The concept of language in some socio-cultural theories

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Abstract. This paper is making a critical examination of the concept of language that is often used in socio-cultural theories about learning. We are claiming that one there is using an idea of language that against its own intentions basically is the same as in cognitivist theories. It is an idea that is based upon language as a calculus and not, as one aims, upon the use. We believe furthermore, that it is common in those discussions of language that one confuses the vocabulary of a language with its conceptual content. This will lead to that one in those theories restrict the discussions to investigations about expressions, and will not be able to discuss the understanding of the conceptual content.

Key Words: Language, Concepts, Vocabulary, Calculus, Socio-cultural theories, method, explanation, understanding, language as a tool, filter, discourse.

Introduction

We are in this paper going to investigate some ideas of the role of language in various theories about learning and understanding. There are several reasons for this. One is that language is often central to the ideas that are put forward in theories about education. We can see this in a number of so-called socio-cultural theories about learning and conceptual change, where language often plays a foundational role for the theory as a whole. Another reason for considering language together with ideas of learning is that there are several different concepts of language that could be used in such discussions. In socio-cultural theories about language one also often claim to have another concept of language than mentalist theories have. It seems moreover that many problems in those investigations are based upon the concept of language used. We do furthermore believe that many socio-cultural theories unintentionally do have the same basic conception about language as mentalist ones, and that they both do also often share the same presuppositions about what language is. We are therefore in this paper going to investigate what concept of language that is used in some of those theories, and what kind of implications these presuppositions have regarding questions about learning and about understanding language. Our examination will therefore primarily concentrate upon questions about the fundamental ideas about language involved in those theories and not primarily problems about pedagogical ideas. There are three main questions that
will be placed in focus of this examination. The first one is about the idea of language as structured by rules into a system of expressions in contrast to the idea of language as determined by use. The second question is the difference between language as a vocabulary against language as consisting of the conceptual content. The third question is only indirectly related to the concept of language used. It is the question of what level the theory is supposed to work, or to what extent a claimed theory has the capacity to explain how understanding works as against a more modest theory that only has the ambition to put up a method that is useful in teaching. These three questions are also often interwoven in each other and can’t always be discussed separately.

Some formal views of language
We will start with some short remarks about the first question of what concept of language that are being used in discussions of understanding and language acquisition.

The most common view about language in general is an idea that we will here call a linguistic or grammatical view. It is a view that is based upon language as a lexicon and a grammar. Language is then a set of words and grammar regulates how these words can be meaningfully combined and altered. This is the view that is used in ordinary school grammar that most people are familiar with since their youth. It is as well used in ordinary descriptions of language when we say that two different languages come from two different countries, for example English and German as two different languages from two different countries. This view of language is also usual in philosophy of language and in several theories in linguistics such as Chomsky’s generative grammar. Language is here supposed to consist of words, and rules for the use of these words. Some words are classified as nouns others as verbs, etc. There are then rules for these words about how they are allowed to be combined into meaningful sentences etc. The grammar has then the function of being the rules that regulates the use of words and gives language a structure. Language is thus a system of expressions. As a system of expressions we can say that language is regarded as a calculus, i.e. it is regulated by rules. This view of language as a calculus goes for both the technical view on language in formal semantics and the more common view in ordinary school grammar. In formal semantics it is obvious that language is regarded as a calculus since
mathematical models explicitly is projected on to language and gives it its structure. But in several theories of linguistics and in school grammar we could also say that language is treated as a calculus since rules gives language a structure that it wouldn’t have without the rules.

