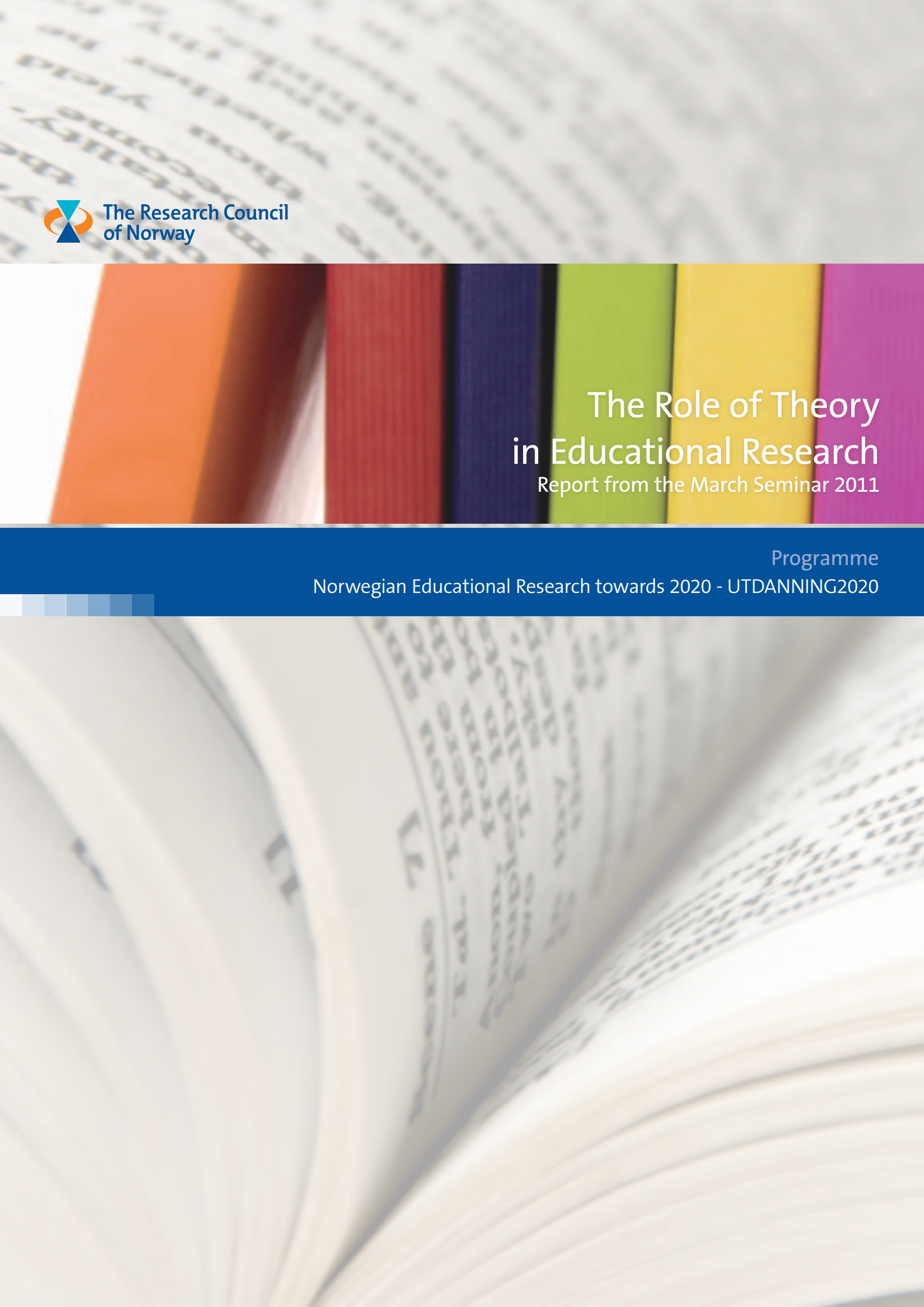

The Research Council of Norway

The Role of Theory in Educational Research

Report from the March Seminar 2011

Programme

Norwegian Educational Research towards 2020 - UTDANNING2020

About the programme

Norwegian Educational Research towards 2020 - UTDANNING2020

The Programme for Educational Research – UTDANNING2020 (2009–2018) succeeds the Programme for Knowledge, Education and Learning – KUL (2003–2007) and runs parallel with the Programme for Practice-based Educational Research – PRAKUT (2010–2014). The programme has a total budgetary framework of approximately NOK 400 million.

The UTDANNING2020 programme conducts research on the education sector – from early childhood education and care to doctoral level education. The programme seeks to enhance the knowledge base for policymaking, public administration, professional education and professional practice and to promote research of high scientific merit. A variety of subject areas and research communities are encouraged to conduct research on issues related to the education sector as well as areas of overlap in other sectors.

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UTDANNING2020

Introduction

The Role of Theory in Educational Research

As a means of promoting scientific quality and merits, UTDANNING2020 uses different tools and strategic actions. A special annual seminar – held in March every year – is devoted to addressing scientific and methodological issues in educational research. The first March seminar took place in 2010, and discussed rigour and relevance in educational research. Last year the seminar was devoted to "The Role of Theory in Educational Research". Scholars from different social sciences devoted to educational research (educationalists, economists, political scientists, sociologist and so) shared their insight and reflections on the role and use of theory in educational research. This publication reflects some of the contributions at this seminar.

The notion and term of theory are essential in any discipline that perceives itself as scholarly or scientific. Suppes (1974: 2) claimed already forty years ago that the obvious and universally recognised importance of theory in the more mature sciences is strong evidence of the universal generalisation that theory is important in all sciences. Hence, theory is essential in educational research as a research domain, and the term is frequently used in papers, books, and – not least – in PhD. dissertations. On closer inspection, however, it is not at all clear what theory actually means in the different social sciences devoted to educational research. Nor is it clear where the entities referred to as theories invoked in educational studies come from, how they are used, what foundations they have, or what roles they play in the field. It seems problematic that a key entity for the advancement of research in a field is ill-defined and has an unclear status and function. The report you are now reading is therefore an attempt to help put these issues on the agenda of articulate and deliberate discussions within our field of expertise. The contributions in this report reflect different voices heard at the 2011 March seminar devoted to the role of theory within the educational sciences. This report is not intended to survey or review in a coherent way different specific theories put to use in the educational sciences. Rather, it is meant to offer some general challenges and considerations of an overarching nature regarding the role of theory within this field of research.

So what is theory in the scientific field of educational research?

Simply speaking, theory refers to a particular kind of explanation. Leedy and Ormrod (2005: 4) state: "A theory is an organized body of concepts and principles intended to explain a particular phenomenon". Thus, theories explain *how* and *why* something functions the way it does (Johnson & Christensen, 2007: 7). As pointed out by Boss, Doherty, LaRossa, Schumm, & Steinmetz (1993: 20): "Theorizing is the process of systematically formulating and organizing ideas to understand a particular phenomenon. Thus, a theory is the set of interconnected ideas that emerge from this process". Following McMillan and Schumacher (2000), a theory can develop scientific knowledge

congruent with the following criteria: first, provide simple explanation about the observed relations regarding their relation to a phenomenon; second, be consistent with an already founded body of knowledge and the observed relations; third, provide a device for verification and revision; and fourth, stimulate further research in areas in need of investigation.

So in principal, for a system of concepts and claims to be called a theory, the system has to be i) *stable*, i.e. unchanged over a longer cycle of time, ii) *coherent,* i.e. the components of the system have to be linked in a comprehensive and non-contradictory way, and iii) *consistent* in the sense that it should not be possible to arrive at contradictory claims by means of the types of derivation permitted in the theory. In practice, however, many systems named theories do not possess all these features. This is particularly true of theories in educational sciences the mathematical educationalist Niss (2006) argues. Some theorists would add that the requirements that all non-fundamental claims in a theory have to be testable. In other words, such theorists would reject what Niss describes as "transcendental theories" (2006: 3), i.e. theories in which the concepts and claims are so general and overarching that they do not apply in a straightforward way to a specific, empirically well-defined world. A number of theories belonging to the humanities or the social sciences and education are transcendental in this sense.

