



Knowledge in practice

Nina Bonderup Dohn

► To cite this version:

Nina Bonderup Dohn. Knowledge in practice. Network for Non-Scholastic Learning, Working Papers, No.1, Aarhus Universitet, 2000, Århus, Denmark. hal-00190360

HAL Id: hal-00190360

<https://telearn.hal.science/hal-00190360>

Submitted on 23 Nov 2007

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Knowledge in Practice

**Paper given at the 18th International Human Science
Research Conference, July 26th to July 29th**

by

Nina Bonderup Dohn

Table of contents

Introduction	2
1. Examples of 'knowledge in practice'	2
2. 'Knowledge in practice'	7
3. The role of the body in knowledge acquisition	11
4. Concluding remarks	13
Bibliography	15

Introduction

In traditional Anglo-American philosophy knowledge is understood as a static, linguistic representation of the world. This means that knowledge is understood to be necessarily propositional: Knowledge is 'knowledge that'. In consequence, the everyday concepts of 'knowing how' and 'knowing what' (often also referred to as a 'knowledge of') exemplified in sentences like "He knows how to drive a car" and "She knows what red looks like", respectively, are either neglected or subsumed under the category of 'knowledge that'. The aim of this paper is to show the problematic nature of analyses based on this presupposed primacy of linguistic knowledge and I shall argue that the knowledge we possess in practice apart from 'knowledge that' includes 'knowing how' ('practical knowledge') and 'knowing what' (or 'experience', as I shall also term this notion). These three kinds of knowledge form a synthetic unity which I shall call 'knowledge in practice' and which, I shall claim, can be characterised as a perspective that makes aspects of a situation stand out as relevant and important. The paper will be structured into three main parts: First, to focus attention on the subject matter I shall give some examples of 'knowledge in practice'. Next, I shall try to extract some philosophical implications of these examples for the concept of knowledge, and lastly, I shall consider the role the body plays in the acquisition of 'knowledge in practice'. I shall end the paper with a few concluding remarks that sum up the main points of the argument.

1. Examples of 'knowledge in practice'

My first example concerns the expert practitioner in medical practice, for example a nurse or a doctor. These kinds of practitioners definitely have a large amount of linguistic knowledge – in their education they have learned theories of for example anatomy and physiology and have also acquired theoretical knowledge of a number of specific malfunctions and diseases (the doctor of course has a higher degree of theoretical knowledge than the nurse). At the same time they have to have a large amount of practical knowledge: Just to mention a few obvious examples, the surgeon must be able to make his cuts the right way, the doctor working with fractured bones must know how to put a broken leg together again and make the right plaster cast for it, and the nurse must be able to apply and change a bandage. Actually this is not a very good way of putting the point, because it sounds as if the 'know that' and the 'know how' of the medical practitioner were totally distinct from each other, which is really the opposite of what I wish to argue. To see what I mean it helps to consider Mi-

Michael Polanyi's description of what it is the medical student being introduced to radiography is learning (Polanyi, 1964).

At first, when the student is presented with an X-ray picture of the lungs all he sees is the ribs – he cannot see the lungs and certainly not any specific traits in them, so he understands nothing of what the expert radiographers are saying to one another. After having seen several such pictures, though, the student gradually becomes able not only to make out the lungs, but also to discriminate between traits due to natural variation and traits caused by illnesses of various kinds. The student is here learning to identify the terms he has until now only been reading about in his textbooks – that is to say: The linguistic knowledge of the books acquires meaning for him because he is learning how to see relevant features. In other words he only *understands* the linguistic knowledge when he *knows how to* discriminate the features it refers to. And since 'knowledge that' in any reasonable interpretation must involve understanding, not just reproducing, the relevant sentences, 'know that' and 'know how' are seen in this case to be inextricably bound up with each other. Furthermore, these two kinds of knowledge are also interdependently related to the third kind of knowledge, 'knowledge of', in that they both are made possible by the student's experience of a wide variety of X-ray pictures. In effect, when the student has learned the required pulmonary radiography he knows what characteristic traits of normal and sick lungs look like and this supplies him with the basic understanding of the textbook theories as well as makes him able to discriminate such traits in new pictures. In other words, what the student is acquiring is a form of knowledge that is a unity of 'know how', 'know what' and 'know that' – a unity, in which the three aspects mentioned ontologically speaking are necessarily interrelated and even for analytical purposes can only be partially separated. This unity I shall call 'knowledge in practice'.

