On the Definition of Learning

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What should we demand of a definition of 'learning'?[1]

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Introduction

Clear and precise definitions of theoretical concepts are commonly held to be crucial to fruitful theoretical exchanges and development in both the humanities, and the natural and social sciences. Bluntly put, the function of definitions is to unambiguously point out the phenomena theories are about, and they do so by spelling out the meanings of central terms in the theoretical framework. But while the value of definitions is widely acknowledged it is often overlooked that there are various kinds of definitions with different purposes and distinct criteria of adequacy.[2] So before searching for a definition of 'learning' one should consider the definition types available, the purposes they may serve, and the purpose the sought definition is intended to serve.[3]

This contribution distinguishes definitions from theories, examines different types of definition, and shows that the purposes we intend a definition of 'learning' to serve determines what kind of definition we should look for. The relevance of these issues to the project of defining 'learning' is demonstrated by applying our considerations to the assessment of the particular definition of 'learning' proposed by the influential Danish educational researcher Knud Illeris.

Definitions and theories

Before we turn to the discussion of what we should demand of a definition of 'learning' and the various kinds of definitions available, we first want to clarify the relation between definition and theory. As we shall see, the two are interrelated, but ought nevertheless to be distinguished analytically.

The classical Aristotelian approach to definition is to see it as the attempt to answer the question "what is so-and-so?".[4] Stated in this

succinct manner, however, definitions are easily conflated with theories. Let us look at the question: "What is learning?". One way of answering this question is to say that learning is something we cannot help do because it is deeply rooted in our human genes. Or it may be said that learning is something which helps us adapt to the world. Or that learning is an important part of socialization. These responses, however, are clearly not offering definitions of the word 'learning'. Instead, they are *theories* about why people learn things, what the effects of learning may be, and the role learning plays in society. In contrast, the *definition* of 'learning' could be something along the lines of "the meaning of the word 'learning' is acquiring insight or skills" or perhaps "By 'learning' I mean taking lessons and practicing skills". Let us try to spell out further the difference between definitions and theories. Definitions are usually understood either as identifying the essential properties characteristic of things belonging to a specific category or as formulations which state the meanings of words or concepts. Some hold that definitions do both (e.g. Fine, 1994, p. 14) and there are numerous variants of these two views on how to define 'definition' (cf. Robinson, 1950, p. 2-3 for famous examples from the history of philosophy). According to all of them, definitions can be seen as tools for classification: having a definition of 'learning' will allow one to decide whether something (such as a public whipping) belongs in that category or not. In contrast, theories are (relatively) coherent sets of propositions. They can provide, for instance, causal, functional and structural explanations of a matter (depending on the kind of theory), and sometimes also be used to predict or evaluate something.

So, what is the relation between definitions and theories? Let us consider this question by focusing on concepts other than 'learning'. Some definitions, such as that of 'sunburn', will explicitly rely on theories because it incorporates the causal explanation about the origin of the skin burn. Others, such as the definition of 'fossil', presuppose considerable theoretical knowledge of, for instance, paleontological facts. Such examples might appear to suggest that definitions are simply theories on a par with other theories about a subject matter. But a little reflection will show that this is not the case. For instance, there are endless numbers of theoretical claims which are clearly not part of the definitions of what their terms refer to. The claim that Aristotle was responsible for Alexander's learning about the Greek philosophers, for example, is clearly not something that a definition of 'learning' needs to include.

But even though definitions are distinct in aims and structure from theories, and cannot generally be characterized as short versions of theories, they are still crucially related to theories. This is because definitions are necessary for theories and theorizing. A theory of learning must contain a clear understanding of the meaning of 'learning' so as to make it clear what the theory is about and what it applies to. Often the meanings of theoretical terms are merely implicitly present in a theory, and in some cases this is as it should be because their meaning is sufficiently clear and obvious. For instance, a book on theories on how to break in dogs need not include a definition of 'dog'. But in other cases where key theoretical terms are used with several different meanings across the literature, one may have to compare theories and analyze core examples to provide a definition of, for instance, 'punishment', 'domestic animal', or 'learning' in order to settle which phenomena the theories are about.

