

**KNOWLEDGE AS A GOOD:  
SCIENCE, EDUCATION, AND THE COMMODIFICATION OF  
KNOWLEDGE**

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**Abstract.** The author of this paper presents six theses concerning Education and the Knowledge-society, Knowledge as a Good, Education through Science, and accompanies these with a few explanatory remarks.

**Prefatory remarks**

Knowledge, above all in its theoretical forms, was once considered the essence of Man – the *rational* being – and, therefore, the highest form of human activity. Hence the famous opening sentence of Aristotle’s *Metaphysics*: “All men strive by nature towards knowledge”. And thus in his ethics he qualifies theory as the highest form of praxis, although one should bear in mind that this is an ideal – it is neither a fact, nor is it actually attainable. Knowledge is here identified with a form of life. And in consequence, knowledge has always been identified with a subject – an exceptional scientist or an admired teacher. But this conception is, if we leave some particular cases aside, more or less a thing of the past. Knowledge today is vanishing behind new methods of transmission, and because of new methods of teaching and learning it is also increasingly subjectless. At the same time, it is regarded more and more as a product that is to be accommodated to the usual forms of the market. A society that once considered itself to be a society of knowledge has discovered that knowledge is a commodity, and indeed believes that it possesses a conception of knowledge that is superior to all those that went before. How did we arrive at this peculiar view of things? What happened? In the following I present six theses concerning Education and the Knowledge-society, Knowledge as a Good, Education through Science, and accompany these with a few explanatory remarks. I offer nothing fully finished, but perhaps something that is nonetheless stimulating (for a more detailed discussion see Mittelstrass 2001: 33–56).

### Thesis 1

*Education that goes beyond the needs of the day, and beyond the vocational core, is more than ever necessary in a society that sees itself not only as open, but indeed as accelerating, in that it holds as a credo that there be unlimited mobility, innovation at any price, and chameleon-like flexibility. Without fundamental education, the open society will founder on its own adaptability.*

In the modern world, the pressure to change constantly and as a result to specialise our know-how is steadily increasing. This drive towards specialisation, however, stands in peculiar contrast to the simultaneous 'technological' integration of knowledge. This integration, which is effected by modern information and communications technologies, does not, however, lead to a new (or old) unity of the universally oriented, and thus universally orienting, knower, but rather to the creation of the expert. The modern world is a *world of experts*: it is ruled not by a Leibnizian understanding, namely one which mirrors the world, but by the specialist, in whom almost nothing, or to paraphrase Schiller, a divided world is reflected. The specialist, who knows ever more about ever less, has landed on the other side of universality: he seeks it in the detail that is for him a totality.

But this can hardly do. In a world of experts, the old ideal of unified knowledge, even if the latter is still to be pursued 'technologically', loses its social function. The ordering of knowledge under the categories of universality and disciplinarity, that is to say the responsibility for both the whole and the part, begins to pale, and this is true most of all when the knowledge-society begins to understand itself as an information-society. That is why the present reincarnation of the knowledge-society as an information-society threatens us with disappointment, at least to the degree that these terms denote not merely an informed society, but indeed one which is oriented. How such an oriented knowledge can be achieved, and by this I mean one which is not to be confused with mere expert knowledge, is thus not a question that can be answered by appeal to yet more information.

Put otherwise, the world of information in which we all live today, whether we like it or not, is not an oriented world, even if in rational cultures this oriented world must increasingly include elements of informational knowledge. That lack of orientation which is often, and rightly, ascribed to modern society cannot be overcome by following the road that leads to the information-society, even if the latter is a proto-form of the knowledge-society. This is actually a paradox: the richer our stores of information and knowledge, the poorer our ability to orient ourselves. But this ability is just that which the notion of *education* (in the sense of the German *Bildung*) once stood for.

