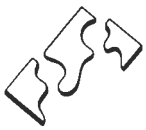

Human Science is Responsible[1]

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I want to address the role of responsibility in human science. My thesis is that responsibility is an important characteristic of human science which differs from natural and behavioral sciences not only by its topics and methods but also by the degree and the kind of its responsibility. I contend that the question of responsibility leads us to the foundation of the sciences in the lifeworld.

The Contradiction Between Science and Responsibility

There exists a broad consensus about the criteria of scientific method, which may include the following: Scientific statements must be true and open for examination; they must be logically justified and verified by experience; science must explain its objects and reduce these explanations to laws. Besides these, one point which is important here is that science is interested in pure knowledge, insofar as the researched subject matter must be purified of all subjective factors, mainly of valuating and of moral judgment; researcher and subject matter, subject and object, have to separate in a neutral distance.[2]

The most rigid realization of this scientific ideal can be found in classical physics, but it is also applied in those sciences in which the human being is the subject of research. In spite of (or because of) their success, the natural sciences get into a dilemma which has become more and more obvious. The scientific success which is used and pushed by technology turns on human catastrophe. As keywords I mention only a few: nuclear demolition, manipulation of genes, ecological destruction. The claim for "responsibility of science" arises.[3]

But how can responsibility and science correlate? Responsibility is considered to be an ethical category which demands moral action and orientation to ethical standards, and this is exactly what scientists have to renounce as far as they are active as scientists. Must they take social and political responsibility—so to speak—in spare hours to atone for what has been done in the laboratory during the day? So did the American atomic scientists, among them Einstein, who protested to the President against the use of the atomic bomb.[4] Are not scientists who take responsibility in such a way schizophrenic? The demand for responsibility in science makes sense only when the contradiction between science and responsibility can be resolved.

To do so it is necessary not to accept a dogmatic definition of scientific method. First, the form of science known to us is an historical appearance and not a fate to which we have to submit blindly. Second, science reveals itself as a way of human action when we consider it phenomenologically, and when we ask for its meaning for the whole of human life. Then it is not only a logical matter and an intellectual product, but it can be described as something that certain people do.

Some characteristics of modern science as a form of action are the aspiration of pure knowledge, the curiosity which is involved in it, the playful attitude of the scientist and the proper dynamics of scientific knowledge ("We don't know what will happen"). Human action can be changed and we can take responsibility for it. Why not also for science as a form of acting? However, if we want to look for such a science which is responsible, we must be aware that we are trying to combine responsibility and science, which are considered to be incompatible.

Responsibility for the Scientific Method

In our context, interest does not lie in a general theory of science but only in the question of how *human science* can or must be responsible. Strictly speaking, it does not make sense to ask for responsibility of a "science," for an abstract thing which we call "science" or "human science" cannot be responsible. Only concrete persons can be that. Thus our question is directed to the responsibility of human scientists. In the following we will see that the responsibility of human scientists can be displayed in three different forms.

A first form consists of *responsibility for the scientific method* of research. Let us consider an example of researching the effect of extended work or play with computers. In this case, scientists will formulate hypotheses with respect to the dependency of computer use and personal behavior. They will search for definitions of "extension," "work," "play," "computer"; analyze different effects, scores, rating scales, and so forth; and they will try to justify the chosen population and the number of observations. Finally they will apply exact measurement, thorough evaluation, and so forth. Responsibility consists of "doing a competent job."

Every scientific position can agree to this form of responsibility as it finds its confirmation by strict application of its own criteria. Thus the empiricist will rely on sense data, the historian will observe the authenticity of documents, and the human scientists will demand the observation of hermeneutical rules. On this level, responsibility means to apply the typical procedure which constitutes the specific understanding of science.

This form of responsibility has criteria as follows: The scale for a possible imputation is given by the appropriate scientific criteria. I use "imputation" as a term of ethical theory; it means, first, to state that a person is the origin of a certain action and, secondly, to judge this action according to juridical, moral, or other laws.[5] In the case in question the "laws" consist of the scientific criteria. These are defined in advance and are not changed by the normal process of research. The *authority* which calls the scientist to account lies in his own *reason* and in that of his colleagues. As far as sincerity is concerned, individual conscience may be an authority.

Responsibility for the Adequacy to the Subject Matters of Human Science

On a second level, the meaning of responsibility *extends* the scientific method and includes the *kind of subject matter* in question. This seems to be obvious because every scientist will adapt his or her way of working and his or her methodology to the object. But the methodological orientation depends on the perspective by which the object is defined and could be considered in a different way. Is the definition of the object given in advance of the scientific criteria? Or does the scientist try to observe the object as it is by itself? Will he consider the object to be something which can be defined exclusively by means of sensual perception? Or are meaningful moments also considered to be important for its definition?