Definitions are necessary in advancement of academic efforts because they are the markers needed in evaluating a theory. Without a precise definition of the subject in question, it will remain unclear whether a theory covers all relevant possible instances under discussion. For example, if a theorist claims that learning can only occur when discipline is strict, one must be able to identify what counts as instances of learning to determine whether the theorist is right. Furthermore, attention to definitions is important to make sure that they are not unnecessarily packed with theoretical content. One should be aware of the relation between definition and theory.

On the whole, research is advanced by definitions because they can reduce vagueness and ambiguity, clear up homonymies, and force researchers to make precise categorizations. Definitions are hence crucial in improving theories (see Schaffalitzky, 2014, p. 510-511 for similar points). However, as will be apparent in the following, there are different kinds of definition with different aims and different standards of adequacy.

Lexical definitions and its challenges

Now that we have distinguished theories and definitions, let us take a closer look at what work we can reasonably expect definitions to perform. It should, however, be noted that the range of phenomena

referred to as 'definitions' is so broad and heterogeneous that some of its members must be left out of the discussion here. In what follows, what we refer to as 'definitions' will be limited to the most common and prominent types of definitions: namely those intended as specifications of the meanings of words On this understanding, what a definition characterizes is the meaning of a term, not the phenomena that the term refers to.

Among such definitions of word meaning there are two main varieties that we want to consider: first, lexical definitions which aim to capture the meanings particular words have in their common usage, and, secondly, definitions which assign to a term a particular meaning that does not necessarily correspond with the meaning commonly attached to the term. In addition, to illustrate the relevance of the distinctions between these varieties of definitions we will hold them up against Knud Illeris' definition of 'learning', according to which 'learning' is defined as 'any process that in living organisms leads to permanent capacity change and which is not solely due to biological maturation or aging' (Illeris, 2009, p. 7).[5]

What is a lexical definition?

We begin by considering lexical definitions. A lexical definition of a term is meant to provide a characterization of the meaning attached to a term in ordinary, common usage. To say that the lexical definition of a term is such and such hence implies the claim that such and such corresponds to what ordinary speakers mean by the term. A lexical definition of 'learning', for instance, should be such that how the meaning of 'learning' is characterized correlates with how the term is used. If it does not, the definition is incorrect because it then mischaracterizes the term's meaning.

Let us then consider, how Illeris' definition fares when evaluated as a lexical definition (noting all the while that Illeris does not explicitly say whether his definition is intended as a lexical definition rather than another type of definition). To decide this question we should ask whether the proposed definition corresponds with the ordinary use of 'learning'. This does not seem to be the case. Permanent changes in the capacities of a subject which are neither solely nor partly due to biological maturation or aging encompass a range of phenomena which

are not readily thought of as examples of learning. Castration and laser eye surgery, for example, are instances of such permanent changes in a subjects capacities. Yet, we hardly want to say that the castration of someone is an instance of learning, so that, for instance, the voice of a castrato singer is the effect of pre-pubertal learning. Illeris' definition of 'learning' then seems inadequate as a lexical definition because it is too broad. It misrepresents the ordinary meaning of the word 'learning' by including phenomena that we would not ordinarily categorize as examples of learning. If we want an adequate lexical definition of 'learning' we need a less inclusive definition.

The task of providing adequate lexical definition of terms in ordinary language, however, is not an easy one. One major difficulty concerning attempts to specify lexical meaning is due to the largely tacit nature of the knowledge that ordinary speakers have of word meaning. While knowledge of what their words mean enables us to apply and understand the terms in our vocabulary, such knowledge does not come in the form of consciously held beliefs about explicitly stated definitions. Instead, its contents are typically implicit in how we think and tend not to be directly accessible to conscious awareness, which means that the meanings speakers attach to words can only be made explicit with great difficulty, if at all.