Once social/educational sciences are required to hold the same features as natural sciences in terms of their theories, it becomes evident that social sciences have more competing theories available. Anfara and Mertz (2006) declare that the major characteristic of social sciences in contrast to natural sciences is its multiple theoretical orientations which never reaches a fixed consensus like the empirical referents or explanatory schemes which characterise natural sciences. The competing theories available in social sciences are commonly popular because the nature of the phenomenon that is being studied allows its consideration through multiple perspectives and thus each of these perspectives suggests a reasonable explanation of the phenomenon.

The many faces and functions of theory in educational research

As outlined above theory has many functions within the educational sciences , just as it does in the social sciences. Theories provide predictions and explanations as well as guidelines for actions and behaviour. Theories might provide a structured set of lenses through which aspects or parts of the world can be observed, studied or analysed. Theories also provide a safeguard against unscientific approaches to a problem, an issue or a theme. By articulating underlying assumptions and choices and by making them explicit and subject to discussion and by situating one's research within some theoretical framework one might be protected towards criticism. In his insightful paper on "The Place of Theory in Educational Research" dating back to 1974, Suppes identified five different ways in which theory might be made relevant for educational research by analogy, by reorganizing of experiences, as a device for recognizing complexity, for problem solving and to avert the triviality of "empiricism".

The first, theory as a means of building analogies and universal generalisations, goes back to how knowledge is built in the more mature sciences like physics and other natural sciences.

This is the classical and *standard* notion of theory Mjøset argues for in this publication, and it serves as a reservoir to make predictions on the basis of analogue situations. The second, theory understood as the reorganising of experiences, makes theory relevant as it can change our perspective on what is important and what is superficial. For many cases where theory has been successful in science we can make a strong argument for the deeper organisation of experience which the theory has thereby provided. The third way posits that theory also nurtures our ability for recognizing complexity. One benefit of theory is to show that what appears on the surface to be simple matters of empirical investigation, on a deeper level, turns out to be complex and subtle. It is a merit of theory to push for a deeper understanding of the acquisition and not to relax before we have a complete analysis of what a student does and what goes on inside his/her head as (s)he for example acquires a new skill. The fourth notion, problem solving as theory, goes back to the Deweyan concept of inquiry as the building block and repository for the transformation of an indeterminate and indefinite situation that presents a problem regarding what is determinate and definite. Inquiry - and problem solving- as a theoretical device can thus be seen as corrective to the overly scholastic and rigid standard conception of scientific theory, and where the developments of scientific theories are regarded as potential tools for problem solving. Suppes' fifth way is where theory serves as a protection against the triviality of "empiricism". Those parts of science that have been beset by "empiricism" have been suffering accordingly. The deficiency of simple empirical facts and anecdotes is well acknowledged. Empiricism as simply the recordings of individual facts and with no apparatus of generalisation or theoretical framework leads nowhere.

As indicated in this short overview, theories serve many functions and have many features in the social/educational sciences, and the variability within each of these features of a theory is sufficient to suggest that the notion of theory is not exactly a unified one. This poses severe challenges for the role of theory in the field of educational research. In the next section I will end this discussion by postulating four general challenges regarding the role of theory in the educational sciences.

Challenges in the use of theories in the educational sciences

First, there is *no such thing* as a well-established unified "theory of education" which is supported by the majority of educational researchers. On the contrary, different groups of researchers represent different schools of thought, some of which appear to be mutually incompatible if not directly contradictory. Moreover, for reasons that will be discussed later in this report it is neither likely nor desirable that we shall get a unified theory in educational research in a foreseeable future, if ever.

Secondly, many educational researchers relate their work to explicitly invoked theories *borrowed from other fields* (or at least from authors who belong to other fields), and often do so in rather eclectic or vague ways. The use of 'grand' theory, or theories about the social world as advocated by such major social theorists as Karl Marx or Michel Foucault, for example, raises further and different issues for research engagement. When basing research in the understandings of a specific theorist or set of thinkers it can be tempting to apply the theory in a more or less uncritical fashion to interpretation of evidence, rather than engaging critically with the theory itself or engaging with the evidence in an effort to test or modify the theory. At its worst, this can resemble the "adulation of

great thinkers" (Tooley & Darby, 1998) or what the sociologist Frønes in this report entitles "fashion of the nonsense". Rather seldom are theories "homegrown" (Niss, 2006: 4) within the educational sciences.

Thirdly, much discussion and debate within educational research takes the shape of "battles" with and between theories. This could potentially be fruitful to the degree that competing theories offer different perspectives on the same thing, whereas it is potentially unproductive, if not damaging, if the theories deal with different things and therefore compete only in the superficial sense that "my topic object of study is more important than yours". In this report Tellings suggests different mechanisms of synthesising as a means of going beyond what appear to be competing theoretical perspectives.

Fourth and finally, quite a few educational researchers have a poor match between the theory they invoke and its relevance for their data set .Many researchers who actually do invoke a theory in their publications do not seem to go beyond the mere invocation, and with subsequently a poor fit in applying the theory to their data and the interpretations of their evidence. In other words, some theoretical framework may be referred to in the beginning or in the end of a paper without having any presence or bearing on what happens between the beginning and the end.

The three contributions that follow engage with the role of theory in different ways. Tellings is occupied with the many functions and faces of theory in educational research. Theories might both describe and explain reality, and at its best also change reality. As for the latter she argues that it is likely that we need to combine different theoretical positions. For example, in order to learn fractions in mathematics you have to combine insight from language learning and conceptual knowledge, but also real-life experience with quantities. Furthermore, you have to draw on short-term and long-term memory, rote learning, and insight into how fractions are solved. A good theory concerning fractions must account for all of this, she argues, and it is likely that a combination of different theories will work best. Tellings (2001) is subsequently occupied with integrative efforts in the educational sciences, an attempt she sees as yet to be made. Tellings suggests four different mechanisms of integration: *reduction, synthesis, horizontal addition,* and *vertical addition.* For the domains of education with it multidisciplinary character, horizontal addition is especially promising and powerful, she argues.

From the point of social science sociologist Lars Mjøset underscores natural sciences – what he entitles standard view of science, social philosophy (humanities, linguistics, philosophy and other text related disciplines) and a contextualised view (case studies) as *three* distinct theoretical traditions. He argues that each of these views connects to a reference faculty within the university structure and with definite traditions, history and methodological guidelines. The social-philosophical reconstructive notions of theory build on Kantian ideas of enlightenment and encompass transcendental reasoning such as philology, case constructions, and other text-based ways of thinking. Today these ideas are recognized in contemporary European philosophy within "grand theories" such as Luhmann, Giddens, and Habermas, Mjøset states.

The standard law oriented notion of theory builds on the natural sciences such as physics experiments and other natural sciences. The tradition has contributed to foregrounded experimental and statistical design inspired theories within the educational sciences. Most social sciences today work with such data, regarding statistical inference as quasi experiments, reading regression equations as evidence, and econometrics.

Mjøset sees contextualize theories as the most promising and adequate for the educational sciences, and especially the contextualized explanation view of theory. The contextualized explanation view of theory has its origins in ethnography,

anthropology and other cased based, and bottom up, based models for generating theory, and which retain contexts and achieve generalization that are limited in time and space. Contextualize theories are not a method community –theories build from explanation of cases with reference to selected case categories, Mjøset argues. Like Tellings, he sees cross-case analyses and similar integrative efforts as a means by which contextualized explanation theories could escape away from their focus on unique cases and singular units.

The last contribution in this report summarises the roundtable debate on educational theories as a field of cross-disciplinary investigation. From the disciplines of education, political science, economics and sociology, Haug, Frølich, Bonesrønning and Frønes discuss the role of theory within the education sciences. Frønes questions the tendency to privilege transcendental theories (Niss, 2006: 3) and grand theories, what he labels "fashion of the nonsense". Haug is sceptical towards what he sees as a tendency towards privileging certain theoretical positions and "one theory fits all". All four of them, however, underscore educational research as a multidisciplinary field where different theories should work in concert. They also underscore educational research as a multifaceted field of investigation where a magnitude of theoretical positions is required and desirable. There is no single theoretical position that could serve all purposes. Quite the contrary, they argue, which is why we need all kinds of "workers in the vineyard", and we need a variety of training for these various workers, not only in terms of different theories of education, but also in terms of whether their approach is primarily theoretical or empirical.