The idea of language as a system of expressions is common to most mentalist theories of language. In Chomsky’s theories language is supposed to be build up by simple units such as verb phrases and noun phrases etc. There are moreover transformation rules that regulate how these units are allowed to be combined. We have then a grammar in the mind that is "a system that specifies the phonetic, syntactic and semantic properties of an infinite class of potential sentences" (Chomsky, 1980, p. 35). Language is thus regulated by rules to form a structure. We can say the same about language and rules in for example Piaget’s theories. Even though Chomsky believes language to be innate and Piaget thinks that language is developed in the child, Piaget also regards language to be a system of expressions. He says for example that in the child by the age of about 11-12 a "hypothetico-deductive propositional logic is formed" (Piaget, 1980, p. 25). And a propositional logic is a formal language. We can find another example of language as a system of expressions in Philip N. Johnson-Laird’s ideas about mental models. Johnson-Laird uses formal semantics and natural deduction to explicitly form models of language as a computational calculus that is active in the mind (Johnson-Laird, 1983). Johnson-Laird is not alone in using formal semantics in analysing language. J Fodor does for example also rely heavily upon the formal approach of language in his ideas as does several others. We can in addition see that even M. A. K. Halliday who has a sociolinguistic approach regards language as a system of expressions (Halliday, 1975).

We do not however think that the linguistic view of language is helpful in our study. Our research project is going to investigate how language is used in various ways and in different contexts in concrete situations. This includes investigations of shifts of meaning in language use. Since the linguistic view is based on a view of language that it is determined of rules and, among other things, upon a static view of language it will not be able to capture the dynamic side of it. We will instead commit ourselves to the phenomenological idea of going "zu dem sachen selbst”, to the things themselves. And we will therefore use some ideas of Ludwig Wittgenstein’s later
philosophy of language in our examination, since he is studying *actual* use of language and not rules or a grammar that *regulate* expressions.

**Level of theory and vocabularies**

Before we continue with a discussion of what kind of concept of language that is used in different theories about learning, we will jump to question three above – What kind of claim do a theory have regarding the question of explaining understanding. Is the theory supposed to explain how understanding *works* or is it a theory that is restricted to give a method that can be used in teaching? Let us look at an example from James Wertsch (Wertsch, 1998).

Wertsch discusses some ideas from K. Burke (Burke, 1969). Wertsch is interested in using Burke’s ideas about a so-called pentad together with his own ideas of mediated tools. A pentad consists of five elements that are to be used in an investigation of analysing the understanding of an agent’s action and motives. The elements are: Act, Scene, Agent, Agency, and Purpose. Wertsch explains them as roughly being the same as the questions ”What? Where? Who? How? and Why?”.

He also says that they are what school children are taught to answer in essays and what journalists use in writing an article.

One question one now could ask about the pentad is if it is supposed to give an *explanation* of the problem of how human understanding works, or is it just a *method* that can be used to analyse what motive an agent has with an action. I guess that Wertsch would say that the theory is supposed to give an explanation of what understanding is. Nonetheless, if the pentad consists of the ultimate components that constitute understanding of motives, these components ought to be in a way non-analysable or at least the primary ingredients in understanding. They ought to explain what a motive as such *is*, as contrary to an answer to the question of what the motive for an action was.

If we however take a closer look at, for example, the category ‘Act’, which is supposed to equal the ”What-question”, we must say that this can’t be something that is primary to what is to be explained. The act or what-has-happened-question is an extremely complex question. To explain what has happened is as
complex as to explain the motive itself. It can’t therefore be something that is simpler or primarily to the motive. We can however use the ”act-category” as a tool in a method if we would like to describe an event. That is also why it could be compared to the what-question used by journalists. The question already presupposes that we know how to describe and understand the world and can therefore be used as a tool when reporting something. But it can’t answer the question of what it is that makes up what understanding is. The what-question can therefore be used by journalists since they are not researchers, but it want work in an explanation of how we understand motives since it presupposes most of what we would like to explain. The pentad can thus be used as a tool to structure the parts involved in a description of the motive that someone had for acting in a certain way. We can from this analysis know what the motive was, but we won’t know what it is that makes it possible for us to understand the motive. So if Wertsch has the ambition to answer that question he won’t succeed.

The question of what ambitions a theory have are sometimes connected to question two above; the confusion of a vocabulary of a language and the conceptual content of a language. We will illustrate that with a discussion from Andrea A. diSessa & Bruce L. Sherin.

