

# The Politics of Information

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## A Need for Information

With a point of departure in the controversy over the application of modern biotechnology I aim to comment on learning processes related to the dissemination and commercialisation of genetic engineering. In particular I am interested in potentialities for democratising the shaping of modern biotechnology and how learning processes could contribute to that. In the controversy the question of acceptance plays a major role. The fact that many applications of genetic engineering are not well accepted raise issues of democratic decision-making processes on such applications in the first place. The issue at stake is who should decide about this technology and its applications? One could even ask, whether technology is a matter of politics or simply an issue of a scientific logic (cf. Rammert 1995, p. 19). However, if the claim is that the public has poor knowledge on the subject, this always includes the blame and insinuation that the public is not qualified to decide such issues.

On the other hand it can be argued that it is exactly the lack of acceptance which is the driving force behind numerous efforts to “better inform” the public on the very nature of genetic engineering. Information<sup>1</sup> became a strategic factor under the banner of “Public understanding of Science” (PUS). In the late nineties we can find a broad consensus calling for more information on genetic engineering. In Austria this was an outcome of public debate around a national referendum in April 1997.<sup>2</sup> Most often the situation was understood as follows:

**Problem:** There is little public acceptance of genetic engineering.

**Hypothesis:** The public disapproves of genetic engineering because of a lack of knowledge.

**Solution:** This can be cured by providing “information” for the general public.

In the following I will criticise this rationale. The idea that “information”—what I would rather name “providing data”—could alter the poor acceptance of genetic engineering is based on an *underlying assumption* which can be called “knowledge-acceptance relation”. This idea is often expressed as follows: “If only all the people knew what scientists do know, there would be no resistance to genetic engineering.” Statements like this express a specific expert-lay distinction. A distinction between those who know and those who don’t know. This so called »deficit model« (Wynne 1992) has been criticised extensively. First and foremost it disqualifies lay from informed judgement and thereby enforces an

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<sup>1</sup> I will use the term “information” in its common sense meaning, even though, against the backdrop of a constructivist understanding, information is somewhat different, namely a process. Heinz von Foerster (cf. 1974, p. 196) defines information as the process of knowledge acquisition and thereby strictly distinguishes information from data. Accordingly what is called information in the public understanding of science discussion would be more appropriately described as data.

<sup>2</sup> A national referendum in April 1997 advocated the exclusion of GMOs (genetically modified organisms) from agriculture and food production and a ban on patenting life (Austrian Parliament 25.4.1997, p. 1).

“expertocracy”. Lay people are left to acceptance whereas it is only experts who are capable to decide. The deficit-model suggests there was a criterion to identify what counts as knowledge and what doesn’t. Critical commentators such as Brian Wynne have argued that knowledge itself is always context dependent. Thus, lay people might be knowledgeable, but not accounted for that (cf. Wynne 1996, pp. 62-68).

In addition to this criticism of the deficit-model there are other empirical objections, too. In accordance with international studies (Hampel/Renn 1998, p. 387; Weingart 2001, p. 247, Wynne 1995, p. 369) my own research data<sup>3</sup> show little evidence for a correlation between knowledge about genetic engineering and acceptance thereof (cf. Wieser et al. 2001, p. 87). Rather, more knowledge tends to lead to more differentiated attitudes. People who claim they would know more about genetic engineering are likely to find positive *and* negative aspects related to its application in agriculture and food production. Hampel and Renn (1999, p. 387) have argued that particularly proponents of genetic engineering do live in a cognitive tension i. e. they are aware of critical aspects, too.

Others have shown that most people assess genetic engineering ambivalently (cf. Pfister/Böhm/Jungermann 1999, p. 172 and p. 192). On an international level it can be shown, that countries with relatively high knowledge about genetic engineering such as the Danes do not necessarily support genetic engineering much more than the Austrians, who are distinguished by their comparably low knowledge on the subject. Portuguese on the other hand don’t know much either, but they seem to be less concerned than Austrians or Danes (cf. Eurobarometer 46.1, p. 13 and p. 26). With Jürgen Hampel and Uwe Pfenning (1999, pp. 50-51) we can conclude that a causal and universally valid model for attitudes toward genetic engineering does not exist in social science (yet). This is particularly true if those attitudes are differentiated or ambivalent as they indeed are.

However, it can be noted that it remains quite vague what “knowledge” about genetic engineering actually means, when it is correlated with attitude. Tacitly it is taken for granted that, there is just one kind of knowledge, that somebody possesses or not. Here we encounter the idea that knowledge must be the same for everybody, otherwise it cannot be knowledge (of the truth). As evident and innocent this philosophical theorem seems, as powerful it is. It is quite hard to argue for an alternative view, that knowledge is necessarily contextual. Furthermore it is one of the reasons, why many people still stick to the knowledge-acceptance relation.

