Jörg ZELLER *

Towards a Logic of Cultural Communication. From Cassirer's symbolical forms to Ricoeur's hermeneutics

Abstract. The point of departure for my considerations about a logic of culture is Cassirer's theory of symbolization. The logic of cognition, lets call it epistemic logic, and the logic of action, let's call it – with Bourdieu (1977) – logic of practice, are different aspects of one and the same human agency of meaning-formation. I shall allege that this logic is – in Ricœurs (2001) words – a hermeneutics or logic of meaning. I also agree with Ricœur that it is a reflexive or circular probability logic. In this, it comes in my opinion close to Peirce's theory of abduction as a probabilistic logic of discovery. My own contribution to this sequence of ideas is to show that this logic of meaning by the same token is a logic of cultural communication.
Keywords: logics, cognition, practice, culture, communication.

1. Introduction

I will start my considerations with an idea from Ricœur (2002). The idea goes as follows: the formation of both textual and practical meaning is a *reflexive* or *circular* process of *objectivization*. In reference to Kant's Critique of the Power of Judgment (2000) Ricœur takes this hermeneutical process of meaning-generation as a *reflexive probability* logic.

Next I will look at Cassirer's 1953 [1910] theory of symbolization. I'll take as my point of departure his *functionalistic* theory of conceptualisation. I confess that I read this theory as a paraphrase of Frege's (1891) understanding of concepts as propositional functions. In other words, I presume that Cassirer (1953), in the same way as Frege (1891), sees the concept or predicate as a principle or rule of generating propositions, which are either intentional thoughts or extensional truth-values.

A concept understood as propositional function is therefore according to Cassirer to be understood as an intellectual (Verstandes) *action*. Cassirer (2001) expresses this idea in the first volume of the *Philosophy of Symbolic Forms*, referring to Kant's *Critique of Pure Reason*. Kant says:

> "Thus the knowledge of every, at least of the human, understanding is a cognition through concepts, not intuitive but discursive. All intuitions, as sensible, rest on affections, concepts therefore on functions. By a function, however, I understand the unity of the action of ordering different representations under one common one. Concepts are therefore grounded on the spontaneity of thinking, as sensible intuitions are grounded on the receptivity of impressions." (Kant, 1998: 205).

* Universitatea Aalborg, Danemarca

The question is, however, how impressions and concepts are linked up to generate our knowledge of things. Cassirer (1953) says:

> "The impression of the object and the object itself are separated from each other; instead of identity, the relation of representation appears. No matter how complete our knowledge may be in itself, it never offers us the objects themselves, but only signs of them and their reciprocal relations." (Cassirer, 1953: 303).

Signs are things representing other things for someone, a bearer of consciousness, a psychological subject. Knowledge through signs is not immediate knowledge of an object, but knowledge by means of something used as a medium to know something else. To use something as a medium to recognize something else is by Cassirer (2001:4) also called *objectivization*. Thus 'knowing' means the same as 'objectifying', or 'making something an object' for someone. In epistemology 'something' represents here a psychological subjects experience (Husserl: *Erlebnis*) of something or other. If this subject succeeds in making his or her experience an object, that is to say objectifying it, then he or she understands his or her experience as representing a particular thing. The logical means of objectivization is what Cassirer 1953 calls a *concept*. Concepts objectify experiences to things or objects. The mental process of objectifying is called thinking or understanding and results in a *predication* or *proposition*. It is verbally[1] expressed by a

sentence, i.e. by a syntactical structure of signs that carry out different functions in this structure. In a similar way as Frege (1891,"Function and Concept") Cassirer (1953) understands concepts as logical, that is to say propositional, *functions*. There is more to say about this later on. For now we can resume that according to Cassirer to understand that something *is* or *does* something else is a process of objectivization by means of signs, and therefore, by the same token, it is a process of mediation. *"All objectivization is"*, says Cassirer (2001, 4), *"in fact mediation"*.

Actions, the practical functions producing artefacts and generating culture, can – according to Ricœur (2001) – be seen as the practical version of meaning-formation. They *presuppose* – according to Cassirer (1994: 26) – the cognitive formation of meaning. Performing an action, one can say, is materially (not metaphorically) *realizing* the idea of a possible thing or an event. Actions thus can be understood as the *practical* counterpart of concepts or of *cognitive* meaning functions. Lets say, actions understood as types of performances (action tokens) are *practical meaning functions* – practical rules or recipes of meaning production.

My third step is retrieved from Bourdieu's (1977, 1993, 1996) theory of theoretical, aesthetical and practical production of meaningful artefacts and culture as a dynamic logic of practice-fields. I understand 'practice-field' as a dynamic, changeable and nondeterministic system of mediations. The carriers of mediating-

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[1] It is nothing new that language is far form the only semiotic means to express the conceptualisation of our experiences. Visually, i.e. by visual perception, we objectify or conceptualize the experience of visual information to pictures of reckognizable things. According to Peirce are even

emotions to be understood as "conclusions" of abductive inferring processes (cf. Magnani, 2001: 45). Magnani says: *"In all these examples Peirce is referring to a kind of hypothetical activity that is inferential but not verbal, where 'models' of feeling, seeing, hearing, etc., are very efficacious when used to build both habitual abductions of everyday reasoning and creative abductions of intellectual end scientific life."* (ibid.).