Therefore, providing an adequate lexical definition of a term from ordinary discourse is not simply a matter of looking up the right entry in the mental lexicon. Rather, producing an adequate explicit formulation of a term's meaning will require an extensive, systematic effort to think through the conditions under which the term can be applied and the conditions under which it cannot.

Moreover, as we will discuss in the following, there may be further considerable, perhaps even insurmountable, obstacles to achieving a lexical definition of 'learning' which retains the clarity and precision that we seek to achieve when pursuing definitions. In particular, contrary to widespread orthodoxy, our word meanings might not be structured in a way that can be adequately represented by means of definitions taking so-called "classical form", that is definitions that draw the boundaries of categories by stating the necessary and jointly sufficient conditions on category membership.

The idea that categorization is structured as definitions of the classical form has been the dominating view – not least in philosophy,

psychology, and linguistics – from antiquity at least up till the last quarter of the twentieth century (Taylor, 2003, p. 20). The origin of the classical view on categorization is customarily thought to be Aristotle's Metaphysics (1984, sect. 996b & 1011b). An important advantage of the classical view is that once the proper definition has been sorted out, one will know the definite boundaries of the category in question and so be able to deduce exactly if something meets the definition or not. For instance, if one defines 'bachelor' as an unmarried man, it means that 'bachelor' applies to everything that is both a man and is unmarried. Each of these conditions is necessary, but neither is individually sufficient.

Historically, the classical view of definitions has dominated attempts to provide lexical definitions in philosophy. Recent research within experimental psychology, however, has revolutionized the understanding of categorization (Rosch, 1973; Rosch, 1975; Rosch et al., 1976; Lakoff, 1987, p. 6-7) and this has had a profound influence on discussions about definitions. Today it is uncontroversial, at least within the cognitive sciences, that there are a number of important aspects of human categorization that the classical definition-based model is unable to account for. So let us take a look at some of the central problems.

Fuzziness as a challenge

The first major problem is this: if categories were structured by necessary and sufficient conditions, it would entail definite categorial boundaries. Either something is a member of some category, or it is not. Either you fulfill the conditions or you don't. One can find many examples of categories that work in this way. Take for instance the category prime number, which can be defined, as *all natural numbers that have exactly two distinct divisors: 1 and itself.* Even though it may take a while to figure out that $(2^{43.112.609} - 1)$ is a prime, once you do there is no discussion. Any natural number is either totally in or totally out.

However, inspired by Wittgenstein's concept of family resemblance (Wittgenstein, 1990), Eleanor Rosch and her colleagues designed experimental research which demonstrated convincingly that there are many categories where this is not the case (Rosch, 1975). While tables and chairs are obviously part of the class of phenomena which 'furniture' refers to, it is less obvious whether carpets or TV sets enjoy the same

status. Linguistic vagueness is by no means a new discovery, but even though the vagueness of predicates such as 'obese' is uncontroversial, the fuzziness of the reference of natural kind terms such as 'vegetable' and 'fruit' may still come as a surprise. No one doubts that apples and oranges are convincing candidates for membership of the category we call 'fruit', but think of coconuts or cucumbers. Many might be tempted to use 'vegetable' when referring to the latter. The fuzziness of categories, thus, in many cases speaks strongly against the possibility of capturing the meaning of terms by use of classical definitions.

Prototypicality structure as a challenge

Another major problem is the following. If categories can be adequately represented in the form of classical definitions, then fulfilling the necessary and sufficient conditions should make any object a full member of the specific category on a par with all other members; all members should be equally typical and no member should be better than any other. But some members are generally found to be more central than others. The classical example in the literature is that the robin is thought of as a better example of the category 'bird' than the penguin or the ostrich. The issue of prototypicality is very much related to the problem of conceptual fuzziness above. But while fuzziness concerns what is going on at the boundaries of categories, prototypicality focuses on the structure at the centre of the category in question. Categories that exhibit typicality-effects are called graded categories, and it is not the case, as one might suspect, that gradedness is only a feature of fuzzy categories. Even categories with distinct boundaries turn out to be graded on close examination. Experiments have shown that for instance the category 'even numbers', which have quite clear boundaries, display typicality-effects: experimental participants consistently rate numbers like '2', '4', '6', and '8' as better examples of even numbers than, say, '34' (Armstrong et al., 1983, p. 276).

