

WHAT IS AN ORGANIZATION THAT IT MAY LEARN? RECONSTRUCTING THE INDIVIDUAL-ORGANIZATIONAL TENSION IN LEARNING AND KNOWLEDGE

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ABSTRACT

In this paper I draw on Niklas Luhmann's social systems theory, and in particular on his sociological concept of knowledge, to develop a genuinely social organizational learning process. It is hereby assumed that the creation of knowledge and learning are highly intertwined as the implicit (and mainly explicit) notion of learning implies acquisition, generation and change of knowledge. Especially the tacit dimension of knowledge will be given a crucial role in the process of knowledge generation and learning.

Major contributions to the research field remain on an individual level description for the process of knowledge generation and consequently fail to produce a real organizational definition of learning or knowledge generation.

This paper offers an alternative view to existing concepts. Niklas Luhmann's sociological epistemology leading to a description of organizations as social systems creating themselves through the observing operations of communication will be revised and shall serve as a conceptual framework for a genuinely social description of knowledge generation, hence learning. The concepts of "observation" and "blind spots" allow for promising insights.

1. INTRODUCTION

The concept of organizational learning has gained major importance and recognition in management and organization theory within the last two decades. Although the number of publications has grown very rapidly (Easterby-Smith, 1997) and a variety of systematizations aim at overcoming the fragmentation and multi-disciplinarity of the field (Klimecki/Thomae, 1997; Prange, 1999; Schreyögg/Eberl, 1998; Shrivastava, 1983; Tsang, 1997), the underlying concept of organization, however, often remains only vaguely defined and “leaves us again with the depressing lack of a truly social science of organization or of learning” (Weick/Westley, 1996). “The idea of learning, but not the individual learning mechanisms should be applied to organizational processes so as to develop the idea of a learning or precisely non-learning organization” (Schreyögg, 2001).

The aim of this paper exactly addresses this theoretical question of how organizational learning can be described as genuinely, organizational process¹, thereby assuming that the creation of knowledge and learning are highly intertwined because of the implicit, and mainly explicit notion of learning implying the acquisition, generation and change of knowledge.

But, how can we talk about organizational, social learning? What does it mean to talk about genuine organizational or social learning and knowledge? Does it refer to individual action within an organizational framework, or does it refer to individual action taken on behalf of the organization, i.e. individual action determined by organizational rules and procedures? What can be referred to as implicit and what as explicit knowledge of the organization? How can valuable and important implicit knowledge be rendered explicit for general use of the organization?

This paper will provide an answer to these questions. A genuinely organizational understanding of knowledge and learning shall for this purpose refer to the fact that organizations develop complex, dynamic and system – characteristic processes and structures which cannot be described in their specificity and comprehensiveness by recurring to individual or inter-subjective processes only. It would, however, additionally result problematic to explain individual behavior within organizations by drawing on the determining organizational perspective merely. Researchers, hence, find themselves stuck in the apparent trap between the individual and the organization forced to choose between theoretical options emphasizing the individual actor or the organizational system respectively. Such theories often run the risk of reifying or anthropomorphising the organization. “When researchers define organizations as monolithic corporate actors, they overemphasize order and underemphasize elements; when they define them as mere aggregates, they overemphasize elements and underemphasize order” (Orton/Weick, 1990).

In alignment with recent theoretical developments in organization theory (Giddens, 1988; Luhmann, 1984), this paper, on the contrary, shall challenge such assumptions supporting the view that these approaches provide a partial and shortsighted insight into the organization only and that a comprehensive and extensive description of the organization calls for both perspectives to be considered in their own right and to be given equal word. A genuinely organizational definition of learning additionally sustains that such a theoretical endeavor

¹ The notions of genuinely organizational and genuinely social will be used synonymously in the following.

shall be located on a systems level of analysis. Drawing on Niklas Luhmann's social systems theory therefore appears to offer a promising and fruitful conceptual framework for this purpose.

As a consequence of organizational learning being described as the process of knowledge acquisition, generation and change for the aim of this inquiry, the emphasis will be laid on the fact of how a genuinely social process of knowledge generation is possible and the crucial role the tacit dimension of knowledge herein plays. Only after having reframed the concept of knowledge within Niklas Luhmann's sociological epistemology, consequences for the learning process itself can be deduced.