Oslo, March 2012

Kirsti Klette
Chair of the programme board

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Theories and Research in the Field of Education: An Indissoluble Union

What is a theory? The word is difficult to define. It is easier to say what a (good) theory *does*. It describes reality, explains reality, and, if possible, tells how we can change reality. Thus, it guides our empirical research and our interventions in practice.

For instance, Piaget's theory of cognitive development describes four cognitive stages a child goes through, explains these stages in terms of developing cognitive structures, and discusses how this development can be helped by the child's parents and other educators, that is, by supplying the child with many different experiences. Familiar as this might seem to scholars, it is worthwhile to give it some thought once in a while, for in the daily routines of educational research and practice one is not always fully aware of the consequences and implications of this triad between describing, explaining, and changing reality. An example might illustrate this.

Cambridge Somerville Youth Study was a programme in which boys from antisocial or otherwise disadvantaged families were offered different kinds of help, guidance, and counselling over the period of a few years. Social skills were taught, healthful and wholesome activities were undertaken, many features of the riskful environment were changed, and the boys were given all kinds of medical and social support. Each boy had one counsellor who coordinated the activities and functioned as a mentor. The goal was to prevent them from becoming criminals.

The study was very carefully designed, the counsellors were trained very well, and next to the group of boys who received the treatment there was a comparable group of boys from problematic families who did not receive such treatment. Thus, it was possible to precisely determine afterwards whether or not the treatment was effective, and the boys were followed for many years after in order to also measure long-term effects.

This intervention was based on former studies which had shown that boys from at-risk families, living in disorganised neighbourhoods, had a much greater risk of becoming delinquent than boys who came from good homes (=description of reality). The theoretical idea was that even boys living in very bad circumstances could be steered away from delinquent careers. For this to happen, during their formative years there should be one adult who could be an example for them and give the boy emotional support and guidance, and most of the limiting conditions they lived in should be changed (=explanation of reality and changing it). So, there seemed to be a sound theoretical idea behind this intervention.

Now, although the boys in the treatment group did show some positive behavioural changes after the treatment, follow-up studies showed the boys in the treatment group to have broken the law significantly *more* often than the boys in the comparison group who did not receive the same treatment. So the treatment had reversed effects! An explanation for this phenomenon could only be found in something being wrong with the theoretical basis of the study. For, as I explained above, the study was methodologically well executed with well-trained counsellors. A plausible theoretical explanation indeed has been given, induced by another finding in the study: that the boys who had been in summer camp during holidays and had been treated (this was part of the intervention for most boys) had broken the law more often, and the more often they had been in summer camp the higher their crime rate.

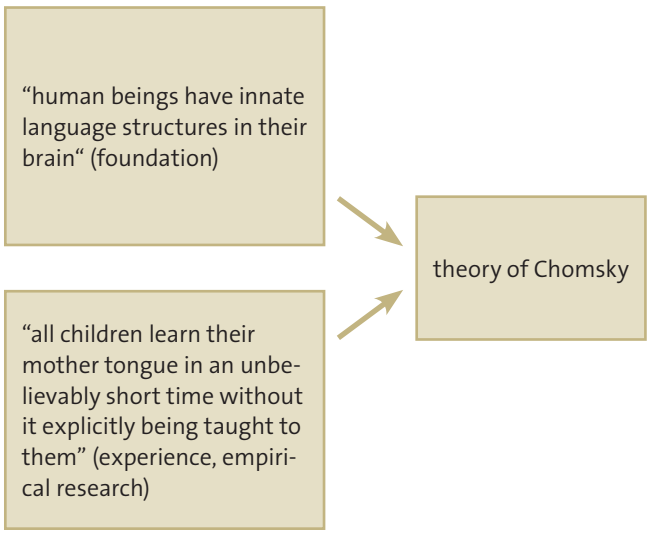
According to the construct theory of motivation of McCord (2000), peers more than parents or other adults shape the behaviour of adolescents – by shaping the *motives* adolescents

have for their behaviour. In these summer camps, children had a lot of unsupervised time. The boys in the treatment program probably bragged about their bad behaviour to their non-criminal peers during summer camps. This gave them a special status in the peer group, and that motivated them to stay on the criminal path.

Strangely enough, the detrimental effects of the Cambridge Somerville youth intervention have not prevented scientists and policy makers from making the same mistake again and again. Programmes and empirical studies in which adolescents who are at risk for becoming criminals were obliged to visit peers who were locked up in prison (so as to deter them from becoming criminals themselves) have had the same reverse effects, and policy makers (at least in the Netherlands where I come from) still advise "education camps" for criminal youth. These experiences show the need for a good theory. In this case, what was lacking was a thorough, well-considered theoretical description and explanation of what influences and motivates adolescent behaviour.

So, a sound theoretical base for our research and for our interventions is of huge importance. But how do we find, let alone develop, such a sound theoretical base? There seem to be so many different theories, standing in different research traditions. For instance, in the field of moral education, *character education* and the Kohlbergian approach seem to oppose each other. To describe the difference somewhat bluntly, according to character education we should teach children moral behaviour mainly by explicit reward and punishment, whereas according to Kohlberg's theory the moral development of the child progresses more or less automatically via fixed stages, provided that the environment makes sure the child can encounter the right type and diversity of moral experiences. Similarly, in the field of school education the Montessori approach competes, on the one hand, with more traditional schooling and, on the other hand, with the so-called "New Learning" in which the child is entirely free to choose what she wants to learn and do, provided she does not disturb others.

In order to make a good choice for a theory or an accompanying intervention, one should consider that most theories rest both on foundations that are very hard to verify empirically and on empirical research or experience. Which of these two (the foundation or the experience) comes first, is a chicken-egg problem. An example is given below:



« Theory without practice is for geniuses, practice without theory is for fools and villains, but for most educators [there] is the profound, indissoluble union of both

Thus, when choosing a theory to use as a basis for our research or practice, we must find its foundation(s) at least plausible and check whether the empirical research it rests on is sound. The plausibility of not (as yet) verifiable assumptions can only be safeguarded by good reasoning and probably, in the end, by intuition. As regards sound empirical research, the ideal design of an empirical study looks something like this (Veerman & van Yperen, 2007), for educational intervention studies:

- Clearly described intervention or experiment, sound theory base, with detailed protocol
- Experimental group gets the intervention or experiment
- Control group gets placebo or alternative intervention or experiment
- Participants at random assigned to a group
- Participants similar on relevant characteristics
- Pre- and post-test
- Adequate statistical analyses

For pure descriptional or other type of studies this list should be adjusted, but the general idea is clear. As Veerman & Van Yperen (2007) explain, in education research it is often not possible to perform studies that answer the ideal design because practice is not always manageable, but that is no big problem as long as one is aware of the lower scientific status of the results of a less ideal design. It does not at all mean that the study is valueless. Thus, if we have checked both the plausibility of the theory's foundations and the soundness of the empirical research it rests on, we can make a judgement as to the general quality of the theory at hand. We then have to analyse whether the theory is plausible, consistent, coherent, and well-reasoned.

It is easiest when, in this way, we can deal with the different available theories and end up choosing one particular theory for our further research and interventions. However, sometimes it will be better to combine theories. In the field of education, this is possible because the human beings who are the centre of education are very complex beings, and theories that seemingly focus on one and the same aspect of human behaviour or human functioning, on closer view often turn out to deal with slightly different aspects that can or should be combined. Combining or integrating several different theories can roughly be done in four ways (Tellings, 2001):

- reduction
- synthesis
- horizontal addition
- vertical addition

Reduction means that one theory is re-defined in terms of the other theory or is subsumed under another theory. It is said, more or less, "If you really look closely to these two theories, with some corrections and adjustments, they amount to one and the same core theory." Or it is concluded "...on closer view, the one theory is really part of the other theory".
A well-known example of reduction of terms and, with that, reduction of theoretical approaches, is the reduction of mind to matter: the idea that "the mind" is merely a term for a non-existing something and that all we really have is the cells in our brain. Although this reduction solves some problems, it also gives birth to many new ones.

Reduction can also be a first step towards one of the other three types of integration of theories. For, if we want to

« theory without practice is empty, practice without theory is blind

integrate different theories or models, we must first be sure whether, and to what extent, they are really *different*.