These questions are central for the human sciences, for they are dealing with matters, facts, and processes in which the human being is involved. Thus when human science asks for its object, it must ask for the human being, and it must answer this question: What are the specific criteria of human beings in contrast to that which is not human, and how does human science do justice to these criteria? This is the crucial question.

A human scientist cannot take the persons who are working and playing with computers in the same way as when a researcher checks the reactions of rats to Mozart and Schönberg. Furthermore, a human scientist will realize that persons have to be differentiated in manifold ways, for instance, with respect to age, education, culture, gender, intelligence, and so forth. A differentiation must be made between the "effects" of pure mechanical reactions and deliberate, free actions.

In my opinion, the most important fact that human scientists have to consider is that human behavior and actions include and express *meaning*. In experiencing the world, one discovers and bestows meaning. All actions, insofar as they are not pure reactions, are characterized by the dimension of sense and meaning. Or is the human being to be considered merely as a mechanism of stimulus and re-

sponse as behavioristic theories of learning presuppose? For example, is educational acting to be reduced to a technology as teacher effectiveness theory pretends? Is the human being a product of cognition and emotion as certain psychology wants to make us believe?

If human science wishes to do justice to its object it has to use other scientific methods than quantitative measurement and behavioral testing; otherwise it would talk about something other than the human being about whom and for whom it pretends to do research. It has to use approaches which are adequate to its meaningful object.[6] Certainly human science cannot abandon interpretive, hermeneutical, and phenomenological methods which include the self-reflective participation of the researcher himself or herself as a fundamental condition for perception.

On this level, scientific responsibility means the following: The content of it is the qualitative adequacy of the science and especially of its methodology to its subject matter—human beings, and their meaningful actions and products. The scale for this responsibility extends the narrow scientific method and includes the preservation of the meaningful, which also includes the ethical dimensions. The authority of responsibility is here the *reason* as well as the *conscience* of scientists and the community in which they live, for together they have to decide what it means for them to be human.

Responsibility for the Subject Matter Itself

Are the above forms of responsibility really enough? What prompts questions and research? Is it the pure curiosity of a scientist? Is it a scientific game with an open result? Is it knowledge for the sake of knowledge, the white spot on the map which is the typical "not yet" of natural sciences?[7] Human scientists want more and have to want more. What causes the scientist to do research—is his or her sense of responsibility for the persons and the subject matters themselves, which goes beyond the research situation.

This responsibility is not only wider than that for the scientific method and the adequacy to the object; it is another type of responsibility. The first one follows the model of a legal procedure, in that there are certain laws which have to be fulfilled by somebody. Individual scientists may or may not succeed in doing this. They will be judged for their actions. Principally, it is more or less obvious what must be done, and the scale of judgment is clear: The motivation for the action is mainly the expected imputation. We may call this type "juridical responsibility."

The type of responsibility for the subject matter itself differs principally in two aspects. First, the acting person is motivated by the subject matter in question, by the situation of certain persons or by certain things; a possible, future imputation after having acted is

less important. Secondly, it is not quite clear what is to be done; it may not even be obvious that something is to be done at all. This responsibility is an answer to an unexpected and problematic situation. Consequently, in engagement one has to find the right scale for action, to decide personally and existentially, and to incur a personal risk. At the same time, an imputation of an action which results from this situation is difficult, often not possible in a definite sense. Because of the existential dimension of this responsibility we can call it "existential responsibility."[8]

When we understand education as a human science it may serve as a paradigm for other human sciences, for I think that responsibility has a crucial importance in education, not only in practice but also in the theory of education. Evident is the need, the natural and social need of both children and educators which does not allow the educational theorist to be dissociated from them and disinterested in their affairs. The interest of the educational theorist which motivates his or her perception goes back to the roots of educational responsibility. The impetus of the educational theorist is *practical educational responsiblity*.[9]

But we must be aware that theorists are not involved with concrete children in the same way as educators who assume concrete educational responsibility. However, the responsibility of theorizing is to be realized in such a way that all thought and action presuppose that practical educational responsibility will be possible and supported in the best way and will not be deformed or even hindered by theory. Therefore, theorists' presuppositions are not irrelevant—whether or not education is defined as training and manipulation, or whether or not the child is defined as a biological organism or as a mechanical apparatus—for theoretical work is concerned, in its practical continuation, with concrete individuals.

