

**Martin Saar** ([saar@em.uni-frankfurt.de](mailto:saar@em.uni-frankfurt.de))

public lecture in the Institute for the History and Philosophy  
of Science and Technology, University of Toronto, Feb 27, 2009  
at the invitation of the Foucault Reading Group and IHPST  
[please don't cite without permission from the author]

## **Knowledge, Power and Historicity The Philosophy and History of Science after Foucault**

The year 2009 not only marks the 200<sup>th</sup> birthday of Charles Darwin, but also the 25<sup>th</sup> year after Michel Foucault's premature death (on June 25<sup>th</sup>). This should be a welcome occasion to take stock of and review the influence and reception of a thinking that continues to have a massive impact on the human sciences even if it continues to polarize (not too unlike Darwin\_s) its readers into fervent critics and fervent defenders. In an interesting way, Foucault's influence is as widespread as it is decentered; it would be hard to tell where, in which fields it is most visible or effective. There is of course much Foucaultian literary studies and cultural history, sociology and political theory, but one wouldn't say that any of these disciplines is the center of his legacy. Neither is philosophy, which was his own discipline by training. When he was given the chance to name his own academic chair at the Collège de France which he held from 1970 until his death in 1984, he called it "History of Systems of Thought" which already points to an uneasy confrontation of historical and conceptual issues. But nor is Foucault exclusively treated as a historian who mainly made material contributions to specific areas of historical research (as the history of the human sciences, particular social institutions or even of conceptual change), but almost always as a theoretical and methodological reference.

For these reasons (and more), there is no chance to even try to assess "the" influence as such, let alone "the" legacy of Foucault's work in general; one has to become more specific and take a closer look at certain academic contexts and research agendas to get a clearer picture of what the reference to his methodological and substantial contributions has meant and how useful it might be in the future. What I propose to discuss here is his contribution to the study of scientific knowledge, i.e. to the philosophy and history of science in the widest sense. Of course, this survey will be rather sketchy given all Foucault had to say about knowledge in general, but it might help establish a standpoint from which to relate his position to other, competing perspectives.

This discussion of Foucault's relationship to the history and theory of science will need to introduce his understanding of knowledge and (to a lesser degree) power and historicity, because it might be said that his position is specific in that it intimately relates these terms: For Foucault, one of the main tasks of the historiography of science and knowledge is to reveal the deep historicity of orders of knowledge; and one might say that one of the main imperatives he left for the study of science is to always keep looking for the interrelation between knowledge and its social conditions (many of which can be spelled out in terms of power).

I will begin (in my first section) by just recalling the vast bulk of material in mostly the early work of Foucault that deals with issues from the history and theory of science. This survey is important to see that whatever Foucault became famous and notorious for later, he started out as something like a historian and philosopher of science, even already a rather unconventional one. I will then (in my second section) give a broad and probably unfair summary of the main lines the discussion of the early "archaeological" Foucault on knowledge and science has taken so far and distinguish 5, or rather 5 ½ different readings. I will then (in my third and shortest section) argue for the internal consistency of Foucault's extension of focus after the so-called archaeological works. This obviously refers to his famous turn to "genealogy" and even later to something like the "history of ethics" or of the self; my intention here is to show that this is no radical methodological reorientation but a rather consistent way of further spelling out the conditions, limits and contexts of knowledge, and a remaining challenge for historians and theorists of science. Urging us to think the link between knowledge, power, and historicity remains the Foucaultian provocation.

### **1. The early Foucault on Science and Knowledge**

If there is something like a general philosophical theme or thesis concerning knowledge that pervades the entire Foucaultian oeuvre, one might say it is a radical rejection of an abstract or general philosophical concept of truth or knowledge. Reacting against many strands of French academic philosophy of his day, Foucault went far to argue for local, contextual, contingent truths and forms of knowledge. This is what explains his opposition to many epistemological projects in the Cartesian tradition. From early on, Foucault tries to circumvent any attempt to generate any philosophical generalities about truth and knowledge but argues for specific research

into particular fields and areas of knowledge. This also means that from early on, Foucault tries to leave the ground of “pure” philosophy and enter the universe of “impure reason”, i.e. the various human activities actually producing knowledge and truths, many of which we call science.

The young Foucault, holding degrees in philosophy and psychology (1948, 1949), is working as something like an academic assistant at the *École normale* (where he was trained), as an intern in a progressive psychiatric clinic (Sainte-Anne) and is doing some research on experimental psychology. His very first publications are marked by these interests. A short introductory book on mental illness appears 1954 and also a book-length introduction to his translation of the Swiss psychiatrist Ludwig Binswanger’s book on the psychology of dreams. In both texts, Foucault reviews and comments on current issues in psychiatry and psycho-pathology and sympathetically reconstructs Binswanger’s more or less existential or phenomenological version of psycho-therapy („Daseinsanalyse“), heavily influenced by Heidegger, that is opposed to the dominant models of the psyche. In 1957, Foucault contributes to a handbook an article on „Psychology from 1850 to 1950“, arguing for (or better, against) the unclear epistemological status of academic psychology and its inner tensions and contradictions. Drawing on a variety of influences, he claims that the “future of psychology” depends on the relentless rethinking of the “conditions of existence of man [or human beings] and the taking up of what is the most human in man, namely his history”.