- If they are not really different, we can reduce the one theory to the other.
- If they are really different, perhaps they can be combined in one way or the other.

It is as if we have to do some cleaning up first by means of reduction, before the Real Stuff of combining or integrating can start.

The second integration type is *synthesis*. In this type of integration, the integration of theories leads to entirely new insights. The theories fertilise each other, new ideas originate where the two theories or models meet. An example is CAT, *cognitive analytic therapy*, designed by Anthony Ryle. This therapy combines ideas from Freudian analytic therapy with cognitivism and with ideas from Vygotsky. From Freud it takes the delving into the psyche of the patient but it leaves aside the unstructured character of Freudian therapy. From cognitivism it takes the structured, goal-directedness but leaves aside its superficiality. And from Vygotsky it takes the clear role of the environment, more particularly of a mentoring adult – in this case the psychotherapist.

The result of this integration is something new in the sense that elements are central in the therapy that does not occur in Freud, or in cognitivism, or in Vygotsky. One such element is *formulation*. This takes the form of reformulation of the problems of the patient early in the therapy process, and of formulating both unhelpful and helpful procedures for dealing with problems, later on in the therapy process. In these formulations, Freudian insight into the psyche, cognitivist rational thinking, and the Vygotskyan experience of the mentor, the therapist, come together.

The third integration type is *horizontal addition*. This type of integration is useful when different theories or models cover different domains in education – or when they cover different aspects of one domain, as for instance empathy development and cognitive reasoning development, which might be viewed as two different aspects of moral development. Such different theories and models, then, are rather simply added together so that a complete picture originates froms the domain, with all relevant aspects. The underlying idea of horizontal addition is that the phenomena described by the different theories or models occur more or less diachronically, in the same cross-section of time. For the domain of education, with its multidisciplinary character, horizontal addition is often useful.

An example is mathematics. In order to solve fractions, several different skills are required. First, one has to have a concept of what a fraction is. Mathematical insight, but also language knowledge, is required for this, and both are acquired by lots of experience with quantities in the real world. Furthermore, one must have stored in mind arithmetic facts, such as the multiplication tables. This can be achieved by rote learning, which requires a good working short-term memory and long-term memory. These are necessary also for another aspect of fractions: one must know and understand procedures for solving fractions. Thus, language, conceptual knowledge, real-life experience with quantities, short-term and long-term memory, rote learning, and insight play a part in solving fractions. A good theory and method concerning fractions



must account for all of this and it is likely that a combination of different theories will work best. Rote learning, which can be stimulated with rewards, can perhaps best be approached behaviouristically, whereas insight into what a fraction is can probably be explained best by cognitivistic theories.

Finally, there is *vertical addition*. In this form of integration theories or models are piled on top of each other. The underlying idea of vertical addition is that different theories or models describe different stages or phases in a development. This form of integration is especially suitable in the context of education since children by definition are developing human beings. Vertical integration has been attempted in moral education by different scholars, of which Richard Peters was the first. The idea is that character education and the Kohlbergian approach, seemingly conflicting approaches to moral education, can be fruitfully combined vertically. Character education says that morality entails the transfer of moral norms and values to children with behaviouristic methods, with reward and punishment. Kohlberg, in contrast, thinks that moral education, or rather moral development, means the development of choosing one's own norms and values in a principled and well-considered way. Kohlberg's approach is based on cognitivism. The vertical integration entails that character education is a necessary step towards later choosing of one's own norms and values. The idea is that one cannot consciously choose certain norms and values without at least having to some degree internalised these norms and values, by behaviouristic methods.

It is interesting that here not only theories and methods are integrated, but also foundations. The behaviourism of character education is viewed as a necessary step towards the cognitivism of Kohlberg's moral reasoning.

A final remark with respect to the integration or combining of theories is that most of what I have said above also holds true for integrating of combining practical interventions or (school) methods, which some of the examples I have already given show. Going back once more to theory as a triad of describing, explaining, and changing of reality, I would like to say something about both the role of foundations and of empirical research as pillars of a good theory. Next to foundations that have as yet not been verified empirically – such as the idea that language is innate or the idea that children of all ages are eager to learn by themselves without external force – but which perhaps once might be verified, there are other views involved in educational theories that can never be verified. They are the educational norms and values by which we are guided, more particularly our ideal of the well-educated adult human being. For instance, Kohlberg's theory of cognitive reasoning is based on a very different ideal, that is, of a much more autonomously thinking adult than the character education approach. When choosing a theory, or when integrating theories, we must be aware that any choice of theory at the same time means a choice of one or more educational values.

Usually, researchers do not explicitly choose a theory to base their research on. They work within the framework of the theory they happen to be educated in at the university, or the theory they encountered in the position they happen to apply for. Nevertheless, of course, in retrospect it is also quite possible to reflect on the theoretical tradition one works in. This

should perhaps be done much more, in open discussion with other traditions.

As regards empirical research, this is the indispensable tool for developing, verifying and (re)adjusting theories. It can corroborate or falsify theories, or even bring to life new theories. The relation, however, is mutual. Good theories yield many interesting issues for empirical research. Doing empirical research without a firm theoretical basis is not only lazy research, it can have detrimental effects, as we have seen in the case of the Cambridge Somerville Youth Study and in several successive interventions and studies with similar approaches. The originators of that first study (almost 70 years ago now!) are not much to blame. They had a theoretical rationale which was plausible and which they thought to be sufficient. However, there should be something like advancing insight, and later researchers should have learned from the Somerville study.

I would like to end with a quote about the mutual relationship between theory and practice. Many such quotes exist, most of them having the structure of the one attributed to the philosopher Immanuel Kant (which, many say, Kant never uttered): "theory without practice is empty, practice without theory is blind". A nice, and for education relevant, one is the following, which is a quote from the Dutch pedagogue J. H. Gunning (1859-1951), cited by one of his successors, M.J. Langeveld (1905-1989; 1979, p. 23): "Theory without practice is for geniuses, practice without theory is for fools and villains, but for most educators [there] is the profound, indissoluble union of both."

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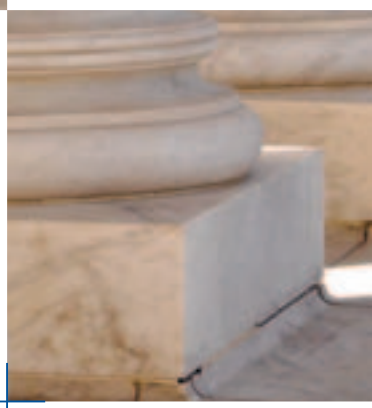

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Many Notions of Theory – Too Few Methodologies to Deal with Them

We can distinguish three ways in which social science methodologists conceive of science. This distinction is grounded in a fairly detailed sociology of science analysis (Mjøset 2009), one that we here have to take for granted. The *standard* view relies on a methods community with the natural sciences (via mathematics and statistics), the *social-philosophical* view relies on a symmetric methods community with the humanities (via philosophy, linguistics and other disciplines based on the interpretation of texts), while the *contextualist* view relies only on a methods community internal to social science.

Methodologists define the three methodological views (or practical philosophies of social science) when they legitimate their research experiences (based on their skills in one out of the three clusters of methods) by borrowing concepts and arguments from the relevant areas within professional philosophy of (natural, human and social) science.

Within each view we find at least two different notions of theory. In the overview below, we establish a connection between different understandings of theory and the interacting histories of higher learning/research institutions and the state in the Western world. Each of the three views connects to a reference faculty, since faculties unite similar disciplines. The historical analysis behind these historical clues concerns the differentiation of the university institution in a setting where the largest Western states relate both to industrial transformation (impact of basic natural science in the late 19th century scientific revolution) and to social mobilization. The detailed processes can be traced in country cases (for Norway, see Mjøset 2011). In this very short overview we start with the brief summary contained in Table 1. The first three columns is a taxonomy of understandings of science and theory in present-day social science. The four right-hand columns give some historical clues. In the following, we survey (however briefly) both the historical roots and the contemporary notion.