Trouble for the lexical definition of 'learning'?

How are these objections against the classical conception of lexical meaning relevant for the issue of a definition of 'learning'? They are relevant, we claim, because if the meaning of 'learning' is structured as

word meanings are most, attempts to provide a definition of 'learning' which has the sharp distinctions of the classical form and still captures the meaning of 'learning' in common use may be in vain. There is hence little reason to think that a classical definition of 'learning' can be easily achieved. Both prototypicality and gradedness appear to stand in the way of this pursuit.

Are some instances of learning more prototypical than others? We believe so. To see this, compare (1) "acquiring mathematical skills through the solving of equations in a textbook" with (2) "acquiring the ability to run a marathon in under 3 hours". Here (1) is definitely more prototypical than (2). Indeed, some might even be hesitant to think that building up the physique to run a marathon in an impressive time amounts to learning. It is simply not entirely clear whether such a change in physical capacity would qualify as learning. And there are likely many other (and perhaps better) examples involving fuzziness and gradedness due to the psychological, physiological, and sociological complexity of learning as a real-world phenomenon.

The central point is that the meaning of 'learning' appears to be fuzzy as well as graded. Consequently, a classical definition, however ingeniously constructed, simply seems unsuitable to capture the meaning of this term. So it seems that we have to choose between, on the one hand, a vague definition[6] referring to prototypical instances which might to some extent capture the common use of 'learning' and, on the other hand, something clear and precise which is not apt to represent the term's ordinary meaning.

A further worry one might have is that in everyday speech we use 'learning' to refer to quite disparate phenomena which may be very different in nature. For instance, the phenomenon of *learning to walk* might be a case of actualizing an innate biological potential, whereas *learning to read* is a case of acquiring a set of culturally based skills. *Learning to sit still* or *control ones temper* on the other hand might be cases of acquiring the ability to suppress specific natural reactions in order to live up to certain social norms (which, of course, presupposes yet another form of learning).

It is obviously an empirical question to what extent these different phenomena of learning differ in nature. But if they do, this might be a significant part of the answer to the question why it is especially hard to come up with a single concise comprehensive definition of 'learning'.

If, indeed, this is the situation, the recommendation could be to opt for the development of several (as many as required) definitions each targeting a distinct kind of the various phenomena we currently cram together and label as 'learning'.

In the remaining part of the chapter we want to consider two types of definition which escape these difficulties since they are not supposed to correspond with the lexical meaning of a term.

Stipulative definitions and explicative definitions

As we have seen, clear-cut lexical definitions of the words theorists get from ordinary discourse may be more difficult to achieve than is usually assumed.

Simple stipulative definitions

While a lexical definition of 'learning' in the form of necessary and sufficient conditions on learning might seem desirable for the sake of clarity, there may be good reasons not to strive for this type of definition after all. But rather than giving up on clarity and precision, we may look for alternative ways of defining the term, which do not fall prey to the difficulties related to lexical definitions.

One option, often seen in academic work, is to go for a *stipulative definition*. A definition is stipulative when we simply stipulate that for the purposes of certain contexts the meaning of a word is such and such, that is, when we simply decide to attach a specific explicitly stated meaning to a term or symbol in specific contexts. Thus, rather than trying to capture or represent a meaning that a symbol already has, a stipulative definition assigns a meaning to a symbol without any commitment to capturing, or even taking into consideration, the meaning others have attached to the symbol.

Accordingly, since we may decide to assign a symbol whatever meaning we like, stipulative definitions can neither be said to be correct nor incorrect. Indeed, this is one reason why they are useful for academic purposes. When a word has a long history of use, and has been understood differently by different theorists belonging to different research traditions it may eventually become impossible to employ the word in a way which does not conflict with one or the other of the interpretations previously thought to be the correct lexical definition

of the word. In that case, by stipulating that one will use the word with a particular meaning, one can employ the word with a clear and precise meaning without a commitment to the further claim that one has represented its meaning in ordinary discourse correctly. So while Illeris' definition of learning is problematic as lexical definition it could still be an acceptable stipulative definition.