Another philosophical proposition is closely related to this understanding of knowledge. Michel Foucault has called it the “cogito-subject”. This is the entity who accesses truth and thereby gains knowledge. This leads to the main argument I’d like to make in this paper.

### **Descartes’ Cogito-Subject**

René Descartes has successfully introduced the idea of a substantial<sup>4</sup> subject that is universal and unchangeable in its abstract form. That the subject is substantial has been doubted, but since Descartes an a priori form of the subject is broadly presumed in western philosophy. In other words the subject is already given to itself “before all experience”, like it is understood according to Kant’s transcendental subject later on.<sup>5</sup> Thus the subject is a sovereign and constitutive subject, with an universal form that could be found everywhere (cf. Foucault 1984, p. 137-138). Through this Descartes succeeded at introducing a subject that has a priori and per se the ability of cognition. This has two aspects: Philosophically it tells us that truth is universal and therefore the same for everybody. Pedagogically it suggests that

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<sup>3</sup> Hereby I refer to a project the IFF/IFZ (Inter-University Research Centre for Technology, Work and Culture) carried out from 1998 until 2000 in Styria, which is one of nine Austrian provinces.

<sup>4</sup> We can find the idea of the subject as a substance already in the ancient times. Aristotle for example holds this view, too (cf. Schmid 2000, p. 247).

<sup>5</sup> I shall note that the idea of an autonomous subject that is essential and universal is really dominating German philosophy. This is the heritage of the Enlightenment and the German Idealism (Neo-Humanism). It can be traced up to the Frankfurt School and Husserl’s Phenomenology but also to (French) Existentialism. Especially in pedagogy this understanding of the subject is omnipresent.

knowledge is accessible for everybody who is a reasonable being. In this way the subject becomes the justification of knowledge conveyance—or as Foucault puts it “knowledge practices”. Every individual can automatically receive the truth, because he or she is an epistemological “cogito-subject” beforehand. Everybody is receptive to knowledge and truth (cf. Foucault 1987, pp. 290-291; cf. Foucault 1985, p. 35, 47).

The crucial point is, a universal knowledge-subject has nothing to do or contribute to his or her “understanding”, but to show insight. In German the word “Einsicht” expresses this a little stronger. It almost means you just need to admit the truth. Accordingly the individual is understood to be a passively receptive one. Furthermore, this conception of the learning subject lays an emphasis on those who provide knowledge. The contribution of the learner is understood to be completely insignificant and consequently ignored, because it is assumed that to be reasonable and insightful is enough and given in any case. The idea that learning is better understood as a process of acquisition—that requires an active contribution from the learning subject—than indifferent reception, remains out of sight in this model.

But what would this mean in the context of public understanding of genetic engineering? If we applied the cogito-subject model, wouldn't we conclude the following: Every rational being will understand how genetic engineering functions (in its principles) and automatically arrive at the insight that the application of genetic engineering is in no respect problematic. The assumption is that every rational being will understand genetic engineering in the same way and will arrive at the same conclusions, simply because he or she is a rational being.

The argument applies not only for the communication of knowledge, but of its production, too. Scientists need to come to the same results, because the world is by definition understood the same way by all cogito-subjects. In other words the universal cogito-subject is constitutive for the possibility of an objective science (in a positivist understanding). It is one truth that runs through all the processes and it is one knowledge that comes about regardless who receives this truth, if only he or she is a rational individual. Education simply has to do the distribution-job. It is just consistent that the biggest problem in PUS undertakings appears to be a most efficient dissemination of information understood as data. The problem occurs as a transfer problem that can be solved technically e. g. via internet or other more conventional media. So, if views on genetic engineering were only a matter of availability of reliable and valid information wouldn't that mean that how we should deal with genetic engineering is a matter of pure reason?

### **Kantian Clarifications**

From Immanuel Kant we learn that cognition is different from (moral) action, the latter belongs to the realm of practical reason. In other words, to know about genetic engineering is different from practically dealing with genetically modified organisms (gmo's). The first is an epistemological question the latter an ethical. For Kant this means: The fact that something *is* does not automatically mean that it *should be* (cf. Meyers 11, p. 155). Sentences about *what is* (Seinssätze) are different from sentences about *what should-be* (Sollensätzen).