### Thesis 2

*When knowledge, information and orientation draw apart, when the market becomes the measure of all things and Man withdraws behind his economic goods, education becomes a concrete utopia. It becomes the future of a knowledge-society that no longer disposes of an integral concept of knowledge.*

For, once again, education is the expression of a culture in which the rational nature of Man is realised. This culture is not something external to the modern world, something that has to be lovingly preserved and nurtured for the very reason that it is superfluous to the future of this world. Culture is rather *the world itself*, a world that has been transformed into the world of the human being, who can only recognise himself in those things that he has made himself. He recognises himself not only in those things to which he lends objectivity, as in the sciences, but also in those that partake in his subjectivity. Man moves in this world by discovering, interpreting, and shaping it. In doing so he makes this world. And thus the modern world is always, within this context of discovery, formation and invention, a cultural world. It may sometimes forget this fact, above all in the pursuit of political and economic affairs. But it cannot divest itself of its cultural form.

Education is at the same time the obverse of culture – culture that has become a form of life, indeed an individual form of life. And thus education is above all non-theoretic. It is ability and a form of life, and not merely a matter of knowing one's way around the stacks of knowledge. Wilhelm v. Humboldt is still in the right. An educated person for him is someone, who tries "to grasp as much of the world as is possible, and who tries to bind it to him as tightly as possible" (Humboldt 1903–1936: I, 255). Thus the concept of education in both the classical and the modern sense includes the concept of *orientation*. Orientation is itself something concrete, not something abstract like theories, or the manner in which theories are transmitted. The locus of orientation is the life-world, not the conceptual or theoretical world. And this holds true of education as well. Education and orientation are structurally correlated, not so much in the form of science (and by science I mean in general the German *Wissenschaft*, which includes the Humanities and the Social Sciences) as in the form of life, that is to say in the form of an ability. We might, following Humboldt, say that it is the ability to integrate the world in oneself and to express the world in itself. Put otherwise: knowledge is, at least when one considers knowledge and experience as well as sensibly consorting with them, the universal expressed as a particular.

What I have just formulated in rarefied and abstract – that is to say in what is commonly called educated language –, describes quite exactly, in my opinion, the sense in which a humanist educational ideal might be reintroduced into our culture. It is concerned with an active conceptualisation of the world; it is opposed to an essentially economic preference of the *Zeitgeist* for a divided self, that is to say one that is split into a private, a social and a consumer self. Thus it is concerned with the restoration of an undivided self, and with restoring clarity to the concept of knowledge by means of which our society defines itself. It is just this clarity that we are beginning to lose.

### Thesis 3

*Modern society vacillates in its self-understanding, and in its self-description, between the promises of an information-society and those of a knowledge-society.*

*And in doing so, the knowledge-society paradoxically runs the risk of losing its concept of knowledge.*

When the power of knowledge is celebrated today, this is done strangely enough with reference to its *transitory nature*. One speaks of the half-life of knowledge, about how what we once thought we knew is rendered obsolete in ever shorter periods of time. Is all knowledge labelled with an expiry date? Does knowledge come and go like a moody God? Does our very knowledge-society walk a floor of loose planks? I think that these concerns are overdone.

The rhetoric of half-life and expiration dates is profoundly misleading. What we once learn or discover does not lose its truth-value every five years, barring simple errors. This is just as true of mathematical proofs as it is of much scientific knowledge, and even of one or two economic or philosophical insights. Our knowledge grows, but it has not grown more perishable than it was in times less obsessed with the growth of knowledge. In other words, we ought to think more about its permanence when thinking about science, instead of praising it by invoking a false rhetoric. We have enough disposable possessions – let us pay greater attention to the lasting ones. For there are, thank God, enough of them in science.

But there is also the rather peculiar conception of a transmutation of knowledge into (disposable) *information*. Indeed, knowledge structures are changing in the modern world; informational worlds are replacing worlds of knowledge and education. A new pedagogy tries to convince us that we knowledge-dwarfs should all become information-giants. Knowledge as a cheap commodity and the information-society as a new social good? The credo of such a society, namely the symbiosis of monitor and head, renders the distinction between knowledge and information empty. One imagines that knowledge is spontaneously generated in the medium of information, or that, with the concept of information, a new and superior concept of knowledge emerged. Competence in the formation of knowledge is replaced by competence in processing, and with trust in the information's being 'right'. What business does a sceptic have in front of a screen? One forgets that knowledge presupposes a knower, and that only a knower can acquire new knowledge.

So let us take care that the triumph of information does not come to signify the loss of knowledge; that the value of knowledge is not reduced to its immediate application to rapidly changing social situations; and that the value of reflection is not measured with regard to its (apparent) unwordliness. For the head is the navigator, and the best navigator is still the thinking and knowing head. This too is an element of education.

