

The Organizational Underpinnings of Innovation and Change in Health Care

Alexander Mingst

2008

Andrássy Working Paper Series No. XXI

ISSN 1589-603X

Edited by the Professors and Readers of Andrásy Gyula University, Budapest.

This series presents ongoing research in a preliminary form. The authors bear the entire responsibility for papers in this series. The views expressed therein are the authors', and may not reflect the official position of the University. The copyright for all papers appearing in the series remains with the authors.

Author's adress and affiliation:

Alexander Mingst
Andrássy Gyula Budapesti Német Nyelvű Egyetem
Pollack Mihály tér 3
H-1088 Budapest
E-Mail:
Alexander.Mingst@andrassyuni.hu

© by the author

Introduction

Dissatisfaction with health care systems seems to be a common phenomenon, with reforms undertaken all around the globe.¹ Political initiatives to change health systems often proceed by giving detailed prescriptions, which seldom leads to the desired results. Through these efforts, the dynamic behaviours of the actors and the processes of their constant interaction are regularly neglected. Apart from ignoring how the system actually works, the potential of generating innovation and change “from within the system” through experimentation is widely suppressed.²

In this paper a bottom-up perspective is taken, starting with the explanation of individual behaviour and its role in creating, implementing or impeding change. Because of the significant role of organizations as providers of health services, the perspective is expanded to organizational behaviour. When innovation and change shall be explained on the basis of individual behaviour, we need a clear model of human behaviour. A fruitful approach is based on the concept of mental models, as it is able to explain creativity and individual choice processes as well as social influences and constraints upon individual deliberation. It can easily be connected to existing concepts of knowledge and capabilities and can serve as a link between so far distinct strands of research in the fields of institutional economics and organization theory.³

In a first step, a general framework being able to explain innovative as well as inertial individual and collective behaviour is established. In a second step, a brief literature review is undertaken to gather clues about how this framework may be applied to health care and which factors might actually influence the processes of change in this sector. Due to paper size, the scope of this attempt is limited to health care providers.

¹ Glouberman/Mantzavinos (2001, 56).

² Cf. Okruch (2001); Cassel/Sundmacher (2006, 279); Klimecki (1998) for a similar case of administration reform.

³ For economics see for example Denzau/North (1994); Mantzavinos (2001); Budzinski (2003); for organizational science Argyris/Schön (1996); Nonaka/Takeuchi (1997) and the cognitive aspects of learning in Fiol/Lyles (1985).

The Cognitive Foundation of Individual Behaviour

Individual Learning and Mental Models

„The greatest challenge for the social sciences is to explain change – or more specifically, social, political, economic, and organizational change. The starting point must be an account of human learning, which is the fundamental prerequisite for explaining such change. The ability to learn is the main reason for the observed plasticity of human behaviour, and the interaction of learning individuals gives rise to change in society, polity, economy, and organizations.”⁴

Human behaviour can be interpreted as problem-solving, which is guided by the motivation to increase individual utility.⁵ The focal point of every action is the brain, which processes incoming environmental information and directs the individual activity. The structure of the mind can be interpreted in terms of different kinds of rules.⁶ Rules of *categorization* interpret the signals coming from the sensory perception organs and try to assign them to certain categories, which have been learned by the individual until that point. Thus it is possible to recognize objects, feelings or events and to trigger appropriate action. The relevant behaviour in a certain situation is determined by rules of causation, or *condition-action rules*. For each considered course of action, they state an expected result. For choosing one out of several possible alternatives, the different consequences attributed to each solution have to be valued. Therefore rules need to be applied that assign a *value* to actually perceived or expected states, according to their expected influence on utility.

The stimulus for action is the perceiving of a personal feeling or a certain state of the environment that is judged as a problem. Learning takes place through conducting a specific action to solve that problem and afterwards perceiving and evaluating the consequences. Successful solutions will be reapplied, if a problem occurs, that is perceived similar to the former situation. When a certain rule is repeatedly applied successfully to a frequently occurring problem, this rule is strengthened. For common problems, this can lead to the automatic application of rules without any prior reflection. These rules are called *routines* and can save a tremendous amount of cognitive capacity.⁷

⁴ Mantzavinos/North/Shariq (2003, 2).

⁵ Mantzavinos (2001, 10-15). For the following arguments see especially Mantzavinos (2001, chap. I); Denzau/North (1994, 13); Budzinski (2003, 215-217).

⁶ Mantzavinos (2001, 24-26).

⁷ Mantzavinos (2001, 29).

Mental models are sets of rules, which are built to address a specific situation. They guide the perception and order the available knowledge relevant for solving the problem. This can mean that for a problem that is perceived as new, comparisons are made to similar problems and rules are applied that proved successful in a different setting (*heuristics*). It also allows for the *creative* imagination of completely new solutions or the adoption of externally available rules (*learning from others*). Mental models are flexible in so far, as they are predictions about expected results in dealing with a problem. They can either be changed or reinforced according to environmental feedback. As with single rules of action, the repeated confirmation of a successful mental model can lead to its stabilization. Such unconscious, “crystallized” mental models, or *belief systems*, may turn out quite resistant to changes.⁸

Different Kinds of Knowledge

So far, learning has been described by the cognitive processing of special rules. These rules are the basis for different kinds of knowledge. One famous classification is Ryle’s distinction between *knowing that* (theoretical knowledge) and *knowing how* (practical knowledge).⁹ “Knowing that” is about facts and causal relationships. The knowledge about objects and their meanings belongs to it as well as the explanation of cause-and-effect chains. This knowledge is communicable and can be visualized and stored in definitions, documents, diagrams or technical blueprints. “Knowing how” is skills and the practical ability to actually do something or perform a sequence of actions, like riding a bicycle or performing cardiac surgery. Practical knowledge itself is not communicable and therefore not directly transferable. One can describe how to ride a bike or what has to be done for a successful surgery, but that doesn’t result in the auditor being able to actually perform it. Practical knowledge can only be attained through performing the relevant tasks again and again, maybe guided by examples from skilled performers and imitation. A correspondent can be found in the distinction between the *science* and the *art* of medicine.¹⁰ As the example of the cardiac surgery indicates, some problems require the interaction between both forms of knowledge. The practical performance of the operation requires the theoretical knowledge of the human

⁸ Mantzavinos/North/Shariq (2003, 4).

⁹ Ryle (2000); Mantzavinos (2001, 30-33); Kogut/Zander (1992, 386), using slightly different names.