processes that may take place in various forms of practice-fields are different forms of power – intellectual or aesthetical, i.e. cultural, social, and economic forms of power. All these forms of practical power are to be understood as an agent's possibility to act – that is as potential acts or abilities to act. Actions, thus, are to be considered as performances of action-power. There exist according to Bourdieu three different manifestations of action-power, called *habitus*, *capital*, and (practice-) *field*. Habitus is action-power as incorporated in a human agent – lets call it the subjective appearance of action-power. Capital is objectively realized action-power – material products and at the same time media of action. There exist as many kinds of capital as there exist kinds of action-power – cultural, social, and economic capital if we trust Bourdieu. I will call these kinds of materialized action-power action-*media*. A practice-field is so to say a "universe of social interaction possibilities" consisting of social agents with their habitus' and different forms of capital that in synergy with each other make it possible for the field-agents to act in a meaningful way. From an epistemological point of view practice-fields should be understood as *action-environments*. These environments guarantee that intentions adapted to the material, cultural, and social conditions of the environment can become realized through action. Practice-fields are practical meaning-spaces or practical meaning-environments. These spaces make it possible for their agents to act meaningfully on account of a kind of practical communication – not only between different agents but also between the individual agent's habitus and the different forms of capital being available to the agents in the field.

Let's summarize: The formation or generation of meaning is – according to Ricœur (2002) and Cassirer (2001) – a process of objectivization. It is according to Ricœur also reflexive or circular, and it is probabilistic. This holds in the same way for cognitive and practical processes of meaning formation. Knowledge, as a result of cognitive formation of meaning, is – according to Cassirer (1953 and 2001) – a process of objectivization of a psychological subject's experience through signs or symbols. Knowledge is symbolization or mediating a subject's experience through a concept with an object. Concepts are object-makers on the basis of experiences. In accordance with Frege's (1891) concept view, Cassirer (1953) understands concepts as propositional functions. There exists a close resemblance between Cassirer's view of concepts understood as logical functions and Bourdieu's view of habitus and capital understood as the subjective and objective side of practical functions. One could feel tempted to draw the pragmatist conclusion: thinking and acting are two sides of the same thing: thinking is virtual or symbolic action and acting is real or material thinking.

I shall now look a little bit closer at the objectifying, functional, reflexive and probabilistic aspects of meaning formation.

2. Objectivization

Objectivization of verbal meaning means – according to Ricœur (2002) – to transcend and transform an utterer's situated verbal utterance – also called discourse-event - of his/her internal experience into a written expression of meaning, which is independent of the uttering-situation – i.e. place, time, author, and addressee of utterance. This transcendence

from situated to generic meaning is bound to objects that are able to carry the uttered meaning from the uttering situation to a spatio-temporal different receiving situation. Such objects are usually called signs or symbols. The process of meaning-formation is a process of signification or symbolization. The signs or symbols, if they shall be able to fulfil this objectivization function of a process of meaning formation, have to be durable over time and transportable from place to place. Speech, the spoken sounds of words, phrases, sentences or discourse, isn't. Written text, ordered sequences of characters is. Locution, the transcendence from uttering verbal signs to linguistic, that is meaningful, expressions of a subject's experience, is the transcendence from his or her saying (German: *Sagen*[2]) something to his or her having something to say (*Aussagen*), that is stating, proposing or predicating something. In this way 'objectivization' means two things at the same time:

1. the transcendence[3] from subjective, situated, and accidental meaning to subject-independent i.e. objective, situation-independent i.e. ubiquitous and essential meaning and

2. the translation or transformation of subjectively experiencing something to forming this experience or making it visible, audible or imaginable by signs or symbols.

Both steps together make the process of meaning formation a process of symbolization, i.e. *relating* experience to an object. Incidentally, meaning formation and symbolization may be performed in a mute or aloud, a visible or invisible manner. We can either just imagine or utter it, either just intend or perform it. According to Ricœur, what here has been said about linguistic meaning formation and objectivization is also true of practical meaning-formation and production of meaningful things or artefacts. What is true of speech acts is essentially also true of actions in general.

In my opinion it is perfectly clear that Cassirer (1953) understands this objectifying process of meaning-formation as a process of conceptualising as well as a process of symbolizing in the same broad Ricœurian sense, which includes both mental imagination, verbal expression, and practical production of meaning. The process of conceptualising our experiences, i.e. of meaning-formation, is a process of signification or symbolization. Cassirer's "Philosophy of Symbolic Forms", with language, myth, religion, arts and science as different patterns and developmental stages of meaning-formation, is against this background to be understood both as a philosophy of culture and a philosophy of science. It tries to amalgamate the logic of mythical, artistic or scientific discovery with the logic of justification of these different meaning forms[4].

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[2] Ricœur (2002 b) uses himself the German terms 'Sagen' and 'Aus-sage' in this connection (cf. ibid., 51).

[3] The basic meaning of the Latin verb 'transcendere' is 'to go over' or 'to pass over' or 'to cross over' – a transcendence is, thus, basically a (kind of) *transition*. Passing over can sometimes become a *passing into* or *turning into* – the going, passing or crossing entity is then *changing* in transition and turns into an entity with new properties or relations. The so-called transition from quantity to quality – playing a critical role in dialectical thinking – is a classical example of this kind of transition. I will use ther term 'transcendence' in this sense of a transition resulting in a change of the entity going over from something to something other.