Actually, 'knowledge in practice' is to be understood as more than just the interrelated combination of the three aspects. As I see it, 'knowledge in practice' is a kind of perspective with which we meet the situation; a perspective that lets aspects of the situation stand out as relevant and important. This is exactly what happens when the radiographer sees an X-ray picture of the lungs: His 'knowledge in practice' makes certain features that the novice student literally cannot see noticeable for him and thereby lets him identify the pulmonary disease of the patient. In a less literal sense it is also what happens in medical diagnosis in general, and, I would say, actually 'knowledge in practice' as a perspective on the situation is a key concept in understanding medical practice as such: In diagnosing and treating a patient the 'knowledge in practice' of the doctor makes certain aspects of the patient's story as well as certain traits in the patient's physical and psychological appearance stand out

as important while other aspects are seen as irrelevant or are not noticed at all. In interacting with the patient the perspective of 'knowledge in practice' makes certain parts of the theoretical knowledge of the doctor the relevant ones to relate to and makes certain forms of action seem appropriate, which is to say that the perspective facilitates the doctor's 'knowing how to' react to the patient. Of course the former experience of the doctor is essential in this context – his encounters with prior cases supply the 'knowledge of' necessary for him to be able to classify a given case as a certain kind of disease. This is not to say that a given case will be exactly like any other he has experienced before – on the contrary, every situation will be unique in its own complexity – it is rather to say that on the basis of the aspects of the situation that the perspective lets stand out as relevant the situation will be experienced as analogous though not fully similar to other situations the practitioner has been in. It is important to emphasise that the three kinds of knowledge, 'know how', 'know that', and 'know what', here as in the more specific case of radiographic diagnosis will be aspects of a unity and that the interrelated nature of the aspects only allows a (partial) analytical, not an ontological separation: The 'knowledge of' of the medical practitioner supplies meaning to his theoretical knowledge and is at the same time the basis on which he performs adequately – it is for example an integral part of knowing how to conduct an operation to know what it feels like to hold and use the knife the right way. Likewise, linguistic and practical knowledge will be intertwined – theoretical knowledge about the heart and the way it functions is for example of the greatest importance in the transplantation of an organ of this kind. In sum, knowledge in medical practice is a 'knowledge in practice', *i.e.* a unity of 'know how', 'know that' and 'know what'; a unity that essentially involves more than its aspects in that it constitutes a perspective on the situation. To try to capture this last point, I shall speak of the unity as a *synthetic* unity, thereby indicating that the three aspects synthesise to a whole that involves more than its parts.

A piece of evidence for the existence of this 'more' is supplied by reports of medical practitioners (*e.g.* Benner, 1984, Josefson, 1988) that they not uncommonly have the experience when confronted with a patient that they 'can see that something is wrong' though they 'cannot say what it is'. In this case, the perspective of 'knowledge in practice' lets the situation present itself as 'unusual', 'strange' or 'wrong'; and, it should be noted, the presentation moreover has the form of a gestalt: The practitioner is not able to point to definite features that are not as they should be, rather the appearance of the patient as a whole gives him the overall impression that something is wrong. The knowledge of the practitioner is here not a linguistic knowledge since he cannot determine what it is that is disturbing him; neither is it a

practical knowledge since he is not doing anything. Of course, his former experience has a great role to play in this connection – it is exactly his (not explicit) knowledge of the ways healthy and ill people look, acquired through the interaction with a great number of patients with a large variety of diseases, that makes it possible for him now to have this presentation, *i.e.* to view the patient in this way. Still, he is most probably not relating to any one (or even just a few) of these experiences – if he were, he would presumably be able to say at least something like “Because of this-and-that, this person reminds me of so-and-so who had such-and-such a problem”; which is to say that he would actually to some extent be able to describe what it is that strikes him as wrong. In sum, there is more to this presentation than just the interrelated combination of ‘know how’, ‘know that’, and ‘know what’.

