

Schuh, Bernd; Sedlacek, Sabine

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Problem centred city-hinterland management - a scientific and policy approach

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**42nd Congress of the European Regional Association (ERSA)
Dortmund, August 27th to 31st 2002**

*Problem Centred City-Hinterland Management – A Scientific and Policy
Approach*

Bernd Schuh and Sabine Sedlacek

Department of Environmental Economics and Management
Vienna University of Economics and Business Administration

Vienna/Austria

bernd.schuh@wu-wien.ac.at

sabine.sedlacek@wu-wien.ac.at

Abstract

According to models of urban development the relations between city cores and its hinterlands are defined by strong inter-linkages and interdependencies. Some examples for those are: - Procurement of reserve areas - Exchange of energy and mass-flows - Sharing of logistical and deposit functions. Co-operations are used to foster these inter-linkages and the institutional framework with its relevant actors (organisations, associations) embedded in both spatial areas are used to determine this frame. In former works we have identified two layers to analyse these co-operations (i.e. micro and macro level). The micro level can be defined also as the personal level where personal contacts and interactions in form of communication patterns and information flows determine the problem solution capacity, the relationship between the actors/players and the success and failure of a co-operation. The macro level can be defined as the overall framework conditions or the system related conditions. These conditions influence city-hinterland relations directly and are often the reason for failed co-operation efforts. Therefore it is necessary to check these conditions first. This paper will deal with the possible design and management of city-hinterland relations which may overcome conflicts and weaknesses. Our approach will not only be based upon empirical evidence from the Vienna region but also be embedded in an interdisciplinary scientific frame. We will therefore try to combine regional science and management science as well as behavioural science in this design. The key hypothesis will be that efficient and effective city-hinterland management will only be possible if centred on problems at hand rather than institutional routines. Co-operations in this context should help to strengthen this orientation. The empirical background of our paper will be drawn from the findings of a research project funded within the focal research programme "Kulturlandschaftsforschung" of the Austrian Federal Ministry of Science. Within this research project four city-hinterland municipalities within the metropolitan area of Vienna have been thoroughly analysed. This contribution will provide the basic information to derive the mentioned theoretical framework.

1 Introduction

City regions are one of the most dynamic areas in terms of housing, labour market and economic development. The city centre functions as an economic, cultural and social space whereas its hinterland is mainly dominated by housing areas. Their inter-linkages are manifold and therefore most challenging within urban development research.

This contribution focuses mainly on the question how to manage these inter-linkages. As pointed out in former research (see Schuh and Sedlacek 2000) co-operations are used to foster these inter-linkages. There are several types of co-operations co-existing – e.g. traditional formal co-operation, formal co-operation without institutionalisation, modern types of co-operation following the theoretical concepts of management science, etc. (see Schuh and Sedlacek 2000, p. 7ff.). The classification of each type of co-operation demands more information about the problem or conflict to be solved by such a co-operation (co-operation focus) and detailed information about the involved players or actors (stakeholder approach). Coming back to the main research question – how to manage city-hinterland relations – a second question arises: Where and how are these city-hinterland relations embedded? And what is even more important: which ones are to be successful?

1.1 Classification model of co-operations on a regional level

City-hinterland relations are taking place on different levels. Figure 1 shows that these relations are embedded in a micro and a macro level. The micro level is defined as the personal level. Within this level personal contacts and interactions in the form of communication and information exchanges are taking place. The identification of specific communication patterns and types of information flows are placed on this level. Both determine the problem solution capacity, the relationship between the actors and finally the success or failure of a co-operation. The macro level is defined by overall framework conditions – i.e. size of the urban region under research, economic structure, and topographical features etc., which are specifically adopted for each urban system. These conditions influence city-hinterland relations directly and are often the reason for failed co-operation efforts – e.g. inflexibility as a result of system specific bureaucratic proceedings.

For this reasons the overall conditions need to be identified first. In many cases the framework conditions are the impulse for an arising problem and need to be taken into consideration for the resolution strategies. Finally, the macro level can be summarised as the institutional level. Institutions are the main drivers for urban framework conditions. As Scherer (2001, p.1) pointed out institutions or organisations are systems of implicit and explicit rules focused on specific objectives. "*These rules specify which actions are required, permitted, or prohibited*" (Ostrom 1998, p. 73).

