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Concept of University

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Abstract[*]

1. Introduction: Concepts as means of understanding and shaping institutions

Concepts are instruments meant to fulfil two functions:

- as means of understanding what is passed on from the past as historically accomplished, and
- as means of accomplishing the new, for example, as means of construction of new institutions; Thus in the manner of my use even models are concepts.

I want to put forward the following thesis: At present both for understanding the genesis and structure of the university and for envisaging and shaping its future an *organism-model* is in use. My plea is to replace it with an *interaction model*, a model, I claim, that can serve the purpose much better.

2. Humboldt University

The founding of the Berlin University under the guidance of Wilhelm von Humboldt has an important effect on the notion of university. This event was part of a far reaching reform of the educational structure in the beginning of 19th century Prussia. It is both a culmination of several lines of antecedent developments and the causal factor of several succeeding events in the history of education. Therefore it can become our point of departure for discussing both the present institutional structure of the university and the larger context of society and history within which this institution is situated.

- The design of Berlin University was directed against two traditions that were underlying the practice of higher education till then:against the mediaeval university that consisted of four faculties: three *higher faculties* (Theology, Law and Medicine) meant to train the students for special tasks, and a *lower faculty*, (philosophy or artistic faculty) that was meant to give students a preliminary training that must equip them with a general education.
- against Napoleonic tradition of institution of higher education as a place of training for professional needs of the State and industry)

The conception of what culminated as the Humboldtian alternative was taking shape in Prussia (Germany) at the end of the 18th and the beginning of the 19th century: Kant articulated a theory of the university between 1786 and 1794 (published as *Streit der Fakultäten* in 1798). Schiller, Fichte and Schelling gave a series of lectures between 1789 and 1804 in Jena that focussed on the purpose, structure and status of academic studies. Also, Schleiermacher and some other intellectual figures of Germany put forward ideas on the same theme.[1]

In spite of there being internal differences amongst them, all these thinkers were united in their ambition to articulate a conceptual framework providing an anthropological basis for an institution of higher education. The goal was to define both the internal structure and social function of a university on the basis of a theory of science – Fichte's term was 'Wissenschaftslehre'– and that, in turn, on the basis of a theory of man and his historical development. The *Jena Lectures* envisaged the cultivation of science as well as being-cultivated-through-science as a form of life appropriate for human beings as derived from the definition of what a human being is: they unified two normative definitions of man – man as striving for knowledge (an ideal rooted in the ancient or Greek thought) and man as striving for freedom (an ideal traceable to the intellectual impulses of the French revolution), and attempted to show the principles in accordance with which knowledge historically develops taking the gestalt of different disciplines, nevertheless constituting a unified system *(Wissenschaftssystem)*.

[*][Editor's Note: This article is an English version of a short talk given in German back in 1997 to the general body meeting of Philosophical (or Arts) Faculty of the university of Saarland on the occasion of it conferring on the author the (post-doctoral) *Habilitation* degree. We are publishing it in the form of a discussion note and as such it is work-in-progress. We intend to publish a fuller and more elaborate treatment of the issues dealt with in this note in a subsequent issue of the journal.]

3. Mechanistic versus Organic-Models

This philosophy known under the term 'German Idealism' will be shortened to 'Idealism' in the following. Idealism was anything but uniform. Nevertheless for our purpose its understanding of society and history can be articulated in the following three postulates:

(i) The human being is a species-being (*Der Mensch als Gattungswesen)*: In contrast to animals, man cannot develop the natural endowments individually but only at the species level as a whole. Consequently, for the purpose of understanding the historical process, the whole of humanity has to be conceived as one unit, and human history has to be conceived as a potential becoming an actual, i.e. it is the unrolling of the essence that is already there as a seed. In other words, the historical process came to be seen in analogy with the biological development. 2/13

(ii) *The autonomy postulate*: An institution constitutes and asserts itself against the environment surrounding it as one organic unit just in the manner of a biological organism

(iii) The System of disciplines (*Das Wissenschaftssystem*): Different elements and disciplines of knowledge constitute an interconnected whole comparable to an organic unit. The history of its coming into being has to be seen as an expression of self-flowering of the endowment of a human species.