After this rather lengthy description of the knowledge of medical practitioners, I shall give two shorter examples of ‘knowledge in practice’ to show that the phenomenon is widespread – actually, I would claim that knowledge understood as something people (can) use in specific contexts (as opposed to an abstract mental entity that can be possessed without ever being put to use) always has the form of ‘knowledge in practice’, but within the limits of this paper it is not possible for me to try to prove this more substantive claim. The first of these examples concerns car driving understood not only as the actual driving of the car but as an activity one undertakes in a wider context – for example as part of the process of going to work or to see some friends. Even when the only reason for driving the car is that ‘one feels like a ride’ this activity still is not ‘just driving’ since it has a meaning in terms of precisely this goal and of the fact that one has the opportunity to pursue it. Seen in this light there is quite a bit of ‘know that’ involved in car driving: Apart from knowledge of traffic rules and perhaps of some facts about the possible speed and acceleration of various car brands – facts, that it might be contested (as Hubert and Stuart Dreyfus do, Dreyfus & Dreyfus, 1986) play a role in expert as opposed to novice driving – the driver will make use of explicit knowledge concerning for example which roads to avoid during rush hours, which routes provide the more interesting scenery and which ones are the shortest etc. On the other hand, driving is definitely to a large extent a ‘know how’ – no amount of even extremely detailed rules will make up for the expert driver’s intuitive grasp of the situation and his smooth way of responding to it. And certainly experience is very important here; *i.e.* experience of the way it feels to drive, *e.g.* how the car behaves when manipulated in certain ways, as well as experience of a variety of situations with different weather conditions, traffic density, road conditions etc. As in the case of medical practice, I furthermore wish to contend that the three kinds of knowledge involved in driving form a unity: It is difficult if not impossible to say where

the experience of driving stops and where the 'know how' begins, and likewise, the 'know that' involved in the making of specific decisions structures the way the 'know how' is practised. As for the relation between 'know that' and 'know what', the experience acquired in specific situations will be part of what supplies meaning to the utterances one would make concerning these situations. At the same time, the 'knowledge in practice' of the driver, like the 'knowledge in practice' of the medical practitioner, is more than the interrelated combination of the three kinds of knowledge: Here, too, it has the form of a perspective that lets aspects of the situations the driver comes in present themselves as relevant and important. To the novice all other drivers seem the same and the cars are only seen as dangerous obstacles to be avoided. As he gains experience, though, the perspective of the novice becomes more sophisticated so that he is able to tell the difference between aggressive and timid driving and to notice features he would not have seen before, like a tendency to sway a bit to one side, that prepare him for the manoeuvres of others even before they signal these manoeuvres unequivocally. And once in a while he can come to have the feeling that there is 'something wrong' with the way someone is driving, even though he is unable to say what it is that disturbs him, which is to say that the perspective here, too, is giving him an apprehension of the situation in the form of a gestalt; *i.e.* an apprehension that cannot be identified in terms of any constituent parts. In other words, the 'knowledge in practice' of the driver is a synthetic unity that is more than its constituent aspects.

My last example is taken from a practice where knowledge is normally considered to be exclusively linguistic, namely the practice of doing natural science. To make the example as short as possible I shall concern myself with only one kind of natural science and have to this end chosen physics. My point is here that even though the physicist of course possesses explicit linguistic knowledge to a very high degree there is also a practical knowledge and a 'knowledge of' involved in doing physics and that actually knowledge here, as in the former cases, has the form of a perspective on the situation that lets relevant aspects of it present themselves. Furthermore, I wish to contend that this is so not only in experimental, but also in theoretical science. This is most easily seen when one considers the fact first discussed by Thomas Kuhn (Kuhn, 1970) that students often find it exceedingly hard to solve the problems at the end of their textbook chapters even though they claim to have understood every word of the text. The reason for this can be described by saying that they lack the 'know how' necessary to solve the problems, as well as the experience of working with and solving a large variety of related problems. This way of putting the matter, however, though correct, does not allow for the fact that the most important thing which the

