

## WHAT IS THEORY ?

### THEORY AND ITS USE IN EMPIRICAL PHD-PROJECTS

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#### Abstract:

The article emerges from discussions in a multidisciplinary PhD-program with candidates from various disciplines and different research traditions, representing different conceptions of the use of theory in research. Facing the differences of traditions, the questions as to the *what*, the *where* and the *why* of the use of theory arise: What do we mean by ‘theory’? Where may its presentation find room and how does theory impose itself on our research? How much should we elaborate on it – and why? The problematics, in sum, may be formulated as the question of how theory is conceived of and what may be its place in doing and presenting empirical research. Patterns of theory-building linked to overarching and basic traditions in the theory of knowledge are elucidated, looking at how they may contribute to the shaping of research projects. Sketching a model for the use of theories on different levels, the place for their elaboration in a PhD-thesis is suggested. Finally, attention is drawn to the critical dimension of theory as a major condition for knowledge production to be anchored in (political and ethical) values, as well as for developing a knowledge based, reflective professional practice.

**Keywords:** Epistemology, empiricism, interpretative theories, practice, value base.

#### Sammendrag:

Bakgrunnen for artikkelen er diskusjoner innenfor et flerfaglig PhD-program hvor kandidater kommer fra forskjellige fagdisipliner og forskningstradisjoner som representerer ulike oppfatninger av teoriens plass i forskningsarbeidet. Stilt overfor disse forskjellige tradisjonene reises spørsmålene om *hva*, *hvordan* og *hvorfor* i bruken av teori: Hva mener vi med ’teori’? Hvor og hvordan kan den finne rom i vår forskning? Hvor mye skal med – og hvorfor? Vi vil utforske ulike forståelser av teori og deres plass i gjennomføring og presentasjon av empirisk forskning. I artikkelen klargjøres mønstre for teoridannelse knyttet til de brede og grunnleggende tradisjonene innen kunnskapsteori, og hvordan disse kan bidra inn i utformingen av forskningsprosjekter. Etter en gjennomgang av synet på teori i de vitenskapsfilosofiske hovedtradisjonene, foreslås en modell for bruk av teori på ulike nivåer samt hvor disse kan finne rom i en PhD-avhandling. Den kritiske dimensjonen ved teoridannelse understrekes som betingelse for å utvikle både en verdiforankret kunnskap og en reflektert profesjonell praksis.

**Nøkkelord:** Kunnskapsteori, empirisme, fortolkende teorier, praksis, verdiforankring.

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## Introduction

This article emerges from discussions with colleagues and candidates in our multidisciplinary PhD-program at VID. The program welcomes candidates with empirical projects and with a common focus on value-based professional practice. Beyond this common denominator, the candidates have a variety of research projects and come from various disciplines and different research traditions, representing different conceptions of the use of theory in research. Facing the differences of traditions, the questions as to the *what*, the *where* and the *why* of the use of theory in their PhD projects are raised perhaps more vividly than in programs where one single tradition is more or less taken for granted. Also, as articles leave less room for presentation of theory, candidates writing article-based dissertations, on the one hand, will be confronted with the challenge of how to integrate theory more specifically in the extended abstract, or “the cloak” as we name it in Norwegian. The challenge for candidates writing monographies, on the other hand, will rather be to consider what (kind of) theory to elaborate where, not only in the introduction but possibly also in other parts of the thesis. Overall, we are faced with questions like; what do we mean by ‘theory’? Where may its presentation find room? How does theory impose itself on our research? How much should we elaborate on it ... and why? Such are the questions prompting this article, thus formulating its problematics, in sum: How is theory conceived of and what may be its place in doing and presenting empirical research?

The article takes as its starting point a theory of knowledge / philosophy of science perspective. Thus, I will not give an overview of the wide array of specific conceptions of theory that we may find elaborated within various scientific disciplines. My concern is to elucidate models of theory-building as they are linked to more overarching and basic traditions of knowledge, trying to bring these different patterns of theory-building to the forefront in looking at how they may contribute to the shaping and expanding of research projects. My hope is that such explorations may clarify and deepen our reflections on theory in empirical research and be of use to both PhD-candidates and their supervisors alike.