2. ORGANIZATIONAL LEARNING LITERATURE REVIEWED/REVISED

Application of psychological concepts such as learning and knowledge to an organization faces certain analytical and conceptual problems that have to be taken into consideration when dealing with such phenomena at the level of organizations. Above all, it has to be acknowledged that organizations develop a specific, different and complex dynamic distinct of their members and therefore should be regarded as entities sui generis.

The major problem, however, when trying to describe learning and knowledge on a genuinely organizational basis rests on the fact that organizations can neither be perceived nor experienced which means that an experiential referent of the "object" organization is missing, resulting in a variety of imprecise referents for the word "organization" (Weick/Westley, 1996). The research field of organizational learning therefore lacks the highly productive tension resulting between experience and explanation normally driving theory development (Sandelans/Srivatsan, 1993). Consequences of such absence lead to drawing on the individual as a possibility to gain major insights about learning processes and knowledge generation, as will be shown below. "By definition, organizational learning is a process that can be fully understood only at the group or organizational level. Nevertheless, seminal theorists on the subject have tended to agree that organizational learning begins, and often ends, with the individual" (Friedmann, 2001).

Contributions to the research field might correspondingly be classified into two branches according to the concept of knowledge and learning applied to explain the learning process.

A considerable part of the literature concerned, including the pioneer approaches to the field (Argyris/Schön, 1978; March/Olsen, 1988), takes the individual as starting point for the explanation of organizational learning and mainly employs elements of the well-known either cognitive or behavioral individual learning definition. The crucial process through which these individual processes transform into a learning process on the organizational level, unfortunately remains only vaguely defined (Tsang, 1997). Consequently organizational learning is being described as the learning of individuals within the context of organizations (Argyris/Schön, 1978; March/Olsen, 1988; Kim, 1993), as individual learning on behalf of the organization (Duncan/Weiss, 1979) or as functionally analogous to individual learning. (Huber, 1996; Walsh/Ungson, 1991; Pautzke, 1989) It can be shown that on the one hand individuals act as the agents of organizational learning (Argyris/Schön, 1978; Kim, 1993; Hedberg, 1981), while on the other hand individual learning serves as model or metaphor for a deeper understanding of the phenomenon at the organizational level (Tsang, 1997; Tsoukas, 1993).

Explanation of these learning processes consequently remains on an individual-mind-centered, material and commodity notion of knowledge regarding it as something persistent, as a static pool of resources whose generation, acquisition and change could be compared to the mechanisms applied to the increase and reduction of material things (Simon, 1997). Besides, such a definition of knowledge draws a clear line between implicit and explicit knowledge thereby assuming these to be two different types of knowledge being convertible into one another through the processes of externalization or internalization respectively. (Nonaka, 1994)

The generation of organizational knowledge rests on the individual level, and could for instance be described as follows: „It is this continual, concerted meshing of individual images of self and others, of one’s own activity in the context of collective interaction, which constitutes an organization’s knowledge of its theory-in-use“ (Argyris/Schön, 1978). As already mentioned above, the explication of this crucial process of “concerted meshing” is not further explained, leading to the following cognitive as well as individualistic description of organizations: „Organization is an artifact of individual ways of representing organization“ (Argyris/Schön, 1978).

In both cases, either by taking individuals as the agents of organizational learning or by assuming an analogy between the individual and the organization, these theories apply learning and knowledge in a metaphorical sense and make themselves guilty towards the accusation of reification and anthropomorphism as they fail to reframe traditional individual concepts such as knowledge, cognition, memory, etc – and finally learning itself.

In contrast to this view of organizational learning and knowledge, a second branch of literature, subsumed under the label of “practice-based theories” (Gherardi, 2000), can be distinguished. While above mentioned theories only implicitly assume a link between organizational learning and knowledge, these contributions directly relate the learning process to the acquisition of knowledge thereby drawing on the concepts of context, practice and identity. The underlying assumption being that social learning not merely implies the acquisition of knowledge but the acquisition of identity too. “Learning is inevitably implicated in the acquisition of knowledge, but it is also implicated in the acquisition of identity. People do not simply learn *about*; they also learn, as the psychologist Jerome Bruner (1996) suggests, *to be*“ (Brown/Duguid, 2001). Individuals engaged in the same activity (e.g. butchers and midwives (Lave/Wenger, 1991), photocopier repair technicians (Brown/Duguid, 1991), flute-makers (Cook/Yanow, 1993)) are supposed to learn from and in the context of the so-called community of practice.