students lack is the right perspective on the problem. In classical mechanics, for example, it is of advantage when solving the movement problem of a pendulum to view it as 'like' a block on an inclined plane, but seeing this likeness is not just a matter of possessing textbook knowledge – rather it is a question of having a perspective on the pendulum that lets the relevant similarities stand out as significant. This perspective is what makes the 'know how' of solving the given problem possible and is also what is needed for a full understanding of the linguistic knowledge connected to it. Furthermore, these two kinds of knowledge are clearly intertwined with each other, as they are, too, with 'know what': It is through working with concrete problems – through experiencing specific ways of handling physical situations and, very importantly, through having the 'aha-experiences' of suddenly 'seeing' the solution to a given problem – that it becomes possible for a person to acquire the 'know how' of problemsolving and the full understanding of the explicit knowledge simultaneously and in relation to one other. In sum, here, as in the other cases described, what the students need is a 'knowledge in practice', *i.e.* a unity of the interrelated aspects of 'know that', 'know how', and 'know what' – a unity that is at the same time more than just the combination of these aspects in that it forms a perspective on the situation; or, as one might also put it, in that it gives a 'feel for physics' (cf. Kanigel, 1986).

With these examples I hope to have made plausible the claim that at least in a wide variety of practices, ranging from ones where explicit linguistic knowledge has a very great role to play to ones where practical knowledge is dominant, the knowledge we possess has the form of a perspective. Likewise, I hope to have rendered it reasonable to say that even though one of the three discussed kinds of knowledge constituting 'knowledge in practice' ('know that', 'know how', and 'know what') may be dominant in certain practices the other two kinds will also be present and necessary for an adequate way of relating to specific situations. In the next section I now wish to take a closer look at the notion of 'knowledge in practice' and at the relation between its constituent aspects. The purpose will be to elucidate the philosophical implications of the examples given in this section.

2. 'Knowledge in practice'

A point very much in need of clarification, given the foregoing, is the relationship between experience and 'knowledge in practice'. I have tried to show that 'knowledge in practice' involves more than just the 'knowledge of' acquired in concrete situations, but on the other hand I have emphasised the importance of this latter kind of knowledge as well for 'knowledge in practice' as for the other two constituent elements

‘know how’ and ‘know that’. The question of the role the two phenomena play in the acquisition of knowledge therefore remains to be answered.

Basically, as I see it, ‘knowledge in practice’, at least in some primitive form, will always be necessary for the acquisition of experience: It is a condition of experiencing that certain aspects of a situation in some sense be noticed to be important and this is precisely what the perspective of ‘knowledge in practice’ renders possible, in that it lets certain features of a situation stand out as the relevant ones. This is not to say that ‘knowledge in practice’ *determines* what we experience – what stands out as noteworthy features may very well be features that are surprising or unexpected. Rather, it is to say that it is only because of the perspective that anything can be noticed as ‘surprising’ in the first place. What the perspective does is to let the world present itself in certain ways – a sick person simply looks different to the doctor than to the layman, just as the same traffic situation may seem chaotic to the novice and relatively easy to handle to the expert driver. Therefore, the expert has the possibility of acquiring other experiences, or at least experiences that are much more differentiated and sophisticated, than the novice. In this way, ‘knowledge in practice’ is a prerequisite for experience.

At this stage it should be noted that the experience acquired in a given situation is not necessarily one of which we are mentally aware in any strict sense. To explain what I mean by this it is helpful to introduce the terminology of Polanyi who speaks of our attention as having a focal and a subsidiary part (Polanyi, 1964): When we act the *focus* of our attention is the goal of our action not the action itself – when hammering, for example, we concentrate not on the hammer or on the hand holding it, but on the nail or, rather, on the board that the nail is to be driven into. At the same time, though, I would claim that we are maintaining a *subsidiary* awareness of the action itself: Were it not for this kind of awareness we would not be having any experience at all since our focal attention is directed elsewhere – we would not be getting the ‘feel of hammering’ and actually it would be a mystery how we ever succeeded in improving through practice. The point I now wish to make is that quite a lot of the experiences that we acquire while partaking in practice are acquired in this subsidiary way, which means that we are not able to account for them and, most often, are not even aware that we have had them. The driver concentrated on the traffic situation of which he is a part is not focally aware of all the movements he makes with the car in order to adjust to the situation, but still he (ideally, at least) becomes more experienced all the time because he notices subsidiarily what he is unaware of focally. Actually, I would claim that a number of the aspects one finds important in a situation are not noticed focally, but only subsidiarily, and that one reacts to them on the basis thereof. The doctor, for