In what follows, I will first single out how theory is conceived of in the broad traditions of the philosophy of science; in the classical empiricist paradigm (1) and in various interpretative paradigms (2-3). I will then sketch a model of different kinds of theories being used on different levels, and further suggest what might be the place for their elaboration in a PhD-thesis (4). Finally, I draw attention to the critical dimension of theory, identifying it as a major condition for knowledge production to be anchored in (political

and ethical) values, as well as for developing a knowledge based, reflective professional practice (5).

## What is theory?

It seems that since long, most if not all researchers will agree that in empirical research there are no theory-free, “pure” data: Data are always theory-dependent. As Karl Popper formulates it; “the belief that we can start with pure observations alone, without anything in the nature of a theory, is absurd “ (Popper, 1963/2002, p. 61). The statement suggests that theory is the very condition for gathering data in empirical research. But this does not necessarily mean agreeing with Nietzsche famous saying that “there are no facts, there are only interpretations”, implying perhaps that theory equals any and all kinds of interpretations, also in empirical research. The question “what is theory”, I propose, is somehow stretched out between the two extremes of “pure data” and “mere interpretations”.

Recent publications on the use of theory in academic work underline the diversity in how ‘theory’ and its function is defined within different disciplines, whilst also stressing the fact that no matter the discipline, the use of theory is an integral part of the production of academic knowledge (Grue, 2015, p. 7ff). Theory provides us with a perspective, literally with a point of view from where to understand, interpret and analyze the reality we seek to explore. Thus, to become aware of our theoretical positions is a necessary tool in research. Theory is used all along the research process; in identifying our field of study, in formulating, answering and justifying research questions, in making discoveries and in analyzing our data (cf. Johannessen, Rafoss & Rasmussen, 2018, pp. 33ff.). All the more relevant, then, to look at some of the different answers to the question of what we mean by ‘theory’.

## Theory in the classical empiricist paradigm

As a start, we may “tune in” to our subject by consulting Wikipedia with an entry on ‘theory’ – and we are immediately reminded of the most basic curriculum in any course of the philosophy of science:

In science, a theory is an assumption about reality that is tested and that explains a phenomena or relations between phenomena in nature. After having tested whether a hypothesis gives a picture of reality that is true rather than false, it often is considered a theory. (<https://no.wikipedia.org/wiki/Teori>, my translation).

And to corroborate this, the Norwegian Encyclopedia's explication of a theory holds that :

A theory is a system or a complex of assumptions advanced to explain a series of facts or phenomena. [...] One of the most important functions of a theory is to bring together several different elements under a common set of concepts and principles or laws. (<https://snl.no/teori>, my translation).

Both entries show the common domination of a classical *empiricist* definition of a theory: Theories are structured as logical systems subsuming data under general concepts or laws; they are judged on their explanatory and predictive power; they must be possible to test, and they must comply to strictly logical – deductive and inductive – patterns (cf. Hempel, 1966). For example, research may establish a lawful connection between the substance of a specific medicament and the health state of patients, subsuming under a general law that *every time x then y*; every time antibiotics is administered, then the infection is cured. The theory would explain the cure, and it would also enable us to predict the same result in future treatment. We are familiar with this view of theory building from medical sciences and health research and many other disciplines.

To put it more simply: In sum, a theory is a confirmed hypothesis stating how various observed phenomena relate to each other. A theory must describe and specify how this relation is to be conceived, by organizing these relations into a consistent whole or “an ordered body of knowledge” as it is usually called. Repeated testing enables us to conclude on a regular causal, correlational or probabilistic – and thus predictive – relationship between for example types of medical intervention and cure, or between particular types of stress in childhood and later psychic vulnerability, or between religious commitment and contentment, or other relations.