Andrea A. diSessa and Bruce L. Sherin discusses in a joint article the question of what a concept is (diSessa & Sherin, 1998). In this article they does not seem to distinguish between the vocabulary (the set of words) a language have and the concepts this vocabulary represents. diSessa & Sherin wonders if every word correspond to a concept or not. This is a question that do however seem to be a bit odd, since it is a question that has long ago already been answered in philosophy of language. A language consists of several words that make up the vocabulary, but it is the content to these words that are the concepts. Sometimes one word has several different meanings, where each meaning is a concept. We then have ambiguity. If we are uncertain which concept are meant in a certain sentence we make an investigation to clear this out. How this could be done is a practical problem, but it is not a theoretical one. Sometimes, on the other hand, we have several different words for one concept. If this is a problem we can also here make an investigation to clear out which, or if, two different words have the same meaning or not. This is not either a theoretical problem, but if one does not distinguish the vocabulary from the content it will be. But that does
too means that if one does not make this distinction one is using a concept of language as if it consists of words and not of the content of words. In philosophy of language it is always the content to words that make up the language. What this content consists of is a philosophical problem, but the distinction between word and content is not. That likewise means that in understanding of language it is the concepts that is understood, so understanding and thinking is therefore done with concepts and not with words (We could add here that if the meaning of a word is a concept, the meaning of a sentence is a proposition).

In the following discussion about concepts, diSessa & Sherin says, in the same article, that they will use a broader concept of concepts than the one used by theory-based models that they are arguing against. According to them (diSessa & Sherin, 1998, p. 1164) they will not only regard "bird" and "bachelor" as concepts but will also regard "force" and "number" as concepts. We agree with diSessa & Sherin that "force" and "number" is concepts, but it seems odd that they think they need to argue for that. diSessa & Sherin obviously thinks that they need to broaden the range of concepts from something that seems to include only words for physical objects to words from other areas as well. But that is not any problem in philosophy of language. One has there always included "number" and "force" as concepts. We can compare diSessa & Sherin’s discussion with an example from G. Frege who is one of the founders of the modern discussion of philosophy of language, and he, if anyone, constantly discusses the concept "number". In Frege’s definition of the concept number from 1884 he uses the concept "not identical to itself". We have here (in the English translation of his German expression) four words, 'not', 'identical', 'to' and 'itself' that is used to discuss this concept. But nobody in the philosophy of language would say that this is a problem. There is not either a problem with the concept being empty. There is nothing that could fall under this concept, since everything is identical to itself. It can therefore be used in a definition of the concept zero and the more general question of defining numbers. Although there are alternative ways to define the concept of number and zero, no philosopher has ever questioned the idea of calling "not identical to itself" a concept. Furthermore, the concept is also contradictory, but not even that gives us any problem, since it is what is meant by the words and not the word themselves that is the concept.
According to diSessa & Sherin is a concept a kind of knowledge system (diSessa & Sherin, 1998, p. 1170). We shall not discuss this idea here, but look into some ideas about how we are supposed to have access to such system. There are according to diSessa & Sherin two components that are used to give us information about something. We must select and combine observations in a process that is called integration. And we must also be able to determine that we observe the same information in a new situation. This is called invariance by diSessa & Sherin. These two criteria are criteria of identification. If we are going to observe something we must be able to discriminate it from its environment and we must besides be able to identify it on another occasion. We could say that in one way it is nothing wrong with these two requirements. The problem is that it is not clear on what level diSessa & Sherin put these demands. If they are only specifying what in general is needed to observe something they are correct. But if they means that these requirements also is the foundation upon which an explanation of how we understand a concept, they want get of the ground. The thing is that if we are going to sort out certain properties from other properties in deciding what properties that belong to a specific concept, we must already be able to observe these properties in advance. That means that we must already have the concept we are trying to learn. This is a well-known problem that has been discussed from such different points of view as by the behaviourist W. v. O. Quine (1960) as by L. Wittgenstein (1958).