#### **Thesis 4**

*When the transitory character of knowledge is celebrated, and its essence is characterised as information, we are threatened by a new commercialisation of knowledge. Knowledge that was once the expression of the rational nature of Man is rendered a commodity.*

What I have just described by means of epistemic concepts – knowledge and information – can also be formulated in economic terms. Knowledge, on this view, is no longer the expression of the Aristotelian conviction I mentioned at the outset, namely that knowledge is the highest expression of human activity, and that knowing in this sense is also a form of life. Rather it is a commodity adapted to the usual market-forms, which is sometimes perishable and sometimes not. It does not master the modern world, but becomes something mastered by this world and its markets. Strangely enough, our knowledge-society does not view itself as one faithful to its scientific and epistemic essence, but instead as one which has discovered knowledge to be a valuable commodity. Those who sit in front of their screens and surf atop the world's informational seas are not concerned with scientific truth, but with the lies of the market, and with the passing fads of entertainment and business. Knowledge and the stock market develop an intimate, and surprising relationship. NASDAQ as a single measure for the quality of knowledge? Are we replacing the conventional standards of validity and of sceptical investigation with ones born of financial success and stock market listings?

For a large part of society, knowledge has in fact become something that one employs, but that one does not actually practice oneself. The magic word is: Knowledge Management. With it, or with that which it designates, one increases the distance between knowledge and the knower, between he who drives knowledge forwards and is thereby a condition for the new, and those who use and manage knowledge. This separation is in general detrimental to knowledge, and it is also permits its commodification, in that it renders the knower a mere provider of services, who is no longer a part of the knowledge process. That is, he is either its transmitter or its end user. But knowledge that is viewed only as a commodity, which is to be acquired, sold, managed and used, loses its proper essence, which is the expression of the epistemic essence of Man, and becomes a commodity like any other.

The knowledge-society is thereby characterised in its self-perception and self-understanding as a part of the service-society, in which all production processes seem to be transformed into mere exchanges. Everyone is at the service of someone, including the scientist, who no longer understands his craft as lying in the production of knowledge, and in his intelligent labour, but who now sees himself instead as a salesman and manager. Knowledge online is everything. We are losing the idea that knowledge is above all something that is discovered, produced, developed and acquired, that idea which in other words would develop in circumstances other than those prescribed by this growing epistemic economy. It seems that knowledge comes out of the computer the way light comes from the power plug. The question of how the knowledge got in the computer is as uninteresting for many as the question of how the power got into the plug.

Knowledge cannot be manufactured in the way that one manufactures ball bearings or soap. But it is just this idea which, conditioned by a changing way of dealing with knowledge, is catching on. The pressure on research institutions, among them universities, to commodify increases constantly. Repeated demands

for so-called knowledge-transfer assume, in effect, that science is to prepare knowledge in a form directly amenable to the needs of the economy, like slugs for the production line. He who dares to speak of research in the sense of fundamental research immediately evokes the image of ivory towers. And while it is true that the latter no longer have a place in the architecture of the modern world, still that has nothing to do with the particular essence of science in its search for the new, and with the special routes that it takes to arrive there. We stand before a grave misunderstanding. And if we do not take care, our casual and superficial treatment of the sciences will turn on them.

### Thesis 5

*Education in the knowledge-society requires a strong educational system, above all in its scientific institutions and thus in its universities. This too, is included in the notion of the theoretical life, in the notion of science as a form of life.*

When we speak of science, we are generally talking about a particular kind of knowledge formation, that is to say of *scientific* knowledge production. We mean the theories, the methods and the special criteria of rationality to which theories and methods are subjected. Among these criteria we number, for instance, the reproducibility and controllability of scientific results and procedures, the linguistic and conceptual clarity of scientific representations, the intersubjectivity and testability of scientific results and procedures (once again in the sense of intersubjective comprehensibility and verifiability), as well as methods of justification. If such criteria are abrogated, science loses its claim to objectivity and truth, so that science and opinion become indistinguishable. But this is only one meaning of the concept of science, although it is, from the scientific point of view, the most important one.