View of science	Reference faculty	Notion of theory	Development phase/university	Historical roots University institution	Historical roots State/civil society	Historical examples
Social-philosophical	Humanities	Reconstructive	Humboldtian "Bildungs"-university	Philosophical (humanities) faculty, dominating the university	Socialization of elites in pre-democratic states	Encyclopaedic Hegelian idealist philosophy
Contextualist	Social science	Critical	(Outside)		Social mobilization of workers for full political rights, since the mid-19th century	Marxism from the 1850s to the 1930s
Standard	Mathematics/Natural science	Laworiented	Research university	Reference faculty influence on humanities (and law) faculties: experiment and statistics	(Second scientific revolution)	All the social sciences, particularly the most influential early ones: psychology, education and economics
Standard	Mathematics/Natural science	Idealizing	Research university	Reference faculty influence on humanities (and law) faculties: mathematical modelling	(Second scientific revolution)	Economics alone, but spreading to sociology and political science since the 1970s
Contextualist	Social science	Explanation-based	Research university (but partly outside)	(Social reformist thinking gaining more influence in the 20th century)	Increasing state activism since the late 19th century in social policies, and/or social reformism in civil society	Depending on country: anthropology (Britain), social policy (Germany).
Social-philosophical	Humanities	Deconstructive	Mass university	Present day humanities faculty in the mass university: post 1960s denationalised humanities influence social science	(Socialisation of parts of the student masses.)	E.g. cultural studies, media studies.

Table 1. Notions of theory in the social sciences, contemporary taxonomy and historical roots.

The social-philosophical reconstructive notion of theory
Historical background: Humboldt turned Kant's (1798) vision of a philosophical faculty free to pursue the truth into a post-medieval model of the university. The philosophical faculty dominated this enlightenment *(Bildung)* university, trying all students in preparatory tests on a range of subjects from classical languages to natural science, synthesised in encyclopaedic systems of Hegelian idealist philosophy. The social task of the university was to socialise future lawyers, doctors and priests into national elites. Hardly any new knowledge was produced. Philosophers lectured on older texts. As research gradually emerged, it consisted of transcendental reasoning, philology and case reconstructions, relying on texts (philosophy), archives (history), and the national cultural heritage (literary texts, cultural artefacts in ethnographic museums). Except for some field excursions to exotic places, there was very little observation by participation. The overall notion of theory was holistic, loosely contextualised and very much preoccupied with the progress through which the human spirit gets to know itself. This realization, a Hegelian synthesis, was also the codification of knowledge.

Contemporary notion: A related notion of theory reappears in some, but not in all the present social sciences. It is distinctly absent in economics, it is rare also in psychology. We find it above all in sociology, but it also appears in anthropology, political science, and education through inspiration from high sociological theory.

It is a late addition, conquering the curricula only since the 1980s. It was influenced by continental philosophers pursuing "critique of positivism" from the 1960s onwards: most typically in Habermas' work (as well as in Giddens, Luhmann, Alexander and others). There is now a host of secondary introductions to such "social theory" from the sociological classics and on. General theory amounts to investigating fundamental preconditions of social science conceived as a set of transcendental concepts (action, interaction, knowledge, and structure). Although they are hardly philosophical idealists, the social philosophers continue in line with Hegel's investigation of mankind's the present, aiming to specify their fundamental concepts in grand interpretations of the present state of modernity. In the wholly different context of the mass university and a democratic political system, their style of theory-making emphasises totality/holism, anti-positivism and the leading role of (continental) philosophy. Such social theorists are "literary intellectuals"-like analysts who synthesise the spirit of the age in personal intellectual products. The fundamental concepts should be general, but there is very little conceptual convergence between different theorists. It hardly follows a distinct method other than firstly, interpreting classical texts of sociology and social philosophy (thus the label "reconstructive"), and secondly, analysing the modern age with reference to research that has already been carried out. The interpretation of the present may focus on structural features related to the global or national situation, or individual/existential personal matters. Such interpretations may be pursued with a materialistic or an existential orientation.

The contextualist critical notion of theory
Historical background: The historical roots of this notion are entirely *outside* of the university institution, as knowledge here is accumulated into theory with reference to social movements organizing to achieve legitimate social

change. Marxism was the first case where a social movement standpoint claimed distinct merits as social science. In such a standpoint epistemology, a sociology of knowledge perspective, is linked to ethical considerations. Marx considered the university economists of mid-19th century Britain as "vulgar economists" because they produced theories that obscured the role of the underprivileged workers in economic development. As this was several decades before democratization, such theories emerged and circulated in activist circles considered by the state to be dangerous enemies. Later, in the more democratised, but still turbulent, interwar period this impulse also yielded early reflections on the philosophy of the social sciences, especially in the philosophical "critical theory" of the Frankfurt School.

Present notion: Critical theory is an early notion of theory, but a late one inside of the university. Since the 1970s, Frankfurt School critical theory influenced the kind of reconstructive social philosophy just surveyed above, becoming integrated into the university institution. But at the same time, other social movements gave rise to new, standpoint-based accumulation of knowledge originating outside of the university. Indications of critical theory in this sense are theories named after social movements. The most typical recent case is feminist theory. It took up the standpoint epistemology tradition pioneered by Marx. But the context was different (a democratised post-war society), and so was the focus: the gendered division of labour not just at work but also at home. Still, the epistemology emphasizing *the standpoint of the underprivileged* clearly stands out. Just as Marx saw the whole set of academic economic theories of his age as "bourgeois", first generation feminists saw all academic social science theory in the 1950s and early 1960s as "male". The main argument is that any social science theory about contemporary developments potentially *participate* in these social developments, feeding back knowledge to the actors they are about. This may create or stimulate social mobilization. Such mobilization, or even just unintended consequences of regular interaction, may change social relations, make established theories "untrue" and society as a research topic a moving target (Hacking 1999).

The standard law-oriented notion

Historical background: Around the mid-19th century, separate faculties of mathematics and natural science broke out of the philosophical faculties. The two standard notions of theory emerged *inside* the university institution, as the new faculties began to exert influence back onto the humanities faculties they had broken out of. Through the first half of the 19th century, natural science introduced systematic observation, experiment and disciplinary organization into the university. This became a major source of influence on some fields within the humanities (and law) faculties, especially the emerging social sciences. The natural sciences seemed capable of exact results, rapid progress and practical usefulness. The causal laws demonstrated by physics experiments (as pioneered by Galilei) defined a *strong ideal.* Furthermore, the "assistant" sciences of mathematics and statistics provided a number of formalisms, some of which even the social sciences could try out. The enlightenment university was transformed into a research university, internationalised through disciplines (international networks of researchers interacting in research frontiers), journals and conferences. Entrepreneurs of the new social sciences offered them as engineering sciences in the fields of social and economic development. Psychology would

replace Hegelian speculations on the spirit with experimentally based knowledge on perception, memory, reasoning, etc. Education emerged in close interaction with this kind of psychology, offering various tests, e.g. of intelligence and work-related skills. But both the engineering vision and the strictly law-oriented notion of theory soon created problems. Social researchers found no laws that compared to the examples they liked to quote from the natural sciences.

Present notion: The failure to satisfy such ideals led to notions such as middle range theories and mechanisms. There were two varieties of this experience. One was related to statistics. Within psychology, the technique of randomised controlled trials spread from pharmaceutical testing of medicines. But this technique could only demonstrate the effect of a treatment, it gave no clues about the additional causal factors with which the treatment interacts. This is a problem if the treatment investigated is not a drug, but for instance a social policy or therapy intervention. A second experience related to non-experimental data. Apart from psychology, most social sciences work with such data, regarding statistical inference as quasi-experiments, reading regression equations as evidence of imposed experimental controls (the effect of one factor with all the others kept constant). Econometrics has developed this approach the furthest. However, promises that sophisticated formalisms would lead from correlations to causes failed to deliver (Abbott 2001). These theories are in any case restricted to the field and the time period from which the data are collected. Their generalizations are segmented, and this makes them middle range theories. The "softest" version of middle range theory appears in parts of sociology, psychology, education and political science: qualitative work is here presented in a terminology originally drawn from experiments (the effects of independent and intervening variables on dependent variables), but the reasoning is entirely verbal. Such versions of middle range theories differ from the contextualist explanation-based theories (discussed below) only in the philosophy of science reasoning that is borrowed to legitimate the procedures and results.