This is an ambiguous phrase in a very ambiguous passage and text, but let’s just note the fact that in this very early stage Foucault is concerned with scientificity and the possibility to generate scientific knowledge about the human condition and that he advocated some kind of turn to history. One can also take from this passage the move from an anthropological view of psychology (which he clearly was sympathetic with in the Binswanger essay) to a more historicized conception of it: the history of psychology as a discipline and discourse, he argues, clearly shows that there can be no naïve anthropological approach to the human condition as such.

Foucault’s dissertation from 1961, his first long book, later published as *Madness and Civilization* takes such a non-naïve, non-anthropological and historical route. It is first and foremost a historical book, a historiography of the many ways in which madness and insanity were understood, codified, institutionalized in early modern Europe. It is therefore something like an account of the prehistory of modern

psychology, and an attempt to uncover the many historical processes that predate the formation of a scientific field. Here Foucault takes up a perspective from the French tradition of history of science as practiced by Alexandre Koyré and most importantly by Gaston Bachelard and Foucault's own teacher Georges Canguilhem who have both always worked on exactly these various forms of the formation of scientific objects and their practical and experiential preconditions. There would be much to say about what Foucault's first major book also tries to do, namely to recover some kind of original "experience" of madness, which he links to certain philosophies such as Nietzsche's but most importantly to modern literature; the early Foucault seems to think that the becoming-scientific of a certain area of human existence also comes at a cost which might be assessed in the historiographical return to the emergence of a scientific field. But let's leave this controversial claim (from which Foucault seemed to have retreated quite early) aside for now.

Foucault's next book, the *Birth of the Clinic* and many shorter essays on the history of medicine of the same time are less ambivalent in this regard. It is a strict, passionless, almost formal history of what he himself calls "medical discourse". The book is mostly about the turn from pre-clinical medicine to anatomical-pathological medicine at the end of the 18<sup>th</sup> century. But this story is not told as a history of new ideas about health and illness but as a complex emergence of types of observation, intervention, thematization, classification and documentation. Foucault tries to uncover the "conditions of possibility of medical experience" by showing that only new techniques of treating and viewing patients (after introducing autopsy as a common procedure), new spaces of assembling and keeping them (the "hospital" in the historical sense of the term), gave rise to a form of knowledge that could become the new science of anatomy and pathology. The subtitle of the book reads "an archaeology of the medical gaze" and it points to a new kind of historical method that will later be called discourse analysis. The term "gaze" (*regard* in French) refers to the kind of experiences produced by certain methods of doing medical research and performing medical treatment, mainly made possible, Foucault claims, by opening up the bodies which in turn transformed the entire thinking about bodies, life, and death.

Until 1966 Foucault was a young hopeful academic (he was professor for philosophy and psychology in Clermond-Ferrand by now), but *The Order of Things* turned him into one of France's best-known intellectuals. The book was a major success, heavily mediatized and fervently debated. Looking back, this seems almost

incredible, given the fact that its subject is extremely difficult, its style demanding, and its overall organization rather uncompromising. Much of its success has to do with the rise and popularity of structuralism as a major intellectual movement (and for many readers of the time *The Order of Things* was *the* structuralist masterpiece from the generation after Lévi-Strauss even if Foucault soon started to deny any adherence to the structuralist movement).

The book gives a sweeping historical story about the forms, rules and organizing structures of human knowledge in three respective exemplary disciplines and in three different periods or epochs: the Renaissance, the “classical age” (ca. 1650-1800) and the “age of man” (by and large: modernity). The forms of knowledge of these different epochs, Foucault claims, are organized around different principles. To search for these principles is to ask for the „ordered space of knowledge [espace d’ordre]“ or the „historical *apriori*“ on the basis of which „sciences, experiences, [,] [and] rationalities“ could form. And this inquiry needs a specific kind of method:

He is “[...] not concerned, therefore, to describe the progress of knowledge towards an objectivity in which today’s science can finally be recognized; what I am attempting to bring to light is the epistemological field, the episteme in which knowledge, envisaged apart from all criteria having reference to its rational value or to its objective forms, grounds its positivity and thereby manifests a history which is not that of its growing perfection, but rather that of its conditions of possibility; in this account, what should appear are those configurations within the space of knowledge which have given rise to the diverse forms of empirical science.” (*The Order of Things*, p. xxii)

Again, Foucault calls this form of inquiry „archaeology“; and in one famous passage he says that its goal is to uncover the „*positive unconscious of knowledge* [un *inconscient positif* du savoir]“ (p.11). With an enormous mass of historical material from the most official to more obscure sources from the history of sciences, Foucault tries to argue that three central fields of knowledge about man (namely: language, [biological] life, and work) are structured around the metaprinciples of resemblance, representation, or historicity. The „episteme“ of modernity, or, to be precise, the age which Foucault lets begin with Kant, is marked by a new historical and reflexive understanding of the relation between man as a subject and an object of knowledge. In contrast, he claims, the earlier models of knowledge took internal similarities between objects of knowledge or the relations of representation among

them to be the fundamental principle. Omitting many details and steps, the *Order of Things* can be said to present a formal and historical narrative about the emergence and succession of fundamental principles and guiding rules of knowledge. Foucault seems to imply that the respective „episteme“ is relatively closed; and he gives almost no hint at why one „episteme“ follows another at a given time. And there is a prospective side to the whole story. In the very last chapters Foucault makes clear that he thinks that the modern „episteme“ is coming to a close and that new formal models of knowledge, exemplified in structuralist work in anthropology, semiotics and psychoanalysis begin to function as “counter-sciences” which might herald a new age of thinking (– this is why the *Order of Things* could later be taken to advance a thesis about the dawning of “postmodernity” as a new epoch).