We may note that this conception of theory is why in articles within quantitative research – inheriting from the natural science approach – theory often amounts to just an elucidation of the best affirmed hypothesis at present and the law-proponing concepts organizing them. For example, the most common structure of scientific articles in quantitative research, the IMRaD – “Introduction, Method, Results and Discussion” – designates no specific chapter for presentation of theory or theoretical reflections; the theory-part often amounts to just a sort of “state of the art” in the introduction, an overview of the results of present research in the field.

A broader understanding of theory and its place in research within the empiricist tradition, is presented by Karl R. Popper (1902-1994). Popper modified the positivist belief in “pure data”: Observation, Popper says, is an active process, there are no such thing as

pure sense data or “pure observations alone” (Popper, [1963] 2002, p. 61). We organize our impression from a “horizon of expectations”, anticipating what we will find. In other words; we always observe from a particular perspective. In that sense, all data are “theory-laden”; theory is anterior to observation and data are meaningful only starting from a definite question to which we seek an answer. In other words, Popper underlines that observation “is always selective. It needs a chosen object, a definite task, an interest, a point of view, a problem” (Popper, [1963] 2002, p. 61). For example, what we are asking in a questionnaire is not random – it will be steered by a hypothesis about what we might find. The interpretation of data, the way we organize them into a theoretical whole, will also be steered by our theoretical inclinations, of course. So, part of working with theory in empirical research is to try to elucidate what we see from where we stand; to clarify as far as possible what theory is implicit in our point of view.

Without a particular point of view, no research could ever take place. Popper highlights this taking as example the story of “the man who dedicated his life to natural science, wrote down everything he could observe, and bequeathed his priceless collection of observations to the Royal Society of Science to be used as inductive evidence”. Poppers point, of course, is that this precious collection serves to nothing as long as we do not know for what it may serve as evidence, i.e. as long as we do not have a specific question that seeks an answer. Thus, as Popper rather maliciously concludes, “though beetles may profitably be collected, observations may not” (Popper, [1963] 2002, p. 61).

Poppers views might look similar to parts of the hermeneutic tradition to which I will now turn. Still Popper stands clearly within the empiricist tradition in holding that testing of hypotheses and logical patterns of theory-building are the key activities of science.

### Theory in interpretative paradigms

The main emphasis here will be “the mother of all interpretative theories”, namely hermeneutics, but I include as part of an “interpretative paradigm” also traditions like phenomenology and later formations like discourse analysis, social constructivism, deconstructionism, and other approaches.

Reflections on theory holds a more prominent place in hermeneutic research than in the empiricist paradigm. We are familiar with the challenge to clarify, describe and account for our theoretical pre-understanding in designing a research project. But in a sense the whole of the hermeneutic research process is a form of theory building in dialogue with the

data. Research is theory building, not in the sense of testing hypothesis of lawful causal relations, but as a process of the construction of meaning, a continuous transformation process in our understanding of data.

In the research process, we see this for example in the interaction between researcher and the ‘object’ of study: Given answers at a particular moment may lead to new questions, restructuring the plan in different phases of interviewing. Or we see it in the dynamics of different delimitations of parts and whole, where data may be interpreted differently according to what context is included. For example if we set out to study what may influence the decision-making of practitioners in NAV, we may delimitate our study to a local service, to decisions linked to a specific group of clients, or to the a national political discourse – each option giving new and different possibilities for the interpretation of data. There are generally always several possible ways to delineate the context and several possible interpretations of the material in question. This process is also what we theoretically are asked to account for and justify in our scientific writings.

A further point here is that several possible interpretations makes for the use of several possible theories, not an either-or, unlike much quantitative research. For example in studying Sudden Infant Death Syndrome, we find *either* higher incidents with babies lying on their tummy *or* not higher incidents – and the theory follows logically here from. But a transcribed narrative, for example of the loss of a child, may have several and different layers of meaning, again varying with the included context, the parents situation, their history, etc.