This model of knowledge and history was forged, amongst others, as an instrument of criticism against the model that was seen as underlying the thought and institutions of 18th century Absolutism. Idealism saw itself as countering a conception of knowledge that was 'utilitarian', 'mechanistic' and 'encyclopaedic'

- *utilitarian* in the sense that knowledge is seen under the aspect of usefulness,
- *mechanistic* in the sense that knowledge is seen under the aspect of the power to *make* things or bring about states of affairs,
- *Encyclopaedic* in the sense that knowledge is conceived as additive – as a summation of information and skills.

As against these ideas, Idealism asserted that knowledge has to be looked at

- under the aspect of *truth*,
- under the aspect of self-formation of the subjects rather than that of the power of *making*, i.e. knowledge has to be seen in its aspect of *building* or self-formation of the individuals, groups, and finally the whole of humanity into organic wholes,
- under the aspect of a System: Knowledge is available only as assertions or elements embedded within a system comprising the totality of available knowledge.

Underlying the model Idealism was opposing was the metaphor of *making* - paradigmatically that of constructing machines and imparting technical knowledge, and therefore the model can be termed as *mechanistic*. As against this Idealism was proposing a model underlying which was the metaphor of organic growth, so it can be termed as an *organism* model.

Idealism used the organism model, on the one hand, to show why science needs to be autonomous from the authority of the State, but on the other hand, also to make the autonomy of science palatable to the State by claiming to science the function of building the human beings into ideal citizens. In his text, put forward as the founding document of the university, Humboldt argues for safeguarding the freedom for science with a suggestion that science builds human character:

> "Sobald man aufhört, eigentlich Wissenschaft zu suchen, oder sich einbildet, sie braucht nicht aus der Tiefe des Geistes herausgeschaffen, sondern könne durch Sammeln extensiv aneinander gereiht werden, so ist Alles unwiderbringlich und auf ewig verloren; verloren für die Wissenschaft [...], und verloren für den Staat. Denn nur die Wissenschaft, die aus dem Innern stammt und in's Innere gepflanzt werden kann, bildet auch den Charakter um, und dem Staate ist es ebenso wenig als der Menschheit um Wissen und Reden, sondern um Charakter und Handeln zu thun."[2] 3/13
>
> (As soon as one ceases to really seek *science*, or imagines that it doesn't need to be created out of the depth of the spirit and rather can be put together by extensive collecting one after the other additively, it is lost irretrievably and forever; lost for the Science […] and lost for the State. For only the science which stems *from* and planted *in* deep inside [man] builds thereby the character too; and for the State as also for the *humanity* the concern is less on knowledge and speech but rather on character and action).

This was the argument, historically, with which the battle for academic freedom was waged and won. It differs, however, markedly from the argument in defence academic freedom prevalent today; that it is a necessary pre-condition for production of knowledge. Knowledge production, in its turn, is argued for by suggesting the economic and other usefulness of it to society. Thus, it seems, we have reverted back to the *utility* argument, something Idealism was arguing against.

This reversal is in fact a symptom of an even more fundamental departure from the understanding of the concept 'research' which Humboldt's reform made central to the notion of University.

Both the convincing power and weakness of Idealism arise out of a contrast made by Kant between the *truth*-oriented *will* and the *need*-oriented will. (General and particular, Selbst- und Fremd-bestimmung) The former, according to Kant, obeys the laws of reason, and the latter that of the society and State. Following this contrast, the authors of the Jena Lectures asserted that science is to be looked at from the point of view of truth alone and not that of material needs or utilities. Accordingly, a distinction was made between those disciplines where truth alone is the motivating factor and those where acquisition and application of knowledge to satisfy the human needs is in the foreground. The former were brought under the Philosophical faculty, the equivalent of the artistic faculty in the mediaeval university, but now transformed into the real core of the university. The underlying idea is: corresponding to the human being as a rational animal the appropriate form of life is Science. To realise that form of life, in a concise formulation of Karl Jaspers, is to set the philosophical faculty in the centre of the university and the university at the centre of society[3]. Obviously, the word 'philosophy' is used here not as a designation of a particular discipline but in the sense of a theoretical orientation.