Organizational learning, hence, takes place in the interplay between the individual and the community of practice in question and “[...] must take into account the relationship between the two, a relationship in which neither one (the individual or the milieu) can simply be reduced to the other” (Brown/Duguid, 2001). “Learning, in all, involves acquiring identities that reflect both how a learner sees the world and how the world sees the learner. Learning any but the most simple job, then is a complex social process, one that cannot simply be captured in the notion that “all learning takes place inside individual human heads” (Simon 1991, p.125)” (Brown/Duguid, 2001).

Drawing on the concept of apprenticeship learning, the learning process may be described as legitimate peripheral participation, which “takes as its central concern the role of participation

by seemingly peripheral individuals in the innovative and very *central* capacities of the group itself” (Cook/Brown, 1999). It follows that participation in practice is the principal process through which learning, and hence, knowledge (as well as identity) acquisition take place and the underlying concept of knowledge reflects the importance ascribed to the concept of practice by these approaches.

In contrast to above individualistic “epistemology of possession” (Cook/Brown, 1999), an “epistemology of practice” is developed. Knowledge is no longer treated as something people possess, but as a kind of practice to be acquired by individuals through participation in a community of practice. Such a definition of knowledge no longer privileges the individual over the social, and the explicit over the tacit, as both defining “properties” call for the interaction of the individual and the community as a necessary condition.

An epistemology of practice consequently assumes social knowledge to be shared by the members of a community of practice, this knowledge being the one allowing for the generation of individual one. “Knowledge, in short, runs on rails laid by practice” (Brown/Duguid, 2001), even disregarding organizational borders. The concept of practice additionally accounts for the redefinition of the explicit and tacit dimensions of knowledge. Referring to Polanyi’s (1985) “We know more than we can tell”, it is held that each type of knowledge bears an inarticulate component being described as knowing and transferable from one member to another by the learning or sharing of a particular practice only.

While the first branch of literature has been shown to remain on an individual, aggregate or anthropomorphising level of description of organizational learning and knowledge, practice based theories can be regarded as a valuable contribution in the search for a genuinely social conceptualization of such processes. Although theories locating learning and knowledge in inter-subjective, interactional processes calling for the interplay between the individual and the social cannot be considered as genuinely social in the above described sense, as they still emphasize too much the individual aspect of learning, the next sections will show that some ideas of such an epistemology of practice can be found in a social systems perspective on knowledge and learning too.

3. INTRODUCTION INTO SYSTEMS THEORY

Luhmann’s (1984) often puzzling answer to discussed tension between individual and organization is sufficiently known. Social systems are no longer seen to be composed of individuals, but create themselves through the catenation of recursive observing operations of communication. The relation between social systems and their environment – the place being ascribed to psychic systems – can no longer be described in terms of parts and wholes, but has to be reconstructed in terms of identity and difference as the structural coupling of autopoietic, operationally closed, and hence peculiar systems.

It follows that the author’s definition of knowledge is located in a sociological epistemology which calls for the transfer of knowledge from a psychic to a social reference. Knowledge is no longer conceptualized as something individual, located in the minds of individuals, but is directly linked to communication. By applying the concept of autopoiesis to social systems and by defining communication as the observing operation leading to the differentiation of social systems, the basics for a sociological epistemology are laid, and knowledge is conceptualized as a condition for the genuine social operation of communication. Already

existing common knowledge is an indispensable requirement for linguistic communication whose autopoiesis would come to a standstill should this precondition fail (Luhmann, 1992). “Without assumed knowledge no communication” (Luhmann, 1992).

Purporting to the fact that the basic concepts of observation, social system, etc. account for a comprehensive understanding of the author’s theory and consequently are highly intertwined with the conceptualization of social knowledge, I shall briefly introduce them before turning to Luhmann’s definition of knowledge.

3.1. Observation

„One begins not with identity but with difference“ (Luhmann, 1995) as the concept of observation that lies at the basis of the knowledge generation process calls for the drawing of a distinction in order to be able to make an indication. The concept of observation employed by Luhmann (1984) goes back to the Oxford logician George Spencer Brown (1979) and is defined as the operation of distinction and indication. “We take as given the idea of distinction and the idea of indication, and that we cannot make an indication without drawing a distinction”(Spencer Brown, 1979).