[4] 'Form' should here not be mixed up with 'formal' in the sense of 'pure form' or 'form without content'. I understand by 'form' always the conceivable or perceptible result of a forming or

In other words, Cassirer's answer to positivistic or Popperian versions of a philosophy of science, which reserves logic to justification and leaves the discovery of meaning to illogical processes of imagination, is a philosophy of *symbolic* – or in a more general, Peircean, sense *semiotic* – meaning-formation. The philosophy of symbolic forms identifies logic with all kinds of meaning-formation: the linguistic, mythical, religious, artistic or scientific relating of experiences to objects, the formation of concepts, the asserting of propositions, and the inferring of conclusions from premises. Logic is present in all these different structures and developmental stages of meaning-formation or cultural production. In accordance with Kant (1998) and, by the way, also with Peirce (cf. Mangnani, 2001: 42), Cassirer (2001) understands this logic as *constructive* or *synthetic* logic. Meaning is not just given but has to be formed or constructed in order to become visible, audible, tangible or imaginable. Only after an experience has been formed, i.e. synthesised with or related to other experiences, a meaning can be analysed, that is broken up in parts or elements, in order to discover its building blocks and to understand its making and working. In order to understand the construction of the world and the working of reality, we have to *reconstruct* it symbolically or reproduce it technically. To understand the world means, thus, to rebuild it from the only stuff we have to our disposal in order to accomplish this job – signs and symbols.

3. Functionalization

Signs and symbols, that is to say things that can be synthesized with or related to other things to form meaning, are a necessary condition of solving the problem of meaning formation but not yet sufficient. Signs or symbols are only the *media*, the instruments of the very *activity* of meaning formation. To mean something is taking something as related to or representing something else. In the end this taking is a *making*, a real action that makes something related to something else. That something, which is made to be or represent something else, is a sign, an objective carrier of meaning. A carrier of meaning, a meaningful thing has a *function* – it can be used as a medium or instrument to synthesize or connect things with each other. Assuming that something has such a function presupposes that something other has given it this function and that someone is able to detect it, that is to say to detect the relation between the first and the other thing.

There exists a remarkable relational-operational and subjective-objective ambivalence of the concept of function. It is known that Frege (1891) took the concept from mathematics and adapted it to logical, i.e. conceptual, propositional, and inferential, conditions. In mathematics, 'function' means either a *relation* between elements of different sets or it means the *operation* that generates, as a result of applying an operation rule, the elements of a set from the elements of another set. A set can thus be seen as a coagulated or objectified operation and an operation as

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constructing process. A form is, thus, something *formed* or *constructed* or *modelled* in a specific way. From a dynamic point of view, being is being formed by something and, at the same time, forming something. On this background I understand by *forms* both *logical*, i.e. conceptual, propositional or inferential, forms and *imaginable* (images), *visible* (pictures, movies, television etc.) , *audible* (sounds, tones, melodies, harmonies), *palpable* (textures), *smelling* (odours), and *tasting* (flavours) forms. Probably also *kinesthetic* forms should be added here.

a liquefied or "operationalized" set. In this respect sets or classes are like concepts and the subjective and objective forms of action-power. In other regions (of thought) where the concept of function is in use it shows a similar ambiguity. The different organs in an organic system have functions, it is said, if they work as means to obtain an end favourable for this system. The function of the organ, say the heart, is to reach this end, say to make the blood circulate through the whole organism. On the one hand the organ *is* an organic function because of its *operating* manner. On the other hand it *has* a function in *relation* to the other organs and the whole organic system. An organ can in this way either be seen as an operating system or as the objective result of the operating of other operating systems that the organ is related to.

Finally, a human agent or action-subject is said to carry out a function in an institution or organization, i.e. a system of social interactions, if he or she performs actions that have a favourable or desirable end for the institution and directly or indirectly for the agent him/herself. The agent's function defines both his/her objective meaning for the organisation and his/her subjective meaning or position in the organisation. Bourdieu (1993) summarizes the ambiguity of the concept of function by saying:

> "…king, priest, banker are humanized hereditary monarchy, church, financial capital. The property acquires the proprietor by its embodiment as a structure for the generation of practices that perfectly correspond to its logic and requirements." (1993: 107).

4. Reflexivity

The relational-operational ambiguity of the concept of function implies another feature of functional processes: their circularity or reflexivity. A concept, understood as a predicative or propositional function, can namely both be seen as a *presupposition* and as a *result* of the symbolically mediated process of meaning formation. Concepts represent on the one hand those objective properties that relate different things to each other in order to be recognized as instances of the same type of things or as instances of the same type of pairs, triples and so on of things. This objective or relational meaning is the result aspect of the concept or predicative function. On the other hand it can be seen as the accomplishment of the function of predicating something, that is to say that something *is* an instance of a type or *has* a certain property or relation to one or several other things. This is the operational or subjective meaning aspect of the concept understood as predicative function. To predicate a concept of an object means therefore at the same time to conceptualise the object and to objectify the concept. The object is made understandable by relating it to other things with similar properties or relations and the concept is made understandable by exemplifying it by some or other object with similar properties or relations as other objects that fall under the same concept. Thus the operational and the relational aspect of the concept or predicative function mutually presuppose each other. In other words, the predicative function is apparently *circular* or *reflexive*. Actually, to come to know something presupposes knowing something (other) in advance.