Narratives and all so-called “soft” data may therefore be read in the light of different theories that help us see the different possibilities of interpretation. In the famous “hermeneutic circle” of understanding, it is not possible to hold that any one single interpretation is the only possible interpretation being absolutely true, whereas another would be absolutely false. But – and this is an important “but” – this does not mean that “anything goes”: In the continual back-and-forth between data and interpretation, not all interpretations are equally plausible or interesting or fruitful. Interpretations may be strong or weak and may make more or less sense. So; what may criticize or support – and also expand, nuance, deepen – our interpretations? Theory of course.

Finally, we may note that even our access to data themselves is theory-laden: In hermeneutic research on cultural and social phenomena, we may hold that data are *created* by being identified as ‘something’, as a particular phenomena. Thus in one sense there are no data outside of theory:



The most basic data accessible to us in sciences studying human and social phenomena, is a content of meaning always already interpreted. We never get ‘beneath’ or ‘behind’ readings of the meaning of phenomena. In the exploration of ‘meaningful material’, data are never simply given. Data are established – data are accessible as data only by being identified as something. In this sense, we may say that as far as cultural and social phenomena are concerned, we create data through our understanding and interpretation of phenomena. (Thomassen, 2006, p. 90, my translation).

The most basic data in the human, social and cultural sphere, is an already interpreted content of meaning; “readings of meaning” in Charles Taylors formulation (1985, p. 52). Or we may say that data are “constructed”, as one would put it in later developments in the philosophy of science. For example, if I set out to study questions related to psychiatric illness or sexual harassment or drug abuse or other social issues, I am immediately confronted with this already being interpretations, namely interpreting something as ‘illness’, as ‘harassment’, as ‘abuse’ and so forth – and one may ask; by whose definition and on what grounds? The data in the human and social world are never simply *given*, they are interpretations of reality.

From what I have said so far, the answer to the question ”what is theory” might seem to hinge on the broad traditions within the philosophy of science – traditions often characterized by a divide between explanation and understanding or interpretation. But must there be a divide? That is what Paul Ricœur is challenging in his classical text; “What is a text. Explanation and understanding” (Ricœur, [1970] 2007). Some of the main points of this article are particularly pertinent for our thematic here. In this text, Ricœur problematize the distinction between “explanation” and “understanding”. The distinction is linked to other dichotomies that Ricœur in several writings has challenged, like the distinction between the study of human phenomena as nature or as culture, or between studying human beings as objects or as subjects. Ricœur wants to show that such dichotomies are far too simplistic – there is never an “either-or”, always a “both-and”.

### The hermeneutical arch

The starting point for Ricœur’s argument is the notion of “the autonomy of the text” (cf. Ricœur, [1970] 2007, p. 106-109): A text – or an action or any human utterance – once it is fixed in writing or acted out in society, is no longer only a carrier of the intentions of the author. Once let out to an audience, it gets its own autonomy and is a carrier of meaning in itself, projecting different possible life-projects. A text as well as an action once emitted, interferes with the world and the course of events; it leaves traces and may lead to a series

of unintended consequences. Therefore a text, an action, or any human utterance has the duplicity of being characterized both by the author's intentional meaning, which has to be understood, and by its own consequential interference with the social world, whose effects have to be explained. We most easily see this with actions perhaps; the best possible intentions may sometimes lead to catastrophic results. The aim of understanding then, according to Ricœur, is the meaning that lies inherent in the text or the human utterance itself. That is why, to elucidate this meaning, also the explanatory approaches have their place, studying expression or utterance as objects, explaining the interconnections of their structural elements, for example regularities in social interactions or in specific patterns of discourses or other.

But, again according to Ricœur, structural explanation must be completed by an interpretation of the movement of the text towards meaning. A text is not closed in on itself, it opens up onto the world: "to explain is to bring out the structure [...] of the text; to interpret is to follow the path of thought opened up by the text" (Ricœur, [1970] 2007, p. 122). Explanation and interpretation thus represents an interplay between different levels at work when investigating into human experience and culture: A structural explicatory analysis is regarded as a necessary stage, but the understanding of meaning is the overarching horizon which is necessary for explanation to have a function. Both explanation and understanding are situated along what Ricœur calls "a unique hermeneutical arch", but at the utmost extreme of this arch, interpretation ensures its anchorage "in the ground of lived experience". (Ricœur, [1970] 2007, p. 121, p. 124.). The interpretation of meaning elucidates in the last resort the existential dimensions of the text – or the utterance or the action – and opens our understanding and our self-understanding to the meaning of our belonging to the human world. In that sense, in the mutual movement between explanation and understanding, understanding precedes, completes and comprises explanation.