¹⁰ Cf. Malterud (2001, 398); Hussain/Raza (2004, 94).

physique and the functions of the used instruments, as well as the practical ability to thread a catheter into the aorta.¹¹

For both kinds of knowledge the distinction between *conscious* and *unconscious* application holds true. Frequently repeated motions might become a routine and are performed automatically when triggered by a corresponding cue, like stopping a car at a red traffic light and accelerating again when it switches to green. Also much of the theoretical knowledge is used without further reflection, for example the use of a theoretical concept like ‘institution’. A definition once might have been learned, but through repeated use the underlying assumptions might get taken for granted – until ‘negative’ feedback from someone with a different understanding will maybe stimulate reflection about the concept again.

Another common categorisation of knowledge is the distinction between *explicit* and *implicit*,¹² which just slightly differs from what has been said so far. It more clearly divides the knowledge according to how easy it is to transfer. Explicit knowledge can be abstracted, codified, stored externally and thus be transferred easily. Implicit knowledge is – so far – unarticulated and engrained in a person. Additional to the entire practical, it also includes the unconscious theoretical knowledge, as Table 1 shows.¹³

Table 1: Forms of Knowledge

	Conscious	Unconscious
Theoretical Knowledge	Explicit	Implicit
Practical knowledge	Implicit	Implicit

¹¹ For a brief description of methods of cardiac surgery see Edmondson/Bohmer/Pisano (2001, 127).

¹² Often the word ‘tacit knowledge’ is used synonymously with ‘implicit knowledge’. Here the term ‘tacit’ will be avoided, as there are too many authors using the term with too many different meanings. Either as practical knowledge (Nelson/Winter, 1982, 76-82), unconscious knowledge (Cohen et al., 1996, 683; Witt, 2000, 744; Lam, 2000, 490) or the dynamic capability of acquiring practical as well as theoretical knowledge (Mantzavinos, 2001, 33 f.; Kogut/Zander, 1992, 389).

¹³ “There are two kinds of knowledge: explicit knowledge and tacit knowledge. Explicit knowledge can be expressed in words and numbers and shared in the form of data, scientific formulae, specifications, manuals, and the like. This kind of knowledge can be readily transmitted between individuals formally and systematically. ... There are two dimensions to tacit knowledge. The first is the technical dimension, which encompasses the kind of informal personal skills or crafts often referred to as ‘know-how.’ The second is the cognitive dimension. It consists of beliefs, ideals, values, schemata, and mental models which are deeply ingrained in us and which we often take for granted. While difficult to articulate, this cognitive dimension of tacit knowledge shapes the way we perceive the world.” Nonaka/Konno (1998, 42).

The interaction between these different forms of knowledge is seen as decisive for the generation of new knowledge.¹⁴ It is important to note that, even when speaking about “making implicit knowledge explicit”, knowledge cannot change its basic character of practical versus theoretical. Through the process of reflection and trying to put the knowing how into words, new theoretical knowledge about the skilful doing might develop – the practical knowledge itself stays the same. It is building a theory about some sort of action, which has to be tested and evaluated.¹⁵

Innovation and Change on the Organizational Level

Theoretical facets of change in organizations

How can the collective behaviour of several individuals, working together in an organization, be changed? Weick and Quinn (1999) show that theoretical as well as practical approaches to organizational change can be divided into two groups. The one is depicting organizational change as an intended intervention, leading to a planned, radical transformation of the organization in a relatively short time. This *episodic change* follows Lewin’s popular idea of a three stage process of “unfreezing”, “changing” and “refreezing” an organization that is suffering from inertia and thus being unable to appropriately adapt to its environment. In contrast, *continuous change* means ongoing processes of little adaptations that are not centrally planned according to a strategic goal. Instead the organization evolves through the cumulating of smaller updates of work processes through continuing trial and error processes. In such cases, the task of reflecting this process and redirecting it where appropriate may arise.

Another favourite contradiction in literature on organizational learning is based on the *level of change*. Here processes of “adaptation”, “first-order change” or “single-loop learning” are distinguished from those of “learning”, “second-order change” or “double-loop learning”.¹⁶ The former describe simple behavioural adjustments due to negative performance feedback. It denotes improving the means according to given ends. The latter is regarded as a

¹⁴ Nonaka/Takeuchi (1997, 72 f.); Lam (2000, 490 f.).

¹⁵ Nonaka/Takeuchi (1997) describe the process of making the practical knowledge of bread baking explicit, to build a baking machine. It took over a year until finally an engineer practically learned baking from a renowned baker and long trial and error engineering until that knowledge was transformed into a machine.

¹⁶ See Argyris/Schön (1996), Weick/Quinn (1999, 368), Klimecki/Laßleben/Thomae (1999, 12) and Fiol/Lyles (1985), who also give a detailed account of the inconsistent use of these concepts by different authors. For an overview with examples from health care see Rushmer et al. (2004b, 395).

“higher” form of learning, also changing cognitive structures.¹⁷ Only in that case, the theories underlying the behaviour are reflected and the goals, norms and values of the organization are changed.

Taken together, the picture of an organization is that of a collection of individuals and groups, constantly adapting their behaviour to better achieve the stated goals. Through environmental changes a situation can be reached, where these little behavioural adaptations are insufficient to secure the survival of the organization. Then, a deliberate and forceful intervention is necessary to change the goals and set the organization on a new track. A careful timing and adjustment of these two processes is crucial. A certain stability of the overarching goals is necessary as a reference point, to gain the fruits of ongoing adaptation and building of routines: the learning curve effects.¹⁸ This bears the danger of sticking to successful routines too long, ending up in a threatening “lock in”. On the other hand, too much exploration of new ideas may also be futile, because no trial gets the time to generate enough revenues to cover the costs related with experimentation.¹⁹

In both cases, the organizational ideal is a successfully self-transforming organization.²⁰ So in all ways it is necessary to start with an understanding of how organizations work, why they get trapped in inertia or move the wrong way and finally, how they can be set on the right track of becoming a learning organization. Therefore the next step will be the extension of the individual problem solving framework to the organizational level.²¹

¹⁷ A view based on the distinction of behaviour and cognition, which certainly is not compatible with the notion of rule guided problem-solving that is followed here.

¹⁸ Levitt/March (1988, 321); Argote (1999, 2f.). These effects are not limited to practical routines, but also apply to managerial learning of theoretical knowledge, as already acknowledged by Penrose (1995).

¹⁹ For the interplay of „exploration” and „exploitation” see March (1991); Kogut/Zander (1992, 393 f.).

²⁰ “If organizational change generally occurs in the context of failures to adapt, then the ideal organization is one that continuously adapts. And this holds true whether the focus is episodic or continuous change.” Weick/Quinn (1999, 370 f.). See Rushmer et al. (2004a; 2004b; 2004c) for an adoption of the ideal of a learning organization to health care.