5. Probability

The reflexivity or circularity of meaning formation is notorious of the hermeneutic view of understanding and interpretation processes. Ricœur (2001) regards the above mentioned "transcendence" (cf. above fn. 3) from saying (uttering) to proposing (meaning) something as a reflexive process. In the syntactical structure of a sentence it moves from naming a thing functioning as grammatical subject to predicating a concept functioning as grammatical predicate or propositional function. The direction of the way of meaning formation that goes from naming the subject to predicating the concept, is to be understood as a kind of guessing or assuming[5]. It is a provisional relating a thing to a type of things, a property characterizing such a type, or to other things that possibly could in one way or other be related to our first thing. To know if this relation between subject and predicate holds the process of meaning formation shall turn around and move back from the predicate to the subject. The first move was to look if subject and predicate *match*. We assumed or guessed that they do. Moving back from the predicate to the subject means to check if the predicate understood as propositional function *generates* the subject. Don't forget the relation-operation ambivalence of functions! A propositional function is both a relation between subject and predicate, and a logical or symbolical operation that generates the subject by applying an operation rule. I hope you can see the crazy circularity of the whole enterprise of meaning-formation. To know what a thing is, we have to relate it to other things. We move from – and thereby relate – our thing (subject) to a wholeness of things (predicate). To know if this relation holds we have to move back and look if this wholeness of things in fact is able to produce our thing. The first direction, the relational one, relates the thing to a class or type of thing. It conceptualises our object and presupposes the existence of an operation that is able to produce the assumed relation. The second direction, the operational one, produces an object that is related in one or other way to all the other objects that are related to each other through the concept. This procedure of object-generating presupposes at least one other object that is able to function as raw material for producing our original object. A circular meaning formation is vicious if it just circles in itself without getting beyond its inbreeding circularity. In logic, i.e. in the formation processes of meaning, such an inbreeding circularity is called *tautology*. In order to get out of a tautological meaning circularity an environment is necessary.

6. Meaning and action environment

Probability conclusions are meaningful only in a space or environment of possibilities. In a very broad sense, communication means the exchange of physical energy or information that is able to get a meaning through psycho-physical so-called "transduction" and sign-based intersubjective interaction between animals or humans. The critical point of the practice and theory of meaning formation is not the informational side. The world is full of energy, of all kinds of dynamics

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[5] This presumptive character of predicating makes up the kernel of the concept of truth. In order to be true something has to have a chance to be false. At the same time it can be taken as indication of the *abductive* character of reasoning altogether as Peirce himself and many present researchers in abductive reasoning seem to believe (cf. Magnani, 2001).

that synthesize and relate things to each other. Things happen as they are causally connected to other things. The effects they cause in other things are potential information for these things. The critical point of meaning-formation is, thus, not this ubiquitous information, the "meaning-stuff", but its interpretation. That the sun is shining is information for all beings the sun actually is shining on. But what this means for the different natural classes, species, and individual beings under the sun, is another thing. It can mean innumerable different, good and bad things. That depends on the individual's situation in and relations to its environment – its physical, psychical, and social environment. In an abstract sense, environment is a finite space of other things around and related to an individual. The physical network of things and relations around an individual is at the same time a possible semantic and pragmatic network for this individual – a space of possible interpretations and actions. A singular thing, a singular effect, a singular experience, a singular thought means nothing unless in relation to other things, effects, experiences and thoughts. An individual's environment and its communication with it is the keystone of understanding the meaning of the world. This, if any, is a very Cassirerean idea.

I will therefore underline my considerations with a quote from Cassirer's 1994 "On the logic of cultural sciences" plea for the communicative function of logic. He says:

> "What we grasp as the "meaning" of the world confronts us in any instance where we, instead of enclosing us into our own world of perceptions, focus on something more-than-individual, general, valid for all.... The spoken word never just vanishes in sound or call. It wants to mean something; it assembles itself to the whole of a „speech", and that „speech" exists only by going from one subject to another and binding both in dialogue... Logos ties the link between the individual and the whole; it assures the individual person that she, instead of being encapsulated in the mere sense of her own self, can reach a general being. (1994: 13).

I haven't said much yet what all that I said has to do with culture or a logic of culture. Let's therefore have a look at the concepts of culture and logic and how they fit into each other.

7. Culture

In the following I will understand a culture as a *system of values*. By 'values' I mean all kinds of values and, I assume, these kinds can be categorized by only four uppermost types or categories of values. I will call them *cognitive*, *practical*, *aesthetic* and *ethical* values (see below). Values can be considered in a practical way as rules or – less strictly – procedures or – still less strictly – habits how to understand or to do things. From a hermeneutic point of view a culture can be taken as a common system of *preunderstandings*. The term 'common' should here be interpreted in an "elastic" way of referring to any form or order of human community – from society as a whole down to personal partnerships, friendships etc.. Again, culture is in my opinion not just a certain way of understanding but also of doing things. 'Preunderstanding' should, thus, also be taken in a practical way – how to do and understand things on the basis of a certain kind of preunderstanding or, as I also will call it, *mentality* or way of life (Wittgenstein's 1963 "*Lebensform*").

Lets dive a little bit deeper into the concept of culture. I will line up – without ambitions to be systematic or complete – some points:

One: culture is a *relational* concept. There is no such thing as a culture 'in itself' but only cultures (plural!) of certain human communities.

Two: a culture is a system of human practices producing meaning[6], i.e. meaningful things and performances[7].

Three: in a culture, a world view or mentality or way of life is expressed. By 'world view' I understand the way a community makes human existence meaningful. Because communities are composed by persons and groups with different and partly opposite opinions and world views a culture has to be considered as the 'resultant' of all these opinions and world views. A culture or rather the community having this culture may for example be xenophobic even though there also may exist individuals or groups inside this culture-community that are not xenophobic. A culture – in respect to its superordinate mentality – has to be taken as the 'condensation' of a Wittgensteinian family resemblance[8].

Four: Culture is not the same as society but the *mentality* of a society – i.e. a system of world views and values together with all those forms of practice that produce these world views and values.

Five: the *logic* of a culture is the system of practice forms that produce this culture – the production system of a mentality.

Six: the system of culture producing practice forms is categorizable by the following practice categories:
- Cognitive
- Aesthetic
- Practical (instrumental)
- Ethical[9] (social-political-religious)

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[6] The Austrian writer, Robert Musil, used the German word 'Sinngebung' (to produce meaning) to mark the purpose of poetry (cf. Musil, 1978). I am willing to take 'Sinngebung' as the purpose of culture as a whole.