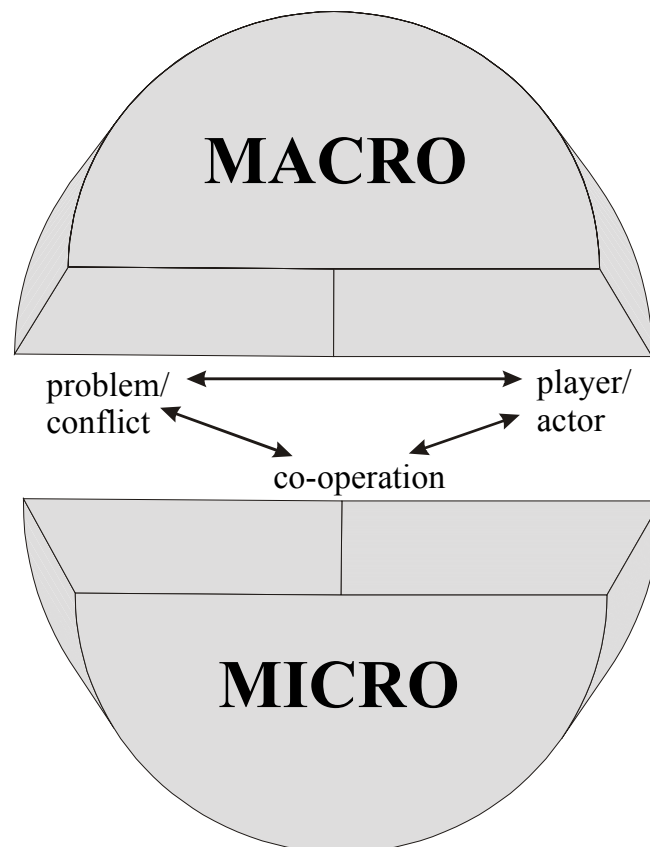


Figure 1: The embeddedness of city-hinterland relations (source Schuh and Sedlacek 2000)

As pointed out earlier this paper concentrates on the question of how to manage city-hinterland problems and conflicts. For this particular reason we will concentrate on **actors** and **co-operations**:

The **actors** are in this model classified along the following principles:

- Capacity to initiate decision power - we do think that within co-operations it has to be stressed that the formal framework (i.e. the written agreements, the official design,...)

differs quite significantly from how things are practised. Therefore it could happen that although an actor/player within the co-operation may have the capacity to initiate decision power thus filling it with life she/he may not play this role (willingly or not).

- Role within the co-operation – this characterisation follows the line that although an actor may play quite an important role in a co-operation (at least „on the paper“) – she/he may not actually participate within. On the other hand there may be actors/players who are not included in a formal framework but do play an important role in the real world design of the co-operation.
- Degree of participation - as we know from decision theory (see Roy 1985) in many real world situations there are several actors, which take part in a decision process and there is a confusion between the one who ratifies the decision and what is called the decision-maker. Moreover even when the decision-maker is clearly identifiable, his/her preferences very seldom seem well shaped: in and among areas of firm convictions lie hazy zones of uncertainty, half-held belief or, indeed, conflicts and contradictions. This fact leads to different behaviours vis-à-vis the degree a decision maker is willing to participate in a co-operation. A differentiation which becomes even more significant if the person who ratifies a decision is looked at (e.g. members of public administration).
- Time horizon – this is the time horizon each of the players/actors anticipates for the co-operation and within the co-operation.

The **co-operations** on the other hand are classified as follows:

- Traditional formal co-operation - Those co-operations are established via a specifically created institution or corporation, which has been founded because of a need of coordinating two or more public authorities in a specific policy field or along a specific problem solution. Typical examples of such co-operations are to be found in the form of planning institutions or traffic compound systems.
- Formal co-operation without institutionalisation - Those co-operations are based upon legal agreements without establishing specific institutions or corporations, which might carry out the tasks in question. The partners to those agreements could either be public authorities and/or private corporations. The most commonly known example of this type of co-operation is the public- private partnership, a widespread form of public services (waste management, water treatment). The general notion behind this form of co-operation is the idea of outsourcing.

- Modern types – They comprise a list of new forms of co-ordinating public policy such as new public management, citizen participation or mediation.
- Mixed types - Those co-operations try to combine different types of the above mentioned concepts in order to minimise the drawbacks and reach an optimal solution. In other words under this heading we summarise a combination of formal and/or modern types of co-operation.