Perceiving a unit consequently requires this unit to be distinguished from “everything else” and to be differentiated against the respective “everything else”. Depending on the distinction employed, observers perceive and construct the world, whereby for each observer a different guiding distinction results to be the first and relevant one. The selection of the guiding distinction therefore is “in no way a harmless matter” (Luhmann, 1992). The concept of guiding distinction dates back to Bateson (1972) who refers to it as “... any difference which makes a difference in some later event”, i.e. that an information, a “significant difference” (Willke, 1996) can be gained from the underlying distinction.

Depending on the guiding difference a system differentiates itself out of its environment through the recursive catenation of observations. A structured system is necessary to assure the continuity of observing operations. Systems differentiated in such a manner are unique and identical with themselves as “no other system can draw the same cut between itself and the environment” (Luhmann, 1992). “Each system differentiated in such a way, hence, represents an operationally closed empirical system” (Luhmann, 1992). With reference to the specific operation carrying out the observation – communication or consciousness – psychic and social systems can be distinguished. “Psychic systems are [A.H.] constituted on the basis of a unified (self-referential) nexus of conscious states, and social systems are [A.H.] constituted on the basis of a unified (self-referential) nexus of communications” (Luhmann, 1995).

“The observation itself has to be taken as the first distinction that can only be distinguished through another observation (of another observer, of the same observer at a later point in time) and has to be employed blindly in the actual moment of its utilization through the observer” (Luhmann, 1992).

To sum up, we have defined the operation of observation as the drawing of a distinction aiming at indicating one side of the respective distinction and not the other. A distinction always contains two sides and as such represents a border line which enables on the one hand the distinction of the two sides and on the other hand a potential “crossing” (Spencer Brown)

(Luhmann, 1991). Distinction and indication therefore are not conceptualized as a sequence of operations, but take place at the same point in time, i.e. in the actual operation of observation. It follows that what becomes visible of these two operations is not the distinction, but the indication of one side of the distinction.

Consequently the form of distinction underlying the operation of observation actualizes a unity as duality: it actualizes both distinction and indication at the same moment in time. “The form of the form is a paradox. It is concerned with the identity of a difference, with a distinction distinguishing itself in itself” (Luhmann, 1993). As a consequence, the operative performance of the observation has to proceed blind, i.e. that the employed distinction cannot be subject of the actual moment of the operation of observation. The distinction, however, “serves as an invisible condition, as blind spot” (Luhmann, 1999). In other words, the observation is enabled through the underlying distinction, which cannot be observed, but only performed in the actual moment of operation. It follows that the underlying paradox can be unfolded through obeying the simple instruction “Draw a distinction!”, i.e. simple performance or through timely or socially different observations employing a different distinction (Luhmann, 1993).

The naivete of the operation of observation leads to the distinction between operation and observation and the concept of the second-order-observation.² This distinction represents the core part of Luhmann’s epistemological position. It has to be underlined that the distinction is only made for epistemological reasons and that both operation and observation are defined in the same way – as distinguishing indications. The only difference lies in the fact that observation is a knowledge creating operation. „By operation, I mean the actual processing of the reproduction of the system. ... By observation, on the other hand, I mean the act of distinguishing for the creation of information“ (Luhmann, 1990). The next section will describe this concept in detail.

3.2. Second Order Observation – Observing Blind Spots

As already mentioned, observations are uncritical concerning their underlying distinction, i.e. that they are unable to see the identity of their distinction within the actual moment of performance of the indication as this would call for the actualization of a paradox – of a unity as a duality. But – exactly herein lies the reference to the reality of all observation – “in the recursiveness of the observation of observations securing that all distinctions can be distinguished themselves” (Luhmann, 1992). “As operation observation can be performed and as empirical observation it can be observed” (Luhmann, 1992). In other words it can be said that through the operation or first-order-observation system-specific reality is constructed, enacted (Weick, 1979), whereas on the level of the second-order-observation, the distinctions employed as a condition of first-order-observation are themselves treated as reality (Fuchs, 2001).³ Thereby the second-order-observation can be directed either to operations of the system itself or to operations of its environment.

² The concept of second-order-observation dates back to Heinz von Foerster’s secondorder cybernetics or cybernetic of observation of observers.