²¹ According to Klimecki and colleagues the concept of organizational learning is of special relevance, as it is a more thorough theory than the many fast moving concepts of change. The common paradigm of different approaches to organizational learning is an underlying foundation on cognitive learning processes (Klimecki/Laßleben/Thomae, 1999). Their „unifying framework” describes learning as collective information processing with processes of building shared interpretations of signals through communication. This is what Mantzavinos (2001, 68) calls the “static” aspect of shared learning. Little attention is put on unconscious processes of building routines that may lead to inertia and the interaction of different forms of knowledge over time. Therefore a self-contained framework is developed in the following chapter, based on the cognitive learning paradigm developed in the previous chapter, and connected to findings of organizational learning literature. For the difference between information and knowledge also see Nonaka/Takeuchi (1997, 68-71).

Collective Learning and Shared Mental Models

Usually the success of an individual action also depends on the actions of others. This is especially clear in organizations, where work is divided upon several agents and thus has to be coordinated to accomplish a common goal. Because every individual has experienced a unique history of successfully and unsuccessfully approached problem situations, all individual mental models differ.²² Additionally, the possibility of creative problem solving exists, which leads to the application of completely new solutions to a problem. Therefore social interaction is shaped by structural uncertainty about the behaviour of others. Anyhow, in a social interaction, the individual mental models of the members of a group also contain *hypotheses* about their colleagues. Through repeated interaction, these models are changed according to feedback and a set of rules concerning the work situation evolves that is shared by all group members.²³ These shared mental models not only evolve spontaneously. Established rules of the organization are actively disseminated and newcomers entering an established team get socialized and actively learn from others through various mechanisms.²⁴

This collective learning taking place comprises all kinds and forms of knowledge. Especially relevant is the interplay between different forms of knowledge and between different levels of the organization (individual, team, division, organization).²⁵ A useful framework for analysing this interplay was developed by Nonaka and Takeuchi (1997) to show how new knowledge is generated. In their view, the starting point for all knowledge in the organization is the individual. Without them, no knowledge can be created. Organizations provide the context for creative individuals and facilitate the process that amplifies the generated knowledge and strengthens its use.²⁶ According to the distinction between explicit

²² Denzau/North (1994, 14); Witt (2000, 745).

²³ These kind of mental models are also referred to as *transactive memory*. “Research on ‘transactive memory’ ... is also relevant for understanding whether knowledge is embedded in social structures versus in individuals. This research emphasizes that as social systems gain experience, members [!] acquire knowledge about the system as well as about their individual tasks. In particular, members acquire knowledge about who is good at what, about how to coordinate and communicate effectively, and about whom to trust. This knowledge in turn improves their performance.” Argote (1999, 83).

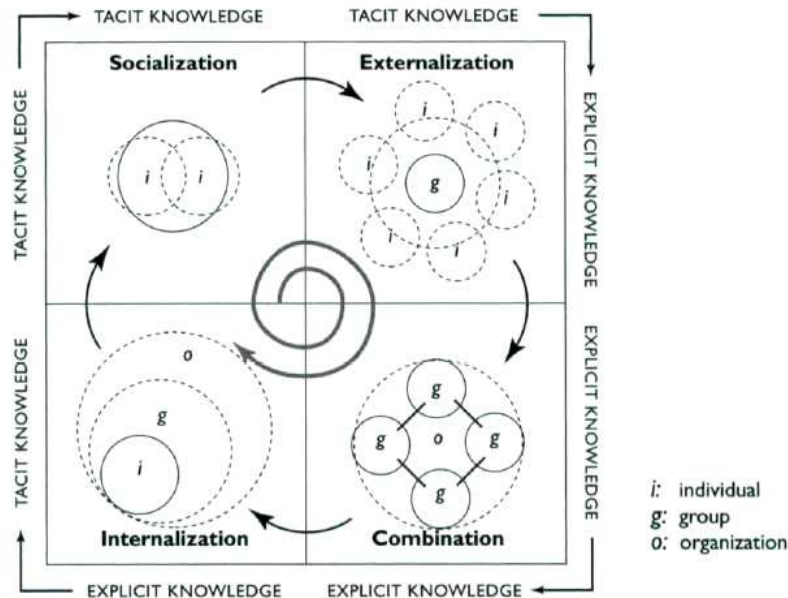
²⁴ „Organizational knowledge and faiths are diffused to individuals through various forms of instruction, indoctrination, and exemplification. An organization socializes recruits to the languages, beliefs and practices that comprise the organizational code ... Simultaneously, the organizational code is adapting to individual beliefs.” March (1991, 74).

²⁵ Nonaka/Takeuchi (1997); Lam (2000).

²⁶ The point whether organizational knowledge is reducible to individuals or not is controversial and very often it is stated that “collective learning ... *cannot be reduced* to the sum of the individual learning processes although it is based on individual contributions and on individuals as changes agents” (Siebenhüner 2003, 18). See also Kogut/Zander (1992, 384); Weick/Roberts (1993, 365); Nonaka/Takeuchi (1997, 71);

and implicit knowledge, four mechanisms of knowledge conversion can be described, which can also be interpreted as the different settings, in which shared mental models evolve and are altered. This spiral of knowledge is depicted in figure 1.

Figure 1: Modes of Knowledge Creation



Source: Nonaka/Konno (1998, 43).

Through *socialization* implicit knowledge is transmitted.²⁷ As no “verbal” communication by means of language is involved, this mechanism works through shared experiences, observation and imitation. Therefore the direct interaction is required and with growing group size and decreasing intensity of contacts, socialization gets more and more difficult.²⁸ It includes the learning of practical skills by an apprentice, as well as the unconscious adoption of norms and beliefs “how things work around here”. Newcomers might not learn the unwritten group norms because someone tells them. Their mental models will slightly adapt to the existing shared mental model through peer pressure, which may take very subtle forms, and by watching the behaviour of other group members and senior managers.²⁹ As a result of

Nelson/Winter (1982, 104 f.); Levitt/March (1988, 320); Argyris/Schön (1996, 11); Argote (1999, 80 f.). Building on the cognitive approach of mental models, the position is taken here that organizational knowledge cannot be created without individuals. This is no contradiction to the possibility that collective knowledge can be more than the sum of its parts. Through the development of shared mental models, which reside in individual brains, organizations are capable of performing things that cannot be conducted by the individuals alone. To utilize their knowledge specific to the organization, individuals need the organizational context.

²⁷ For the following part see Nonaka/Takeuchi (1997, 75 ff.); Witt (2000, 744 f.); Mantzavinos (2001, 76 f.).

²⁸ Cf. Kogut/Zander (1992, 389); Witt (2000, 746); Mantzavinos/North/Shariq (2003, 5).

²⁹ Robinson (2001, 40); Weick/Roberts (1993, 367), who also point out that through answering the questions of newcomers, also the experienced insiders are often resocialized.

socialization, organizations are able to maintain certain routines and a special culture despite employee turnover. This can also become a source of dangerous patterns of collective behaviour like groupthink.