As mentioned before problems and conflicts in an urban region arise from the micro (personal level) as well as the macro level (institutional level). Both levels mainly influence actors and co-operations and are vice versa influencing both parties at the same time.

1.2 Structure

The paper is structured as follows. The following section will briefly describe the theoretical foundations of systems and intervention theory and their connection to the problem of city-hinterland co-operations. The underlying assumption is that co-operations are to be seen as systems themselves but also as parts of them.

The next section presents types of problems based on findings from an empirical study of the Vienna region.

In the last section we will then try to summarise these findings and draw some conclusions for further applications in a real world context.

2 Systems theory

So far we have – in a scientifically traditional way tried to reduce the complexity of the identified problem by constructing a model – thus attempting to narrow down the causes for the problems and by using this deductive approach hoping to get some grip on them. Still empirical lessons in a policy context tell us (see Schuh and Sedlacek 2001, Schubert et al. 1999) that it is far from being enough to identify some causes for problems and communicate them and maybe show some options for overcoming. The results of such a procedure are – if visible at all – often heading into wrong directions and are not satisfying in their outcomes neither to the scientists (in the role of the consultant) nor to the decision maker. What is the reason for this? Or put in another way – what makes it so difficult for science to come up with recommendations and options for interventions in the context of societal problems?

Modern systems theory¹ (for an overview see Willke 1996a) offers some hints for explanations and maybe some clues for overcoming the problems:

Urban agglomerations can be seen as systems in many ways – social, economic, cultural or political – where the layers of the different viewpoints often overlap and interfere with each other. Thus when adding up these systemic approaches in order to get an overview and to capture this interference, which is in many cases the real source of problems, the complexity increases and the problem becomes alert to any intervention. Basically managing agglomerations and their problems – like exchange of mass and labour flows and the attached environmental problems caused by traffic congestion and waste management – is a multi-actor, multi- variable/ criteria maximisation problem. As pictured in our model, mentioned above, there are many decision makers and stakeholders with as many divers interests and potential in decision- power involved. The problems – though easily visible are highly complex in their causes and effects and are in many cases strongly interrelated. The time frames connected to these problems are not homogeneous and their spatial contexts are neither. We will give some illustrative examples of these kind of problems later on in this paper. But first we would like to look into systems theory to find some explanations, which should then help to deal with this complexity without having to oversimplify and thus to loose important information on the way.

Policy in general has to be seen (according to modern system theory – e.g. Willke 1996a, 1996b) as a complex social system which follows the logic of:

- *Self-reference* – this concept refers to the basic findings of Luhmann (1984) which are themselves based upon the theory of autopoiesis (for an overview see Maturana 1982). The bottom line could be described as the capacity of systems to reproduce themselves by using the help of their parts, of which they consist. Though in autopoietic systems the basic principle of systems theory that complex systems show a tendency to open up, does not seem to hold true – so that systems renew themselves by an operatively closed process. But the theory states that only in their basic structure of self-guidance systems are absolutely independent from the outside and alert to influences from this side. Of course this definition raises questions and problems in the context of intervention into complex social systems like public management – as the ability to

¹ Modern systems theory follows basically the ideas of the philosophical school of Constructivism (Watzlawick 1978, 1985, Watzlawick et al. 1967) and is influenced by the works of Riedl (1982) and Luhman (1984).

guide and manage these systems then becomes very limited if not impossible. We will deal with this problem in the next paragraph.

- *Non-linearity* – this concept reflects basically the fact that social systems are not "trivial machines" as they are seen in most of the socio-economic models (based upon neo-classic economic theory). Trivial machines are working on the principle of causal mechanics, where inputs and outputs are connected by clear cause- effect relations. The input- output relations in non trivial systems on the contrary are based upon side effects and uncertainty and are only to be understood via the "view-point" and logic of the system itself – otherwise they seem irrational, unpredictable and illogical (for a more thorough description see Foerster 1984).
- *Self-guidance* – this concept refers to the capacity of a complex social or psychic system (organised as self-referential systems of standards) to guide itself. The freedom and extent of guidance is determined by an organised selectivity of expectations and the contingency of other systems and itself.