Just to be clear: Foucault’s arguably most important work, *The Order of Things* is a book about (certain) science(s), a book about the internal principles of scientific knowledge, and a book about old and new forms of science. But Foucault doesn’t argue for any progress or evolution. The almost scandalous formalism of his approach consists in merely documenting, describing the ordering principles of certain scientific texts and reducing them to a certain logics or internal organization. Foucault, as it were, is exclusively working from the archive of the history of science. It is only in Foucault’s next book, called the *Archaeology of Knowledge*, that he will present something like a general methodological reflection on language, its rules and conditions, his critique of hermeneutics, interpretation and of the philosophies of the subject he sees as dominant and as obstacles to the kind of formal analysis he wants to propose. Many readers have noted that the *Archaeology of Knowledge* looks like a methodological clarification of Foucault’s own previous books while in fact it introduces a whole array of concepts and principles that weren’t present before. But still, it advances and deepens the “project of a *pure description* of discursive events [*description des événements discursifs*] as the horizon for the search for the unities that form within it”.

The metaphor of an archaeology of science (already present in Kant and in Husserl) should be taken seriously: The historian of science lays bare the layers of the different ways of talking about scientific objects and tries to reconstructs its patterns, regularities and rules. All he or she can detect is how different these patterns were in the different historical periods – and how different from ours. And

nobody knows when “our” form of reasoning will be the object of another generation’s excavations.

## **2. Reading Foucault on Science: 5 ½ Models**

This short survey of the early Foucault’s work was meant to establish the relevance and pertinence of his writing for the question of the history and philosophy of science. Of course, there are many forms of science he never spoke about, focusing in most of his work on the “sciences of man” or human sciences (as there are also called in French). But as I tried to argue, this does include more general methodological claims about how to study the history of the sciences as such. In this section, I want to review several propositions or strategies of how to read Foucault on science which differ quite seriously.

I. Since all of the others about which I will say more are affirmative readings, i.e. they argue for the productivity of Foucault’s perspective, let me just first name one option which of course is possible, even widespread in some philosophical circles which says that Foucault was an “epistemological nihilist”, undermining (or denying) the very intelligibility of scientific knowledge. This is, of course, a possible reading given his insistence on the impossibility of a robust general philosophical conception of truth and knowledge. The historicist and skeptic strands in his thinking, it can be argued, undermine the very possibility to explain scientific developments. This is a possible yet restricted interpretation, since it reads, in my view, too much relativism into Foucault’s historicism. Read in this way, his aversion against a general philosophical position would also include a wholesale relativist position that would condemn all knowledge as partial, questionable or ungrounded. However, it can be argued, Foucault was passionately interested in the many ways in which stable, robust knowledge was generated through scientific practice, in the techniques of verification and confirmation. Of course, in all cases, he tried to detect the specificity, locality and contextuality of these practices of knowledge, but this is a far cry from a general philosophical relativism.

II. Let me name as a second option the strongest philosophical reading there is, which in the English-speaking world became rather popular soon after the publication of the brilliant book *Michel Foucault: Beyond Structuralism and Hermeneutics* by Hubert Dreyfus and Paul Rabinow, published in 1982 which is among the best

introductions to Foucault's entire philosophy. For these two commentators, it is clear that Foucault has to be placed in the intellectual context of his time, and, more specifically, in his relation to structuralism on the one hand and phenomenology and hermeneutics on the other hand. Particular emphasis is placed on the fact that Foucault inherits a Heideggerian theme, namely the idea of "disclosure" (*Lichtung*), which in the early Heidegger is an ontological process in which certain objects appear to a subject, and which in the later Heidegger was reformulated in a historicized version: Different conceptions of being disclose different objects, and it's a matter of the "epoch of being" the subject is part of what, i.e. which objects will be disclosed and experienced. Dreyfus and Rabinow clearly state that Foucault did not subscribe to the whole ontological implications of such a conception, but that he nevertheless transposed this conception to the history of science. The different forms of "episteme" he is talking about can be compared to Heidegger's ontological conceptions or frames in that they also "let appear" certain objects; in the age of resemblance everything will be disclosed according to this fundamental principle.

This is a reminder of Heidegger's own renewal of the transcendental problematic. Accordingly, some more recent commentators, and most prominently Béatrice Han, have argued for the transcendentalist nature of Foucault's project in general, and many studies have revealed the extensive, even if sometimes only implicit elaboration of Kantian themes throughout Foucault's entire career. These are convincing contributions and they can convincingly show how Foucault's historical projects reworked some more traditional problems, the famous term "historical *apriori*" being the best example of this relationship.