[7] Cassirer (1994) takes "culture as a whole" as the *"development of language, art, and religion"* (ibid., 65). 'Language' can here be understood as the carrier or instrument of cognitive practice forms, 'art' as aesthetic and 'religion' as ethical practice form. Those instrumental forms of human practice a community uses to produce the system of "means of life", i.e. food, instruments, vehicles etc., Cassirer (1994) doesn't count as culture. This corresponds with the 'classical' division of human practice in *material* or material values producing and *cultural* or cultural values producing. This is perhaps a heritage of Cartesian dualism dividing reality into two coordinated but essentially different worlds, a material and a mental world. This coordination may be understood by analogy with the Cartesian *analysis* – i.e. the coordination (modern: mapping) of intuitive (geometrical) "quantities" or figures with conceptual quantities, i.e. numbers or n-tuples of numbers. Also here a kind of 'translation' or 'transduction' makes itself felt even though the real 'ferrying over' or 'crossing' remains in the dark.

[8] Cassirer (1994) describes the peculiarity of cultural compared with scientific concepts as dealing with *"an unity of direction not of being"* (ibid., 73). To the concept of 'Renaissance man' it applies for example: *"The individuals belong together – not because they are like or resemble each other but they take part in a common task that we understand as something new compared with the Middle Ages and as the intrinsic 'meaning' of Renaissance." (ibid.).* Cassirer calls this kind of concepts *meaning concepts*. The peculiar of this kind of concepts is according to Cassirer that they do *characterize* but don't *determ* (cf. ibid.). As a consequence *"the peculiar subsumed under them cannot be derived from them"* (ibid.). In other words we don't deal here with deduction – but with what else do we so deal? In any case, Cassirer believes that we deal here with *conceptual identification* and not only with *intuitive description* (cf. ibid.). But this is according to him a *"peculiar way and direction of (…) identification"*, *"a logical-mental work sui generis"* (ibid.). The question is then if this specific way of cultural reasoning has to be understood as a kind of *abduction* or rather of *transduction* (see below).

[9] I take 'ethical' here in a broad sense as the implicit (habitual) and explicit (legal) constitution of a human community – the way people usually and

NB: it seems that according to Cassirer 'logic' has to be understood as the study of *form* and *structure* of meaning carriers as well as meaning instruments – i.e. linguistic and artificial forms of expression (knowledge, aesthetics), practical forms of production of material values (economy), and social forms of interaction and communication (ethics). The concept of form is here not only to be understood in a structural-static but also in a functional-dynamic way. Understood this way, forms are *ways of producing meaning*. A form is, thus, connected with a certain way of *forming*, i.e. with a modelling, moulding, or building activity[10].

Seven: the difference between cultural and scientific logic – the logic of *"the*

concepts of form and style on the one hand and the concepts of things on the other hand" as Cassirer (1994) formulates it – corresponds the (earlier in Cassirer explained) difference between *perception of expressions* and *perception of things*. According to Cassirer, we deal here with a *"logical translation of a certain contrast of direction that as such not just occurs in the region of concepts but with its roots reaches down to the soil of perception"* (1994: 73).

NB: the difference between perception and conceptual reasoning corresponds according to Cassirer (1994) the difference between *intuitive* and *discursive knowledge* (ibid.). 'Discursive' can here perhaps - with a side glance at Brandom (1994) - be understood as a kind of 'putting out' (explicating) or explaining. Contrary to this 'dissecting', 'partitioning', and 'discursive' knowledge, which Dretske (1981/1999) characterized as *digitalization*, perception and intuition are *analogical* and *holistic*. Cassirer (1994) says: *"The 'reality' as we grasp it in perception and immediate intuition shows itself to us as a whole wherein there don't exist abrupt separations"*.

The constancy of properties and laws (cf. 1994: 74) is a result of the conceptualizing of perception. Cassirer, however, realizes that also in the region of perception occurs intuitive or "analogue" and conceptual or "digital" knowledge in a mixture. We experience objects and not only sense impressions. The Heraclitean stream of analogue consciousness has to 'consolidate'[11] in order to make it possible for us to recognize something in our stream of experience. Cassirer:

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legally do things and interact in this community. In my opinion , this broad and in a way "empirical" and "applied" view of ethics doesn't exclude its *normative* aspect. Norms are only the tip of an iceberg of normality, that is the normal and actual way of doing things. If we didn't know in advance how to do things we didn't even understand what it means that we may, shall, or have to do things in a certain way. The dichotomy between the describable morals of a community and the prescriptive ethics of its enacted laws and written or otherwise recorded rules doesn't hold in reality. There, in reality, rule continuous transitions in both directions between descriptive facts and prescriptive norms (cf. Brandom, 1994).

[10] This view of the logical as the 'formal' is also responsible for the increasing importance of abduction as a *creative* kind of reasoning (cf. Magnani, 2001, Gabbay & Woods, 2005). By the way: Kant's *transcendental* logic has apparently to be understood as one of the more important attempts to deal with logic not only as a study of reasoning *structures* but also of reasoning *functions*. The critical concept of this Kantian understanding of logic is the concept of *synthesis* or - in Kant's way of speaking - of *synthetic a priori judgements*. One can say it this way: the production of meaning is a synthesis understood as the *connection of the different to unity*. A concept is such a synthesis of the manifold (different appearances) to unity. The concept 'red' is the synthesis of all the different appearances of something red.