example, who directs his attention towards the specific illness of a given patient may not focally be aware of all the details of the appearance of this patient, but still he most probably is noticing many of these details subsidiarily and accommodating his treatment accordingly. Therefore, when I emphasised above that the perspective of 'knowledge in practice' makes it possible to find aspects of a given situation relevant it is to be understood that this process does not have to be obvious to the experiencing person, but can very well take place subsidiarily.

The reason for the subsidiary nature of many of our experiences is as already suggested that 'knowledge in practice' is an integral part of our interaction with each other and the world through our participation in practice. In other words 'knowledge in practice' is *not* a static, linguistic representation of the world as traditional Anglo-American philosophy has it – instead, it is an ever evolving phenomenon directed towards action; a phenomenon, large parts of which are not and cannot be articulated in words. Perhaps 'knowledge in practice' could be described as a preparedness for actions and events in the world. In any case, in relation to the question of experience, the nature of 'knowledge in practice' implies that it is *in practice* that the world presents itself in some ways rather than in others and therefore it is in practice and in relation to practice, *i.e.* very often *in action*, that our experiences are acquired. Thus, experience acquisition is something which we seldom, if ever, undertake solely for its own sake: It is something that happens in the midst of activities motivated by other goals. This, I think, explains why we come to have many of our experiences in a subsidiary way.

A further point I wish to make concerning the relationship between experience and 'knowledge in practice' has to do with the primary role experience to my mind plays within the unity of 'knowledge in practice' with regard to linguistic and practical knowledge. As has already been implicit in the analysis of the examples given in the last section I want to claim that experience is a prerequisite for the acquisition of 'know that' and 'know how'. The dependence of 'know how' on 'know what' is, I think, uncontroversial: Only through experience is it possible to acquire the 'feel of' something and to get to know the right way to react in specific circumstances. As for the relation between linguistic knowledge and experience, I would contend that a significant part of the meaning of a great number of words and expressions, though not all of it, consists precisely in the non-linguistic experience of certain kinds of phenomena, *i.e.* in 'know what'. This was seen to be the case in the example of radiography, in which the student first fully understood the textbook descriptions when he had had the experience of perceiving the relevant traits in the lungs of sick and healthy people. It was seen, too, in connection with the physics students whose full

understanding of the theories of physics included experiences of working with and solving problems related to these theories. In a more everyday context it is also the case for a wide variety of words and expressions like 'red', 'pain', 'love', 'what it feels like to be addicted to smoking', etc.: Though part of the meaning of the word 'red' definitely is made up of other linguistic expressions like 'different from blue', as I see it, there is also a significant part that relates to the actual experiencing of red things. A blind person simply does not know what the term 'red' means in the same sense as a sighted person does.

Summing up, I want to say that 'knowledge in practice' is necessary for the acquisition of experience and also for linguistic and practical knowledge. This is so, partly because these two types of knowledge are both dependent on experience and partly because even when in specific situations the 'know how' has already been acquired and the meaning of the terms involved are known on beforehand (most probably, at least to some extent, because of earlier experiences), the perspective of 'knowledge in practice' is still needed both to make aspects of the given situation stand out as the relevant ones to react to and to formulate into sentences of linguistic knowledge, and as something to which one can relate the 'know that' already in one's possession. Since 'knowledge in practice' lets the world present itself in some ways rather than in others, it is on the basis of 'knowledge in practice' that our 'know how' and 'know that' are structured in concrete situations.