This stress on *Science* as a *form of life* appropriate for human beings went hand in hand with a strong polemic against what Schelling termed derogatively as the pursuit of scholarship for the sake of bread (Brotgelehrte). This was meant not merely as a criticism of pecuniary motives for academic pursuit on the part of individuals. The objection was against the very concept of 'need' as a governing principle: pursuit of knowledge should not be governed by any bread and butter *needs,* independent of whether it is that of the individual or of the society. 'Search for truth' alone should guide higher education. In setting up a (new) discipline also the conception, the organisation and the institutional structure for it should follow the logic *internal* to the system of sciences itself and not that of considerations *external* to science such as the need for expertise in society on a particular issue as such.

Since learning and teaching in higher education were conceived as processes of getting access to truth, they were conceived as 'research', on par with the activity of producing new knowledge. Thereby it also enshrined the notion of 'research' in the very conception of higher education. Thus, ironically, without necessarily intending it, the notion of search for truth laid a basis for the research-oriented university and that in turn for coming into being of the multiplicity of academic professions. (*Wissenschaft als Beruf*). Yet, the original notion of 'research' which was instrumental to the pursuit of specialization and played the role of midwife to the academic professions was understood quite differently: whereas for us the association of 'research' is with knowledge production, for Idealism, it is with *formation* of the person or personality building – the German term is 'Bildung': Knowledge acquisition by individuals in the field of Science is *research* irrespective of whether by way of appropriation of that which is already available from the past or something newly produced through procedures of investigation. The distance between the two understandings becomes all too obvious if we look at the three principles formulated by the Humboldt University: (i) the unity of research and teaching (*Einheit von Forschung und Lehre*), (ii) the freedom or autonomy of teaching-learning, (*Lehr- und Lernfreiheit*) and (iii) formation through science (*Bildung durch Wissenschaft*). The first two, even if controversial at times, are still recognisable today as the principles underlying the places of higher education. The last one, however, appears a bit pompous for contemporary sensibility. For the contemporaries of Humboldt, on the other hand, the notion of 'Bildung' was the very backbone of the whole model and thus of even the first two principles.

4. History as *Bildung* and Science as a Sign-process

Unlike the contemporary discussion, Idealism situates its discourse on education within a framework of philosophy of history. This involves two theses:

(i) History is the unfolding of the possibilities inherent in the human nature.

(ii) History is an educational process and not merely a process of change that persons and societies inevitably undergo.

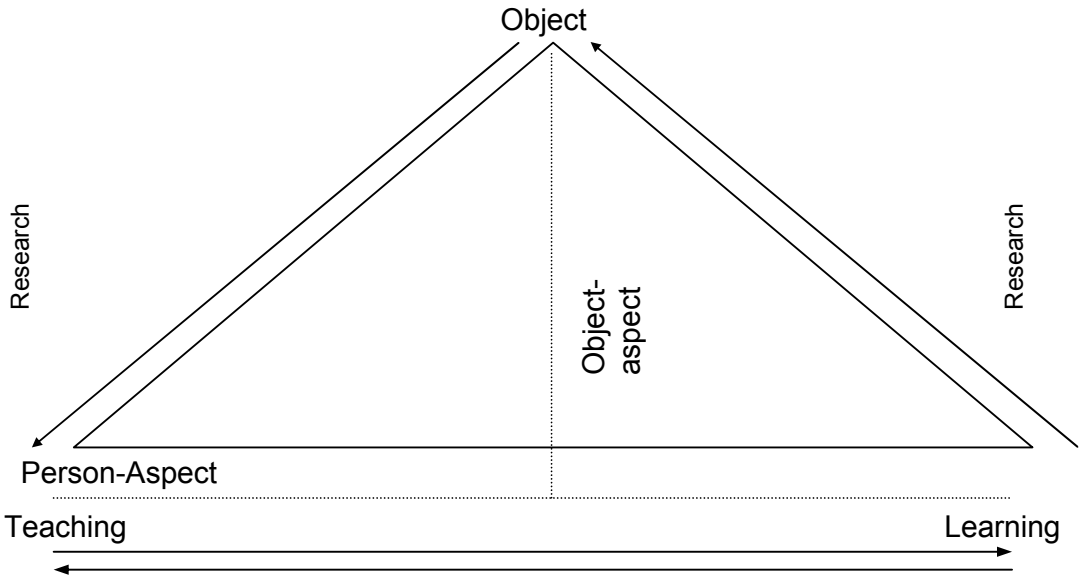
I will have something to say on the first thesis later. But my main focus will be the second thesis, since how it is understood is decisive for defining the role of the university and the scholar.