The most difficult process is the converting of implicit into explicit knowledge, as it implies the articulation of the inexpressible. As already mentioned, this is not a real transformation of the implicit knowledge, than rather a process of building explicit symbols, metaphors, analogies or hypotheses about those implicit phenomena.³⁰ *Externalization* includes the reflection upon unconscious theoretical beliefs and concepts as well as the description and modelling of how things are done. The interpretation of analogies and metaphors gives room for different interpretations. This may lead to inconsistencies and tensions in groups, prompting further reflection and discussion, which in turn shapes the shared mental models of the actors. The results of these processes can be stored in an external medium and thus be transmitted also beyond group borders.³¹ Outsiders will, of course, lack the deep understanding of that external medium, due to the missing shared mental model.

Through the transferability of explicit knowledge it is possible to draw on several sources of knowledge to build something new through *combination*. Information from outside the organization may be utilized, as well as bringing together several sources of knowledge from within the organization.³² This blending of explicit knowledge requires a skill Kogut and Zander (1992) label “combinative capability”, which allows for taking advantage of capabilities, which so far have been unnoticed. Closely related to combination is the diffusion of explicit knowledge through the dissemination of external artefacts like documents, blueprints and technology. Because these, at least partially, contain translations of implicit knowledge, the application of these external devices will differ in a context with different implicit knowledge. The explicit knowledge is re-translated according to the shared mental

³⁰ Nonaka/Takeuchi (1997, 77-80).

³¹ Mantzavinos (2001, 75); Mantzavinos/North/Shariq (2003, 5 f.), who see this mechanism as only applicable to theoretical knowledge. In contrast, here the argumentation is followed that external symbols *about* both kinds of knowledge can be made. The knowledge is not directly stored and applicable by someone else, but the symbols can function as a cue on which basis an interpretation is made, based on ones own experiences. Someone with prior experience in cooking will be able to learn preparing an unknown dish, guided by a cook book. Apart from that, practical knowledge may be stored in technical artefacts, actually performing a set of motions, like robots. Nonaka/Takeuchi (1997, 76) describe how an engineer learned (through socialization) how to knead dough and later on transformed this implicit knowledge into a bread-baking machine.

³² Kogut/Zander (1992); Nonaka/Takeuchi (1997, 79 f.).

models prevailing in the new context.³³ As a result, organizations are more likely to develop new knowledge in fields related to what they already do or know.

A common form of combining external knowledge is through discourse. Attendants translate their implicit knowledge and ideas into words and possibly see that other people come to different interpretations. Clarifying the different points through discussion may lead to a new set of knowledge, for example stated in a strategy concept.³⁴

When new knowledge has been generated and is thereupon applied in every day action, it gets *internalized* after repeated conducting. The new explicit knowledge becomes part of the unconscious stock of implicit knowledge through “learning by doing”.³⁵

Entrepreneurs as the drivers of change

So far it has been shown that the individual knowledge base of an organization is constantly moving. “There is a continual, more or less concerted meshing of individual’s images of their activity in the context of their collective interaction”.³⁶ So the question remains of how this micro-level learning becomes organizational, how this process can be triggered in the case of inertia and from where the direction of change originates.

The process starts on an individual level, by recognizing a “difference” between expectations and perceived actual outcomes that constitutes a new problem and has to be spread throughout the organisation later on.³⁷ How this problem is handled, depends on the past experience with dealing with problems and the feedback actors received after trying a solution. Because for the individual, the effect on his personal utility is crucial, the employment of a solution to the problem does not depend on its effect for the organization. The members of the organization have to expect positive feedback for the option “pursuing a problem solution”. The so called “green room effect” describes how people are scared off

³³ Cf. Polanyi (1962, 52); Nelson/Winter (1982); Kogut/Zander (1992); Weick/Quinn (1999, 376).

³⁴ Weick/Quinn (1999, 381).

³⁵ Nonaka/Takeuchi (1997, 82 ff.).

³⁶ Argyris/Schön (1996, 15).

³⁷ Argyris/Schön (1996, 11); Nonaka/Takeuchi (1997, 86). For a detailed analysis of the various kinds of differences serving as triggers of organizational learning see Klimecki/Lassleben (1999).

pushing forward with a new idea.³⁸ This may lead to “suppressing a problem” as the individually best behaviour.³⁹

Apart from a culture enabling the articulation of problems and new ideas, an organization also needs the ascertained solutions to be implemented. Therefore the concept of opportunities plays a central role. Core questions concern the sources of opportunities and the processes of their discovery, evaluation and exploitation.⁴⁰ According to the framework applied here, opportunities are developed through the mental models of entrepreneurs⁴¹ and constitute a hypothetical set of rules, which still have to be tested. This may take place through real implementation and to a certain degree through the “mental probing of alternatives” prior to action.⁴² Because of the division of labour in organizations, it is necessary for the successful, coordinated application of the new solution, to communicate the mental model to those members who take part in the implementation – a function Witt has labelled as “cognitive leadership”.⁴³ The entrepreneur seeing a solution therefore has to explicate his vision and intensively interact with crucial multipliers to build a shared mental model of the problem solution. Through this externalization of the implicit idea, as well as through the stimulated discussion processes, the hypothetical mental model might get changed and enriched through the activated knowledge of the persons involved. The resulting concept gets spread by those “boundary spanners” to those groups of which they are members. Through this process, a transfer of the new idea takes place to the different parts of the organization.⁴⁴

The entrepreneurial services itself can be divided among members of the organization. Senior managers, for example, might be more prone to perceive the existence of a problem, due to a better overview of the organization and several sub-parts. Because of their greater distance to the actual organizational routines and a lack of expert knowledge, though, they might not be able to “see” the solution to the problem. In that case of top-down change, it is

³⁸ Berthoin Antal/Lenhardt/Rosenbrock (2001, 867, 880-883).

³⁹ For an overview of cultural factors influencing learning in an organization see Rushmer et al. (2004a, 378 f.).

⁴⁰ Shane/Venkatamaran (2000).

⁴¹ The term change agent is replaced here by the concept of entrepreneur developed by Penrose. Entrepreneurs are the “individuals or groups within the firm providing entrepreneurial services, whatever their position or occupational classification may be. Entrepreneurial services are those contributions to the operations of a firm which relate to the introduction and acceptance on behalf of the firm of new ideas, ...” Penrose (1995, 31 f.).

⁴² Mantzavinos (2001, 54).

⁴³ Cf. Witt (2000).