What annoys Kant is the suspicion that what is true could not be true for everyone and what is morally good could possibly not be good for everyone. He aims at dispelling these doubts. For cognition he has a quite convincing proposition, namely his priori notions that he labels “transcendental categories”. Kant was convinced that what works for truth must work for ethics, too. He constructs an analogy to make it possible that everybody will produce the same moral insights as it seems necessary for him. It must be that individual action could become universal. His solution was the famous “categorical imperative”. Doubtlessly Kant's solution is impressive and stringent, but it can only work if the subject is a universal. Others (Blankertz 1982, p. 147) have noted that Kant's Ethics is very much embedded in pietism, that works through introspection. Doubtless the categorical imperative requires an “inner directed character” (cf. Riesman 1964), who follows unswerving his or her inner law. Today

the idea that the mind must demand action in such a strict and rigid way is less popular for people, although some still hope it would.

### **Teach the Mind, Attitude and Action will Follow**

In fact, the idea that ethics is—or should be—a consequence of cognition is not quite new. Johann Friedrich Herbart (1776-1841) has introduced this concept into educational theory in the early 19<sup>th</sup> Century. He called it “educating instruction” (erziehender Unterricht, where the so called “circle of imagination” (Vorstellungskreis) must be developed in order to achieve morality (Sittlichkeit) and moral behaviour (cf. Gudjons 2001, p. 96; Fischer/Löwisch 1998 p. 180). In German speaking countries this is well known as “formal step theory” (Formalstufentheorie) and not too far away from present cognitive science. The principle of this thinking is that the mind determines will and action, i. e. morality through knowledge. In his Book “Allgemeine Pädagogik” from 1806 Herbart argued, education has to take care of the “circle of thought”, the latter will produce mentality and interest. Interest produces emotions and this causes that one wants what he or she is interested in. Moral characters result from moral ideas (cf. Gudjons 2001, p. 96; Blankertz 1982, p. 145).

Today this idea sounds a little bit weird, notwithstanding herbartism dominated German education until the beginning of the 20<sup>th</sup> Century. But this is not just history and past forever. If we translate Herbart’s thinking to public understanding of genetic engineering it sounds much more familiar if we formulate: Knowledge will lead to acceptance.

### **Why Does the Cogito-Subject Fail?**

Following Descartes, Kant and Herbart one could be surprised why it is possible, that more knowledge does not lead to higher acceptance. Apparently the described model fails to “explain” and even more it fails to “understand”<sup>6</sup>, why different people arrive at different conclusions, even if they share the same kind of information. The only consistent explanation is that somebody who fails at holding the same view, is irrational and this is quite insidious. Actually this is what the deficit model implicitly does, it disqualifies lay people from the capability of reasonable judgements.

There is lots of critique, that knowledge is not the same or universal, but situated and context dependent (cf. Wynne 1992; 1996). But, and this is my claim, the subject of cognition is not a universal either. Moreover, the subject of judgement (or moral action) cannot be understood appropriately if it is conceptualised as universal or transcendent. My argument is that the described model cannot make sense of the empirical data we receive when correlating knowledge and acceptance. However, if we have a different model, we will not necessarily get different data, but maybe they would make more sense to us and we wouldn’t need to interpret differing views as failure, irrationalism or ignorance.

Furthermore the idea of a universal subject is interrelated with a certain rationale that focuses on acceptance as the problem. This outlook fails to suggest, how we should organize PUS-undertakings other than providing information (data). The addressee is understood to be receptive to knowledge and does not need to do anything, but to accept. The learner can remain passive. Active behaviour or participation is not asked for and as I suspect it isn’t desired either.

### **Foucault’s Subject of Experience**

Michel Foucault suggested to understand the subject to be a transgressive, i. e. different and changing in time and place. Foucault calls that a “subject of experience”. People have different lives, different biographies, interests, values, world-views, they live in different cultures and societies and so on. People change themselves, they gain experiences and think differently about the same issue in the course of their lives. Experience is hereby understood

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<sup>6</sup> The German notion “verstehen” refers to method of the so called “Geisteswissenschaften” (humanities) which is distinguished from the method for sciences that is “erklären” (to explain). This goes back to Wilhelm Dilthey who aimed at designing a methodology for the humanities (cf. Schwandt pp. 272-276).

in its double meaning: experience as actually made and as experiment, as possible experience in the future (cf. Schmid 2000, p. 380). The core elements of this “subject of experience” are changeability and diversity. An experience is something, one comes out of from differently (c.f. Foucault 1996, p. 24).