³ E.g.: The first-order-observer creates men, women, things, etc. without being interested in the underlying distinction. Men can be distinguished from women, but also from animals, etc. This distinction of distinctions then is referred to as second order-observation (Fuchs, 2001).

The concept of the second-order-observation allows for indicating and thus rendering explicit the “blind spot” employed by the first-order-observer. It follows that the “blind spot” can be brought to the surface by the observation of another observer at the same point in time or by the observation of the same observer at another point in time. It has to be underlined, however, that by rendering explicit the “blind spot”, a “new blind spot” serves as the invisible condition for observation, which leads to the fact that knowledge generation calls for the working together of both dimensions of knowledge – explicit and implicit. Explicit knowledge thereby refers to the actual performed indication, while implicit knowledge means the underlying distinction enabling precisely that indication. The knowledge gain consists in the fact that it is able to see what cannot be seen – tacit knowledge can be observed.

The essence of Luhmann’s epistemology lies in the fact that construction of reality is tied back to the observer (to the observing system) that exclusively constructs observations and descriptions of which some aim at generating knowledge, i.e. second-order-observations. The term exclusively refers to the fact that the environment does not contain any knowledge nor any distinctions – it is “enacted” (Weick, 1979) by observing systems. Even systems themselves would not exist without such distinguishing and indicating operations (Fuchs, 2001).

From this account it can be shown that the contribution of the above outlined abstract definition of observation and the differentiation of first and second-order-observation for the research field of organizational learning and knowledge is auspicious and twofold: On the one hand it enables the conceptualization of communication as basic element of social systems resulting in the possibility to define organizational learning and knowledge in a genuinely social way and on the other hand it reconceptualizes the relation between explicit and implicit knowledge by defining implicit knowledge as knowledge’s blind spot – thereby allowing for a clear distinction between explicit and implicit knowledge as well as the rendering explicit of the implicit dimension.

Before carrying further obtained findings by applying them to social systems, a short description summarizing the basic concepts of social systems has to be supplied.

3.3. Social systems

From an operative point of view an observer is created through the sequence of his temporalized operations. Through the catenation of such observations, through their recursiveness, self-reference and autopoiesis an observing system, an observer, is created. It has already been mentioned that depending on the operation performing the observation, social and psychic systems can be distinguished (see p. 7).

In contrast to a conventional understanding of social systems assuming them to consist of persons, Luhmann challenges this view by conceptualizing communication as the basic element of social systems. She [communication, A.H.] is a genuine social (and the only genuine social) operation” (Luhmann, 1999). Although communication presupposes a majority of cooperating psychic systems, she cannot be attributed to one single psychic system as a unity (Luhmann, 1999). Individuals, thus, are not seen as forming parts of social systems, but together with other social systems, represent part of the system’s environment – a vital part of the system’s environment though. “Without consciousness no communication and without communication no consciousness” (Luhmann, 1992).

The relationship between social and psychic systems is referred to as structural coupling, which denotes the link between two operationally closed systems and represents a relationship of mutual reciprocal enabling and not of complete separation. “... the separation of respective systems is based only on the fact that the recursive networks, through which the operations constituting the systems are reproduced and identified, are different and do not overlap” (Luhmann, 1992).

Emphasis has to be paid to the fact that structural coupling not only accounts for the rendering possible of the operation of communication through consciousness, but additionally serves as the only source through which the social system is linked with its environment. Psychic systems consequently represent the vital part of the environment for social systems as it is only through them that irritations leading to second-order-observations testing the validity of the observation schema employed can reach social systems.

Additionally, it shall be stressed that operational closure refers only to the operative level of reproduction and not to the structural coupling relation described above. It rather denotes to the fact that such systems can operate only within their borders “for the production of ... basic elements constituting the system, the reference to other system specific elements and the regulation of selection of this reference through system specific structure is essential” (Luhmann, 1992). In short, social systems are autopoietic systems producing communication out of communication. “There are no “conscious communications” A human being cannot communicate; only communication can communicate” (Luhmann, 1992). Based on this understanding of social systems, a systems theory perspective of knowledge and learning can be presented.