A second meaning of the concept of science is given by the fact that science is also a *social organisation*, that is, the particular social form in which science is realised as a special form of knowledge formation. Here, we speak of science as an *institution*, for instance the university. The formation of science stands under particular socially defined conditions, among which we may include the pedagogical and research responsibilities of the university. Science becomes visible as an institution, even if only symbolically, when one thinks of the invocation of truth and the virtues which earlier adorned the portals of our universities.

But the concept of science is still not exhausted by this second, institutional meaning. There is a third one extending beyond those of its theoretical or methodological, and its institutional characters. This can be illustrated in connection with the above-mentioned criteria of rationality. These criteria cannot be restricted to purely methodological aspects, rather they connect scientific rationality to a *moral form*. With regard to this moral form, science is not only methodically enlightened rationality, or a means to differentiate and stabilise the social organisation of consumption and the satisfaction of needs, but it is also an *idea* that relates to the second nature of Man, i.e. it is his epistemic or rational nature, or, still better, his *form of life*.

This third meaning, which transcends everything methodological or theoretical and everything institutional, was once the essential meaning of science. Greek philosophy, to which we owe the theory-form of knowledge, spoke expressly of the *bios theoretikos*, the theoretical life, and not of theories that, in the sense familiar today, make up the contents of textbooks. *Theoria*, according to Aristotle, is a general orientation with regard to life. Theory in this sense – not in the sense of our textbook concept – is one of the highest forms of practice (Aristotle *Eth. Nic.* K7.1177a12ff.). With *theoria* as a form of life, truth also becomes a form of life, that is, according to the distinctions I have introduced, it belongs not to the methodological but to the moral form, and thus to the idea of science. In this sense both the work of Man on his rational nature and truth are moral.

Thus one can speak of science in three senses: either with the science-theoretical meaning (science as a particular form of knowledge formation), or with the social-theoretical meaning (science as an institution), or with its ethical meaning (science as an idea). This idea is ethical (or moral) because it concerns the guiding orientation of the scientific subject (in whom furthermore all claims to autonomy in scientific matters are founded). At the same time, it presupposes a good measure of real institutional autonomy, and of course successful scientific praxis, by which I mean practised forms of knowledge production, if it is to flourish. Seen from this perspective, the notion of an orientation for the sciences is nothing foreign or external. It is rather at the very essence of science, and that in all three senses of the word in question here. The question is: Can science succeed in transmitting this essence to society, by imparting its orientation to society?

Significant confusions concerning the institutional and moral character of the sciences appear to speak against this possibility. Above all, we have lost touch with the idea that science can adjudicate in moral or ethical matters, or indeed with the notion that it is itself a form of life. We have done so in part because of a false dichotomy between science as an end in itself (the ivory tower), and science as a pure motor of production ('applied science'). At the same time, our universities no longer cultivate a form of life with which students and teachers can identify. Among the reasons for this we might count (see Mittelstrass 1989: 13–42): (1) *Universality* in the sense of 'general responsibility' for subjects that extend beyond one's own discipline in the narrow sense, a responsibility which once belonged to the essence of academic forms of knowledge, has now given way to growing specialisation. As a result of the simultaneous differentiation among its disciplines, the university has lost not only its surveyability, but also its internal unity. The mere juxtaposition of particularities will not yield a new universality, so that this region of the space of knowledge, which was once the source of orientation and identity, is now an empty field. (2) Increasing emphasis on *vocational training* degrades not only elements of universality, but with them elements of education. The evasion in the direction of programmes of 'general studies' shows only that we no longer have a self-evident unit of studies. (3) The acceleration of legal and institutional changes in the university system, along with the high degree of dependence on regulations, leads to an excessively organised life, which replaces

reflection with the ability to conform. But reflection is an essential moment of any effort at orientation.

Thus here again one must rethink things against the grain of the *Zeitgeist*. After all, it is of the essence to (modern) technical cultures that they transform thought into action, and that they evaluate action with reference to rational standards. These claims, according to the analysis of the different forms of science just given, imply a *moral form*. For if they did not, then rational cultures would run the risk of following rational forms in their productive affairs while following irrational ones in matters of orientation. But no rational culture can sustain this tension over time.