The second thesis asserts that human individuals and human formations (such as societies, epochs, and for Idealism, 'humanity' itself) are products of a *learning process* and not that of a *causal process.* The former, in contrast the latter, is a sign-process and the relation between its constituents is not the same as that between the objects. By making use of a distinction of Wittgenstein, we can say, the relation between the constituents of a sign-process is 'internal' and that between the objects is 'external'[4]. These terms can be understood in the following way: between the units of a relation there exists an internal relation only when the units *become* through these processes. Otherwise the relation is external. In the causal process that which is identified as a cause must be conceived of as a logically independent unit formed fully without this causal process. But in case

of sign-processes, both the objects as well as those who communicate about those objects are brought about by the sign-process. (The objects, signs and sign-using agent are related distinctions – logically distinguishable but not empirically separable).

(The distinction between the construction of objects in a sign-process and the *making* of an artefact)
Let me make use of a graphic scheme for further elaboration. Taking a simple situation of *someone saying something to someone*, one can construct the following sign-scheme.

(knowledge or sign triangle)



Here I want to call the 'someone to someone' as the 'person-aspect' (the base line), and 'about something' as the 'object-aspect' (the perpendicular line). In the person aspect in its turn, one can distinguish a teaching and a learning role. The whole situation can be termed as the teaching-learning situation[5].

An important assertion of the Jena lectures is that research, teaching and learning constitute a unity, and that simultaneously also forms the humanity of the persons involved in those activities.

We see here the arrows on the right and left sides – from the object to the teacher and from the learner to the object - refer to the research process. The teacher articulates the object to the learner, and this articulation is a construction of the object. To the learner, the object is available only through his re-construction of the object on the basis of the articulation received from the teacher. In relation to knowledge transmitted through the historical past, both the teacher and the student are in the role of learners and they re-construct the historically transmitted articulations. In other words, both the appropriation of the object and the appropriation of the historically transmitted involve the steps of construction or reconstruction: *access* to the object is always *through a construction of it* – whether it happens through direct enquiry or through mediation by means of transmitted articulations by the teacher or by the historical past. Therefore research, teaching and learning, as also the appropriation of the historically transmitted, constitute an inseparable unity.

Research is the construction of an object in the semiotic process: the semiotic construction of the object, in contrast to the making of an artefact, is predicated upon the notion of 'internal relation': the object, the sign-using agent and the articulation which is articulated and appropriated are all logically distinguishable, but empirically not separable units within a single sign-activity.

Like any other activity, sign-activity too involves not merely a doing-aspect but also a happening or 'suffering' aspect. These aspects should not be conceived as something separable but merely as logically distinguishable correlative to each other. Whereas in relation to the *object* the sign-activity is a construction and it is a *doing*, in relation to the *subject* or the persons involved, it is a formation, and that is the *suffering-aspect* of the sign-activity. Of course, the 'construction' in question, since it is part of a sign-activity, should not be

conceived as a *making,* as in the case of material artefacts. The relation of the sign to the object is, as elucidated earlier, an internal one and not an external one. Similarly, the suffering involved is not to be conceived as an event of material affection. In other words, the formation or Bildung should not be conceived causally, as a relation between a learning event and its effect. 'Bildung' corresponds to the happening aspect, both in the teacher and the learner. In other words, Bidlung is necessarily an inseparable aspect of the sign-process that constitutes the practice of Science. Hence, the principle: '*Bildung durch Wissenschaft*'. (Since research, teaching and learning are not merely a task of collecting from without but has to be seen as a construction task from within, it simultaneously represents a formation of the subject (*Bildung des Subjekts*).

The notion that sign-object relation is an internal one also has implications to the process of initiation into sciences: pursuit of knowledge (Humboldt's notion of Knowledge is an activity carried in 'Einsamkeit' - loneliness - and Freiheit - freedom. What is meant by this? It can only be meant as the special nature of 7/13
knowledge activity rather than as asserting the loneliness as such; Humboldt who is the originator of the idea of the dialogue notion of thinking could not have meant that knowledge to be an activity to be carried out without the dialogue process. His idea can be interpreted as asserting: knowledge as *an activity* in contrast to *a making* is a process that requires the understanding by the persons involved: It is, for example, unlike a manufacturing process where designing can be separated from the performance of an act of production.