4. LEARNING – RENDERING EXPLICIT BLIND SPOTS

In contrast to epistemologies viewing scientific knowledge as something superior, as something professional carried out by experts and specific institutions only (see Luhmann, 1992; Jensen, 2000), within the theory presented no difference is made between scientific and everyday knowledge creation. The process by which knowledge is created always draws on the concept of observation and follows the same “mechanism” whether it occurs within an organization or within the function system specifically differentiated for this purpose: science.⁴ Furthermore systems theory’s central interest is focused more on the function knowledge serves within social systems and less on the content of knowledge and its characteristics. Additionally it has to be pointed out that within a theoretical framework that conceptualizes its basic elements as temporalized operations, whose “continuous reproduction continuously requires new elements” (Luhmann, 1990) knowledge cannot be seen as a static, time persistent pool of resources. “Knowledge always concerns an actual operation that vanishes as soon as it is performed” (Luhmann, 1992).

By defining communication as the basic element of social systems, and knowledge - with the exception of certain idiosyncrasies - as the result of communication, knowledge and learning can be conceptualized in a genuinely social way. Individual conscious knowledge cannot be

⁴The only difference consists in the guiding difference of the system. Science is the system operating under the always internally referable code true/false, as the guiding difference of a system that codes knowledge and brings it in the form of theories and methods (see Fuchs, 2001). The differentiation of a system specifically concerned with the generation of knowledge calls for the possibility to be able to observe the distinction between knowledge and object as distinction, i.e. to treat the distinction as a unity, as a form, on the level of second-order-observation (see Fuchs, 2001).

isolated, no matter how conclusive this individual knowledge might appear for its holder. Neither the contents nor the certainty of knowledge can be traced back to the resources of individual consciousness even when individuals are conceptualized as autopoietic, operationally closed complex systems (Luhmann, 1992). The reasons for this being that if there is no communication of knowledge, this knowledge will have no effect, but as the relation between psychic and social systems is characterized by reciprocal enabling, “the success of communication requires that all participants participate with knowledge and not-knowledge”⁵ (Luhmann, 1999).

As already mentioned above, while communication is the operation securing the autopoietic reproduction of the social system, knowledge is referred to as its structure. Within described theoretical framework, the concept of structure is not constrained by a special type of stability, but by its function of enabling the autopoietic reproduction of the system from one event to another (Luhmann, 1995). Through the continuing catenation of distinctions (communications are the observing operations) certain distinctions prove to be more successful than others. They represent “a difference which makes a difference” (Bateson, 1985) and through repetition of the same distinction in a socially, timely and factually different situation, the “original” observation is confirmed and enriched with meaning and constantly evolves. Finally it results in an observation schema serving as structure for the autopoietic reproduction of communication. Knowledge, hence is nothing else than condensed communication resulting from the process of selective condensation and generalizing confirmation (Luhmann, 1992). It is conceptualized as an observing schema that represents a generalized range of potentially expectable possibilities that can be reinforced by each further operation, but also disappointed.

In this respect knowledge is referred to as a generalized expectation bearing the risk of being disappointed. Consequently it is necessary to provide for situations where observation schema or expectations are disappointed. With reference to the above described relationship between the psychic and the social system, termed as structural coupling, it is shown that social systems can be disappointed by psychic systems only. Once having been disappointed, there are two possibilities to deal with the disappointment of structures: “One can do so by adapting the expectation to the disappointment (learning) or, conversely, by retaining the expectation despite the disappointment and insisting on behavior conforming to the expectation” (Luhmann, 1995).

A non-conforming, disappointing communication questioning the existing structure might therefore represent the starting point of a knowledge creation process. Under the condition of learning, a modalization of structure takes place meaning that the evolved schema of observation is changed in case of a non-conforming communication (Luhmann, 1984). The generalized expectation or schema of observation is referred to as knowledge only under the learning condition. Knowledge, hence, denotes the changeable range of possibilities or observation schema securing the autopoietic reproduction of the system in question.

Whether a schema of observation is modalized as knowledge or as a norm (representing an observation schema that is not changed in the case of disappointment) can be seen only retrospectively in the new course of autopoietic operation. Due to the fact that a system is

⁵ Within a theory based on distinctions each indication of knowledge directly refers to its second side– to what is not known, to not-knowledge.

based on temporalized elements, knowledge is actualized only in the moment in which the actual communicative event draws on it, i.e. it has to be performed in order to “exist”. If a new schema of observation has been established, a process of knowledge generation and change of the knowledge base of the system has taken place, which means that the system has learned. It follows that knowledge and learning are highly intertwined within a systems theory perspective on knowledge.