[11] Cf. Wittgenstein's (1970) metaphor of river, river bed, and riverbank as explanation of the smooth transition from the *flowing* experience and the *movable* riverbed of *settled* thoughts to the *rocky* or *sandy* riverbank of logic that can be washed out and made flowing again (!970: 34-35).

"This tendency of this 'consolidation' is already characteristic of perception itself – and without it perception could never become perception of 'things'. Already perception, seeing, hearing, touching, performs here the first step that all formation of concepts requires and from which it goes on. Because already here happens the selection process by which we distinguish the 'real' colour of an object from its apparent colour, its real magnitude from its apparent magnitude." (ibid., 74).

8. Objective and phenomenal logic

So far we have dealt, as we could say, with a logic of *reference* or *objectivation* – a kind of mental activity that condensates manifold experiences of environmental reality to reckognizable and memorable objects, ensembles of objects, structures of objects, structures of ensembles, structures of structures, etc.. However, this kind of logic does not explain us how we are able to grasp the *meaning* of our experiences of objects. The logic of meaning formation and understanding is the declared target of *phenomenological* studies and, as we could call it, a *hermeneutic logic*. It goes without saying that a *logic of meaning* understood this way has to extend the domain of logical inquiry. Here we have not only to do with the formation of *objective* concepts and conceptual structures (predication, inference) but also with the formation of *subjective understandings* or *interpretations* of our experience (German: *Erlebnis,* cf. Husserl, 1968) of conscious processes that sometimes result in conceptual reasoning and other times in presentiments, feelings, emotions, moods, etc.

To say it in a Pierce-style semiotic way - the extension necessary to pass from an objective to a "phenomenologi-cal" or subjective logic, i.e. a logic of meaning, has to take beyond a system (world or reality) of *objects* and a system of *repraesentamens* (signs) also a system of *interpretants* (experiential and intentional activities) into account. The logic of meaning studies, thus, not only systems of signs or sign structures and their suitability to be mapped on systems of objects or objective structures but also systems of mental (experiential, German: *erlebnishaft*, and intentional) activities or streams of such activities that *experience* and *interpret* the mappings of signs into objects or of objects into signs. The semantics of a phenomenological logic is, we could say, in contrast to the 2-dimenional objective logic a 3-dimensional logic – a logic involving objects, signs, *and* experiential and interpretive processes.

To go immediately one step further in direction of what I mean with a *cultural logic* we have to extend the domain or horizon of meaning formation again. Cultural meaning is not only phenomenological, i.e. what the conceptualizing of experiencing an object "means" to the experiencing subject, but *communicative*. Cultural values are not only cognitive and esthtetic but also *productive* and *ethical* in kind. Production is based on (inter)action, and all (inter)action presupposes objectively or semantically mediated communication.

The above mentioned four categories of cultural values – cognitive, aesthetic, practical, end ethical – have this way found their place on the way to a cultural logic. We have to do with four variants of meaning or value formation and by the same token possibly also with four variants of logical inference, which I will call, inspired by the Russian logician,

Rutkovski (1859-1920), *deduction, induction-abduction, production, and transduction* [12].

In order to understand not only the peculiarity of a cultural and, as I claim from an inferential point of view, trans-ductional logic but also its connection with both practical, aesthetic and cognitive logic, it is interesting that Cassirer (2001) understands the relation between objective and subjective being as *"in the most manifold way dynamically mediated"* (2001: 225, my transl.). Thus, he sees objective reality and conscious being not as *excluding* but as *interlocking* and *mutual determining spheres* (ibid.). There exists according to Cassirer (2001) a *medium realm* (German: *Mittelreich*) *"through which the forms of existence are related to the forms of action, the forms of action to the forms of existence"* (ibid.). This medium realm is the realm of "symbolic forms", i.e. of *media* like language and other forms of meaning expression. The Cartesian abyss between consciousness and reality is in Cassirer's world view filled out with *various layers* of mediating forms of reality (cf. 2001: 229). These layers are at the same time the different layers a culture is constituted of – language, myth and religion[13], art and science.

The meaning of "cultural things" – i.e. artefacts like works of art and science, social and political institutions, any kind of products of human labour – is not *objective* in the same sense as the "meaning" or rather the *reference* of certain types

of signs is understood as being one or other physical object.

Meaning, I claimed earlier, is a kind of transcendence that is at the same time transition and translation, of one type of thing into another type of thing - for example the transduction or "translation" of physical energy into nerve impulses and further into experience. Sensory experiences obtain along this way experiential or empirical meaning. However, the experience of looking at a house does not only have the experiential meaning of visual forms and colours, tactile substances and substantial textures but also the cultural meaning of something to be, stay, work, or rest in, something protecting against wind, rain, snow, coldness, etc.. The "object" of an in a cultural way meaningful thing (artefact) is a cultural and not only a physical (empirical) object.

To understand and know what a cultural thing means requires, thus, not only sensory experience but also communicational practice. The meaning of cultural things is, we can say, a *communicational meaning* – i.e. a meaning that presupposes a community and, thus, members of this community regularly communicating with each other.

The *objective* textual and practical meaning Ricœur (2002) is interested in as a basis for an objective hermeneutics or logic of cultural sciences (humanities) makes only sense if it is understood as communicational meaning.

What does 'communicational' mean in this connection? It does mean that – for example – the Homeric epics wouldn't mean anything if there no longer existed a human community reading, talking about, lessoning to, writing on etc. these two works of literary artistry, - that is without a literate community. The same holds for – let's say – Einstein's theory of relativity

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[12] Rutkowski was according to philosophical net-lexicons mostly interested in *indirect* inferences from known premises to conclusions containing new knowledge (cf. http://www.philosophenlexikon.de/rutkowsk.htm, http://www.phillex.de/ m-schl.htm). In Peircian tradition such arguments are considered as inductive or abductive inferences.