As a consequence the basic problems attached to complex social systems which show these patterns are therefore: uncertainty (in respect of their reactions as well as their internal logic), incompatibility (with other systems) and externalised costs (which means that clearly visible real world problems – e.g. like human- made environmental destruction– which do contradict traditional attempts to explain social acting can only be explained if a certain self- reference and logic of complex social systems is taken into account).

If we follow the above said findings on systems theory, the logical consequence would be that model building – to understand and explain problems in the context of such social systems – itself is problematic as in its own logic it acts as "terrible simplificateur" just trying to build up "if- then" relations and simple linearity. By defining our own classification model – as described above – we certainly tried to reduce the complexity of the system thus tapping into the "systemic trap" ourselves. But in order to manage conflicts or to solve problems in this context, it will be necessary to face this complexity and find ways to deal with it. Therefore it will be necessary to dig some more into systems theory and combine it with intervention theory in order to find ways to overcome the trade off of oversimplification of necessary systemic information on the one hand and the sheer oversupply of impressions and data by which city- hinterland relations are describable on the other.

If we look at the management of city- hinterland relations as a public management problem and if we look at it as a problem in the context of complex social systems as well which is involved in guiding itself and other related systems, then we are confronted with the general problem that the need for guidance in the context of highly developed society has increased considerably on the one hand but the capacity to do so can not be increased for the traditional instruments (i.e. public administration or "policy" and "the market economy") on the other hand – thus opening up a gap of lack of guidance (see Willke 1983). Social science is aware of this problem and one of the major focus points of intervention theory (for an overview see Willke 1996b) tries to deal with the above mentioned trade-off in systems theory that the necessity of intervention seems to increase in a highly inter-linked and developed society on the one hand and the inner quality of self- reference of complex social systems which makes them increasingly alert to interventions on the other hand.

It is the above mentioned concept of autopoiesis which is the starting point and leads to the assumption that systems are supposed to be self- referred. As a consequence this would mean that in their inner structure they are non accessible to intervention. It is understandable that such assumptions have lead to a crisis of intervention theory as – if taken as an ultimate ratio – this would mean an end to any external guidance of social and psychic systems. Therefore a differentiation along the problems of complex systems seemed to be necessary in order to identify those situations where intervention is still possible and thus to open up a window of opportunity to guide systems anyway. In this respect Weaver (see Weaver 1978) differentiates between unorganised complexity (e.g. comparable with the molecular movement of gases) of problems, which allows for no intervention vs. organised complexity, where a limited number of variables which are interdependent do prevail. Therefore a certain estimation of patterns is possible. These problems are also to be described as to show an "ordered complexity" which is one of the qualities of social systems as well. The central qualities of problems of organised complexity are the following (Willke 1996b):

- Non- linear linkages
- "Inertia" of the system, indifference to the problem, multi- layers
- Existence of "sensitive points", which enable changes
- Self- reference
- Sub-systems are responsible for regulation

Therefore, if social problems (e.g. public policy problems like City hinterland management) are characterised as such then intervention and guidance seems to be possible. As starting

point and ultimate prerequisite for success later on, the identification of these "sensitive points" is therefore necessary. We do think that with the help of the above mentioned classification model for city hinterland co-operations this identification seems possible – as this model is oriented towards the “inner logic” of the system and tries to shed some light on the non-trivial content of the interactions connected to it. Therefore we think that first points for intervention can be identified.

As a next step modern intervention theory, which tries to face exactly this kind of problem states, that in case of high internal as well as external complexity of a system a context driven guidance and control of the system has to be adopted (see the following table – source Willke 1996b):

External Complexity	Low	High
Internal Complexity	Low	High
Low	Repressive guidance/ intervention (pre-modern)	Centralized guidance (socialist)
High	Self-guidance and control (liberal)	Context guidance (modern)

If we look at our real world context like the management of city- hinterland relations, high internal as well as external complexity of the intervention environment seems to be a fact. This has become visible when applying our classification model and will become even more obvious when looking at the following real world examples. Therefore it seems fairly reasonable to suggest a context guidance approach as intervention technique to be adopted. For an operationalisation this would mean that as a first suggestion city- hinterland management should be re-oriented around problems rather than institutions.

In the following we will try to foster these theoretical assumptions by giving some examples for problems in urban regions which show that the above mentioned qualities of complex systems (i.e. self reference, non- linearity and self- guidance) hold true for the management of urban regions as well and therefore these first principles of intervention might be helpful.