Quine’s critique is based upon a discussion of long established ideas in the empiricist tradition. According to R. Carnap (Carnap, 1928) concepts is created in the agent by a memory of an earlier observation (which is also supposed to be able to be broken down into its supposed ultimate simple parts). Quine thinks this will not work and has summarized his critique by saying that ”memories mostly are traces not of past sensations but of past conceptualization…” (Quine, 1960, p. 3, emphasis added). That means that we must thus already have the concept we are supposed to learn if we are going to be able to remember it. Wittgenstein has also discussed this problem and has a similar critique (Wittgenstein, 1958). If we are going to observe something simple, for example a spot of red colour someone is pointing to, in learning the concept ”red”, we must already know what red is to be able to observe it. If we don’t we would not know what is being pointed to. We could as well believe it to be the shape of the spot as the
colour. That means that we can only identify something as red if we already have identity criteria for the concept red. But we cannot use it as the ultimate foundation to explain how we learn concepts. If we already have the concept red we can differentiate red from form, the size, other colours etc. So when we already have identity criteria for red, we can as well see that this spot of red has the same colour of red as the one we saw yesterday. We can then remember the concept we used yesterday and compare it to the concept we use today to describe the properties the spot has. But that presupposes that what we remember is, as Quine pointed out, the conceptualisation we already has done, and not a concept-empty observation that is used to create a concept.

According to diSessa & Sherin we thus do learn concepts by using their identity criteria. But if this is to be the foundation of what makes us understand a concept diSessa & Sherin will not get anywhere. If they on the other hand only wants to give a theory of what is needed to distinguish one concept from another when we already masters language they are right. diSessa & Sherin’s criteria will then be useful in explanations of what distinguish two already known different concepts, but it will not say how we are able to understand them. If we would like to distinguish two different concepts we can compare them by describing the different properties the two different concepts has and then determine which concept is which. But that presupposes that we already can identify the properties the two concepts represents, and to do that we need already to understand the concepts we have for those properties. This will not, however, say what it is that makes us understand a wholly new concept, since it will not contain previously known properties. It also means that the question of how we learn a complete new concept is different from the question of how we differentiate well-known concepts from each other.

We see thus that we have at least two problems connected in diSessa & Sherin’s text. We have for one thing the problem of what ambition diSessa & Sherin have, or on what level their theory is supposed to be understood. And on the other hand we do in addition see that this problem is here connected to the confusion of a vocabulary with the conceptual content.
**Language and socio-cultural theories**

We will in this chapter take a closer look upon which concept of language that is used in some socio-cultural theories. Besides the question of language as a calculus and language as a vocabulary there is also the question of what, if any, ontological implications different views of language has. The traditional idea of realism is that the world exists independently of a mind, and idealism says that the opposite, that the world is dependent of a mind. A modern version of idealism is the so-called linguistic idealism. It means that the world exists in the way language describes it and that there is no other way than via language to access it. The world is then dependent of the way it is described. This view is sometimes represented in socio-cultural theories and we shall therefore investigate that idea a bit.

One of the main ideas in socio-cultural research is that learning is done in an interaction with other people in society. The agent is then not just a passive receiver of a message or of information which when required will give new knowledge. He or she will participate in an active way in a process that involves, among other things, language. The language will then be a tool that in some kind of active way mediates knowledge. Included in this view is also often the idea that language is a filter between the world and the mind (Säljö, 2000 & 2002, Östman, 2003). As a filter language is not a single unity that is acquired by every speaker of the language, so that every speaker of it would have the same understanding of the world. Language is instead diverted in different discourses where each discourse contains of distinct areas of knowledge. The mind thus uses language as a tool to understand the world. The world is what’s more understood according to the discourse used.

If language is a filter between the world and mind it also means that thinking must be distinct from language. The idea seems to be that mind does not have access to the world without something mediating it. This mediating thing is language and therefore mind has to think about the world as language describes it. We are thus in a way prisoner in language. Although the mind seems to be something that can think without language, it still needs language to come in touch with the world. The subject can therefore not think of the world in another way than language describes it. And that means that when we do have a language, we are forced to think in accordance with that
language. This moreover means that we here have a form of linguistic idealism. The world exists as language describes it and there is no independent access to it.