With respect to stipulative definitions what matters is not correctness but whether the stipulated meaning is precise and picks out a category of phenomena with properties such that regarding them as belonging to the same type is useful for our theoretical and communicative purposes. In biology, for example, a concept representing human hearts, as well as toe nails and tree sap would be much less useful than one which refers to the fetuses of mammals at a particular developmental stage.

However, since a stipulative definition is free to fix the meaning of a term in any way one finds useful there is no guarantee that it will retain the meaning that a term has in ordinary language. Thus, as Frank Jackson notes, stipulating the meaning of a term involves the risk that one might end up discussing something completely different from what ordinary folk are interested in and 'think is up for discussion' (Jackson 1998, p. 42) when the term is used. So when theorists define the meaning of a common or familiar term they are typically not content merely to assign it a stipulative meaning without any relation to how ordinary speakers and other theorists usually use the term. Instead, they attempt to carve out a meaning for the term which is both suitable for theoretical purposes and close to the term's ordinary meaning. This leads us to the so-called explicative definitions.

Explicative definitions

While the ideal of both capturing ordinary meaning and providing terms with a meaning fruitful for theorizing is usually implicit when terms are defined, it is closely related to the aims of what philosophers, following Carnap (1947; 1950), refer to as explicative definitions, or explications. Roughly speaking, an explication makes "a vague or not quite exact concept used in everyday life or in an earlier stage of scientific or logical development..." exact by replacing the concept "... with a newly constructed, more exact concept" (Carnap, 1947, p. 7-8). And this seems to be exactly what we look for in stipulative definitions of pre-existing terms.

However, we should not simply adopt Carnaps requirements on adequate explications as the aims of our definitions. In particular, we should be critical of the idea that a sufficiently exact explication of a term requires its meaning to be specified in scientific terms. Thus, to avoid impossible, or inappropriately demanding, requirements on explicative definitions we should relinquish the requirement that they have to consist only of scientific vocabulary. Indeed, for the most part, something relatively exact seems to be all that we can ask for when we look for a definition of a term. This is commonly the case in explorative settings or when the development of novel theoretical frameworks requires that one initially operates with less than the highest standards of scientific accuracy.

In addition, we should be careful not to automatically assume that the speakers of a language, e.g., English, all attach the same meaning to every term they use. For instance, the meanings attached to 'culture' by anthropologists may well be different from the meaning that ordinary speakers attach to the expression. Orthographically identical expressions may hence have different meanings in different sociolects and idiolects, so that it is misleading to refer to something in the singular as *the* meaning attached to the expression in common usage. Thus, rather than simply saying that an explication should make the meaning of a term more precise, how we think of explication should reflect that what we want to make more precise may be the meaning attached to a term by a particular group of speakers in their common usage of the term.[7]

By modifying Carnaps original conception of explications to reflect these considerations, we get an account measuring the adequacy of explications in terms of criteria closely linked to the theoretical and communicative roles we generally want our explicatively defined terms to play.[8] According to this modified conception of explicative definitions, an adequate explication should satisfy the following four criteria to a sufficient degree.

a. Similarity
Relative to a particular group of speakers, the explicative definition of a term, e.g., the term 'learning', should be such that for the most part where the explicated term has been used by speakers in the relevant group the explicative definition would have applied equally well. But it is not required that the similarity is very extensive.

b. Exactness

The explicative definition of a term should have an exact form, possibly the familiar form of a classical definition, which places the term's meaning within a framework of relatively exact, interrelated concepts.

c. Fruitfulness

The explicative definition of a term should be such that it can be used in many generalizations, or universal claims.

d. Simplicity

And, finally, the explicative definition of a term should be as simple as the requirements of the other three criteria (similarity, exactness, and fruitfulness) allow.