As to the problems of the theory of science, however, I'm unsure about the usefulness of such a reading. It makes Foucault so much a traditional philosopher or epistemologist that it becomes hard to account for the empirical or "impure" element of his overall project. And it seems to imply that philosophical discourse proper would be the site where these questions could be resolved; and this is definitely something Foucault wouldn't have claimed and this is why his works were not philosophical treatises. The "transcendental" reading seems an odd offer for the theorist or historian of science who might be interested in breaking away from over-abstract model of epistemology which would have nothing to say about the development of specific forms of knowledge or a specific scientific rationality. Any "transcendental" story would be too broad and too general for this. And one would have to be much

more specific about what it means to pluralize and historicize the very idea of transcendental (and therefore always universal) conditions.

III. A third option, also already mentioned and partly endorsed by Dreyfus and Rabinow, would be to translate Foucault's „episteme“ into Kuhnian “paradigms”. This more pragmatic and also more flexible reformulation could save the idea of different “orders of things” without ontologizing them (cf. Kögler 2008). In a way, also paradigms “disclose” scientific phenomena differently, but this here only means that frames of reference, theoretic presuppositions and an established, “normal” way of doing science will shape and determine the range of possible scientific solutions and discoveries. Also the importance of discontinuity, central to Kuhn's (as well as to Bachelard's) concerns, could be reformulated in this way. Foucault's drastic narrative of completely incompatible forms of “episteme” would then refer to paradigm shifts or scientific revolutions, with new frameworks or a new consensus of a given scientific community vis-à-vis a given problem finding its way.

The problem with this reading is that, even if its prima facie plausibility is granted, it is hard to see how it could explain what Foucault is actually doing. He (other than Kuhn) does not talk about scientific problems that are to be solved or about an “epistemological crisis” (McIntyre) arising from incompatible hypotheses. He rather tries to internally argue, on the surface of “discursive events” or scientific statements, for the coherence of a „episteme“ even if the problems to be solved by it are hardly to be seen. The idea of the „episteme“ or of *savoir* as opposed to *connaissance* is “deeper” than the idea of a paradigm (Hacking calls it “depth knowledge”, Gary Gutting “pre-knowledge”). One might say that Foucault is thinking more of a “grammar” of whole fields of knowledge being shaped and transformed and less of particular epistemic moves within such a field. For this reason, *savoir* transcends scientific disciplines in a way paradigms (that are constitutive for the scientific practice in a given scientific community, and this means mostly in a (sub-)discipline) do not. To quote Gutting: “For Foucault [...], the possibility of the entire conceptual development of any given discipliner is based on deeper concepts, shared by other disciplines, and themselves subject to transformations over time that are not controlled by any discipline” (*Michel Foucault's Archeology of Scientific Reason*, p. 219). Whereas the transcendental reading seemed to go too far, the “paradigm” reading seems to stop short too early. The Foucaultian suggestion is more ambitious,

even if, of course, it might make sense to prefer a more modest conception that connects with some sociology of science concerns as does the Kuhnian framework.

IV. For a lack of a better name, let's call the fourth option the "social constructivism" or "sociology of knowledge" reading. As far as I can see, this position is the most popular among many Foucaultians in the social sciences, probably more so in sociology and history than in philosophy and the history of science. As far as the theory of science goes, this reading might be said to come close to some versions of the so-called "strong program" of the sociology of sciences and display many features of an externalist perspective on science, but not necessarily so. In brief, such a reading highlights generally first the fact that new objects of inquiry emerge and come into being on the basis of new patterns of social interaction, new technologies of research or new standards of observation. It second tries to account for these processes in terms of changes or transformations of social factors. In other words, this reading gives a more or less sociological interpretation of the "conditions of possibility" of knowledge. This might sound (and indeed is) an option hardly apt to describe the aim of *The Order of Things*, but remember what I have said about the books on madness and medicine. In both, one might say, Foucault firmly places new forms of knowledge on the ground of social institutions and patterns of interaction. (And one might give this a reductive or a non-reductive twist, one might distinguish necessary and sufficient social conditions for new forms of knowledge to arise etc.) Foucault's insistence on the material, cultural and institutional elements at work in the complex or assemblage of elements of which knowledge is but one part, definitely hints at something like this position, which might make most sense to explain his later works (from 1970 on), where he introduced notions like *dispositif* (translated as "apparatus") or "power-knowledge". But also the historiography of psychology and medicine testify to his attempt to place knowledge in its social context. This reading might then also be called a form of radical contextualism (with all the related methodological and epistemological problems arising). But still, I would like to point out the fact that this might be one of the most influential readings of Foucault (and one might refer to many authors writing on the body and sexuality from David Halperin to Thomas Laqueur as examples, in the theory of science with qualifications to Andrew Pickering and Bruno Latour, the latter emphasizing the technological or material elements more than the "social", which might require

grouping them even differently. Additionally many of these authors draw on many sources and don't necessarily rely on Foucault.)