The standard idealizing notion of theory

Historical background: As with the law-oriented notion, the idealizing notion emerged through interaction between the old and the new faculty. Until recently, this notion was only relevant in economics. Economics went through two revolutions. First, in the 1870s, mathematical formalisms were borrowed from the static mechanics (constrained optimization), yielding neoclassical equilibrium theory. Ever since, economics have been socialised into mathematical problem solving. Second, in the late interwar period, inferential statistics seemed to offer a way to link the mathematical models to empirical data. True enough, economics gained status as a successful social engineering science with its contribution to the planning of the post-war Western mixed economies. This was and is a success, but it relied on many empiricist inputs, and despite it, theory and empirical research did not come well together. Economic modelling retained the experimental ideal, since any experiment must provide idealizations in its efforts to isolate law-like regularities. Although economics hardly built experiments, the methodologists emphasised that economic models were *thought experiments,* and that their "irrealism of assumptions" (Friedman 1953) was warranted since the models yielded useful predictions.

Present notion: Since the 1970s, sociology and political science began to borrow the idealised thought experiment (also in its more sophisticated varieties such as game theory). A fraction of the economists, however, turned to psychological experimenting (behavioural economics). This implied a connection to psychology for the first time since economics wedded itself to mathematical reasoning. This turn has – over some three decades – introduced many modifications to its ambitious mathematized equilibrium theory of human interaction in markets. Among these economists, the idealised notion of theory is becoming more like yet another collection of middle range theories. Idealised models never played any prominent role in psychological theories of action and interaction. Its dualism is between the law-oriented standard notion and the contextualist explanation-based notion. Economics, in contrast, struggles with a dualism between the two standard notions of theory. Given its methods community with mathematics, the idealised notion tempts scholars in economics (and some in sociology and political science) to retain the ideal of knowledge converging into one overarching research frontier of related, general concepts. The empirical basis is not primarily the empirical datasets behind law-oriented econometrics findings, but a combination of elementary experiments and a good dose of common sense (what Cartwright 2007: 226, calls "meagre" theory). The main challenge here is external validity. This has been much discussed also with reference to psychological experiments. But psychology's laboratory experiments lead on to multiple specific research areas, while the economists' models of whole economic systems are mathematical only. Psychological theories of action have always been more scattered, being developed in several fields.

The contextualist explanation-based notion of theory

Historical background: Critical theory developed as the first notion that emphasised the participation of knowledge in social change. This change was first resisted by the state, but as the labour movement gained strength, a tension developed between reformist and revolutionary strategies. Projects of gradual reformist change were pursued by the state (German social policies were crucial to early German social science) or by voluntary groups in civil society (the U.S. case). This interacted with the emergence of experts organised in professions. Their knowledge was predominantly based on experience with intervention in cases. Learning processes are often based on diffusion of knowledge about exemplary cases. This style of knowledge accumulation was only partly accepted in university institutions. However, anthropologists, ethnographers, and sociologists doing fieldwork (e.g. the U.S. Chicago school of sociology) began to think about such case-based, bottom up development of theories that retained context and achieved generalizations that were limited in time and space. Thus, both critical and explanation-based theories belong to the contextualist cluster, based on reflection about how knowledge plays a part in social development.

Present notion: Interest in case studies revived in the 1960s, even outside anthropology and ethnography. Contributions such as Glaser & Strauss (1967) suggested a method for case studies (based on fieldwork particularly) unconnected to any experimental ideal. Such explanation-based theory is built on explanations of cases with reference to selected core categories. The contextualist practical philosophy (Mjøset 2009) is defined as doing what natural science cannot do: enter "into" the object of study, talking to and interacting with its constit-

uent parts! The two contextualist notions, explanation-based and critical theory, can be placed as end points on a continuum defined by the nature of participation in the light of ethical reflection on legitimate strategies of change (reformist to fundamental). Many combinations in between these two extremes are possible. Examples are anti-psychiatry, action research, educational experiments. These are not experiments from which to derive general knowledge. Their purpose is to achieve *change* for the better. The researchers are participants. They may have to discuss charges that their intervention was for the worse. Like in critical theory, ethical reflection is absolutely central here. Knowledge is related to specific outcomes, as in history, law and therapy. Generalization can be offered only with context included. If knowledge is diffused, those implementing it must be able to judge their own context at the receiving end. Reflections on the methodological challenges of qualitative methods such as fieldwork, case studies, interviewing, participant observation, macro-qualitative comparison, etc. have since the 1960s mainly taken place in the social sciences. Explanation-based theory may – as in therapy – be a question of achieving health improvements for a single client, or a better learning environment for one single school class. But it may just as well be a question of a larger unit (state, local government, a private firm, etc.) carrying out reforms based on knowledge of the state of that unit and its context. Such case focus is relevant in a wide spectrum of policy-oriented fields: social work, criminology, schools, care, etc. It is an important field for employment of social scientists in the age of interventionist states with large research councils financing problem-oriented research programmes (cf. the notion of "mode-2" knowledge production; Nowotny, Scott, Gibbons 2001).

The social philosophical deconstructive notion of theory

Historical background: The youngest notion of theory is another social philosophical notion. The deconstructive notion resulted from a major post-war transformation of the humanities into post-national humanities. In most countries, the humanities in the 1950s and 1960s were still part and parcel of a nation-building project, contributing to the construction of a national cultural legacy disseminated in schools and media. But in the late 1960s student revolt, most humanities disciplines came under strong influence from those social science disciplines that were most influenced by critical theory. Across the Western world, the humanities disciplines became more sceptical of their earlier role in sustaining national legacies. While the reconstructionist social philosopher's notion reaches back to pre-research university humanities, poststructuralist deconstructionism (originating in Paris in the 1960s) attempts to develop an assessment of the modern world with reference the most formal and natural science-like part of 20th century humanities: linguistics. In the history of ideas, art history and comparative literature, structural linguistics was relied on to develop theories of discourse and narrative. The French intellectuals were closer to the role of literary intellectuals than in most other countries. Although often confused with critical standpoint theorists, poststructuralists actually insisted on the deconstruction of any standpoint, taking the role of the ironic artist rather than that of the committed activist. They implied a highly relativist sociology of knowledge (inspired by Nietzsche), in which all knowledge is power.

Present notions: – This approach was diffused from Paris to the Western world via Anglo-American humanities since the 1980s. Consolidated as a reference point especially for the

humanities disciplines closest to art, it then trickled down on the social sciences, bringing with it philosophical borrowings about "construction". This was an opposite movement compared to the earlier case of the student revolt, where social science influenced the humanities. True to its origins in the humanities, even post-structuralism generates modernity theories. In addition, however, they produce studies of power-relations in minute details. Like in critical theory proper, we are here at the limits of theory. If all accumulated knowledge is power, theory best be avoided. However, in most cases, scholars pursue poststructuralist theories in academic projects, retaining the term theory. But since the notion of deconstruction has intimate links to the arts world, scholars working with such a notion seem well placed to move into the cultural-literary public sphere. In that sense, the deconstructive notion of theory fits a society with high living standards where many young people move to pursue aesthetic pursuit. Certain disciplines in the mass university provide them with the enlightenment they need to succeed in such ventures. But this notion of theory also influenced second and further generation feminist theorists. Given the victories of the first generation's activist critical theories, the second generation could easily move into the university institution. The poststructuralists' sociology of knowledge allowed them to unmask the power of the "malestream" in the social sciences. Discussing the "constructed" nature of gender, feminist deconstructionists took the nature/culture dualism quite far. It is thus not surprising that a response in terms of neo-evolutionary theory, developing in the interface between linguistics and evolutionary psychology, recently emerged, firmly based on the standard approach.

How to avoid the methodologists' escape into philosophy?: The small survey above adds a university/state-perspective to earlier efforts at mapping the variety of theory-notions in the social sciences (Mjøset 2009). The most important finding is that four notions of theory emerge *inside* of the university institution, while two emerge *outside* of it. The *inside* notions of theory are connected to tensions emerging from the internal differentiation of the original philosophical faculty into natural science and humanities faculties. The two social-philosophical notions of theory have roots in the oldest and most recent incarnations of the humanities, while the two standard notions are return influences by the mathemathical/natural science faculty on the philosophical faculty. In their attitude to society, all these four notions relate to the world from a vantage point *within* the university institution.