Given this analysis, however, the question arises how 'knowledge in practice' can at the same time be a prerequisite for the three kinds of knowledge discussed and also consist in the synthetic unity of precisely the same three kinds of knowledge? The answer to this question is in my opinion relatively simple: As mentioned above, 'knowledge in practice' is not a static entity, but is an ever evolving phenomenon. Therefore, the 'knowledge in practice' that a person has at a given moment renders possible the acquisition of new experience and with it linguistic and practical knowledge, by letting aspects of the given situation present themselves as important. In this process, it should be noted, the three aspects of 'knowledge in practice' are not acquired separately from one another – instead they are acquired in an already united way and in relation to the existing 'knowledge in practice' into which they are incorporated. The result of the incorporation process is a modification and differentiation of the person's 'knowledge in practice' which means that the perspective with which he afterwards meets the world has a higher degree of sophistication. And this, in turn, lets other or more differentiated aspects of a given situation stand out as relevant and important, which again lets new 'know what', 'know how' and 'know that' be acquired. And so on. In this sense, 'knowledge in practice' is always underway –

the incorporation process cannot be viewed as an atomistic adding of elements to a never changing entity, but is in an essential manner a changing of the existing 'knowledge in practice' as well.

This way of understanding 'knowledge in practice' of course raises the further question of how we ever come to have knowledge in the first place. If the acquisition of knowledge always presupposes a perspective, it seems impossible for us ever to get started. Alternatively, is it possible to make sense of the suggestion that we are to some extent born with at least a limited perspective on the world? The answer to this question lies, I think, in our bodily nature, and in the next section that concerns the role of the body, I shall try to explicate in what way. Due to restrictions on the length of the paper, the explication will, however, be of a very tentative form.

3. The role of the body in knowledge acquisition

The point I wish to make in connection with the question of how we ever enter the (hermeneutic) circle of knowledge acquisition is that we do not come into the world as empty buckets waiting to be filled up – instead, as living bodies we have from the very beginning certain needs and wants that make some things matter more to us than others. This means that the world as we perceive it will be fore-structured – we are, so to speak, born with a perspective that makes the world a meaningful place in that it lets certain aspects of any given situation stand out as relevant and important (primarily aspects having to do with pleasure and pain, change and difference, and social responsiveness). This makes it possible for us to acquire some very basic and unsophisticated experiences that, in turn, are connected to the learning of certain very limited types of 'know how' and that are, as well, the bodily basis in relation to which language is later learned. Of course, this fore-structuring perspective is very far from being the 'knowledge in practice' described above – a much higher degree of sophistication in the aspects that present themselves is necessary for this – but still, it is a humble beginning that, given time and participation in appropriate situations on the part of the individual, can evolve into the much more differentiated perspective of 'knowledge in practice'. Therefore, we *are* born, not with an innate 'knowledge in practice', but with the possibility of acquiring this kind of knowledge on the basis of our bodily fore-structuring of the world.

In this sense, the body can be said to form the starting point of human experiencing and knowledge. However, as I see it, the body also has more active roles to play in the actual acquisition of 'knowledge in practice'. For one thing, the tacit, experiential dimension of the meaning of our words and expressions, for which I argued above, is to a large degree made up of bodily sensations and feelings. The

experience of being addicted to smoking, for example, though also involving a cultural aspect, e.g. pride in or shame at having this habit, definitely has a very important bodily ingredient – the feeling of ‘having to have’ a smoke – as well. In passing, it might be mentioned that the Wittgensteinian argument against a private language, or rather, the interpretations of the argument according to which feelings cannot be part of the meaning of our language since we would not be able to communicate about essentially private entities, to which no one else had access, in my opinion overlook the fact that our feelings etc. in a very important sense are *not* private: Our common human anatomy and physiology secures a sameness of experience at a very fundamental level, and actually, it is precisely this fundamental level of experience that gets language started in the first place. It is for example only because we all are hurt when we touch a hot stove that we react to the crying of the infant who has just put his hand on one by saying things like “ouch, that hurts!” We are here not describing a private entity to which only the infant has access – instead we are letting a feeling common to us all due to our common biology give experiential meaning to a word and in that sense letting it have a place in our language. All in all, therefore, at the level of the content of our experiences, the body is of very great importance for ‘knowledge in practice’.