3 Types of problems in urban regions

In former research² we have detected a number of problems, which arose specifically because these basic assumptions have been neglected. These particular problems of the Vienna region are analysed on a general level.

3.1 Problem of bureaucratic and competence structures

Cities are self-standing bureaucratic units with their own financial household. This is one of the most critical factors for inter-municipal co-operations. The question of financing and maintaining a common infrastructure for example brings up a lot of problems. For this reason most of the intended inter-municipal co-operations fail. This is not exclusively a particular problem of urban regions but of any type of region. Municipalities are therefore not equivalent partners for co-operations with local and/or regional institutions – e.g. regional development agencies.

The example of Vienna is in terms of its competencies a specific case. With its double function as a municipality and federal province (*Land*) is Vienna a non-equivalent partner for other small municipalities in its hinterland.

One of the major key-elements for a re-orientation of the regional management within a city-hinterland region is a problem oriented approach. Focusing on real-life problems helps to concretise bottlenecks for planning processes– e.g. traffic problems. The formulation of concrete targets to overcome such bottlenecks is one of the most essential steps within this problem solution path (see new public management approach, Jänicke et al. 1999). The negotiation of compromises is one of the major advantages of such a management oriented approach (“win-win” – solutions). Besides this the involvement of entitled negotiation partners needs to be guaranteed (see Harvard model, Fischer et al. 1997, Kostka 1998). These claims support the ideas of the co-operation model on the micro and the macro level.

3.2 Problem of time horizons and time frames

The question of different time horizons and frames is urgent especially within planning procedures. Because of short legislative periods the political planning process is normally short-term oriented. This is especially a problem for long-term oriented economic, social and

environmental strategies. An additional problem is in many cases a temporal differentiated planning horizon, e.g. different election periods in cities compared to the surrounding municipalities. The need for long-term oriented planning procedures includes the demand for long-term oriented strategies and goals that need to be adapted in the case of urgent short-term developments. According to the co-operation model between the micro and the macro level (see figure 1) this would also include a postponement of competencies between both levels.

3.3 Problem of information inequalities and transaction costs

Different spatial levels imply problems with different sources of information. In Austria municipalities are under the responsibility of the federal provinces (*Länder*) which often results in a curious situation – e.g. municipalities located in the city hinterland of Vienna are legally obliged to St. Pölten the capital of Lower Austria (*Niederösterreich*) with the result of information losses and missing links between St. Pölten and Vienna. In general the federal provinces are the monopolies of information whereas the municipalities suffer under relatively high transaction costs for information consumption. Due to the above mentioned information losses the negotiation power of municipalities is extremely reduced. It might be useful to install a kind of information platform which functions as a mediator or moderator. Within this platform actors are equally entitled. Those institutions responsible for information diffusion should act like an advisory body with the aim of collecting and diffusing relevant information.

3.4 "Soft-factors" of city-hinterland relations and resulting problems

In consequence of various social interactions within a city region “soft-factors” are additionally influencing decision structures.

- Because of divided competencies between the federal provinces and the municipalities a lack of planning institutions on the regional level in between causes a kind of decision vacuum.
- Competing functions of single actors: In total the majority of single actors covers more than one function which causes in efficiency deficit as a result of limited time and know-how capacities.

² Research project "Stadt-Umlandbeziehungen in der Region Wien: Siedlungsentwicklung, Interaktionen und Stoffflüsse. (STAU)" funded by the BMBWK under the cultural landscape research focus ("Kulturlandschaftsschwerpunkt") 2000-2002

- The function of elite's is much more powerful on the local level. Actors know each other personally and participate in the same social environment.

The problems resulting from the influence of such soft factors can be explicitly solved with the micro-macro model of co-operation. The co-ordination of actors in form of specific institutions that function as moderators or mediators is only one efficient measure.

3.5 Problem of identification of the citizens with their community, citizen structure, life style

Urban regions are normally city centre oriented which includes several social functions – i.e. job pool, cultural centre, education, etc. The surrounding hinterland is defined as housing and recreation area. This causes a lot of single problems especially for the surrounding municipalities, they are often losing their originally strong social life function. One of the most important factors is the demand of urban population to live in the “semi-countryside” nearby a city centre with the above mentioned advantages of consuming culture, goods, etc. Many municipalities nearby a city centre are ghost villages without restaurants, grocers or other everyday businesses. Without such services citizens do not get in touch with each others and strengthen their city centre orientation which ends up in a kind of vicious circle. Problems resulting from such developments are manifold – e.g. increasing traffic, lacking maintenance of immobile citizens, etc. – and cannot be solved independently by decision makers of the municipalities. In this case the macro level is the most essential driving force for such developments. Without changing these conditions the micro level cannot successfully intervene although personal relationships are also essential.