Let us now examine, what happens if we evaluate Illeris' definition of learning against these criteria. First, with respect to Similarity, the proposed definition seems to do fairly well. It seems that in most cases the definition can replace 'learning', despite of some situations where it is wrong to say that so and so is a case of learning but right to say that it is a lasting change in the capacities of a subject which is not due to biological maturation or aging. So when we take into account that there does not have to be a very extensive similarity Illeris' definition may be adequate as an explication in this regard.

Further, the notion of a change in a subject's capacities, as well as the notions of biological maturation and aging, appears to be reasonably precise notions, which either have or can be given an exact scientific interpretation. So, arguably, the definition is also sufficiently precise to be acceptable as an explication. It should be mentioned, however, that the verdict concerning this question is not entirely clear, since particularly the notion of aging is a matter of dispute.

With respect to fruitfulness, however, Illeris' definition looks problematic due to its inclusive nature. Its inclusiveness may ensure that every instance of learning falls within its purview but this broadness comes at a considerable cost, since the broadness of the category tends to preclude interesting generalizations about its extension. In other words, the proposed conception of learning becomes so broad that very little of interest can be said about learning in general. To see this,

consider Illeris' own general claim that all learning incorporates three dimensions, or aspects, namely the content dimension, the motivational dimension and the relational dimension, which concerns the social and societal aspects of learning (Illeris, 2006, p. 35-43; Illeris, 2007, p. 16-18). Despite of being phrased in very abstract and somewhat vague terms this general claim still appears to conflict with the definition we are discussing. Getting your legs amputated while you are in a coma hence qualifies as learning if 'learning' is defined as any lasting change in the capacities of a subject which is not due to biological maturation or aging. But the claim that such a change in a subject's capacities has a motivational dimension or a content dimension appears questionable, unless we interpret the thesis regarding the three dimensions of learning so loosely that it becomes void of any interesting consequences.

Moreover, while we have introduced the notion of sufficient fruitfulness as a requirement on explications, the criterion is not merely an arbitrary condition on satisfying a technical predicate. The demand for fruitfulness is motivated by thoughts about how the categories we employ in scientific research best serve the growth of our knowledge. Accordingly, if we group together phenomena with very little in common only very few insights about a particular phenomenon in a category will carry over to other phenomena in the category. So there would be little theoretical interest in concepts denoting widely disparate phenomena, since knowledge of one phenomenon would not permit us to infer anything about the other things that the category subsumes. On the other hand, if our categories instead comprise phenomena with extensive similarities what we learn about a particular phenomenon in a category will extend more readily to the others.

Therefore, while nothing prevents Illeris from relying on his definition of 'learning' as a stipulative definition, his proposal seems problematic both as a lexical definition of 'learning' and an explication of the term. Its broadness implies that it includes phenomena which we would ordinarily reject as examples of learning. But even if we disregard its ability to capture the ordinary meaning of 'learning' the definition seems to have a problem, since its broadness tends to undermine its theoretical significance by making it a common label for a very heterogeneous set of phenomena. Whether it is a lexical definition or an explication we want, we should be looking for something narrower.

How should we proceed to define 'learning'?

Now that we have distinguished lexical definitions from mere stipulations and explications, how should we proceed with the project of defining 'learning'? As we have argued, there may be insurmountable obstacles to obtaining an adequate lexical definition, and a more or less random stipulation is clearly an unattractive alternative. So rather than pursuing these types of definitions, we want to suggest how Illeris' definition might be amended to provide a more suitable explication of the term.

To that end, we want to suggest a definition of 'learning' adopted from psychological research. According to this definition, something is learning if and only if it is a 'process by which relatively permanent changes occur in behavioral potential as a result of experience' (Anderson 1995, p. 4-5). With minor variations this definition is the one we find in typical psychology textbooks, e.g., (Gray 2011; Gross 2010; Klein 2012; Poling et al. 1990).