The view of language as a discourse that humans learn by participating in a social activity, do also contain an idea of language as something that is determined by use (Östman, 2003). Östman and other do often refer to Wittgenstein in this claiming that language is set by its use. One must then ask what is meant by use here. If language is made up by discourses, what then is a discourse? It seems like that a discourse is a system of expressions. What one then learns when one learns a discourse, is its words and the rules for these words (Bloor, 1997). Different discourses are then different systems of expressions. We will later on see that this idea about use is different from the one Wittgenstein have. As it stands however, it is an idea about language as a system of expressions. To learn a language is then to learn a specific discourse consisting of a specific system of expressions. The use talked about in socio-cultural theories is a use of a rule-governed discourse, and not the actual use of language. The difference from mentalist ideas of language is then basically that language is acquired through a social activity, and is not innate or something that develops during the child’s growth. The difference is then a question of acquisition and not a question about what language consists of.

**Vocabularies and concepts**

The idea of language as a discourse does however not only include the idea of language as a system. It do is also based upon a confusion of language as a vocabulary and language as consisting of its conceptual content. According to socio-cultural theories language in the form of discourses is supposed to be a filter between the mind and the world, since different discourses are supposed to consist of different concepts. It does however looks like that these discourses are not based upon *concepts*, but just upon a vocabulary.

If language is a mediating filter between the mind and the world, the mind must be able to think without this language. The mind must be something that can, so to speak, chose between different languages. That means that the mind must be able to think independently of a language. What does this thinking then consists of? We could
compare this to the old idea of concept formation as based upon memory. One of the main points in the critique of this idea is that it presupposes that the mind is able to think or have ideas without concepts. It presupposes that we in learning for example the concept “red” already must know what red is. We then already have the concept we are presumed to learn. The answer to the question of how we do learn concepts can then not be that we are able to think before and independently of language. But that is just what the idea of discourses as filters presupposes. We can also see that this does not work if we compare two different thoughts that are about the same thing.

If two different thoughts about the same thing can be distinguished, the thoughts need something that differs them from each other. If the mind has a thought of something as a, and another thought of something as b, the conceptual difference between the two thoughts is that we have used different concepts (not words) to describe that which we are thinking about. If we do that we are using concepts. We are thus using concepts to distinguish between two different ways of thinking of something. That also means that we are thinking in concepts and that there are no mental ideas that precede the concepts. So thinking of something means to think with language and that language consists of concepts, not of words. Using language (as consisting of concepts, and not of words) in thinking of something can thus not be something different from thinking itself. And if the content in a thought would consists of something just mental it ought to be an idea about how something is, but having an idea of how something is, is to use a concept to think about it.

The idea of language as a mediating filter does however presuppose that thinking is done without concepts. It presumes that thinking is done as something purely mental without any concepts involved. Language would then be something different from thinking. It would be a language as a vocabulary. Language and concepts would then be the same. We could then not distinguish between the words and their content.

If language is a filter that is used to determine the way we think of the world, we must thus be able to think without concepts. But if language is supposed to shape our thoughts as a filter there is not anything that can be shaped. The idea then that language functions as a filter is then based upon the idea of language as a vocabulary. However, if a language describes the world in one way and another in another way in using different words, there need not to be any reason these two languages uses
different concepts. Fragments of different languages can use the same concepts even though they use different words. There would then not be any difference in using the first or the second language. We would think in the same way independently of which language we use. Different languages need then not to have distinct content. Only if language consists of a vocabulary and not concepts, one could say that our ideas are formed by the words. But we would then think in words and not concepts, since different discourses consist of different words.

We could compare the problem of concepts and thinking with an example used in socio-cultural discussions. Östman uses an example with a person that becomes a patient in the meeting with a doctor (2003, p. 94). The meeting is supposed to create the patient since he or she is not a patient before that meeting. One could say so, but that says nothing else than that the agent takes upon him the role of being a patient. It supposes that there already exists an agent that becomes a patient. There is no subject that is created out of nowhere in the meeting. If a person becomes a patient he or she must already exists as a person. The meeting with the doctor can’t be that which fundamentally creates the subject. It can only create the patient but not the subject that is the patient. The same thing could be said of language. If a certain way of thinking about the world is supposed to be created by use of new words, it presupposes that there already exists a thinking in concepts that precedes these new words. But socio-cultural theories discusses thinking as if there is nothing else besides language regarded as a vocabulary or a discourse, so that a discourse, and not concepts, is all we have in understanding the reality.