In contrast, the two *outside* – contextualist – notions originally emerged outside of or only on the fringes of the university institution. They had some influence *before,* but major influence *only after* the founding of social science faculties in the early and middle post-war periods. Inside these faculties since the 1950s/60s, they represent a legacy from and a link to knowledge-based reforms and mobilization strategies outside of the university! Their vantage point is thus not just inside of the university.

In our accounts of the contemporary versions of the various notions, we can discern a trend towards stronger emphasis on middle level notions of theory. While the contextualist approach *only* yields theories that are grounded, only valid for specified contexts, even in the standard and social-philosophical approaches we find a growing interest in such notions. We shall relate this to another trend: disciplinary commitments are sustained within the mass university. Our account above implies that high level notions of theory have a stronger basis in the university sector than in applied research outside of the university. The reason is that only the *inside* views (standard and social philosophical) include such high level notions. If we then ask where we find *resistance against the trend towards middle level notions of theory,* the answer is plain: primarily at the universities.

The role of the methodologist – a social scientist with some specified empirical experience who is not a professional philosopher – is crucial for this resistance. It may take many forms. Here we only have space to point to one of its manifestations: the *escape into philosophy.* University social philosophers are most inclined to escape into continental philosophy, while standard methodologists tend to escape into analytical philosophy (or into the connected field of purely mathematical reasoning).

Along these escape routes, methodologists get entangled with what philosopher Ian Hacking (1999) calls "elevator-words": object, truth, reality, objective, construction and the like. More precisely, they borrow into ontological or epistemological notions – say the distinction between realism and constructionism, or bold statements on the properties of various forms of inference – with no reference at all to specific methods used, specific empirical research results, specific research problems or research frontiers. Such unspecified borrowing of philosophical terminology is tantamount to "taking the elevator" to the top floor terrace where the "chill winds of

abstraction" (Leijonhufvud 1975, 334) are blowing. The more methodologies that are produced in this way, the higher the risk of stalemate discussions in which scholars "who are not professional philosophers" fight battles with notions drawn from high level theories of one or the other type.

Since such battles lead nowhere, it seems important to avoid them. But discarding philosophy is no solution. That would in itself be a philosophical position. There may be several productive ways out of this muddle. We shall here focus on one. Generally, it is relevant for our understanding of theory that we engage in serious interdisciplinary philosophy, history, and sociology of science. This is what Hacking does in his philosophical plea to transcend science wars, such as the one that erupted in 1996 with Sokal's hoax against the poststructuralists. Taken in isolation, Hacking's irony towards elevator words might seem like anti-philosophy. But he is not a philosopher who wants to tear down all philosophy. He rather wants to deal with the deepest philosophical challenges by making sense of elevator words with reference to specific styles of reasoning. True to his point of departure in analytical philosophy of the natural sciences, Hacking has mainly contributed analysis of the styles implied in natural science (Hacking 2002). But there is an emerging subfield in the borderland between philosophy, history and sociology of science: "historical epistemology". One may hope that research here will provide specifications of styles that are relevant also to the social sciences and the humanities.

It should be emphasised that our three practical philosophies of social science are more aggregated than Hacking's styles of reasoning. For instance, the standard approach excels in both mathematical, statistical and algorithmic styles, while the contextualist approach excels at least in typological, historical-reconstructive (process tracing), and therapeutic styles. Still, we shall claim here that a specification of the fundamental problems in the philosophy of the social sciences should as a minimum relate to the three different practical philosophies (view son science). They have, as shown, all contributed understandings of theory that are currently in use in the social sciences, being absorbed in different ways by the disciplines. Methodological reflection should thus *not* relate to social science in an abstract, aggregated way. Nor should it be related to each of the single social science disciplines separately. These are harsh requirements, since they imply that by today, we have very few acceptable methodologies to go by in the social sciences.

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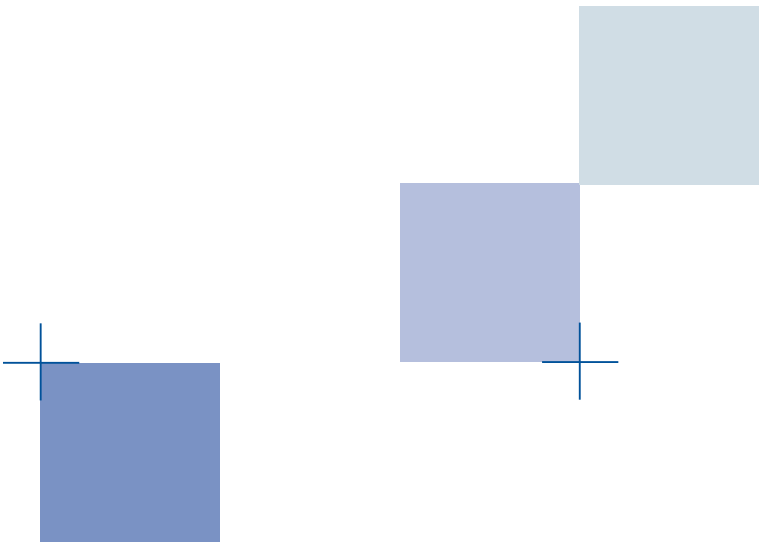


Siv Haugan, The Research Council of Norway

Multifaceted or one-dimensional?

Education researchers have different ideas about the theoretical challenges of their field. Here are four researchers' reflections on the use of theory.

"Research on education builds on many different research interests. In some areas Norwegian researchers are on the cutting edge of international research, while in other areas they lag far behind," says Professor Peder Haug of Volda University College.

He says that the field of educational theory is highly fragmented and non-homogeneous. "This can be problematic for those who are interested in the big picture. For those who are most concerned with their own topics, it probably doesn't matter as much," says Dr Haug.

Differences perpetuated

The traditional differences in the field of educational theory still exist:

"On the one hand", continues Haug, "we have researchers who use theory to predicate and regulate, and on the other hand we have those who use theory mainly to understand and explain. These 'camps' have a hard time talking to each other. Now we're seeing a growing interest again in predication and regulation."

Despite this, he believes that the peaceful co-existence of these contrasting orientations strengthens educational research.

"The result is greater diversity and a better foundation for knowledge development than if just one of these approaches was in play."

"The requirement that schools document their results has been reinstated after a long absence. The field is much more concerned with what works than was previously the case. This is why the goal of some research today is to say something about why things are done in one way as opposed to another. Underlying this is also an element of regulation, where schools need to document for the governing authorities that they have done what they are required to do."

Dr Haug emphasises that in studies of relations between humans, such as in education, it is not possible to predicate results in the same way as with economic research questions.