⁴⁴ Kogut/Zander (1992, 389).

the task of cognitive leadership to act as a trigger and build the context or “learning arenas”, where agents with the relevant knowledge can interact to create a shared mental model with a solution.⁴⁵ The role of the entrepreneur in this case is more that of a facilitator who guides the discourse and gives it a sense, rather than acting as a prime mover, convincing others of his idea.⁴⁶

Applying the framework to health organizations

Knowledge and learning in health organizations

The importance of both categories of knowledge – *knowing that* and *knowing how* – is especially clear in health care. A large body of theoretical knowledge about diseases, symptoms, treatments, medication and the like exists and is continuously expanding. This knowledge mainly consists of objects and cause-effect rules about which factors lead to which phenomena. Obviously, this knowledge can become unconscious through learning and repeated application – leading to “knowing-doing gaps” between „available medical knowledge and the daily clinical practice of many physicians and health care delivery organizations”.⁴⁷ Therefore one problem for every practitioner in health care is to constantly update his *individual* theoretical knowledge. This form of explicit, scientific knowledge enjoys high popularity among the field and is expressed in the proliferation of clinical practice guidelines as a part of evidence based medicine and the support through IT-systems supplying large amounts of information.⁴⁸

The implicit “art of medicine” contains practical knowledge as well as deeply engrained unconscious theoretical knowledge about categories – often subsumed under the misleading term “tacit knowledge”. The character of practical skills seems to be obvious, having a lay image of physicians and nurses using a variety of instruments to perform different kinds of physical treatments. The importance of learning by doing – typical for know how – is shown through the requirements for physicians and hospitals, to perform a minimum amount of certain operations per year. A special task in the health sector is diagnosing.⁴⁹ In the language

⁴⁵ Nonaka/Takeuchi (1997, 87); Klimecki (1998, 29); Rushmer et al. (2004c, 401).

⁴⁶ See Weick/Quinn (1999) and their two different roles of change agents in episodic or continuous change.

⁴⁷ Adler et al. (2003, 13). See also Berta et al. (2003, 283).

⁴⁸ Cf. Adler et al. (2003, 21); Hussain/Raza (2004); Alaszewski (2005, 317).

⁴⁹ Cf. Malterud (2001, 398).

of the cognitive framework, it means the perception of signals (symptoms) and their classification to a certain category (disease). Which symptoms constitute a certain disease is also subject to scientific inquiry and is published in external documents. But the actual categories hold by a physician, are to a large extent the result of the personal experiences and the history of cases already encountered. Due to the complexity and ambiguity of the task, as well as the differences of patients and the necessity to partially rely on their oral descriptions, diagnosing is a practical task of judgment.

That the sole reliance on explicit knowledge is misguided, has also found acceptance in medical informatics. An approach called “cased based reasoning” seeks the utilization of implicit knowledge gained through experience. The idea of looking for appropriate solutions to new problems and reusing rules that have proven successful, while refining unsuccessful ones, seems to be compatible with the framework developed in this paper. The stored cases of successfully solved problems may serve as a trigger, reminding the user of a known context and though activating his implicit knowledge, as well as a source of external solutions, which the user can take into consideration when faced with a decision.⁵⁰ In this view, knowledge is not stored in the system. Instead, the system serves as support to the knowledge hold by the practitioners.

Change and the adoption of innovation seem to be the normal course of life in health care. Not inertia seems to be the problem, but rather a wrong focus of learning activity, being preoccupied with technological change and disregarding organizational learning.⁵¹ For solving complex medical problems the cooperation of different experts with highly specialized individual knowledge is essential. This requires *team learning* of *collective routines* and the building of shared mental models about the expectations to the role every team member has to play. The continuous work in a hospital also requires the smooth transition between shifts and changing configurations of teams. In their study on the implementation of a new technology of performing cardiac surgery, Edmondson, Bohmer and Pisano (2001) found that the new technology required severe unlearning of old routines and posed new tasks upon team members.⁵² Comparing the differences between surgical teams of

⁵⁰ Cf. Hussain/Raza (2004, 95); Abidi (2005); Shepherd et al. (2006).

⁵¹ Cf. Edmondson/Bohmer/Pisano (2001, 10); Glouberman/Mintzberg (2001, 68).

⁵² “More subtly, the new technology requires greater interdependence and communication among team members. ... Thus the surgeon must rely on team members for essential information, disrupting not only the team's routine but also the surgeon's role as order giver in the operating room's tightly structured hierarchy.” Edmondson/Bohmer/Pisano (2001, 127).

16 medical centres in learning the new procedure, they found that the fastest learners shared three essential characteristics:

- Designing a team for learning: When team members are carefully chosen by the leading surgeon, the learning took place at a higher rate, than in settings where this was not the case.
- Framing the challenge: Teams with a leader stressing the collective character of the learning task and supporting team members in their learning efforts were more successful. „They emphasized the importance of creating new ways of working together over simply acquiring new individual skills. They made it clear that this reinvention of working relationships would require the contribution of every team member“ (p. 130).
- Creating an environment of psychological safety: When confronted with a new problem, experimentation with various possible solutions and the revision of unsuccessful trials is important. In a team, this requires a surrounding in which individuals don't fear negative personal feedback when proposing ideas, pointing out errors and admitting own mistakes.⁵³

On an *organizational level*, the smooth interaction of separated but interdependent teams and departments is necessary (e.g. the handing over between shifts as well as different inputs to the overall process of curing from different parts of the organization, like laboratory, pharmacy, etc.). Tucker/Edmondson (2003) examined the problem-handling of nurses. When disturbances of their tasks occurred as a result of boundary-crossing process failures, they tried to fix the problem somehow, in order to quickly resume their work. Only in 7% of the cases they communicated the problem. Therefore the chance to track the underlying causes and engage in “second-order problem solving” to change the routines was lost in most of the occasions.⁵⁴ This indicates a lack of coordinative activities that can assure a smooth integration of different sub-processes.

⁵³ See also Rushmer et al. (2004a, 379).

⁵⁴ The proneness of nurses towards single-loop learning is also found in Rushmer et al. (2004b, 394) and Alaszewski (2005, 317).

Organizational structure and culture in health care

Glouberman and Mintzberg (2001) argue, that the problems of health care stem from the stern structural and cultural separation of four distinct worlds or “silos”, divided by horizontal and vertical cleavages. This is reflected in organizations through the relatively independent groups of doctors, nurses, managers and trustees, as well as on a societal level through distinct organizations of acute care, community care, public control and community involvement. Acknowledging, in principle, the necessity of these borders due to a division of labour, they regard the disconnections as futile and plead for a better cooperation and coordination among these worlds.⁵⁵ Likewise Rushmer et al. (2004, 376 f.) point to the following factors, which make organizational learning extremely difficult in health care: time pressure, no sharing of chances to learn, no feedback-loops, conflicting demands from different parts of the organization, spatial separation, fluctuation leading to the loss of implicit knowledge, professional boundaries and unhelpful hierarchies that sometimes inhibit innovative practice and the sharing of ideas.