V. Finally, without denying that there exists some overlap with some of the groups before, let's call the last set of interpretations of Foucault on science "historical epistemology". The term itself has been used and endorsed by authors like Arnold Davidson, Lorraine Daston, Peter Galison, Hans-Jörg Rheinberger, or Ian Hacking (who has preferred the term "historical ontology" but comes close to the position I have in mind).

To practice historical epistemology is, to use the Kantian phrase again, to uncover the historical conditions of possibility of certain epistemic objects, i.e. the ways in which they became recognizable, describable, measurable. So what this involves is (as in the last group) to contextualize scientific developments by referring to their social, political, institutional backgrounds, but it also involves describing the internal conditions for scientific methods and epistemic practices of heuristics, discovery, verification. And yet another step is to include the various material, i.e. technical and experimental, conditions, the very media of scientific activity, as the apparatuses, test series and locales of research. And finally, this will involve the attempt to describe and analyze different "styles of reasoning" in order to determine the specificity of systems of classification and discovery.

Many of the authors just named, Foucaultian more in the spirit than to the letter, in this way propose to historicize and pluralize objectivity and rationality. The question is not how to be objective, it is to ask for "the way in which objectivity comes into being" (so use a phrase of Hacking's). The term of art "style of reasoning" then refers to the ensemble of operations, implicit and explicit rules that establishes the criteria of what counts as true and false, and these can vary over time. A new style of reasoning introduces new objects, new forms of evidence, new possible laws and generalizations. It is a self-enforcing system, in that it creates the parameters within which plausible and meaningful results will come up and data will make sense. To quote Hacking again: "The truth of a sentence (of a kind introduced by a style of reasoning) is what we find out by reasoning using that style. Style becomes standards of objectivity because they get at the truth. But a sentence of that kind is a candidate for truth or falsehood only in the context of the style" (*Historical Ontology*, p. 191). This does not mean that the facts do not count, on the contrary, it means that

all that counts are the facts as the very “positivities” made possible by that very style of reasoning, observing, judging, arguing.

One might say, that such a research agenda is faithful to Foucault's diachronic epistemological historiography, as practiced in *The Order of Things*, purged from some of its ontological connotations. One might also say that the pluralization and historicization at work here does not (necessarily) fall prey to the charge of relativism (remember the first reading). On the contrary, historical epistemologists can insist that they are rationalists (as Bachelard, Canguilhem, and Hacking do), since they insist on the methodological coherence of a style of reasoning; but the rationalities they are talking about are local, specific and historical. One should admit that the programmatic promise of such a perspective can only be cashed in through material studies. (And there are many things I have in mind: Jonathan Crary's *Techniques of the Observer*, Daston's and Galison's book on *Objectivity*, Arnold Davidson on sexuality, Hacking on mental illnesses, etc., Rheinberger on genetics, Niklas Rose on the history of psychiatry, etc.; again, note that not all of them would identify themselves as Foucaultians.)

“Historical epistemology” would then be nothing else than a name for studies performed with a certain guiding idea, not a metatheoretical position. To understand rationality or to start studying rationalities, these authors seem to propose, is an empirical, historical question. And one might say, that this indeed was one of the major intentions of the early Foucault's work on knowledge and science.

This was my survey and my list of the possibilities and options how the early Foucault on science has been understood and can be interpreted. As I said, all of these readings are around and popular, option I (epistemological nihilism) still being the common sense among many philosophers, option IV (social construction) maybe being the most common among the defenders. As you might have noted, I myself am most interested in the fifth option which I also take to be the reading most compatible with historical research on the sciences. And finally, it is in this perspective that it becomes clear that Foucault may have been a highly original thinker, but that his work on knowledge is part of a larger tradition of the theory and history of science that includes Alexandre Koyré, Bachelard and Canguilhem, but also Ludwik Fleck and some sociologists of science and that, of course in a completely different vocabulary, does not diverge too much from many concerns in postpositivist and postfoundationalist philosophy of science.

### 3. Historical Limits, Social Conditions, Ethical Norms

Keeping in mind the models just laid out and proceeding from the last two, we might say that Foucault's interest in knowledge is a genuine interest in the historical emergence of knowledge. His theory of the "episteme" and of *savoir*, knowledge in the sense of the grammar or deep structure of a given scientific field or discourse, works from the premise that specific, particular knowledge (*connaissance*) always comes in a certain form, is made possible by or is made intelligible by structures and rules that govern, as it were, this field or discourse. "Archaeology" is the name for a theory that tries to uncover and formulate these rules of formation inherent in an established way of doing (a particular) science (at a particular time) and relate them to neighbouring or simply contemporaneous discourses or fields of knowledge. So the first major presupposition is that there is indeed this order or structure to the processing of knowledge or to scientific articulation (not necessarily to scientific discovery): only when knowledge has a depth structure, can it be described in such a formal fashion and only then does it require such a form of structural method to describe it. The second major presupposition or claim is that these forms of orders or deep structures vary over time and are accessible through a diachronic comparison. From this it does not necessarily follow that these changes, transformations or revolutions only occur in an "epochal", rare fashion (as the long term narrative of *The Order Of Things* suggests; this might be explained by the Heideggerian strain in Foucault's work).