[13] Generalizing the way myth and religion – among other things - mediate a certain kind of understanding the world, we could call it *narrative* mediating.

or Leonardo's painting of the Last Supper. The first one would no longer mean anything without a scientific and the last one without an artistic community. On the other hand, the fact that cultural things have a communicational meaning does not imply that this meaning is *subjective* in the sense of 'personal' or 'private' or 'idiosyncratic' or even 'solipsistic'.

As Wittgenstein (1963 b) showed, a subject's subjective - in the sense of 'personal' or 'private'- meaning always presupposes communication with other subjects. His famous saying: *"Right and wrong is what humans say; and in the language they agree with each other. This is not an agreement of opinions but of way of life."* (1963b: 389, PI 241, my transl.), specifies cultural meaning as a practical agreement of actors in a human community and its culture. This culture – understood as suggested above as a system of cognitive, aesthetic, practical and ethical values – is such the space or rather the space-time or *history* of cultural meaning.

In the space of cultural meaning a specific logic is operative – the logic of cultural meaning or mentality. Distinctive for this logic is its peculiar *transductiv*, as I suggest to call it, kind of inference.

This takes me to the next step on my way to an outline of a logic of culture.

9. Functional logic

When Frege embarked for finding a new logic that should be able to justify the whole of modern mathematics he used, as everyone knows, the mathematical concept of *function* as his vessel. To reach his goal he knew he had to *extend* the meaning of this concept. The extension boiled down to understand not only quantitative or numerical, but also qualitative conceptual operations and reasoning - or respectively their results - as functions: the concept (predicate), the predication (proposition), the inference (justification, argumentation) is from a Fregean point of view a *logical function*. As said before, 'function' means here both a mapping (relating, projecting) *operation* and the result of this operation, i.e. a relation between two sets of objects – a domain and a scope.

This way, we can say, logic deals with "transitions" or "translations" from one sphere of objects to another sphere of objects. Nothing "subjective" is involved in the operations and constructions of this kind of logic. Cassirer (1910), the Kantian, wasn't late to understand and appreciate the novelty of Frege's "functionalizing" of logic. "The Kantian", because thinking, said Kant (1998), is a function, an activity. The real innovation of the Fregean logic was, thus, that it was capable to "translate" the operationalistic meaning of its primitives into a symbolic "formalism": concepts, propositions and inferences were intrinsically "mapping", "coordinating", or "projecting" operations expressed by symbols with an operative meaning - like mathematical symbols expressing either mathematical operations or the "objective" results of such operations, i.e. numbers, sets etc.. A concept is then the result of the operation of comparing individuals with each other in regard to their similarity or dissimilarity. A proposition is the result of the operation of "comparing" or subordinate an individual with/to a concept or a subordinate concept with/to a superordinate concept. An inference is the result of the operation of "comparing" different presupposed propositions (premises) with each other. If they "match" in one respect or other the matching, i.e. the *inferential function* is expressed by a

"conclusion". In other words, perceived or imagined *objects* are in this functionalistic view the results or products of logical functions/operations that compare one experience of them with other experiences of them. *Concepts* are the results or products of logical functions comparing different objects with each other. *Propositions* are the results or products of logical functions comparing objects with concepts or different concepts with each other. And, finally, *inferences* are the results or products of logical functions comparing different propositions with each other.

10. Communicative or cultural logic

To embark from this modern, functionalist or operationalist type of logic toward a cultural or communicative logic the concept of logic has to be extended again.

As suggested above, such a logic is not longer only a coordination or translation (i.e. a function) of two spheres of objects where the function itself - that is an operating or conscious mind or subject - is abstracted from. In other words, a cultural logic has beyond *objects* and *representamens* also to involve *phenomenological* (i.e. experiencing and thinking) and *"communicological"* (i.e. communicating and interpreting) *interpretants!*

Again: the involvement of interpreting subjects (minds) does not mean that a cultural logic is "subjective" in the sense of "non-objective". It's true, a "phenomenological logic" could be understood as subjective in the sense that it focuses on "meaning-forming" *(intentional)* operations of the interpretant (subject) relating a representamen to an object. However, neither a phenomenological or a cultural

logic can abstract from the objective starting point (objective information source) and medium (objective sign) in the transductional (interpretive) process from information (reality) into meaning (understanding). Phenomenological logic shows that the forms of meaning that an objective logic operates on are the results of an operating conscious being[14] or subject. Cultural logic has to go still further and to show how the "subjective" phenomenological meanings can be *objectified* on a higher – *communico*-logical or *cultural* - level by the agreement of two or several communicating subjects (actors).

A cultural logic operates thus on the highest level of different underlying layers of meaning formation or objectifying processes, which I above called *objective* and *phenomenological* logic. It is also clear that a cultural logic has to include these lower layers of reasoning to reach that kind of meaning, which is not only objectively *adequate* and subjectively *sincere* but also ethically, *responsible* and *desirable*.

Culture considered as man's striven for happiness is driven by human efforts to make reality meaningful. To reach this goal we not only have to *regard* the world how it is "in itself", i.e. abstracted from our shifting experiences of it; we have also to *respect* the different possibilities of experiencing it; and we have to *communicate* our experiences and thoughts to reach, as I said before, a both desirable and responsible agreement with other subjects about how to make sense of our existence.