Since science-as-process is constituted by an 'internal' sign relation and not an external relation (of *making*), it necessarily assumes what Idealism terms as 'spontaneity': a striving and an initiative of the individual. Therefore the activities concerned with knowledge or science, like teaching and research and the corresponding formation of the persons), cannot be ordered and compelled from an outside agency, whether State, or Church or an examination or syllabus board. This is the basis of the principle of autonomy or freedom to teach and learn.

5. The notion of Bildung and the 'Wissenschaftssystem'

So far, I have not brought the notion of Wissenschaftssystem for the explication of Bildung. Idealism assumed, however, a close connection between the *Wissenschaftssystem* and *Bildung*. The notion of Wissenschaftssystem included the notion of logical interconnection of all disciplines within a hierarchical ordering of the available knowledge and disciplines, and an institutionalization of it into a unified administrative corporation of the disciplinary associations, journals with their referee systems and congresses, examination and degrees. The beginning of the modern scholarly world was still small and cosy. But already in the 19th century this system was experiencing immense change in the direction of specialisation, and the attendant multiplication of disciplines and institutions. The onset of industrialisation and the growing need for specialised personnel contributed to and strengthened this pluralising tendency, weakening the hold of the concept of *Wissenschaftssystem*. The domain of science came to be understood increasingly as an aggregate of professions rather than as a unified system. Such pluralizing tendencies I will call the phenomenon of 'plurality'.

Whereas the scholarship ideal of Humboldt University did bring about the ethos of a dedication to scholarship and identification with the chosen discipline, the phenomenon of *plurality* brought into open the weakness of the Humboldt ideal[6]. According to Fichte, a scholar is someone who strives after knowledge and loves freedom and combines the citizenship duties with a sense of world-historical responsibility. Such a sense of responsibility, it is further assumed, can come only through the synthesis of all available knowledge into a System. But this ideal of scholarship appears plausible only so long as the underlying conception of 'Wissenschaftssystem' appears plausible. It runs the danger of becoming empty when the understanding of what science is gets equated with the expertise in a plurality of disparate disciplines. Simultaneously it also loses 8/13
credibility when a moral orientation is claimed for the sciences. Thus the 19th century saw a transition from Fichte's scholarship ideal to Max Weber's slogan of science as profession (*Wissenschaft als Beruf*): factors outside the practice of science become responsible for the moral orientation.

6. Autonomy of *Science* (Autonomie der Wissenschaft) to Autonomy of science*s* (Autonomie der Wissenschaft*en*)

The advent of science as professions registers symptomatically in the transition in the way the issue of autonomy was debated in the German universities at the beginning and at the end 19th century. During the period of Jena lectures and at the time of founding Berlin University the concern was to wrest aautonomy for Science (Autonomie der Wissenschaft) from the hands of the State. Here 'Science' ('Wissenschaft') was used as an abstract noun in the singular. But at the end of the 19th century the fight for autonomy was for 'autonomy of science***s'*** *(*Autonomie der Wissenschaft*en)*, the plural, 'sciences', is used to connote an issue within the academic

community, the debate being on, how to guard autonomy of each discipline against interference by other disciplines.
How can an alternative to 'science only as profession' look like that does not depend upon the ideal of a scholar as perceived by German idealism, but still conserves the idea of the university as an institution embodying a theory of Science?

Let me recall again the concept of history that was underlying the scholarship ideal. The weakness of the Humboldt University is traceable to the tension between the two aspects (between the second and the first thesis mentioned in section 4) within German Idealism's conception of history. On the one hand it wants to conceive science as a sign-activity, but on the other hand it wants to embed this sign-process within a philosophy of history, according to which, history is the freeing of the human being progressively from the state of nature.

This would mean: the notion of 'Bildung' which is conceived as a sign-process is again situated or embedded within an object conception or causal process[7]. This makes the object ultimately the *'given'*, although what is perceived as the object under particular historical conditions is conceived as what is constructed by the sign-process of science. Thereby the scholar gets conceived in such a way that he can keep in his overview the whole knowledge that is available in an epoch with the help of a speculative construction of a system.