### Thesis 6

*The concept of education here treated, which is concerned with science and the university, represents the continuation of the idealist philosophy. But that does not make this concept something anachronistic and outdated – on the contrary, it makes it an element of the future of a society that is based on science, by connecting concrete morals and the institution.*

Education, in the form of science as well, will no longer be able to appeal today to the Enlightenment idea that only the scientific consciousness is truly educated. But it would also be an error to view this conception of education as representing a congenial alternative to the progressive scientisation of the world. Education has rather always been connected to the essence of a rational culture. Or, put more demandingly, with the *search for the identity* of a rational culture. It is a medium, in that the individual, the subject, must succeed through it in developing his or her special form of life in the *universal* (in the sense of a pure subjectivity that has been overcome). Education is furthermore a medium in the sense that it permits the individual and society to develop a rational identity (in the sense of a stable orientation).

That may sound thoroughly idealistic, and indeed it is meant to. But I think that we can still learn something from German Idealism in this regard, to the extent that if not the reality, then at least the ideal of the university still binds us to this tradition. Thus, according to Hegel, education aims at that ‘subjective substantiality of morals’ (Hegel 1927–1939: VII, 269) which results when ‘Reason’ replaces the natural growth of development (Hegel 1927–1939: VII, 268) – a picture that accords wholly with the ideas of the reformer Humboldt. Thus education is the concretion of morals. Its generality consists on the one hand in the overcoming of pure subjectivity, and on the other in the character of the (civil) society as a system of morals. Science – here in all three senses, though above all in that concerning its institutional character – stands alongside the family, the civil society and the state, as one part of that concrete system of morals. Hegel and German Idealism seek to understand the realisation of the idea of Man as a rational being under historical conditions in this system of morals. Theory – so we will have to say, even at the risk of being damned as an incorrigible idealist – theory is right, but the praxis is not.



There are several reasons for this, quite apart from the usual separation between thought and action. Among them we might include: (1) Education presupposes forms of *immediacy*, forms which are increasingly rare in those matters which affect the sciences. We study today as if we were trying to learn how to ski with a learner's manual held in one hand, and we teach today as if the world were only that which is scientifically the case. (2) Education presupposes *heads*, and not just mediators. There are ever more mediators, and ever fewer heads. Nevertheless, it is this link between heads and knowledge that, today as much as ever, determines the inner unity of research and teaching. Those who do not do research, and who do not do so with serious intent, lose the ability to reflect in their teaching the internal dynamic of those scientific developments in whose midst their knowledge is situated. Such people stand for the past of science, and not for its future. (3) Education is, like science itself, not merely knowledge, but rather a *form of life*. He who does not connect his form of life with his scientific being cannot in turn represent such a being, for he does not live in science, but from it. (4) Education is *self-education*. It cannot be taught, it must be gained. Learning to gain it must, however, be an essential aim of teaching as well.

Thus there are, by the way, no experts for education, only the educated and the uneducated, and no guidelines according to which one can become educated. To put this in terms directly related to the university as that institution which is, from the point of view of orientation, the essential scientific institution: It is the secret of great universities like Oxford and Cambridge that they do not seek to make possible that identification which *forms* the individual by means of intricate courses of study and a complex organisation, but rather by creating structures that further performance and are conducive to the scientific form of life. But this is just why it is so hard to say when, and in what manner, science takes on the form proper to education – that is to say its form of life – in its methodological and institutional reality. Unless, perhaps, we once again follow Humboldt, for whom the educated man is he who tries 'to grasp as much of the world as is possible, and who tries to bind to it as tightly as possible to him'.

This analysis makes at least this much clear: Education is just as much a capacity as it is knowledge. Here too, we see a connection between the concepts of education and orientation, and this makes it clear that deficits in the orienting role of science (in the sense that it does not fulfil its duty to orient) lie less in its *theoretical* form than they do in its *practical* one, both as institution and as idea. But knowledge and capability do not become a praxis in their virtual forms – also a favoured fantasy of our age – but only in their real form, that is to say as a permanent part of individual and social learning. That is why the future of our educational system is deeply connected to the future of the principle according to which education is achieved through science. For only in this manner can knowledge, which threatens to become a mere commodity, once again emerge as a living part of education.

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