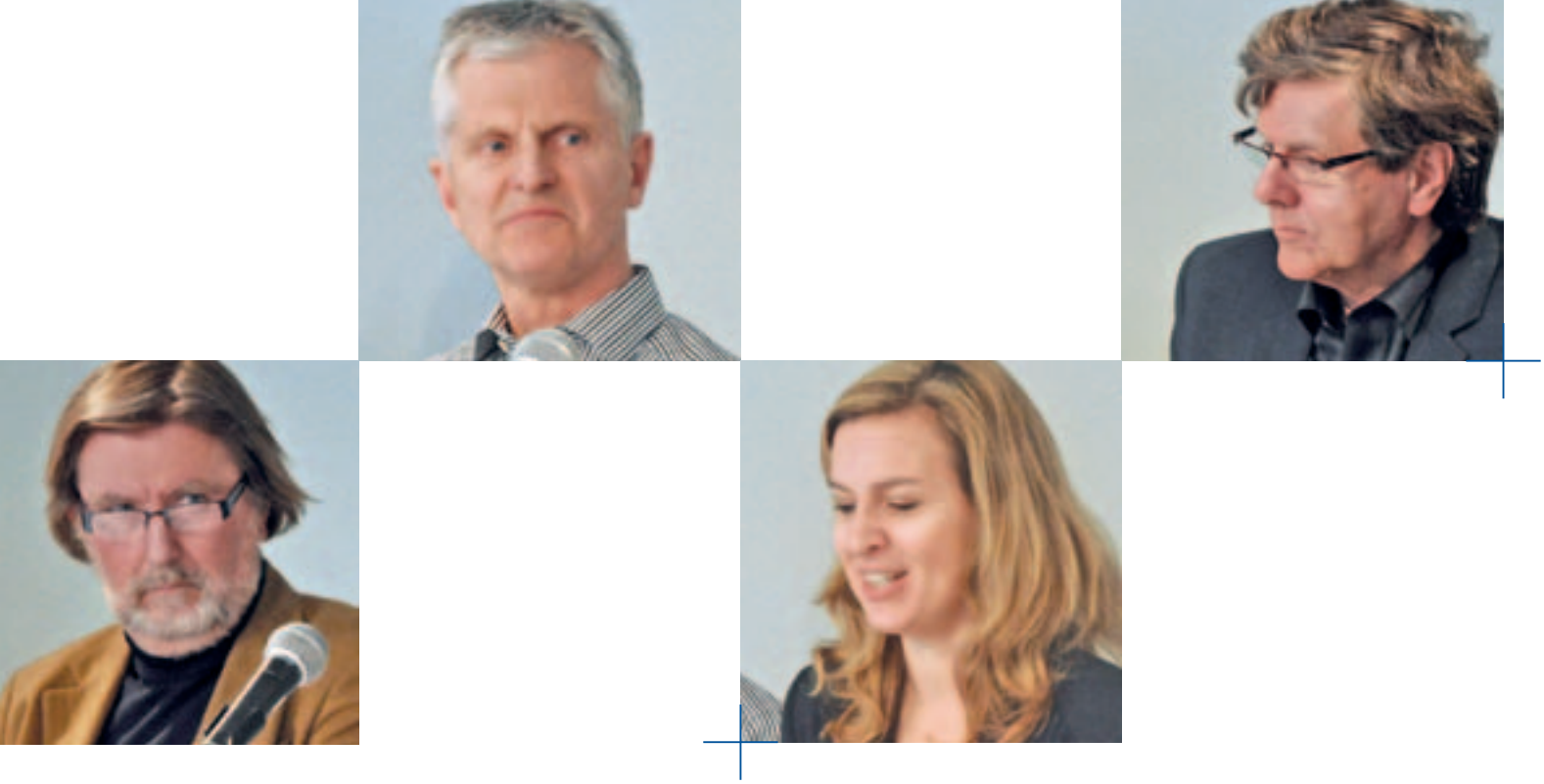
Tendency towards one-dimensionality

"A large number of research projects embrace and support a theoretical perspective based on social constructivism. When so many researchers employ this perspective, it leads to uniformity. We are seeing a tendency towards one-dimensional theorising," Dr Haug believes.

"To shed light on complex issues, such as how learning takes place in the classroom, a one-dimensional theoretical approach is not sufficient."

"In order to explain and understand that happens within the field of education, we probably need to be eclectic. We need to focus on the many small theories and build them up around the empirical facts we have. We can't bring the large theories down to the classroom."

Dr Haug emphasises that the point is not which theoretical foundation gets the "monopoly", but that monopolisation is taking place.



There are many thoughts on the role of theory in educational research: (from left) Ivar Frønes, Hans Bonesrønning, Nicoline Frølich and Peder Haug. (Photo: Siv Haugan)

"The result is that many researchers are marching too much to the beat of the same drum. The critical element in research can be undermined. Monopolisation also stands in the way of an eclectic theoretical orientation based on various elements from a variety of approaches. In other words, a diversity of theoretical approaches is needed," Dr Haug emphasises.

Many ways to use theory

Nicoline Frølich, a Research Professor at the Nordic Institute for Studies in Innovation, Research and Education (NIFU), believes it is important to ask whether respect for theoretical diversity prevents the accumulation of knowledge across subject areas and disciplines.

"Education is a complex area of society. There are many different players: teachers, pupils, parents, bureaucrats, politicians. Many types of processes are involved: teaching, research, management, administration and cooperation between players. Additionally, there are various types of institutions within the field: early childhood education and care institutions, schools, universities, university colleges, vocational schools, companies, ministries and other public players."

According to Dr Frølich, this complexity explains why educational research should incorporate insights from many different subject areas and disciplines.

"To exaggerate this, one could say there is no way around theoretical diversity in educational research," she says.

"The use of theory is in itself a multifaceted concept, and there are several different ways theory can be used. It may have to do with looking for patterns, as in natural science. Theory can also be used the way the classical economists use it, through deductive approaches of models."

Who can contribute what?

Hans Bonesrønning, an Associate Professor at the Norwegian School of Science and Technology (NTNU) and the BI Norwegian Business School, has launched a large-scale project on administration and management in the education sector.

"We're studying why the mass educational system functions so poorly in Norway and what we can do to get more out of all the years of education. To answer these questions we need both relevant theory and reliable empirical analyses."

"Our project is based on common economic decision theory. But we see that many subject areas can have vital input here, beyond economics. As economists, we have relatively stylised models, and we are interested in what psychologists, educators and sociologists can contribute to our work."

According to Dr Bonesrønning, economists have made some progress and begun to incorporate elements from other subject areas. They have long used administrative data and data collected for other purposes in their empirical research.

"If economic research on schools is to advance, a variety of data will be needed – primarily about teacher and pupil behaviour, but also about the behaviour of administrators and behaviour within families. This data capture must be guided by theory, often by theory from other disciplines."

« there is no way around theoretical diversity in educational research

”To gain insight into the complexities of the school system, it is important to have a core model that can be enriched by perspectives from other subject areas.”

”We must translate theory into reliable empirical research. Thanks to new data tools, we have accumulated a large amount of quantitative data, and there is a great need to analyse this. Knowledge of quantitative methods is needed to perform these analyses, but case studies should also be included to flesh things out. But if the ’skeleton’ (quantitative analysis) is not in place, everything will collapse,” explains Dr Bonesrønning.

Economic theory can give guidance

Dr Bonesrønning believes that economic theory can be applied in some parts of educational research.

”It’s relatively common for economists to attempt to understand the behaviour of players in the education sector by applying general economic decision theory, which views the players as making their choices based on their own preferences and the limitations on resources.”

”One example of this is theories for explaining pupil behaviour. A common point of departure is to view the pupils’ efforts at schoolwork as a balance between time for schoolwork and time for leisure activities. With this as a basis, discussions focus on, for example, how teachers can influence the pupil’s own efforts and how the pupil’s efforts are influenced by incentives. Economic theory can serve as a guide for empirical analyses that focus on the significance of the students’ own efforts and various incentives in the school and the labour market.”

”Another example is analyses of the interaction between players. Some models assume that knowledge production is dependent on both pupils and teachers make an enormous effort. Both parties understand that they benefit when the other party takes the greatest share of the burden. In this case, a game-like situation arises in which the pupil and teacher exhibit strategic behaviour in relation to each other. These are positive theories that can be used to understand how classroom settings *actually* work,” Dr Bonesrønning emphasises.

”Fashion of the nonsense”

Ivar Frønes, a Professor of sociology at the University of Oslo, says that theory is crucial for understanding various factors and for having an overall platform.

”Theory is theory about something. It must be context oriented. When we are going to formulate a theory, we need to obtain input from other studies of the topic we’re studying. What previous knowledge do we have about this field?”

”For instance, when we study the problem of marginalisation in Norway, we must explore the types of contexts and life courses this involves. We are forced to take a cross-disciplinary approach, and cross-disciplinarity is necessary for theory building,” says Dr Frønes.

He notes that researchers should be on guard for ”fashion of the nonsense”, meaning that researchers become engrossed with major theoreticians who are in vogue at the time, and try to make reality fit with their theories.

« We need to focus on the many small theories and build them up around the empirical facts we have. We can't bring the large theories down to the classroom level

Dr Frønes says that validity is the critical factor in applied research.

"The desire to conduct applied research that will be used to formulate knowledge-policy naturally puts the focus on validity. The concept of evidence-based measures, and the discussions surrounding this, illustrates the problem of validity. Measures and policymaking must be based on reasonably sound knowledge."

With regard to actions and measures, validity entails more than showing that the correlation between limited variables is significant. An educational strategy must be grounded in an evaluation of strategies – in knowledge-based policy, evaluation becomes all-important.

It is important to evaluate the impacts of educational measures and strategies. Such evaluations require clear objectives. There are also limitations on validity since measures have various effects on different groups and in different contexts. When strategies are to be implemented, we need to be aware of their potential limitations for certain areas.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