The idea of someone becoming a patient in a meeting can also be compared to an idea by, among others, Wertsch (1998). According to Wertsch we do understand language by identifying what’s being said by identifying to which speech genre it belong. A speech genre is some kind of part of language that is about a certain subject matter. Each genre will have a pattern that we recognise when we open a conversation with another person. From that pattern we can roughly calculate what is going to be said, how long the statements are going to be etc. Quoting Bakhtin, Wertsch too claims that these speech genres function in the same way as grammatical forms are said to work (1998, p. 75). They are supposed to be the foundations of language-understanding. This idea is however based upon a number of questionable
presuppositions. If genres are that which makes us understand language, then they must exist before and independent of language. This will give the odd consequence that we all know in advance, before we have understood any language at all, all kinds of genres. We will then know in before, before we have any knowledge of, lets say movies, how a discussion of movies will be structured, what can be said about movies, what people think of movies, etc, etc.

The idea about genres also presupposes that we already have acquired the concept of language. If we are going to be able to identify a genre we must already know what language is, what words is, what speaking is, what discussion is etc, etc. Genres then presuppose that we have a language and already master it. It is like the patient example above. It presupposes that there already is a subject and that it exists as an agent before it can be a patient. We can thus use genres to describe conversation patterns in an already existing language, but not use it to fundamentally explain how we understand language.

**Language as a tool**

We can now proceed with a closer look upon the socio-cultural idea of language as a tool. Language is according to this idea supposed to be a mediating tool that the mind uses in understanding new concepts. How should then the idea of language as a tool be understood here? If we use a hammer as a tool we could say that it is the subject or agent that uses the tool. The hammer is then external to the agent. We do not need the hammer to explain what an agent is. There is no necessary relation between the agent and the tool. If we compare this to the idea of language as a tool we see that it could be understood in at least two different ways. If language is a tool and it is possible to explain it without involving the agent it is also external to the subject. One way of describing language as external to human beings is to say that it is possible to fully describe it as a discourse. Language then will become a system of expressions that can be described as a system regulated by rules. When we have learned the words and rules of the system we have as well learned the language. That is also an idea that is contained in the idea of language as a discourse. If language is a system of expressions that is external to mind it does not consists in language regarded as concepts. It will
instead be language as a vocabulary. A vocabulary is independent of the mind and is something that can be learned and exchanged into another language without altering the foundations of thinking. If thinking exists independent of language, language will be a vocabulary and not something consisting of concepts.

If language can exist as an independent exchangeable discourse it will not either be based upon use, but will be a kind of calculus, a system of expressions. In socio-cultural theories language is often said to be regarded as meaningful according to its use, but as we can see it, contrary to its intentions, is instead based upon an idea of language as a calculus and not upon its use. Despite that, it is also often said that the idea of language as a discourse accommodate to Wittgenstein’s ideas about language (for example Östman 2003). In Wittgenstein we can find both the idea of language as use and besides of language as a tool. If we however take a closer look upon the idea of language as a tool we can see that Wittgenstein’s idea about this also differs from the ideas common in socio-cultural theories. We will therefore investigate the idea of language as a tool for a better understanding of Wittgenstein’s idea of language as meaningful according to its use.

We can take as an example of language use the way a small child may learn to handle a mug while eating. When it does, the child not only drinks milk from it, it will often bang the mug against the table, throws it on the floor, bite on it, etc. In doing all that the child will learn not only that a mug is something that can contain milk. It will learn that the mug will be empty if you drink from it for a long time enough. If it is made of plastic it will probably not break when you throw it to the floor, which a glass will do, that you can use it to make noise with if you bang it against the table etc., etc. Eventually the child will also learn that mug is called a ’mug’. What the child learns is thus to cope with mugs. It will then learn a lot of things that can be described as properties of the mug that will be described with words that expresses concepts that represents those properties. When the child has learned that, it has thus learned the concept “mug”. We then learn concepts by learning to cope with the world. We do not learn concepts by learning a vocabulary that in some way or other contains concepts. But that is what the socio-cultural idea about learning is. It is based upon an idea that language is external to the subject so we can learn a discourse primarily and independent of a copying of the world. The discourse will then be the description of the
world; so that in learning it, it is the discourse and not the concepts we gained that gives us access to and knowledge about the world.