4 First tentative solutions

In a traditional approach we would now – as scientific advisers – try to work our way through this list of problems and come up with a list of recommendations which may even help to some extent if implemented, but will not be looked at by the decision makers anyway. Or – if indeed they pick up one or the other of the ideas – they will do so in their own understanding of the problem. Generally this approach will not lead to a comprehensive and overall solution. This situation was meant when we were saying in the beginning of this paper that none of the parties involved will then be full-hearted agreeing to the final results.

Basically this situation shows that apparently the “sensitive points” for intervention have not been found by the scientists in the first place. The reason – as pointed out earlier on – is to be found in the fact that the inner logic of the system at hand has not been taken into consideration – or put in another way – the logic of the own system (i.e. the one of science) is

dominating the approach, which results in a reluctance to continue the process of intervention on the policy side.

So how could this process be facilitated? How could the system be made more accessible to the information about the problems at hand? As a first principle we have suggested to re-arrange the management of problems (such as city- hinterland relations) around the problem itself. How could this be done in practice?

Therefore we will show now how the simple application of this above mentioned intervention principle – i.e. to concentrate on problems rather than institutions and to centre its intervention around – will lead to a more satisfactory result:

A rather simple example of such an approach could be found in modern hospital management: The example is not in the context of urban management but the re-orientation process gives an illustrative example of what we meant by this approach earlier on.

In former hospital management (which is still the dominating principle in Austrian hospitals) the orientation of problem solving and organisational matters followed the logic of administrative units and professional hierarchies. New hospital management (see e.g. Braun von Reinersdorff 2002, Heimerl-Wagner 1996) is oriented around the problem (i.e. the patient as centre and focus) solving by thematic integration of the different professional fields.

Hospitals in general are to be described as “*systems with many heads and many legs, which is therefore able to follow many goals without heading in one direction*” (Heimerl-Wagner and Köck 1998). The following examples are taken from Heimerl-Wagner (1996).

4.1 Former hospital organisation:

The meta-goal of a hospital is and has always been the optimal support and help of the patient – still the major organisational principle follows the lines of professional competencies and disciplines. This brings along role conflicts and problems with the attribution of competencies vis-à-vis the patient thus endangering the overall goal achievement (see figure 2) (Heimerl-Wagner 1996).

The different hospital departments (e.g. surgery) are staffed by the different professional groups which are themselves organised and controlled by their professional “representatives” in the guiding team of the hospital. Generally the membership of the professional body determines the systemic view of the single employee much more than the membership of a specific department. This leads to conflicts and misunderstandings based upon the inability to break through the self-reference of the own system.

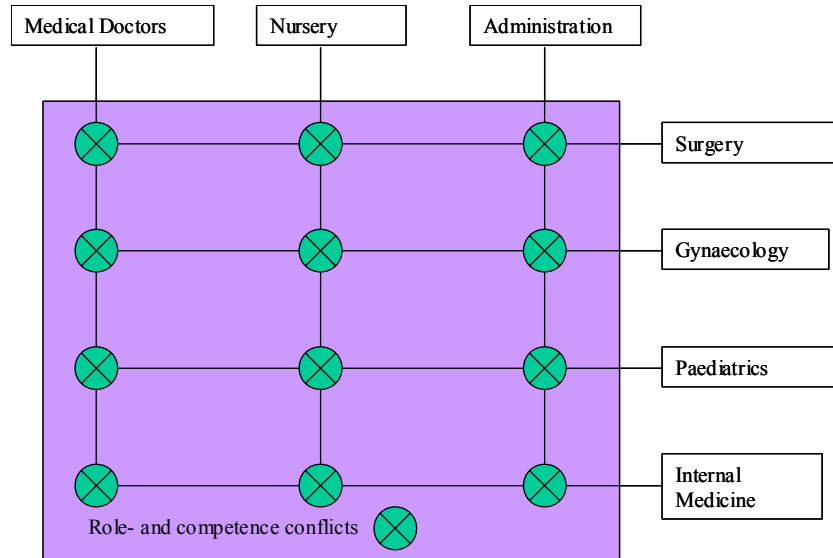


Figure 2: The former hospital organisation

In due course this leads to inefficiencies and unnecessary workloads in order to open up communication channels and enable and facilitate organisation procedures.