Foucault calls the subject of experience sometimes an ethical subject. This is because before Descartes it was clear that the subject of knowledge could not be a-moral. This included that somebody who wanted to access truth had to carry out work on him or herself. This work was called ascesis. Ascesis should not be mistaken for abstinence, but in its ancient Greek understanding: practice or even exercise. As I have already mentioned for Descartes direct insight was enough, no matter who you were, if only a rational being. It was only after Descartes that the subject of knowledge could be a non-ascetic. Foucault claims that it is this change that made the institutionalisation of modern science possible (cf. Foucault 1987, p. 291) Thus, Descartes has separated reason from ethics and today we know how significant this step was. Kant on the other hand tried to bridge the gap by demanding that his universal subject required ethos—an ethical posture. Foucault’s interpretation of the “Critique of practical reason” is that Kant suggested a self-relation, i. e. a relation to oneself as a subject (vgl. Foucault 1987, pp. 291-292). But, according to Kant the individual had to subordinate to reason: The voice of consciousness speaks without condition for Kant (cf. Blankertz 1982, p. 146). For Him in ethics must be necessity.

However, the Cartesian separation of reason from ethics—which is analogous to the separation of the development of technology from its applications—suggests that knowing something could be detached from what we can do with this knowledge. For ancient Greek thinking this was rather problematic like the story of Daidalos tells us. Thus, it was both necessary to think about what to do and it required a certain capacity: *phronesis*. Bent Flyvbjerg explains the term as: “Deliberation about values with reference to praxis. Pragmatic, variable, context-dependent. Oriented toward action. Based on practical value-rationality.” (Flyvbjerg 2001, p. 57) *Phronesis* is a kind of knowledge and reasoning that is quite different from universality and generality. “*Phronesis* is intimately concerned with the timely, the local, the particular, and the contingent (e. g., ‘What should I do *now*, in *this* situation, given *these* circumstances, facing *this* particular person, at *this* time?’).” (Schwandt 2001, p. 208) But not only the circumstances change people have to deal with. Foucault’s aim with his “Archaeology of Knowledge” was to show the conditional “nature” of the subject, that is *not* unchangeable and confronted as such with a changeable world. (cf. Foucault 1990, p. 272).

## **Discussion**

The claim for a historical understanding of the subject is not quite new. In fact, it is Foucault’s argument, that it was rather common in ancient Greek philosophy. The idea of an universal or transcendental subject is much more related to modernity. However, the success of this subject philosophy doesn’t mean that there were no alternative models. Wilhelm Dilthey (1833-1911) for example was very much in favour with the historical quality of human life. And Friedrich Schleiermacher (1768-1834) suggested a pedagogy that should be based on praxis and experience (cf. Blankertz 1982, p. 113). And certainly John Dewey (1859-1952) should be mentioned who emphasized experience as the central category in both education and philosophy.

Certainly it can be discussed which kind of understanding of the subject is epistemologically or ethically more appropriate: the universal cogito-subject or the ethical subject of experience. I think the latter has many advantages in order to comprehend learning processes related to public understanding of science and technology. But, this is not the argument I’d like to make. A historical review shows that the educational issues which are debated in the context of PUS undertakings are not unique for this field. On the contrary, they have a long controversial history and they were debated repeatedly. In other words the different models of learning processes are competing with one another. Hence the question could be: Why is one prevailing against the other? Why is one more popular? From a

Foucaultian perspective one would not try to answer this question according to the intentions that are put forward, rather than by the results and effects. Would that mean that PUS undertakings are chiefly successful? Would that mean that people learned so much about genetic engineering? Or is the opposite the case? Aren't PUS-activities too often failures? Foucault offers an argument which is worth applying to the PUS-issue. In "Discipline and Punish" he explains what could be called the benefit of the failure. If it is true that all those various efforts do not succeed at raising the knowledge on genetic engineering, how come they can still find proponents? What if they succeeded in another way? Ivan Illich has made a related argument, he says, school teaches its own importance. What students learn is first of all that you can only learn in School and under instruction. He called this the "hidden curriculum" (cf. Hentig 1999, pp. 148-149). In other words, PUS undertakings teach the expertise of scientists, that it is only them who can inform appropriately on genetic engineering. That would be an hypothesis to prove. If the only result to talk about genetic engineering was, that the public felt, there is no way they could possibly understand good enough, wouldn't this implicitly mean, that just scientific experts are capable of reasonable judgements? If this was true, the failure of PUS has a benefit. It strengthens the power relations between scientists and the general public and thereby it excluded lay people from participation in democratic decision-making processes related to genetic engineering. Certainly this is just a hypothesis, but it calls for an answer.

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