So it is this double claim about the systematicity and the historicity of knowledge that drives the "archaeological" theory of knowledge and science (and, I think, this basic idea can best be accounted for in the last reading I mentioned, the historical epistemology interpretation). But, as you know, this title ("archaeology") was used by Foucault and consequently by his commentators mainly to refer to his work until the early 1970s. When he took up his chair at the Collège de France in 1970, he started a new set of research projects that also were analyses of discourse and knowledge but expanded the focus (and thereby transformed the entire scope and methodology of his research) to social processes and the interrelation of knowledge and power. "Genealogy" (a term from Nietzsche) became his title of choice for these investigations which tried to elucidate the ways in which an array of interrelated social, institutional and epistemic developments from the 17<sup>th</sup> and 18<sup>th</sup> to the 19<sup>th</sup>

century have shaped the way in which human beings are thought of, societies are regulated, and social norms are administered. The most famous of these works are *Discipline and Punish* from 1975 and *The History of Sexuality, Vol. I* from 1976.

From the late 1970s on, Foucault again refocused his research. Instead of tracing current conceptions and orders of knowledge back to their early modern origins (the time around 1800 being a central threshold), Foucault chose to re-examine their pre-history. He took a close look at ancient Greek and Roman conceptions of the self and selfhood and tried to find out what kinds of imperatives were at work in the ways people (at least the social elites) were leading their daily lives, what kind of ethical worries and concerns (about social conformity, moral excellence, but also bodily health and friendship) were explicitly dealt with and how. Foucault came to describe these ethical discourses in terms of the “arts” or “styles” or “technologies of the self” at work in them and he seemed to envisage a comparative theory of different forms of the self or subjectivity in relation to different ethical conceptions and ethical practices.

Of course, on first sight, these thematic concerns seem a world away from the interests of the theory of science and the material relevant for these projects often only borders marginally on the archives from the history of sciences. But let me just add a few remarks on how these new two dimensions or “axes” of research, power and the self, can be easily related to the programmatic of a historicized epistemology or knowledge-oriented history of science.

I. Power: Foucault is no critic of ideology, and he does not want to debunk the claims to knowledge in a given scientific field. He is interested in the intimate relation and intertwinement of social processes and epistemic phenomena. But his thesis is non-reductionist: knowledge is not reducible to power or explainable by reference to social constraints, since the social (the space of power, as it were) is no separate realm from which the site of knowledge could be separated. To quote a phrase to this effect: “Relations of power are not in a position of exteriority with respect to other types of relationships (economic processes, knowledge relationships, sexual relations), but are immanent in the latter.”(Foucault, *The History of Sexuality, Vol. I*, p. 94).

For Foucault, “power” is not the standard notion that refers to a kind of potential or capacity someone has to influence another’s behaviour. For him, power is rather a dimension of all social relations. The ubiquity of “relations of force” just refers to the fact that what can be done in a given situation will be constrained and framed by the

very heterogeneous elements of this situation. In this sense, no activity is “free from power”, since there are bodies, psyches, mentalities, instruments and entitlements involved. Relations of power being “immanent” to relations of knowledge just means that they are no “exterior” to them but form part of the very reality from which “relations of knowledge” are said to be a part. This perspective, of course, doesn’t destroy the relative autonomy of scientific justification or of epistemic practices (as proof, experiment and logical reasoning), but it locates these practices in a context of other factors. Does this commit the historian of science to become a sociologist of science? I don’t think so. But it might oblige him or her to widen the focus of phenomena from the “relations of knowledge” in question to the patterns of social interaction, hierarchy, subordination and institutional framing also in place in the same space (i.e. the laboratory, the desk, the classroom). This will no doubt be a more “impure” form of history of science, but it will be worthwhile.

II. The self. One need not go into the details of Foucault’s latest work on the self in ancient Greece to see the main point of this kind of inquiry. As with the orders of knowledge and the dominant patterns of social interaction (the orders of power, if you like), Foucault came to formulate the idea that there exist and continue to exist radically different conceptions and practices of selfhood and self-understanding. It is not only that the idea of self, soul and subject are radically historical (and our conception of them radically modern), it is the very practice and activity of what it means to be a self or subject that varies over time, is related to dominant orders of knowledge and of social interaction and last of ethical orientations all of which are also radically historical entities. Foucault took over the task to systematize and to start to write the history of different “technologies of the self” both in their discursive (text-based) and non-discursive (practice-based) form.

This is of course an interest the historian or theorist of science doesn’t start from, but as in the case of power, this might provide him or her with an interesting additional perspective on his very historical object. Because as power, also conceptions and practices of the self (or “ethics” in the widest sense) are present everywhere in social reality. The laboratory, the desk, the classroom are inhabited by solitary researchers or researching teams, all of which have ethical preconceptions, worries, obligations, a specific ethos etc. The Foucaultian lesson here might be to also include these “ethical relations” in the range of phenomena that should be accounted for in a theory or history of science. To describe the evolving and

transforming patterns of self-stylisations of researchers, the different understandings of their role, their moral worth and their commitments to what they are doing might also reveal something like an “ethical grammar” of a given scientific activity in a given period and given social context. Again, also this last form of contextualisation does not debunk or devalue the scientific results or the claim to objectivity; but it might help to see that why and how objectivity was thought to be the achievable goal is in itself a conception with a history.