Logic of culture has to be a logic in a very broad sense that not longer is con-

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14 The German word 'Bewusstsein' suggests the meaning not only of a subject being conscious *of something* but also of a subject *being conscious* of something.

strained to (natural or symbolic) languages can be defined as follows:

Logic =df. A system of elements that can be used (by human or other living beings) to represent or generate (new) meaning.

Finally I will make a few remarks on the concept of *transduction* as I use it to underline the "transcendental", i.e. transitional and translational, character of cultural logic.

Transduction – as a first attempt to define the term – leads from information, i.e. an effect from a cause (source) on a sensitive or a both sensitive and intelligent organism, to meaning.

'Meaning' is here at first what this effect "*makes*" of the receiving organism and which *use* this organism can *make* of the effect. Information – as it is said – makes a *difference*; it changes something in its receiver. The change *can* have a meaning for the receiver. I say: information is *possible* meaning (cf. Zeller, 2005). As a consequence, information and meaning is not the same but the first can be *translated* into the last. The process of transmitting (causality) and translating (interpretation) information I call *transduction*. Transduction, thus, is both transition and translation of information into meaning. What is translated is what information and meaning have in common becomes changed by the translation. The other way round you can also say that the translated is what remains the same in the change.

Transduction understood this way is (of course) nothing new. One has just used other terms for it: metaphor, metonymy, analogy etc..

Metaphor theory (cf. Lakoff & Johnson, 1999) says that we understand the abstract by the concrete, concepts by *basic experiences* (German: *Grunderfahrungen*).

Basic experiences have a generic structure like this: *I-body-object-now-here*. That means: I, a conscious being, experience by its bodily organs objects in a simultan environment of spatially related objects. This kind of structure is in literature on situation semantics (cf. Barwise & Perry, 1983/1999; Devlin, 1993) also be called 'situation'. In other words, fundamental experiences are *situated*. Space-time-object-body-experience is at the same time the way we receive information and translate it into meaning. Concepts are according to Lakoff & Johnson (1999) the result of transitions/translations – projections or mappings as you will – of basic experiences into other, *derived* regions of experience. These *derivations* are according to Peirce and recent research in the concept of abduction (cf. Josephson & Josephson,1994; Magnani, 2001; Gabbay & Woods, 2005) *logical inferences*. Conceptualization is abstraction, leads from concrete, i.e. basic, experiences to abstract experiences, called 'ideas', 'thoughts' and something like that. The traditional name for inferences from the concrete to the abstract, from experiences to concepts, from empirical propositions to theoretical propositions, is *induction*.

Let's take the classical example of the (falsifiable) conclusion that all swans are white because all observed swans before the Australian black swans were discovered were white. The inducing procedure is here to put in the basic experience of white swans both the I and the body of this I and its situated location in an actual environment – phenomenologically speaking – in brackets. It remains the abstract object or rather the abstract bearer or support ("substance") of properties – the swan "in itself".

This way actual swan experiences of actual I's with actual bodies in an actual now-here (spatio-temporal) environment of swans and other objects become *translated* into an *I-body-object-spatio-time-less* swan-concept. The induction affording this concept formation is such the other way round of a metaphor. A metaphor translates something conceptual/abstract into something experiential/actual an induction translates exactly the other way round.

Induction understood as metaphorical translation of experience into concept, is not the only form of transition/translation from one region of experience to another or – generally speaking – from information to meaning. As hinted above, metonymy and analogy are additional candidates for the study of transductional reasoning.

Let's conclude. Abduction research, studies in non-sentential, diagrammatical, visual, and practical or manipulative reasoning (cf. Barwise & Etchemendy, 1998; Magnani 2001) have made it plausible that logic is much more than classical (syllogistic) and modern (predicate and propositional) logic. In its broadest – Peircian or semiotic – sense logic is any kind of reasoning, i.e. transferring, mediating, or translating information by signs (in)to meanings – starting from the experience of whatever kind of information (causal effect) and resulting (sometimes) in meaning. Transduction, as I call it, that is the transition and translation from information into meaning has – semiotically – a basically triadic structure comprising an object, a representamen, and an interpretant. This structure can be *unfolded* on different layers of complexity connected with different kinds of logic – I called them *objective, phenomenal* (representative), practical and *communicational* (interpretative). A logic of communication is in my opinion a good candidate for a logic of culture, which – semantically speaking – is a system of interlocked values that I called *epistemic, esthetical, practical, and ethical.*

The same thing, the same state of affairs, the same event, or course of events can be understood in many different ways. Depending of receiver and receiving situation it can be "transduced" or interpreted cognitively, aesthetically (emotional), practically (usable), or ethically. The critical point of all these kinds of cultural meaning formation is their justifiability. How can we know or be sure that understanding and evaluation of our experiences refers to real things, actual experiences, makes desires realizable, and our (inter)actions environmental and social responsible.

The more complex the logic, the more complicated are its procedures of justification. Especially in connection with esthetical and ethical meaning formation and evaluation we have not only to rely on our actual experience and memory about a world of objects but also to our second-order experience and evaluation of these experiences, i.e. our feelings, emotions, and moods; we have also to rely on the "practicability" or realizability of our desires and wishes derived from these objective references and subjective experiences; we have to rely on the interaction with other people to make our desires and wishes realizable; and finally we have to resort to the communication with our fellow human beings in order to gain a common basis for all kinds of interpretation and evaluation of our first-order or objective experiences and our second-order or subjective experiences or our third-order or practical and social experiences.

We cannot know what is true or false, aesthetically, practically, or ethically valuable or worthless without interacting and communicating with our physical and cultural environment. As Wittgenstein (1963) has coined it, *"true and false is what people say. And in language they agree. his is not an agreement of meanings but of way of live".* The logic of culture is the logic of this communication.

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