Let us sum up with Ricœur – and again 'text' is here to be thought of as any emitted human material, research data or actions:

We can, as readers, remain in the suspense of the text, treating it as a worldless and authorless object; in this case, we explain the text in terms of its internal relations, its structure. On the other hand, we can lift the suspense and fulfil the text in speech, restoring it to living communication; in this case, we interpret the text. These two possibilities both belong to reading, and reading is the dialectic of these two attitudes (Ricœur, [1970] 2007, p.113).



## Theories on different levels

What I have done so far is to present some theoretical perspectives on theory. In other words, I have been presenting *theories about theory* – that is, I have sketched some input at the level of meta-theory (level 1). At this level of theorizing, we are concerned with questions about the presuppositions for research. Another level of theory concerns *theories about domains of the world*, i.e. the subject specific theories we use in exploring what our data might imply (level 2). Theory at this level gives us a framework for explaining and interpreting our data. Still another theoretical level, *theories about a specific segment of the world*, represents a systematization of the specific empirical data gathered (level 3). Theory at this level opens up and gives access to the concrete empirical findings that may shed light on the phenomenon being studied. Thus, different levels of theory correspond to different levels of systematization of data and different levels of interpretation of data.

*Level 1 – meta-theories* or theories about theory involve theories advocated by traditions and paradigms in epistemology and the philosophy of science. Theories about theories will typically address questions like; what are the conditions for obtaining true knowledge, how is knowledge justified, what are the conditions of possibility for data to be registered and understood, and others. Working with such questions contribute to an awareness of the presuppositions for scientific activity. For example, what kind of knowledge does a specific kind of study provide – and what does it not provide? Or; how may we justify the project as a fruitful scientific contribution? Or; how may we justify why we choose this particular theoretical framework and not another? Different traditions in the philosophy of science, we know, will give rather different answers to such questions. In the PhD thesis, critical reflections on such questions may nuance and qualify the work done, adding a depth-dimension to the scientific endeavor. The reflections may find a natural place particularly in the introduction to a monography or in the extended abstract (the “cloak”) of an article based thesis.

*Level 2 – the level of subject specific theories* or theories about domains of the world, call on theories from different disciplines like for example sociology, economy, psychology, medicine, or other. I quoted Popper joking about the amateur scientist committing his whole life to the gathering of data: We have this whole bunch of data, and ... so ... so what? Data calls for explanation and interpretation – we need to let the data speak. We saw that in the empiricist tradition, theory is formulated when data are subsumed under a general law or an explicatory concept. In interpretative sciences, we likewise will