The interaction between peoples that in socio-cultural theories is supposed to be the foundation for knowledge, will in those ideas just be an exchange of words, not concepts. When Wittgenstein however discusses language use, language is internal related to the world since the concepts learned is done by an *activity* together with things in the world. By learning to cope with mugs the child will learn the concept “mug”. *Words* are then accidental to that which is learned but the concept is not. This also means that thinking consists of using the concepts we learned in learning to handle the world. There is then no thinking that precedes language, with language understood as concepts. When language then is a tool it means that the subject uses concepts to understand the world. Concepts are thus not something that lies between the mind and the world. Concepts are *the* way the world is understood in and that is done in thinking. There is no extra medium in form of a vocabulary that lies between the mind and the world that shapes the world.

**Language-games and tools**

The difference between language as a vocabulary and as consisting of concepts is also important in understanding Wittgenstein’s idea of language-games, since it differs from the notion of language-game that can be found in socio-cultural ideas. In those theories is a language-game a kind of discourse. That means that language is built up by parts, which together will form a sort of wholeness, and that wholeness is thought to be the language. Although some parts do contradict each other or cannot be used in a meaningful way together, the basic idea is that a language-game is as part of language as something substantial, something with a content. This is however not Wittgenstein’s idea about language-games.

When Wittgenstein discusses language-games he calls them objects of comparison. They are used as an instrument to investigate conceptual problems in language. That means that they are not parts of language. They are not discourses of language. Language games are used to investigate something that is a conceptual or philosophical problem, and not as a description of what a language *consists* of. We can
take the colour-words as an example of how he regards language games. It is not meaningful to say that two different colours simultaneously completely cover an object. An object cannot simultaneously be both red and blue all over. This is a conceptual remark about colours. It can be used to investigate problems about how one meaningful can speak about colours. But this language game of colours is not something that we learn as a discourse. When we learn the colour words we do not say about objects that they are not simultaneously both red and blue all over. We often say about an object that it is red or it is blue but not anything about what they simultaneously are or not are. This is so because the language game is not something that we use in ordinary conversations. They are instead used as tools for investigating conceptual relations and it is such conceptual properties and relations that we learn when we learn language. We do however not learn the language-game of colours as a discourse containing sentences like: ”This object is completely both red and blue all over ”.

Conceptual properties are then something that we learn when we learn to cope with coloured things, and learn to use colour words for those things. We do thus not learn to use colour words by learning the colour language alone. What we do is that we learn practices that include the use of things together with colour words. Language is then not a filter that makes us look at the world in a certain way. If it were, we would first learn language as a vocabulary and then apply it to the world. But that presupposes that language can exists independently of both the world but also from human activities and practices. The language of colours would then just be the vocabulary of colour words.

We can once more take the example of how a child could learn what a mug is. And we could say that what the child does is just that, learning what a mug is. It learns what a mug is, and it does that by learning to cope with mugs and that includes learning the word ‘mug’. This is also something different from the idea of saying that it learns what a mug is, because it has learned the word mug. In handling a mug the child learns, besides the examples we mentioned above, in addition that a mug is not a living thing (although children often tend to express themselves in an animistic way when they are young). They also learn that a mug can’t, for example, talk or evaporate during the night, etc. This is a thing that children learn in their coping with mugs, and that is the conceptual side of the word ‘mug’. So learning to handle the word is as well learning
the concept for things. And those concepts can in addition be associated with a word, but they need not.

Another example of the difference between language as a vocabulary and as consisting of concepts, is cases where we not always have words to use. We can often differentiate between two different smells simply because we can identify them as different, and we do that by the different properties those two smells have, even though we seldom have any words for smells or their properties. But the different properties we use to distinguish them are the (at least) two different concepts we use to say that they are different. So, if we have words or not for the smells, are of secondary importance. The important thing is if we can differentiate between the properties different smells have, it is by the concepts, and not the words, we use to identify the two smells, that we can discriminate them.