Begun and Luke (2001) on the other hand state a growing variety of organizational forms, also including growing interactions between different organizational worlds (e.g. between hospitals and physicians, between insurers and physicians or between insurers and hospitals). They conducted an exploratory study of the factors underlying the growing diversity of organizational forms in the U.S. health care sector between 1982 and 1995. Their regression analyses seek to explain the difference in the diffusion of “new organizational forms” between local markets. The basic finding is that market size and geographical region determine the path of development, while the trigger that has led to the spreading of organizational forms, as well as the occurrence of the invention of the forms itself, has not been investigated.⁵⁶

Additional to a separation in the organizational hierarchy, there are certain cultural factors like role perceptions, which support the lack of coordination. For nurses, as an example, “‘appropriateness’ is seen as the maintenance of order and routine that they see as a necessary condition for the safe performance of nursing duties.”⁵⁷ Nurses feel satisfied when being able to autonomously solve problems and “avoid unpleasant encounters with cantankerous

⁵⁵ See also Adler et al. (2003, 24 f.); Rushmer et al. (2004a, 376).

⁵⁶ There is one brief note that the growth was „largely in response to pressures to control costs” (Begun/Luke, 2001, 63). In regard to the organizational forms it is mentioned that six out of eight already existed before the investigated period of time (p. 64).

⁵⁷ Alaszewski (2005, 317).

physicians or managers as long as possible”.⁵⁸ Physicians often see themselves as highly specialized experts intervening to cure patients, but being somehow detached from the supporting processes of hospitals.⁵⁹ Another aspect of the mindset that affects what is learned are the rules assigning values to considered options. Improvement will not lead to a certain direction, as long as there are no corresponding norms in the mental models of the actors. A lack of efficiency in health care will therefore remain as long as many physicians still adhere to the norm that “patient’s health needs should be met whatever the cost”.⁶⁰

Entrepreneurs in health care

There exist numerous accounts of the special features of knowledge, organizational structure and culture in health care, whereas special applications of entrepreneurial concepts to that field are hard to find. For example, McCleary/Rivers/Schneller (2006) develop a “diagnostic framework”, to understand “what entrepreneurial traits, types, and/or dispositions precede entrepreneurial behaviors”.⁶¹ They collect personal characteristics ascribed to entrepreneurs from the existing literature and group them according to predisposing factors (like experience, knowledge, age), enabling factors (like credibility, skills, self-efficacy) and reinforcing factors (e.g. autonomy, flexibility). For some factors research findings about their impact on entrepreneurship are mentioned, but none specifically for health care. So – apart from the problems of focusing on special attributes that distinguish entrepreneurs from other persons⁶² – the question remains whether entrepreneurship in health care exhibits properties distinct from the business sector.

Entrepreneurship, understood as the discovery, evaluation and exploitation of opportunities to create goods and services, is a multidimensional process that involves the environment, organizations and individuals and can take place within existing organizations or by establishing a new venture.⁶³ Guo (2006) tries to structure all these aspects by attempting to develop an “integrative model of entrepreneurial management processes”. This consists of a rather eclectic accumulation of factors, which may affect entrepreneurship,

⁵⁸ Tucker/Edmondson (2003, 61).

⁵⁹ Cf. Glouberman/Mintzberg (2001).

⁶⁰ Adler et al. (2003, 17).

⁶¹ McCleary/Rivers/Schneller (2006, 561).

⁶² Cf. Shane/Venkatamaran (2000, 218).

⁶³ Shane/Venkatamaran (2000).

derived from various theories on entrepreneurship or leadership. No factor is discussed in depth and no causal relations are considered. Nevertheless, one point that should be mentioned here is the role of the environment. Entrepreneurs act on the border between the organization and its environment.⁶⁴ They translate external developments into organizational information and try to form an environment supportive for the organizational task. The environment provides signals influencing what an entrepreneur may perceive as opportunity (e.g. technological and demographic development leading to forms of treating age related diseases) as well as enhance or restrict the set of possible solutions (for example through political regulation).

For the pursuit of perceived opportunities that have been judged valuable, the entrepreneur has to move the organization and its members in the new direction – that is, engaging in transformational leadership. „A positive leadership impact is likely to be recognized as one that involves others and helps them to do things for themselves, builds their capacity and confidence or as a hard influence that steps in and forcefully removes blockages, creating opportunities and driving things forwards by organizing practice time, roles and systems. In this way leaders champion the changes.”⁶⁵ This also includes changing the categories and priorities. One important factor for enhancing organizational innovation in health care is therefore the improvement of leadership skills not just from managers, but also from leading physicians.⁶⁶

Conclusion

Changes are initiated by entrepreneurial agents perceiving a problem and developing a mental model of a potential solution. Whether an idea is actually realized depends on the successful process of spreading it through the organization. During the travel of that idea, it sparks the interaction of different kinds of knowledge of various organizational members, enriching the original idea and giving way to a new shared mental model. Whether and how this process might lead to a better organizational performance, depends on the existing individual and organizational knowledge, the possibility to create the context which is necessary for reflection and interaction and agents delivering entrepreneurial services.

⁶⁴ Guo (2006, 505).

⁶⁵ Rushmer et al. (2004c, 403).

⁶⁶ Cf. McAlearney et al. (2005); Guo (2006, 524 f.).

A brief literature review revealed first clues about relevant factors of change and learning in organizations providing health services. Individual scientific knowledge and autonomy are highly valued by actors in health care, whereas matters of cooperation and collective learning are underrated, leading to inefficiencies and faulty processes. This is supported by structural factors supporting an isolation of professional “silos”. Though, for improving the performance of health organizations, the building of structures for enhancing the interaction among all kind of workers seems to be fruitful. This also presupposes a change of culture and role perception towards a greater feeling of responsibility towards group processes. To start such a process, entrepreneurs are needed, who spot the opportunities for improvement and engage in cognitive leadership to persuade others of that potential and actively support individual as well as collective learning processes.

Engaging in attempts to improve requires the preceding perception of a gap between goals and actual outcome. Such a gap can only be recognized in a category defined as important, because otherwise, there would be no expectation to be failed.⁶⁷ Therefore goals like efficiency or better coordination have to be internalized by the actors. This is easier, when the new vision can be related to already existing norms through “joint priority-setting”. The high commitment of staff in health care is often mentioned. A possible way therefore might be to show the positive affects of improved processes on the individuals’ striving for quality care (e.g. through achieving a reduction of disturbances of tasks, due to missing supplies or misunderstandings).⁶⁸

How to get to the situation described so far remains unclear. Obviously, agents actually working in those organizations have to engage in what has been labelled entrepreneurial services. Someone has to start. What factors effect this entrepreneurial behaviour especially in the health care sector still has to be studied in more detail. Here, the cognitive framework can serve as a basis to analyzing prevailing mental models and the process of perceiving opportunities. Additionally, an extension of the framework presented here is necessary to cover inter-organizational changes and integrate the influence of societal institutions on learning processes.⁶⁹

⁶⁷ Cf. Klimecki/ Laßleben (1999).