As the force of the *plurality* phenomenon came to be felt increasingly, especially in the field of sciences and education in the 19th century, the impossibility of realizing the dream of constructing a unified system of science also became obvious. But the assumption still continued that moral orientation is to be gained through acquiring truth, and this in turn is to be gained by capturing the ultimately *given* through an all-comprehensive *system*. This is perhaps the most important inheritance from Idealism and the demarcating feature of the organism model. But that model allows the plurality phenomenon to be perceived only as a crisis situation. The history of ideas from the late 19th till the mid 20th century, especially in the field of philosophy, is characterized by repeated but futile attempts to deal with the phenomenon of plurality in the field of science and knowledge by postulating some kind of unifying principle. As the construction of speculative systems verged on becoming the fantasies at the margins of real (empirical) sciences, the belief gained ground that it would be possible to achieve unity by the notion of scientificity (*Wissenschaftlichkeit*) instead of *Wissenschaftssystem*. The Vienna Circle, for example, sought a criterion to demarcate scientific from pseudo-scientific speculations (metaphysics) [8]. Thus, for the discipline of philosophy the role was cast as a meta-science, and its task was seen as that of a critique of *thought systems* and *ideologies*; these latter were seen as presenting the hindrance to undertaking the right tasks of empirical sciences and right kind of perception of social and political situation.

Alternatively, another school of philosophy sought the unifying principle not in a *meta*-domain but in a domain prior to sciences: Philosophy was seen not as a meta-discipline but as a ground-discipline, a discipline which should focus on the relation of particular sciences to each other as well as to the day-to-day life. Edmund Husserl, for example, speaks of Phenomenology of *Lebenswelt* as such a discipline[9].

But the phenomenon of plurality undermines the implicit premises of both these philosophical streams. The promise of a general criterion that allows to demarcate the scientific (empirical) from the non-scientific is yet to be fulfilled, and probably cannot be fulfilled[10]. The phenomenon of plurality undermines also the assumption that there is a unique life-world (*Lebenswelt*) within which different sciences are rooted. Of course, the reflection on the day to-day activities and its relationship to sciences is an important task of philosophy, but 'Lebenswelt' is not an object 'given' prior to any action dispositions, rather it is a construct out of the action dispositions prevailing in a milieu. Action dispositions are subject to the plurality and diversity of the cultural and other inheritance of the actors, and therefore hardly capable of being accessed as a unified object of investigation.

7. Interaction Model

By taking the consequence of the insight that science is a sign-process and not a causal process to its logical end, I want to suggest an interaction model in place of the organism model. The dialogue character of science indicated by the sign-scheme is taken into account in this model[11]. Its potential can be illustrated by showing how the phenomenon of plurality is handled by this model.

Both in practical decision situation and theoretical reflective situation one encounters a plurality of opinions and approaches.

In practical decision situation, what is pertinent is finding the compromises: A compromise in contrast to a consensus is not dependent on one exclusive view which is shared by all the different participants. Rather it is a result of negotiation which the different participants vote for on the basis of different reasons and interests. The

regulative idea that is conceived by the organism model 'to come to the *true view*' is no help in such a situation. It rather hinders the consideration of differing perspectives of the participants.

That regulative idea of truth conceived as *the truth* is equally an obstacle in situations of theoretical pondering. For reflection usually takes the following form: how does the alternative looks like for what is familiar and preferred by us / me. In asking this we counter-pose what is familiar and preferred by us to something that is different and unfamiliar to us.

That is, both in practical decision situation and theoretical pondering situation the plurality and manifoldness of approaches and opinions constitute the very conditions of interaction that the reflection and decision open up at all. Thus to the concept of plurality belong the interaction between different perspectives that lead to change of perspectives (*Perspektivenwechsel*)

In conclusion, I want to compare the organism and interaction model with the example of manifoldness. The organism model looks at the object as *given* independent of the person-aspect, and emphasises, under the concept of 'being reasonable', faith in a unifying Reason'. The consequence is a demand on the persons participating in a dialogue to give up their differences of perspectives in order to land on the one 'true perspective'. For the interaction model the person and object-aspects are logically differentiable but practically not separable from each other; that means the object is not available independent of the person-aspect. Consequently, what is understood here as 'being reasonable' is performance (Vollzug) of a learnable skill to enact the perspective change in a dialogue situation. The manifold developments that are interpreted in the organism model as situations of crisis are understood in the interaction mode as opportunity. The demand to show consideration to both the object and person aspect appears to those who have faith in the unifying power of reason as a betrayal of reason. That requirement is however the very pre-condition for reason that probes the plurality between the dialogue partners. In performing such an interaction the skill or competence to perspective change is acquired. The acquisition of this competence to construe perspectives in order to undertake the perspective change makes one capable of structuring the situation interactively. The practice of this skill or competence – this is my suggestion – has to constitute Science as Lebensform (Wissenschaft as Lebensform).