This means that the content of the educational theorists' responsibility on its third level is the educational matter itself. It is not only a scientific responsibility for an adequate science, it is also an educational responsibility. According to Wilhelm Flitner, an important German educator of this century, the thinking of the educator is an "engaged reflection."[10] Hence, both the source and the goal of scientific reflection in education is educational responsibility. Educational responsibility is the principle and the horizon of educational reflection. Responsibility becomes a principle of knowledge and the respect with which one has to understand educational matters.

It follows from the above that educational researchers must take responsibility for their scientific task as well as for the results. They cannot, like a chemist, hand out a package of results to the technicians, the economists, or the politicians and leave what they will do with it to their sense of responsibility.[11]

The idea of an educational theory in which existential responsibility is a principle of knowledge may be a paradigm for other human sciences and in a wider sense even for all sciences as far as their procedures would have to be referred to the human being and his or her needs. The content of this responsibility is to make possible and to support the best social and ethical responsibility; it is social and ethical responsibility for the subject matter and not only for the scientific procedures. Its scale is humanity, the respect for and the preservation of the person. Scientific method and adequacy to the subject matter remain important components; both *reason* and *conscience* are the authorities of imputation.

The Foundation of Scientific Responsibility in the Lifeworld

Because of the impetus which characterizes practical social and ethical responsibility, let (human) science and responsibility appear as a *unit*. It thus becomes unnecessary to limit "scientific freedom" by moral laws in order to demarcate human science, because the responsibility of human science is not only a moral claim but also a result of the revealing of the foundation of the sciences in the lifeworld.

In his later philosophy Husserl considered the lifeworld as the foundation of the sciences—as their sensual foundation.[12] "Forgetfulness of this origin was responsible for the intensifying crises of recent science, both internal in its own foundations, and external in its relation to 'life' and to man with his human values and aspirations."[13] Merleau-Ponty put special emphasis on the sensual and corporeal foundation of our consciousness; in this view there exists a prescientific experience of the world to which direct access is impossible. Our "being-to-the-world," our "être-au-monde" is prior to and more basic than our consciousness.[14]

This might not yet be enough to legitimate responsibility as a constitutive factor of science. However, we must be aware that "being-to-the-world" is more than an intellectual attitude; the foundation in the lifeworld means more than the foundation of our consciousness. Being-to-the-world means also a being-to-others, a being-to-humanity. Thus we may formulate the thesis: Responsibility is an implicit factor of the lifeworld.

We find a confirmation for this assertion in Levinas' idea of responsibility.[11] Levinas alludes to the fact that the other is always prior to my knowledge of him. A similar assertion can be made for responsibility for the other. I am responsible for him or her before I can assume responsibility; I am caught in my being responsible. The other and my being responsible for him or her are constitutive for the lifeworld; responsibility is based in the lifeworld. According to Levinas, responsibility cannot be founded and claimed by a theory of ethics; this would always be too late as responsibility has caught us before we theorize.

Primacy of Responsibility has no Scientific "Proof"

We may now dare to draw a conclusion. It is disastrous when we forget the corporeal and sensual foundations of our various sciences in the lifeworld; in the same way it is disastrous to forget their foundation in the lifeworld in relation to our being responsible. In other words, scientists do not have a choice as to whether or not to be responsible. They *are* responsible. A primacy of responsibility is crucial to an abstract ideal of science.

This conclusion is the result of two approaches which meet at the same end. The one is motivated by the question of what it means to be "human." As education and reflection on education try to achieve the human idea in praxis and in theory, it is rather obvious that educational theory has a responsibility for the subject matter itself. However, this achievement is the formulation of what is human itself and not only the means to gain a pregiven purpose. The child himself or herself must be treated as a human being, even in theoretical reflection. In a similar sense, all human sciences have to treat their objects as what they are: human beings or human products; hence, human science has responsibility for the humanity of the subject matters.

Even natural sciences should not deny that their objects have specific meanings for the realization and formulation of what is considered to be human. For example, the development of the ability to change the genetic basis of man has to face the question whether or not it is desirable and allowable to experiment with the human being. In this sense nature is not something beyond the human being, but it belongs to our world of interpretation. As well, we are part of nature. Natural scientists have responsibility for nature in this double meaning.

The other approach to scientific responsibility is phenomenological. It supplies the "proof" of the unity of our being and that of the world in the corporeal and sensual constitution of our being-to-the-world and of the lifeworld. All sciences are founded in the lifeworld; no scientific research is possible without this foundation; if responsibility exists at all, there is no science without responsibility.