4.2 New Hospital Organisation:

The meta-goal is still the optimal care for and support of the patient. This means that he/ she is focus and centre point of the "problem". The new organisation is oriented around the "problem" in a team of equally responsible members of all professional sectors and necessary disciplines (see figure 3):

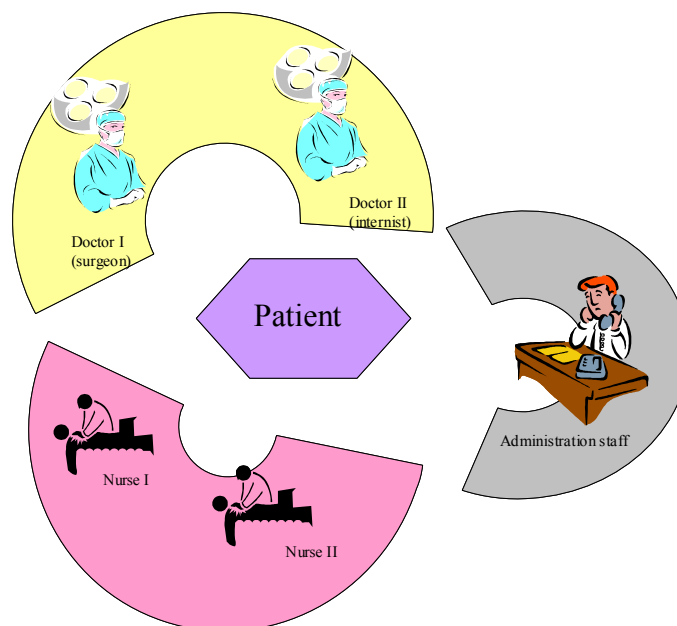


Figure 3: The new hospital organisation

As could be seen the problem orientation leads to the following effects:

- ◆ The self-reference of the single systems – i.e. the "professions" (like MDs, nursery,...) are broken up, thus the alertness to change/ intervention is overcome. In practice this means that less communication obstacles and less problems are to be identified.
- ◆ The system has found its new self-reference and self-guidance, which is centred around the patient, thus energy is guided towards the "real problem" i.e. helping and supporting the patient
- ◆ Less energy and intervention necessity is needed to fulfil the meta-goal of the system. Still the complexity of the system itself did not have to be broken up completely

So what are the lessons to be learned for our case – the management of city- hinterland relations. One reason why we stated this example of hospital management was, that in fact in our empirical work the decision makers themselves came up with a very similar suggestion, without knowing about the parallels to the above mentioned case:

This suggestion has been put forward during one workshop (Feb. 1st 2001) of the project mentioned above ("Stadt-Umlandbeziehungen in der Region Wien: Siedlungsentwicklung, Interaktionen und Stoffflüsse. (STAU)"). The discussion at this workshop focused on lacking inter- municipality co-operations. One of the most mentioned reasons for that is the strictly intra- municipality Austrian revenue sharing arrangement (i.e. the distribution of public expenditures among the different legal authorities – Bund, Länder, Gemeinden). Without clear rules for an inter- municipality revenue sharing arrangement there are too many obstacles for each potential partner to enter into a co-operation between neighbouring communities. The current Austrian system is based upon distribution mechanisms broken down by the total number of inhabitants in each municipality. This is mainly the reason why most of the municipalities follow a simple quantitative growth strategy, which drags them into household deficits in the long run. Changing the system – along our problem oriented approach – the financial households should be opened up and attributed to functional regions and focused on specific problems or bottlenecks as well. Therefore municipalities should identify the most urgent bottlenecks in co-operation with their neighbouring communities. It has to be emphasised that this suggestion has been made without any input from the "scientific" side but simply put forward out of the every- day experiences of mayors and other political decision makers of the communities. The practical implementation of such an approach (i.e. cross border budgets of municipalities) is to be found in municipalities in

Western Austria, where bilateral or multilateral agreements between communities focusing on regional problems (e.g. founding of technology centres) were set up in order to pool efforts and to overcome too narrowly defined system borders (for a description see Rauch et. al. 2001).