⁶⁸ Adler et al. (2003, 25-28).

⁶⁹ Cf. Lam (2000); Berta et al. (2005).

References

- Abidi, Syed Sibte Raza (2005), Medical Knowledge Morphing: Towards Case-Specific Integration of Heterogeneous Medical Knowledge Resources, in: 18th IEEE Symposium on Computer-Based Medical Systems (CBMS'05), 208-213.
- Adler, Paul S. et al. (2003), Performance Improvement Capability: Keys to Accelerating Performance Improvement in Hospitals, in: California Management Review, Vol. 45, No. 2 (Winter 2003), 12-33.
- Alaszewski, Andy (2005), Risk, Safety and organizational change in health care?, in: Health, Risk and Society, Vol. 7, No. 4 (December 2005), 315-318.
- Argote, Linda (1999), Organizational Learning: Creating, Retaining and Transferring Knowledge, Boston, Dordrecht, London: Kluwer Academic Publishers, 1999.
- Argyris, Chris/Schön, Donald A. (1996), Organizational Learning II: Theory, Method, and Practice, Reading u.a.: Addison-Wesley, 1996.
- Begun, James W./Luke, Roice D. (2001), Factors Underlying Organizational Change in Local Health Care Markets, 1982-1995, in: Health Care Management Review, Vol. 26, No. 2, 62-72.
- Berta, Whitney et al. (2005), The Contingencies of Organizational Learning in Long-Term Care: Factors That Affect Innovation Adoption, in: Health Care Management Review, Vol. 30, No. 4, 282-292.
- Berthoin Antal, Ariane/Lenhardt, Uwe/Rosenbrock, Rolf (2001), Barriers to Organizational Learning, in: Dierkes, Meinolf et al. (eds.): Handbook of Organizational Learning and Knowledge, Oxford: Oxford University Press, 2001, 865-885.
- Budzinski, Oliver (2003), Cognitive Rules, Institutions, and Competition, in: Constitutional Political Economy, Vol. 14, 2003, 213-233.
- Cassel, Dieter/Sundmacher, Torsten (2006), Systemtransformation durch Systemwettbewerb im Gesundheitswesen? Zur Eignung des „Vertragssystemwettbewerbs“ beim Übergang vom kollektiv- zum einzelvertraglichen Kontrahieren auf dem Leistungsmarkt, in: Daumann, Frank/Okruh, Stefan/Mantzavinos, C. (ed.), Wettbewerb und Gesundheitswesen: Konzeptionen und Felder ordnungsökonomischen Wirkens, Budapest, 2006, 273-303.
- Cohen, Michael D. et al. (1996), Routines and Other Recurring Action Patterns of Organizations: Contemporary Research Issues, in: Industrial and Corporate Change, Vol. 5, No. 3, 653-698.

- Denzau, Arthur T./North, Douglass C. (1994), Shared Mental Models: Ideologies and Institutions, in: *Kyklos*, Vol. 47, No.1 (1994), 3-31.
- Edmondson, Amy/Bohmer, Richard/Pisano, Gary (2001), Speeding Up Team Learning, in: *Harvard Business Review*, Vol. 79, Issue 9 (October 2001), 125-132.
- Fiol, C. Marlene/Lyles, Marjorie A. (1985):, Organizational Learning, in: *Academy of Management Review*, Vol. 10, No. 4, 803-803.
- Glouberman, Sholom/Mintzberg, Henry (2001), Managing the Care of Health and the Cure of Disease—Part I: Differentiation, in: *Health Care Management Review*, Vol. 26, Issue 1 (Winter 2001), 56-69.
- Guo, Kristina L. (2006), Entrepreneurship Management in Health Services: An Integrative Model, in: *Journal of Health & Human Services Administration*, Spring 2006, 504-530.
- Hussain, Fehmida/Raza, S. Ali (2004), A Knowledge Management Framework to Operationalize Experiential Knowledge: Mapping Tacit Medical Knowledge with Explicit Practice Guidelines, in: ???, 93-99.
- Klimecki, Rüdiger G. (1998), Verwaltungsreform durch organisationales Lernen - auf dem Wege zu einer Lernenden Verwaltung, *Management Forschung und Praxis*, Diskussionsbeitrag Nr. 24, Universität Konstanz.
- Klimecki, Rüdiger G./Laßleben, H. (1999), What Causes Organizations to Learn?, Paper to be presented at the 3rd International Conference on Organizational Learning 6-8th June 1999, Lancaster University, UK.
- Klimecki, Rüdiger G./Laßleben, H./Thomae, M. (1999), Organisationales Lernen: Ein Ansatz zur Integration von Theorie, Empirie und Gestaltung, *Management Forschung und Praxis*, Diskussionsbeitrag Nr. 26, Universität Konstanz.
- Kogut, Bruce/Zander, Udo (1992), Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology, in: *Organization Science*, Vol. 3, No. 3, August 1992, S. 383-397.
- Lam, Alice (2000), Tacit Knowledge, Organizational Learning and Societal Institutions: An Integrated Framework, in: *Organization Studies*, Vol. 21, No. 3, 487-513.
- Levitt, Barbara/March, James G. (1988), Organizational Learning, in: *Annual Review of Sociology*, 14, S. 319-340.
- Malterud, Kirsti (2001), The art and science of clinical knowledge: evidence beyond measures and numbers, in: *The Lancet*, Vol. 358 (August 2001), 397-400.
- Mantzavinos, C. (2001), *Individuals, Institutions, and Markets*, Cambridge, 2001.