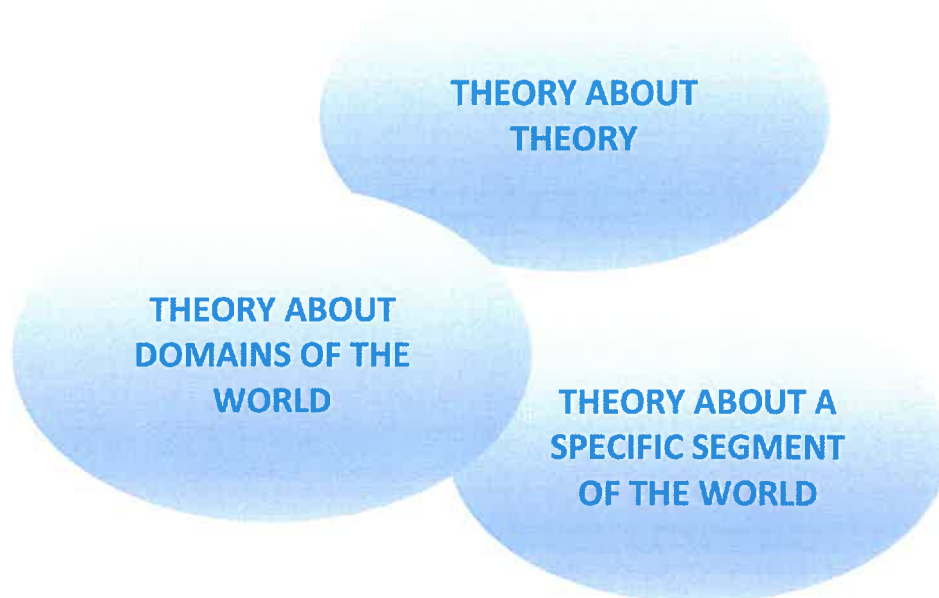
need to subject the data to a systematization and an interpretative process of meaning construction. The subject specific theories meet this demand for a framework for explanation or interpretation. Theory in this sense will accentuate, illuminate and shape the data through various strategies of reading; what do the data say? For example may individual narratives from different life-situations be interpreted in the light of different psychological theories, or medical theories, or theories of meaning making or other. In the PhD-thesis, if we accept Poppers insight that all research starts with a question that seeks an answer, the use of the subject specific theories may help us answer the questions we address to the field of study. Particularly in the process of analyzing our data, subject specific theories are necessary tools to explore what the data may tell us.

*Level 3 – the systematization of empirical data* or theory about a specific segment of the world, is concerned with organizing the concrete results of our study into an orderly whole. This level of theory concerns the presentation, interpretation and evaluation of specific empirical data. It is the level closest to the empirical findings and implies a systematization of research. It is what we do for example when we present and analyze all the different aspects of the correlation between religious commitment and psychic health, or a coded presentation of client narratives or other. Some will say this is just a starting point for further elaboration, others will underline that this is all that we know. It is a little bit like the question; is the bottle half full or is it half empty? The “bottle” on this level is half full as far as empirical content is concerned, but half empty as far as theory and thus interpretative understanding is concerned. In the PhD-thesis, accounting for the actual data of our investigation, rendering the results as clearly as possible, is of course an indispensable part of the work to be done. Organizing the often disparate, complex elements of what we meet into a coherent whole is making up for a first level of theory in its own right.

To sum up: Different levels of theory imply different levels of systematization of data and different levels of interpretation of data. They do not necessarily represent a hierarchy in the sense of going from one to the other; we may conceive of them as constantly interacting with one another. For example presentation and systematization of concrete research findings (level 3) will pose questions and influence both subject specific theories (level 2) and theories within the philosophy of science (level 1), and vice-versa.

FIGURE 1:

## ***METAPHYSICAL THEORIES ABOUT THE WORLD***



## ***THEORIES ABOUT PRACTICAL INTERVENTION IN THE WORLD***

Finally, different theoretical levels will always be embedded in more overarching theories, i.e. in what we may call *metaphysical theories* on the one hand and *practice theories* on the other hand. Metaphysical theories may be ontological theories about the nature of being, existence and reality as such, or about the nature of human beings, or theories about the possible experience of a transcendence; traditionally, the classical metaphysical questions are said to concern “God, the soul and the world”. Practice theories, or theories about practical intervention in the world, may be various theories of ethics, of politics and of action. Often such theories are highlighting that understanding the world

amounts to acting in the world; that knowledge is inconceivable outside action, and action inconceivable outside ethics.

Theories *of* science and theories *in* science are no doubt related to such larger theoretical traditions. Still, one may be reluctant to include these theories in what we need to thematize in our empirical studies. At least, we need at the outset to raise the questions; is it necessary to account for such overarching theories? Are these theories helpful? Are they shedding an important light on our research? Whether these overarching theories are helpful, fruitful and necessary to depict or not, depends of course on what is our project. If for example a project exploring developmental issues in childhood clearly entails as a premise an already established conception of what is essentially human, it would be relevant and necessary to account for these conceptions. Or if for example our project has an action research design, it might be fruitful to clarify and justify the project by elucidating its anchorage in views on knowledge production linked to human agency.