Learning has already been defined as a process of acquisition, generation and change of knowledge for the purpose of this paper. Such a definition of learning rests in the vein of the cognitive research tradition.⁶ According to the cognitive learning school learning takes place through a change in knowledge, and no special attention is drawn on whether this change results in an actual change of behavior or remains a cognitive potential for possible future behavioral change.

Knowledge generation and learning thus afford a self-referential second-order-observation by the system that depending on the underlying distinction might lead to the rendering explicit of “blind spots”. In the same way as simple observations have blind spots, an observation schema (knowledge) has its own blind spot which can be rendered explicit by a disappointing communication based on a different distinction. The possibility of rendering explicit tacit knowledge can be seen as one form of knowledge generation, or learning (see also Nonaka, 1994; Pautzke, 1998; Wiegand, 1996).

While Polanyi⁷ (1985) holds that tacit knowledge cannot be rendered explicit completely, the epistemological concept of second-order-observation provides a possibility to render explicit the “blind spot” of each observation. The knowledge gain offered by a systems theoretical approach, lies in the possibilities to render explicit tacit knowledge, which means to see what cannot be seen.

Applying this knowledge gain to a social systems level, the relation between implicit and explicit knowledge can be reshaped by referring to the concepts of autopoietic reproduction and structural coupling (Luhmann, 1992). The explicit part of knowledge is the one which is reproduced within the process of autopoietical reproduction. It is the knowledge of the knowing system only. An observer who observes and describes the system (in case of self-observation the system itself is the observer) employing the implicit/explicit distinction, is able to observe the structural couplings of the system in question that enable its autopoietic reproduction without being an issue of autopoiesis themselves. The second-order-observer is always able to see the invisible conditions, the implicit knowledge of corresponding environmental events that represents the condition for the autopoietic reproduction of the system. Structural coupling between the psychic and social system can then be defined as the implicit part, the “blind spot” of knowledge allowing for the autopoiesis of the social system to take place.

Consequently knowledge of a social system comprises the explicit part referred to in the autopoietic reproduction of the system as well as that part of knowledge implicit in the

⁶ To draw on the prominent discussion of the cognitive or behavioral dimensions of learning as well as their significance in the underlying theory of social systems, would go far beyond the scope of this paper. Beyond that the research field has accepted a broader definition of learning dispensing with this distinction at all in recent years (see: Easterby-Smith et al., 2000: 786) For a discussion of the cognitive/behavior dimensions of learning please see Fiol/Lyles, 1985.

⁷ The concept of tacit knowledge dates back to Polanyi (1985) who exemplifies it by the example of riding a bicycle, where it refers to the not completely explicable individual ability of performing activity

respective structural couplings of the system. Implicit and explicit knowledge, hence, are two distinct dimensions of knowledge that have to work and be actualized together, because implicit knowledge serves as the invisible requirement for explicit knowledge. Referring to above accounts on the relationship between explicit and implicit knowledge, it can be shown that the practice-based concept of knowledge and the social systems notion resemble in the respect of both assuming explicit and implicit knowledge to be two dimensions of one type of knowledge enabling each other.

5. CONCLUSION

A sociological epistemology on the basis of social systems constituted of communications as basic elements has enabled a genuinely social conceptualization of knowledge and learning. By defining the relationship between psychic and social systems as structural coupling of autopoietic, self-referential, operationally closed systems, social systems theory point of view, allows for the consideration of both perspectives, the individual as well as the organizational one, in their own right.

It shall additionally be argued that such an abstract, observation-related explanation of the organizational learning process, as the rendering explicit of “blind spots”, not only allows for its genuinely social description, but reflects some interesting dimensions of the learning concept itself. Learning, first of all, can be defined in a neutral way embracing a positive as well as a negative notion of the concept without any value judgement being included. Moreover it can be shown to be of a highly practical value as due to the focus laid on its function and not its precise characteristic, it can be customized to company-specific necessities and gains different labels depending on the company involved.

Finally, by relating the concept of learning to the concept of second-order-observation, referring to a questioning of existing structures of social systems, it is demonstrated that the crucial part rests on the disappointment through which such a change of perspective is induced. What causes such disappointments of existing structures? Which disappointments are likely to lead to a questioning of existing structures? What are the factors characterizing an observation as disappointment? These problems as well as further empirical investigation into which labels the learning process is given in different companies, represent an interesting challenge for further research.

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