### **Conclusion**

Let me conclude by referring once again to the question of the phrase “after Foucault”. I have tried to show that there is a vast variety of options of how to understand Foucault’s model as a historian or theorist of science and how to formulate his “legacy” for this discipline. I have argued for a sober and fair assessment of his own theoretical work and to take seriously that he did not work towards a delegitimation of science as such. On the contrary, Foucault seems convinced of the robustness of the formation of knowledge and is interested in the very mechanism and structure of the formation and institutionalization of scientific discourses. The main point remains the insistence on the historicity of the rules governing these formations and institutionalization. It is, I assume, the challenge for every Foucault-inspired research project on science and the history of science to empirically, in the case at hand to make sense of and to operationalize this idea of a “depth knowledge”, or structure or “grammar”. It is furthermore the challenge to allow for the pluralization of possible and legitimate ways of doing science.

Such a perspective is guided by a curiosity, an interest in contingency, difference, discontinuity. When asked, why he had been writing one of his historical books (*Madness and Civilization* in this case), he once said, “to change” himself. This can mean to just change one’s mind about the past when working on its forms of thinking and reasoning. It could also mean more: looking back at our own “systems of thought” from the long term perspective of the history of science allows to see our own ways of thinking and reasoning in a new and less natural light.

## References

- Alcoff, Linda Martín (2005), "Foucault's Philosophy of Science: Structures of Truth/Structures of Power", in: Gary Gutting (ed.), *Blackwell Companion to Continental Philosophies of Science*, London: Blackwell, pp. 211-223.
- Allen, Barry (1993), *Truth in Philosophy*, Cambridge: Harvard University Press.
- Bachelard, Gaston (1934), *Le Nouvel esprit scientifique*, Paris: PUF.
- Bachelard, Gaston (1938), *La Formation de l'esprit scientifique. Contribution à une psychoanalyse de la connaissance objective*, Paris: Vrin.
- Brieler, Ulrich (1998), *Die Unerbittlichkeit der Historizität. Foucault als Historiker*, Köln: Böhlau.
- Canguilhem, Georges (1994), *A Vital Rationalist: Selected Writings*, New York: Zone Books.
- Canguilhem, Georges (1988), *Ideology and Rationality in the History of the Life Sciences*, Cambridge: MIT Press.
- Daston, Lorraine (1994), "Historical Epistemology", in James Chandler, Arnold I. Davidson, and Harry Harootunian (eds.), *Questions of Evidence: Proof, Practice and Persuasion across the Disciplines*, Chicago: Chicago University Press, pp. 282-289.
- Daston, Lorraine/Peter Galison (2007), *Objectivity*, New York: Zone Books.
- Daston, Lorraine/Stefan Müller-Wille/H. Otto Sibum (2001), *A History of Facts*, Preprint of the Max-Planck-Institut für Wissenschaftsgeschichte, Berlin.
- Davidson, Arnold I. (1986), "Archaeology, Genealogy, Ethics", in: David Couzens Hoy (ed.), *Foucault: A Critical Reader*, Oxford: Blackwell, pp. 221–235.
- Davidson, Arnold I. (2002), *The Emergence of Sexuality: Historical Epistemology and the Formation of Concepts*, Cambridge: Harvard University Press.
- Detel, Wolfgang (2005), *Foucault and Classical Antiquity: Power, Ethics and Knowledge*, Cambridge: Cambridge University Press.
- Dews, Peter (1995), "Foucault and the French Tradition of Historiography of Science", in: *The Limits of Disenchantment: Essays on Contemporary European Philosophy*, London: Verso, pp. 39-58.
- Dreyfus, Hubert L. (1987), "Foreword to the California Edition", in: Michel Foucault, *Mental Illness and Psychology*, Berkeley: California University of Press, pp. I–XL.
- Foucault, Michel (1970), *The Order of Things: An Archaeology of the Human Sciences*, New York: Pantheon.
- Foucault, Michel (1972), *The Archaeology of Knowledge and the Discourse on Language*, New York: Pantheon.
- Foucault, Michel (1973), *The Birth of the Clinic: An Archaeology of Medical Perception*, New York: Pantheon.
- Foucault, Michel (1978), *The History of Sexuality, Vol. 1: An Introduction*, New York: Pantheon.
- Gutting, Gary (1989), *Michel Foucault's Archeology of Scientific Reason*, Cambridge: Cambridge University Press.
- Gutting, Gary (1990), "Foucault's Genealogical Method", in: *Midwest Studies in Philosophy* 15:1, pp. 327–343.
- Gutting, Gary (2005), *Foucault: A Very Short Introduction*, Oxford: Oxford University Press.
- Hacking, Ian (1983), *Representing and Intervening: Introductory Topics in the Philosophy of Natural Science*, Cambridge: Cambridge University Press.
- Hacking, Ian (1995), *Rewriting the Soul: Multiple Personality and the Sciences of Memory*. Princeton: Princeton University Press.