Nevertheless, there is no real proof of responsibility of scientists—there is neither an ethical nor a phenomenological proof. The conclusion is the result of a series of presuppositions, implications, and decisions which may or may not be accepted: The epistemological assumption of scientists who are involved in their objects; the anthropological implication of "meaning"; and the ethical question of what is considered as "human." Last but not least, there are the practical consequences; nobody could imagine the effect if all scientists would start to research as responsible persons and begin to un-

veil the social, political, military, economic, and private interests in their work and measure these interests with the question of what is human.

Too many problems seem to stand in opposition to the thesis that scientists are fully responsible. And I can only deliver a rough sketch of a whole, unfulfilled program for manifold reflections. On the one hand, scientists find legitimation for their actions in the prescription to abstain from a personal involvement in their objects. On the other hand, we have to face the menace of a reduction of man to a mechanical being, of nuclear demolition, manipulation of genes, or ecological destruction. Are we, scientists, ready to stand up for the responsibility of human science?

Notes

1. The basis of this text is a paper presented at the Fourth Human Science Research Conference the University of Alberta, Edmonton, May 1985.
2. Compare Baumgartner, H.M. (1974). Wissenschaft. In H. Krings et. al., (Eds.), *Handbuch philosophischer Grundbegriffe*, Vol. 6, Müchen: Kösel; Körner, St. (1980). Wissenschaft. In J. Speck (Ed.), *Handbuch wissenschaftstheoretischer Begriffe*, Vol. 3., Göttingen: Vandenhoeck.
3. Many contemporary publications on this topic could prove this. Very popular (in West Germany) is Jonas, H. (1979). Das Prinzip Verantwortung. *Versuch einer Ethik für die technologische Zivilisation.* Frankfurt: Insel. Compare also the recent publication of this kind, Ströker, E. (Ed.). (1984). Ethik der Wissenschaften? *Philosophische Fragen.* München: Fink/ Schöningh.
4. See also the *Göttinger Declaration* of 18 German atomic scientists (April, 1957).
5. This is Kant's definition. See Kant, I. (1966). Metaphysik der Sitten. In W. Weischedel, (Ed.), *Werke in sechs Bänden*, Vol. IV (pp. 334-335 [=AB 29-30]) Darmstadt: Wissenschaftliche Buchgesellschaft. See also Danner, H. (1985). Verantwortung und Pädagogik. *Anthropologische und ethische Untersuchungen zu einer sinnorientierten Pädagogik* (2nd ed.), (pp. 38-53, 68-75). Königstein: Hain.
6. See Giorgi, A. (1970). Psychology as a Human Science. *A Phenomenologically Based Approach.* New York: Harper & Row; Polkinghorne, D. (1983). *Methodology for the Human Sciences.* Systems of Inquiries. Albany: State University of New York Press.
7. Compare Staudinger, H. Forschung ein Spiel? In E. Ströker (Ed.), *op. cit.*, p. 33.
8. For the distinction of juridical and existential responsibility see Danner, H. *op. cit.*, pp. 67-105; for the question of a responsible educational theory see pp. 303-327.
9. Compare Flitner, W. (1966). *Das Selbstverständnis der Erziehungswissenschaft in der Gegenwart*, (4th Ed.). Heidelberg: Quelle & Meyer, p. 14.

10. Compare Brezinka, W. (1978). *Metatheorie der Erziehung*. München: Reinhardt, p. 98, who speaks about the use of the results of educational research by persons who are interested in this research and who even order it.
11. Husserl, E. (1982). *Die Krisis der europäischen Wissenschaften und die transzendentale Phänomenologie* (2nd Ed.). Hamburg: Meiner, 9/h.
12. Spiegelberg, H. (1982). *The Phenomenological Movement*, (3rd Edition). The Hague: Nijhof, p. 146. Compare Lippitz, W. (1980). *"Lebenswelt" oder die Rehabilitierung vorwissenschaftlicher Erfahrung*. Weinheim: Beltz, pp. 20-21, 57, 62.
13. Merleau-Ponty, M. (1966). *Phänomenologie der Wahrnehmung*. Berlin: De Gruyter, pp. 417, 491-492.
14. Levinas, E. (1983). *Die Spur des Anderen*. Freiburg/München: Alber. Compare Hellemans, M. (1984). Questioning the meaning of educational responsibility. *Phenomenology + Pedagogy, 2*(2), 124-129.