So, depending on our project, both “metaphysical theories” and “practice theories” may shed light on our research. Not the least, overarching theories may sometimes be central for a critical reading of our research, which brings me to my last point.

### The critical dimension of theory

Theoretical reflexion has a critical dimension to it, in the sense of the Greek etymology of the word *krinein*; to discern, to distinguish and to separate, to deliberate and to judge. The intellectual obligation to scrutinize, examine and evaluate knowledge is inherent to scientific work. It entails a challenge not to take current and established truths for granted and at face value, whatever these accepted truths may be. The critical dimension is particularly present, of course, at the meta-level of theory – but it also shows the very practical implications of this meta-level. Let me in this respect point to just three central concerns; the concern for questions of truth, the concern for questions of power and the concern for inherent values.

The critical dimension of theory implies a concern for *truth*: What is our “best possible knowledge” at present? The search for truth is a concern and a commitment for the whole of science as an institution. As researchers, we are obliged to examine and scrutinize the whole research process and its results as lucidly as possible. This obligation may, however, have different profiles: We may be concerned primarily with factual truths, but we may widen the scope to include also ethical truths, thus problematizing the very concept of truth

in science. “Best possible knowledge” may be the most reliable knowledge, but also the most liberating knowledge.

The critical dimension of theory implies a concern for *power relations*: Whose knowledge is this? This perspective is particularly raised in later developments in the theory of science with the question; how to give a voice to the voiceless, the marginalized? We see this obligation translated for example in the demand to leave the power of “grand theories” so as to accept as valid local and singular knowledge and lifestyles. An example here could be the work of Jean-Francois Lyotard (see f. ex. Lyotard, 1979). We likewise see it in the re-reading or deconstruction of the foundational texts of our present culture so as to view them anew and thus let the data speak in new and subversive ways. This would for example be Jacques Derrida’s contribution (see f. ex. Derrida, 1967). Conceiving theory as implying a moral obligation for people, then, provides for new theorizing, but also new research practices like action research, feminist research, research in partnership and the like. So, theory both informs and is being informed by practice.

Finally, the critical dimension of theory implies a concern for *values*: What inherent conceptions of human life, society and practice do our theories imply and/or advocate? Our study programs at VID are basically concerned with knowledge and science as they contribute to professional practices: To underline this is to say that the production of knowledge is for the good of the people we work with. Critical scrutiny of the knowledge base for professional practice will always be subordinate to an ethical demand on behalf of the persons our practice exists for. We have an obligation, so to speak, to reflect on what knowledge this may actually be and how it may contribute to the exercise of a practice. In this sense, knowledge is inextricably linked to values. Theoretic reflection *on* and *in* our scientific work thus inevitably has an ethical side to it.

## Conclusion

Throughout this article, we have seen how different traditions within the theory of knowledge propagate different conceptions of what characterise theory, where its place may be and what function it may have within empirical research. Bringing together and explicating such different conceptions, the aim has been to elucidate a multiplicity of reflections on theory building and its relation to data in doing empirical research, and more specifically in writing a PhD-thesis. Such multiplicity raises questions as to how these different conceptions may enrich each other in the understanding of scientific research, as

well as how they may complement each other rather than exclude each other in various concrete research processes. In this respect, the complexity of “the hermeneutical arch” combining explicatory and interpretative approaches may present a particularly interesting model. The multiplicity of theoretical input also points to different types of theories contributing on different levels in relation to the systematization and interpretation of data. Why we at all should be concerned with this complexity of types of theories and theoretical levels is perhaps best indicated by the traditional commitment of science to be “a truth-seeking endeavour”. The responsibility to always seek the “best possible knowledge” opens up a whole range of critical questions as to the ethical and political context and value base of scientific activity, questions that we are obliged to continuously scrutinize in an open debate.

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