5 Conclusions

As could be seen in this example a simple re-orientation towards problem centred thinking helped to overcome some of the problems caused by the above mentioned shortcomings on the actor/ stakeholder level which are pictured in the qualities of systems – like self- reference and non- linearity as described above. It would mean too much boldness from our side to think what is needed is just this re-orientation towards problems to overcome all of them. We are perfectly aware of the fact that nonetheless public policy is confronted with higher complexity and determined by many other factors so that it will be far from enough to end up at this point but it could be used as adequate starting point.

Putting together the elements of intervention theory, systems theory and our practical experiences and classification model the following “problem solving path” for a successful intervention in a city- hinterland co-operation could be found, which is oriented along the lines of our model used to identify the sensitive point within the problem:

- ◆ *Problem identification and definition:* the aim is to get a grip on the focus point around which the co-operation should then be grouped.
- ◆ *Micro level:* next it will be necessary to identify and cluster the involved actors. The main aim is to identify the “sensitive points” in the context of the problem as well as to understand the “self- logic” of the different stakeholders without which suggestions for interventions will not be possible.
- ◆ *Macro level:* the aim here is to identify and learn to understand the institutional frame to the problem. It also helps to identify the context of the “sensitive points”.
- ◆ *Co-operation:* This last item helps to define the approach to the problem. It will be compulsory to involve the actors actively in this and to mediate them through this step. The basic goal is to overcome the systemic self- reference by reducing the selectivity of expectations and the contingency of the single systems (i.e. the single actors) thus leading towards a common systems logic.

Another conclusion is to be drawn from this paper concerning the capacity of modelling and building of general rules is the following. It seems to become clear that other – i.e. more

powerful – methods of solving and treating complexity are needed as the majority of models in socio-economic research are still based upon the assumptions of society and its problems as trivial machines. Potentially the methods used in the field of Operations Research (OR) and recently in Ecological Economics could offer such qualities as they follow the concept of procedural rationality (see also Faucheux et al. 1997). Basically procedural rationality characterises decisions in domains that are too complex, too full of uncertainty or too rapidly changing to permit the objectively optimal action/ solution to be discovered and implemented (Simon 1978). This means that the overall assumption of traditional economic theory that there is always a social optimum does not hold true and there could be a multi-criteria maximisation at best to solve a problem. As stated above this is exactly the case when looking at public management problems in any spatial context.

In OR the school of Multicriteria Decision Aid (vs. Multicriteria Decision Making) has adopted these underlying assumptions and tried to include them in their methods and tools.

Therefore the possible solutions to city- hinterland management will not be a simple "cooking recipe" and the above mentioned path of "problem solving" shall not be seen as such either. From system theory and real world observation it becomes quite clear that problems in public policy – therefore in city- hinterland co-operations as well - are unique in their qualities (defined by micro-, and macro level and actors). The uniqueness of the problems however require unique processes and methods to solve them. Therefore highly flexible methods are needed and maybe even a combination of different ones shall be adopted – but still a strongly founded scientific frame has to be obeyed. We think that multi-criteria decision aid methods offer such qualities:

- There is a high variety of methods – e.g. rough set theory, inclusion of fuzzy sets (see NAIADE - Munda 1995) used in the context of regional planning problems; for other well defined, and locally restricted problems (see e.g. Bana e Costa et al. 2002, Schuh and Giokas 2002). But there are methods with a higher degree of assumptions but a more easily understandable mathematical background to be found as well e.g. Analytical Hierarchy Process (AHP), Outranking Methods (see PROMETHEE Brans and Mareshal 1997)
- The legal framework to use such methods is partly already there: e.g. see the Austrian UVP (Umweltverträglichkeitsprüfung – i.e. Environmental Impact Assessment) or mediation processes

- They offer a higher quality of problem solving in the sense of higher public acceptance due to stakeholder involvement.

Basically we would like to stress the point that city- hinterland co-operations could be the backbone of sustainable regional development in the context of urban agglomerations – still the success of these co-operations will be strongly determined by the way they are approached. With this paper we tried to put forward some arguments for a systemic approach which leads to a certain analytical framework and methods. Of course it is to be understood as invitation to add some practical applications to these suggestions in order to underpin these hypothesis.

6 References

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