When Wittgenstein discusses language use he thus means use of words as concepts according to the properties that the word represent. Concepts are internal related to the properties of things, words are not. That means that it is not the culture one lives in that decides which conceptual properties something has. A mug can’t speak or evaporate during nights no matter what culture one belongs to. Two colours can’t simultaneously occupy the same area of an object, no matter which culture one belong to, or how many colour words one have. These are conceptual properties and they are not relative to a culture or the discourse a certain culture has. The conceptual properties that ultimately decides what a thing is, is instead that which we learn about the world that is not dependent on a culture. Horses could be worshiped in one culture and totally dismissed in another, but no matter which culture we belong to, and no matter what attitude we have to horses, they can’t fly, and that’s a conceptual property that describes something objective about horses.

When socio-cultural theories say they investigate concepts and the understanding of concepts, we could say that they are in fact instead investigating a vocabulary. It has then the consequence that when one in those theories discusses language as a tool, concepts become words that are supposed to be applied to the world. The world must then conform to the words, not to concepts. In learning a language one is, contrary to the intentions of the theory, then learning the workings of a vocabulary and not the acquisition of concepts. In Wittgenstein’s discussion language is instead a
tool as a way to understand how the world is, since it is the world that decides which properties a concept is. To say that language could be regarded as a tool means then that it is not regulated by a system of rules, but to use words conforming to the way we have learned to cope with the world in concrete practices. The discourse idea is the opposite. It says that to use language as a tool, is to learn to cope with the world in the way language, independently of activities, describes it.

**Language use and conceptual change**

In the research project *The interplay between language and thought in understanding problems from a student perspective* we are investigating students of physics understanding of physical theories and physical descriptions of events. We are here using a phenomenographic method that could be described as the opposite of ideas based upon the view of language as a system of expressions.

In our study we are analysing students own reflections expressed in interviews of their own explanation of an event that could be described with the language of physics. They are for example asked to describe what happens when a ball is thrown away. In the description of the event they will use several terms from physics, such as ‘force’, to explain the event. There is also an opportunity for them to reflect on these explanations and make changes or revisions of what they said. It is quite common in those reflections that some of them change their minds and alters the explanation they gave at the beginning of the interview, while others stay with the same explanation during the whole discussion. There are also several different types of explanation given. Some of them rely on a kind of Aristotelian concept of force, while others are more based upon a Newtonian idea.

In the reflection of their explanations we do often find that the students change the concepts involved in the explanation of the event. This would be explained by for example Paul Thagard in terms of a computational model that is based upon an idea of concepts as mental entities (see Thagard 1992). We do however think that this misses what actually happens in the understanding of the event.

When a student describes the move of a ball in the air he or she will use a concept ”force” that is more or less correct according to physics. Which concept he or
she actually will use can only be determined from the context of the concept. Everyone in this study used the word ‘force’ to explain the movement of the ball. But we can see that although they all use the same word, they are not using the same concept. Some of them use the word ‘force’ without a real understanding of it. In investigating how that could be, we can see that there are several problems involved here. One is that they have not learned to cope with the world in the way the physical concept ”force” describes it. They have as a result problems with understanding the concept since it is not enough for them to read about the concept in just a theoretical way. When they hence are uncertain of how too use the concept they are using the word ‘force’ with several different meanings. Each different meaning is thus a different concept. The creation of those different concepts does then not follow any rule that determines them. The concepts created will instead be determined out of the context they are used in. We see thus that it is the actual use of language that determines which concept being meant, and that it could only be understood by putting the concept in a context. Without the context we do not know which concept is being meant in using the word ’force’. The activity of using the concept in a context is consequently a way to learn to cope with the concept. But if this activity of putting concepts in a context is not followed by the corresponding activity of using the concept in the way physics does, the student will not learn the correct concept ”force” and will not understand why the one he or she uses is the wrong one. The student will then only learn to handle the word ’force’ as if it was only a word in a vocabulary or a discourse, and not as something that has a content determined by the way we cope with forces.

References