Institutionally, then, the question is that of finding the forms of organization that supports and enables the undertaking of the trans-disciplinary, trans-local and trans-historical perspective changes. The dialogues that are conducted within this framework are undertaken more with the will to discover (*Entdeckungswillen*) rather than the will to win (*Siegeswillen*) on the part of the dialogue partners[12]. But, if we conceive this distinction as that which can be clearly demarcated by a clear criterion, then we are back in the monological approach than the dialogical one.

Notes

1. See Schiller, 1789, Fichte, 1794, Schelling, 1802, Schleiermacher, 1808, Humboldt, W. Von, 1809/10.
2. 'Über die innere und äußere Organisation der höheren wissenschaftlichen Anstalt in Berlin', *Gesammelte Schriften* x, p. 253.
3. "If one has to succeed in bringing about the appropriate bodies and institutional structures one has to constantly bear in mind and eagerly want the real purpose: The University as the place where truth in its every dimension is both available and the students eagerly lay their hand on. This is however more than mere reform. Rather the reform is *for the sake of* a process of the constant rebirth of the truth in the scholars, researchers, thinkers. Such a process can and ought to be the core of the university just as the university as a whole can and ought to be the center of spiritual education of a people – this is the guiding idea. Without it the university will be lost in its daily administrative operations." In: K. Jaspers, 'Doppelgesicht des Reforms', *Die deutsche Universitätszeitung* 15, H. 3 (1960), p.7.
4. L. Wittgenstein, *Tractatus Logico-philosophicus* 4.014 and 4.023, Basil Blackwell, Oxford 1959.
5. K. Lorenz, 'Dialogische Konstruktivismus', S. 335-352 in: Kurt Salmun (Hrsg.) *Was ist Philosophie?*, UTB 1000, Tübingen 1986, p. 347.
6. For a history of the German universities in the 19th century, see: Friedrich Paulsen, 'Überblick über die geschichtliche Entwicklung der deutschen Universitäten mit besonderer Rücksicht auf ihr Verhältnis zur Wissenschaft, p. 3-38 in: W. Lexis (Hrsg.) *Das Unterrichtswesen im deutschen Reich*, Band 1, Berlin 1904.
7. For the details of the conception of history in German Idealsim, as the necessary process of blossoming of the human-species essence, see: Chapter 6. 'The Making of the *Naturgeschichte*' in: Narahari Rao, *Culture as Learnables*,); Also see chapter III titled 'Einheit der Geschichte und Beginn der Geschichtsphilosophie' in: Rüdiger Bubner, *Geschichtsprozesse und Handlungsnormen*, (StW 463), Frankfurt am Main 1984.
8. For a comprehensive account and critique of the project of the Vienna circle, see: Pap A., *Analytische Erkenntnistheorie*, Wien 1955.

9. See *Die Krisis der europäischen Wissenschaften und die tranzendentale Phänomenologie* in: Husserliana, Band VI, edited by W. Bimmel, Paragraphs 8-9 und 33-34.
10. See: Pap (1955) ibid.
11. For a overview of the dialogical approaches to Science, see: Else Barth, Dialogical Approaches'. In: M. Dascal, D. Gerhardus, K. Lorenz, G. Meggle (Eds) *Sprachephilosophie Ein internationales Handbuch zeitgenössicher Forschung* 1.Halbband, Walter de Gruyter, Berlin 1992, p. 663-76.
12. Cf. Husserl, *Die Krisis der europäischen Wissenschaften und die tranzendentale Phänomenologie* in: Husserliana, Paragraphs 8-9 und 33-34.
13. I have borrowed this distinction between dialogues undertaken 'with a will discover' and 'with a will to win' from J. Mittelstraß, *Unzeitgemäße Universität*, StW. Suhrkamp Verlag, Frankfurt 1994.

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