- Mantzavinos, C./North, Douglass C./Shariq, Syed (2003), Learning, Institutions and Economic Performance, Preprints of the Max Planck Institute for Research on Collective Goods 2003/13, Bonn.
- March, James G. (1991), Exploration and Exploitation in Organizational Learning, in: Organization Science, Vol. 2, No. 1, February 1991, S. 71-86.
- McAlearney et al. (2005), Developing Effective Physician Leaders: Changing Cultures and Transforming Organizations, in: Hospital Topics: Research and Perspectives on Healthcare, Vol. 83, No. 2 (Spring 2005), 11-18.
- McCleary, Karl J./Rivers, Patrick A./Schneller, Eugene S. (2006), A Diagnostic Approach to Understanding Entrepreneurship in Health Care, in: Journal of Health & Human Services Administration, Spring 2006, 550-557.
- Nelson, Richard R./Winter, Sidney G. (1982), An Evolutionary Theory of Economic Change, Cambridge, London, 1982.
- Nonaka, Ikujiro/Konno, Noboru (1998), The Concept of “Ba”: Building a Foundation for Knowledge Creation, in: California Management Review, Vol. 40, No. 3 (Spring 1998), 40-54.
- Nonaka, Ikujiro/Takeuchi, Hirotaka (1997), Die Organisation des Wissens: Wie japanische Unternehmen eine brachliegende Ressource nutzbar machen, Frankfurt/Main, New York, 1997.
- Okruch, Stefan (2001), Gesundheitspolitik: Wirtschaftspolitik der Experimente als Ursache und Lösung der Krise des Gesundheitswesens?, in: Koch, Lambert T. (ed.), Wirtschaftspolitik im Wandel, München, Wien, 2001, 113-136.
- Penrose, Edith (1995), The Theory of the Growth of the Firm, 3. Aufl., Oxford: Oxford University Press, 1995.
- Polanyi, Michael (1962), Personal Knowledge: Towards a Post-Critical Philosophy, London: Routledge, 1962.
- Robinson, Viviane M.J. (2001), Organizational Learning, Organizational Problem Solving And Models of Mind, LINK.
- Rushmer, Rosemary et al. (2004a), Introducing the Learning Practice – I. The characteristics of Learning Organizations in Primary Care, in: Journal of Evaluation in Clinical Practice, Vol. 10, No. 3, 375-386.
- Rushmer, Rosemary et al. (2004b), Introducing the Learning Practice – II. Becoming a Learning Practice, in: Journal of Evaluation in Clinical Practice, Vol. 10, No. 3, 387-398.

- Rushmer, Rosemary et al. (2004c), Introducing the Learning Practice – III. Leadership, empowerment, protected time and reflective practice as core contextual conditions, in: *Journal of Evaluation in Clinical Practice*, Vol. 10, No. 3, 399-405.
- Ryle, Gilbert (2000), *The Concept of Mind*, London, 2000.
- Shane, Scott/Venkatamaran, S. (2000), The Promise of Entrepreneurship as a Field of Research, in *Academy of Management Review*, Vol. 25, No. 1, 217-226.
- Shepherd, Michael et al. (2006), Information Systems and Health Care IX: Accessing Tacit Knowledge and Linking it to Peer-reviewed Literature, in: *Communications of AIS*, Volume 17, Article 40, 2-39.
- Siebenhüner, Bernd (2003), International Organisations as Learning Agents in the Emerging System of Global Governance. A Conceptual Framework, Global Governance Working Paper No. 8, Potsdam, Berlin, Oldenburg: The Global Governance Project, September 2003.
- Tucker, Anita L./Edmondson, Amy C. (2003), Why Hospitals Don't Learn from Failures: Organizational and Psychological Dynamics that Inhibit System Change, in: *California Management Review*, Vol. 45, No. 2 (Winter 2003), 55-72.
- Weick, Karl E./Quinn, Robert E. (1999), Organizational Change and Development, in: *Annual Review of Psychology*, 1999, 50, 361-386.
- Weick, Karl E./Roberts, Karlene H. (1993), Collective Mind in Organizations: Heedful Interrelating on Flight Decks, in: *Administrative Science Quarterly*, Vol. 38, 357-381.
- Witt, Ulrich (2000), Changing Cognitive Frames – Changing Organizational Forms: An Entrepreneurial Theory of Organizational Development, in: *Industrial and Corporate Change*, Vol. 9, No. 4, 733-755.

ANDRÁSSY WORKING PAPER SERIES
ISSN 1589-603X

- XXI Mingst, Alexander. 2008. „The Organizational Underpinnings of Innovation and Change in Health Care“.
- XX Okruch, Stefan. 2007. “The ‘Open Method of Coordination’ and its Effects: Policy Learning or Harmonisation?”
- XIX Okruch, Stefan. 2006. “Die ‘Offene Methode der Koordinierung’: Gefahr schleichender Harmonisierung oder Chance für Politiklernen?”
- XVIII Okruch, Stefan. 2006. “Values and Economic Order: In Search of Legitimacy”
- XVII Okruch, Stefan. 2006. „Die EU-Wettbewerbspolitik zwischen Einheitlichkeit und Vielfalt – Anmerkungen aus ordnungsökonomischer Sicht“
- XVI Beckmann, Klaus B. 2006. “Tax evaders keep up with the Joneses”
- XV Margitay-Becht András 2005 “Inequality and Aid. Simulating the correlation between economic inequality and the effect of financial aid”
- XIV Beckmann, Klaus B. 2005. “Tax competition and strategic complementarity”
- XIII Meyer, Dietmar – Lackenbauer, Jörg. 2005 „EU Cohesion Policy and the Equity-Efficiency Trade-Off: Adding Dynamics to Martin’s Model”
- XII Chiovini, Rita und Zsuzsanna Vető. 2004. „Daten und Bemerkungen zu den Disparitäten im Entwicklungsstand ausgewählter Länder”
- XI Alfred, Endres. 2004 „Natürliche Ressourcen und nachhaltige Entwicklung”

- X Bartscher, Thomas, Ralph Baur and Klaus Beckmann. 2004 „Strategische Probleme des Mittelstands in Niederbayern”
- IX Arnold, Volker – Hübner, Marion. 2004. „Repression oder Umverteilung - Welches ist der beste Weg zur Erhaltung der Funktionsfähigkeit marktwirtschaftlicher Systeme? - Ein Beitrag zur Theorie der Einkommensumverteilung.”
- VIII Okruch, Stefan. 2003. „Verfassungswahl und Verfassungswandel aus ökonomischer Perspektive - oder: Grenzen der konstitutionenökonomischen Suche nach der guten Verfassung.”
- VII Meyer, Dietmar: „Humankapital und EU-Beitritt – Überlegungen anhand eines Duopolmodells.”
- VI Okruch, Stefan. 2003. „Evolutorische Ökonomik und Ordnungspolitik – ein neuer Anlauf”.
- V Arnold, Volker. 2003. „Kompetitiver vs. kooperativer Föderalismus: Ist ein horizontaler Finanzausgleich aus allokativer Sicht erforderlich?”
- IV Balogh, László – Meyer, Dietmar. 2003. „Gerechtes und/ oder effizientes Steuersystem in einer Transformationsökonomie mit wachsendem Einkommen’.
- III Beckmann, Klaus B. 2003. „Tax Progression and Evasion: a Simple Graphical Approach”.
- II Beckmann, Klaus B. 2003. „Evaluation von Lehre und Forschung an Hochschulen: eine institutenökonomische Perspektive”.
- I Beckmann, Klaus B. and Martin Werding. 2002. „Two Cheers for the Earned Income Tax Credit”.

Paper copies can be ordered from:

The Librarian
 Andrassy Gyula Egyetem
 Pf. 1422
 1464 Budapest
 Hungary

Visit us on the web at <http://www.andrassyuni.hu>. Please note that we cease to circulate papers if a revised version has been accepted for publication elsewhere.