- Hacking, Ian (1999), *The Social Construction of What?*, Cambridge: Harvard University Press.
- Hacking, Ian (2002), *Historical Ontology*, Cambridge: Harvard University Press.
- Hacking, Ian (2002a), "Making up People", in: *Historical Ontology*, pp. 99–114.
- Han, Béatrice (2002), *Michel Foucault's Critical Project: Between the Transcendental and the Historical*, Stanford: Stanford University Press.
- Heidegger, Martin (1962), *Kant and the Problem of Metaphysics*, Bloomington: Indiana University Press.
- Heidegger, Martin (1977), "The Age of the World Picture", in: *The Question Concerning Technology and Other Essays*, New York: Harper Row, pp. 113-154.
- Heidegger, Martin (1996), *Being and Time*, Albany: State University of New York Press.
- Hemminger, Andrea (2004), *Kritik und Geschichte. Foucault – ein Erbe Kants?*, Berlin: Philo.
- Kögler, Hans Herbert (1996), *The Power of Dialogue: Critical Hermeneutics after Gadamer and Foucault*, Cambridge, Mass.: MIT Press.
- Kusch, Martin (1991), *Foucault's Strata and Fields: An Investigation into Archaeological and Genealogical Science Studies*, Dordrecht: Kluwer.
- Latour, Bruno (1987), *Science in Action*, Cambridge: Harvard University Press.
- Lecourt, Dominique (1975), *Marxism and Epistemology: Bachelard, Canguilhem and Foucault*, London: New Left Books.
- Lemke, Thomas (1997), *Eine Kritik der politischen Vernunft. Foucaults Analyse der modernen Gouvernementalität*, Hamburg: Argument.
- Owen, David (1994), *Maturity and Modernity: Nietzsche, Weber, Foucault, and the Ambivalence of Reason*, London: Routledge.
- Pickering, Andrew (1996), *The Mangle of Practice*, Chicago: Chicago University Press.
- Poovey, Mary (1998), *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society*, Chicago: Chicago University Press.
- Putnam, Hilary (1981), *Reason, Truth, and History*, Cambridge: Cambridge University Press.
- Rajchman, John (1985), *Michel Foucault: The Freedom of Philosophy*, New York: Columbia University Press.
- Rheinberger, Hans-Jörg (1997), *Toward a History of Epistemic Things: Synthesizing Proteins in the Test Tube*, Stanford: Stanford University Press.
- Rheinberger, Hans-Jörg (2007), *Historische Epistemologie zur Einführung*, Hamburg: Junius.
- Rorty, Richard (1984), "The Historiography of Philosophy: Four Genres", in: Richard Rorty/Jerome Schneewind/Quentin Skinner (ed.), *Philosophy in History: Essays on the Historiography of Philosophy*, Cambridge: Cambridge University Press, pp. 49–75.
- Rorty, Richard, "Foucault and Epistemology", in: David Couzens Hoy (ed.), *Foucault: A Critical Reader*, Oxford: Blackwell, pp. 41-49.
- Rose, Nikolas (1989), *Governing the Soul: The Shaping of the Private Self*, London/New York: Routledge.
- Rose, Nikolas (2006), *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century*, Princeton: Princeton University Press.
- Rouse, Joseph (1987), *Knowledge and Power: Toward a Political Philosophy of Science*, Ithaca: Cornell University Press.

- Rouse, Joseph (1994), "Power/Knowledge", in: Gary Gutting (ed.), *The Cambridge Companion to Michel Foucault*, Cambridge: Cambridge University Press, pp. 92–114.
- Saar, Martin (2002), "Genealogy and Subjectivity", in: *European Journal of Philosophy*, 10:2., pp. 231-245.
- Saar, Martin (2003), Review of Ian Hacking: *Historical Ontology*, Cambridge/London 2002: Harvard University Press, in: *European Journal of Philosophy* 11: 1, pp. 117–121.
- Saar, Martin (2003b), „Heidegger und Michel Foucault: Prägung ohne Zentrum“, in: Dieter Thomä (ed.), *Heidegger-Handbuch*, Stuttgart: Metzler, pp. 434–440.
- Saar, Martin (2007), *Genealogie als Kritik: Geschichte und Theorie des Subjekts nach Nietzsche und Foucault*, Frankfurt/M./New York: Campus.
- Taylor, Charles (1986), "Foucault on Freedom and Truth", in: David Couzens Hoy (ed.), *Foucault: A Critical Reader*, Oxford: Blackwell, pp. 69–102.
- Veyne, Paul (1997), "Foucault Revolutionizes History", in: Arnold I. Davidson (ed.), *Foucault and his Interlocutors*, Chicago: Chicago University Press, pp. 146-182.
- Veyne, Paul (2008), *Foucault, sa pensée, sa personne*, Paris: Albin Michel.
- Vogelmann, Frieder (2009), *Verantwortung als Regierungstechnologie. Eine Untersuchung zur Struktur der politischen Praxis*, unpublished manuscript, Frankfurt/M.