This definition has two important advantages over Illeris' proposal. First, Anderson's definition is not vulnerable to those counterexamples to Illeris' definition that we put forward. Amputation of a person's leg influences the person's behavioral potential in various ways, but does not qualify as learning on Anderson's psychological definition because the change does not result from experience (although it may be accompanied by experiences that the person might learn from). Second, while it may not yet be the optimal explication, the fact that Anderson's definition is narrower than Illeris' definition means that it is likely to allow more interesting generalizations about the phenomena it refers to. For example, the general claim that motivation is important to learning seems highly plausible on this proposal, since motivation is likely to influence how experience affects neural states in order to change behavioral potential. Anderson's definition hence seems to fare better than Illeris' proposal with respect to both Similarity and Fruitfulness.

We do not, however, mean to suggest that this proposal should end the discussion of how 'learning' should be explicated. It may only be an initial step towards a more optimal definition, or a wide range of individually distinct narrower explications. Thus, whereas Anderson's definition reflects the very broad theoretical assumption that experience affects behavioral potential, future research may allow us to say more precisely which of our experiential psychological processes our

research on learning should investigate. But while the proposal here is modest in this sense, it is not without ramifications. If we think of learning as something primarily related with psychological conditions and phenomena, then it stands to reason that learning should be investigated with methods suitable for settling psychological questions. In addition, theories of learning built on concepts without psychological respectability would have to be left by the wayside. So although we do not purport to have the optimal explication of 'learning', the potential consequences of our proposal are considerable.

Concluding remarks on the work ahead in providing a definition of learning

A main conclusion of our discussion is that clear and precise definitions are of extreme importance in academic theorizing in general. This requirement also applies to learning theory. One attempt to provide the definition of 'learning' required in this area can be found in the work of Knud Illeris. But as we have shown, his proposal is problematic.

The question, then, is how to proceed from here. We consider two options: A lexical definition or a (partly or fully) stipulative definition. Problems loom for lexical definitions because of the fuzziness and prototype structure of word meanings, which together pose a non-trivial challenge to the idea of pinpointing the meaning of a word in ordinary usage. It may be that these challenges can be overcome, but even if one is optimistic that they will be so eventually, there is currently no common agreement on a definition of 'learning'. For this reason one might prefer to bracket the search for a lexical definition and move on by opting for a stipulative definition instead.

This is perfectly legitimate, and may even be recommendable in the light of the above. But it should be noted that stipulative definitions in the simplest form will be of little use or merit unless they are guided by criteria akin to the criteria of adequacy Carnap suggested for explicative definitions, namely similarity, exactness, fruitfulness and simplicity. A definition which meets these criteria will be of great value to theories of learning and the discussion of it deserves a central place in the scholarship of teaching and learning. As a step towards achieving this goal, we recommend replacing Illeris' definition of 'learning' with Anderson's psychological definition.

Focusing on the task of providing a definition of the meaning of 'learning' in the way we have proposed here, will also minimize the risk of conflating definitions with theories. Such conflation will deflect attention from the need for a definition. Theories are of course essential to scholarship of learning, but before the question of definition is settled there is no way to be sure what the theories actually describe and explain.

Notes

1 This paper was presented at the conference On the definition of learning, University of Southern Denmark, 2014. We are grateful to the audience for their comments.
2 For a brief overview, see Gupta (2014).
3 To avoid confusion we will use single quotation marks to indicate whenever we are *mentioning* a word, e.g., when discussing a given definition of the word 'learning', rather than *using* a word to refer to certain phenomena, as in "An adequate theory of learning presupposes an accurate definition of 'learning'."
4 See, for instance, Robinson (1950) for a historical overview and p. 8-11 for an account of Aristotle's view on definition.
5 For the wording of the definition in Danish, see Illeris (2006, p. 15).
6 I.e., a definition so vaguely formulated that using it for its intended purpose will require that theorists implicitly supplement it with an additional level of interpretation. The need for such further interpretation, however, severely limits the utility with respect to ensuring theoretical clarity.
7 Thanks to Christopher Winch for discussion here.
8 For further discussion of Carnaps notion of explication, see e.g. Boniolo (2003) and Hanna (1968).

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