At another level, though still one related to the question of experience acquisition, namely the level of subsidiary experience, the body also seems to me to be of great significance. As I see it, the possibility of experiencing subsidiarily is to a great extent supplied by the body in that it upholds a kind of unfocused attentiveness to the situation while the mind focally is concentrated on only a part of it. This is the case in driving where one is focally mindful perhaps only of the cars ahead of one, but still has a bodily feel of the way the car moves and fits into the traffic, as well as an openness toward the situation as a whole by means of which one becomes aware of signs of a disturbing or dangerous incident about to take place. It is, I think, also the case when the medical practitioner has the feeling that ‘something is wrong’ with a patient, although he cannot ‘figure out what it is’, *i.e.* cannot ‘get his mind focused on it’ – here, too, his body seems to be serving as a kind of background awareness that lets him notice subsidiarily that of which he is focally unaware. Actually, I would contend that it can even be the case in the very theoretical field of physics where one, on being confronted with the results of someone else, can come to have a very bodily feeling (“a feeling in the guts”, cf. Kanigel, 1986) that something is not as it should be with the results, though at first it might not be at all apparent (*i.e.* in focus for the mind) what it is that is out of order. The body, therefore, at this level has a rather active role to play

in the acquisition of 'knowledge in practice' in that it is a condition for the acquisition of a great many of our experiences.

Lastly, one might ask whether the body, in some instances at least, could be said actually to be the very subject (in the Continental sense of the word) of knowledge acquisition and not just to facilitate and structure the experiencing of the mind. It seems to me obvious that at least some of the experiences acquired subsidiarily will be acquired by the body, not by the mind, which is to say that we are not at all (mentally) aware of acquiring them. This will be the case for many of the experiences connected to bodily 'know how' – most people able to ride a bicycle, for example, have learned to do so without having been mentally aware of all the experiences facilitating the learning; a point that is reflected in the fact that, when asked in which direction to turn the handlebars when the bicycle is tilting to the left, they answer "to the right", even though what they actually do is turn them to the left (fortunately – otherwise they would fall all the faster...). Bodily 'know what' connected to 'know how' is, however, as I see it, not the only way in which the body can be said to be the subject of knowledge acquisition – one could give many examples of knowledge that, though once known to the mind, has been forgotten mentally and is only upheld by the body. One such example would be the knowledge of the code of a lock: People very often have the requisite knowledge 'only in the fingers and not in the head', *i.e.* they cannot say which digits the code has, but they can without any problems open the lock when standing in front of it. In this case, it seems reasonable to say that it is the body, not the mind, that is the knowing subject. All in all, I find that quite a lot of examples suggest that the body has a much more fundamental role to play in the acquisition and maintenance of knowledge than is normally ascribed to it. At the same time, I also think they indicate that the mind-body-distinction is not to be understood as designating a rigorous dichotomy, but rather as supplying a name for the two end poles of a continuity. Therefore, since the 'knowledge in practice' for which I have been arguing is essentially a tacit way of letting the world present itself to us as active, living, *i.e.* bodily, beings interacting with this world, it would seem to me that a further investigation into the concept of the body as a knowing subject and the relation between body and mind in this connection would be a particularly promising one to undertake. Actually, the perspective of 'knowledge in practice', given further analysis, might very well turn out to be to a great extent the perspective of the body.

4. Concluding remarks

In this paper I have argued that the knowledge we possess in practice is not, as traditional Anglo-American philosophy holds, exclusively, and not even primarily,

linguistic knowledge, but instead has the form of a synthetic unity of the three aspects linguistic knowledge, practical knowledge, and experience. These three aspects, I have claimed, are ontologically speaking necessarily interrelated and can even for analytical purposes only be partially distinguished from one another. Within their unity, however, experience is the more fundamental one in that it supplies meaning to our words and expressions and gives the bodily 'feel of' necessary for practical knowledge. Their unity, which I have termed 'knowledge in practice', I have characterised as a perspective with which we in practice, *i.e.* as part of our way of living in the world, meet this world, whereby features of the concrete situation we are in come to stand out as relevant and important. Since a presentation of features as important, furthermore, is a prerequisite for experience acquisition as well as for the acquisition and structuring of linguistic and practical knowledge, I have contended that 'knowledge in practice' is necessary for the acquisition of its own aspects. The seeming contradiction involved in this statement, I have claimed, is resolved by the fact that 'knowledge in practice' is not a static entity, but an ever evolving phenomenon that develops from the very humble basis supplied by the fore-structure that our bodily being imposes on the world.

'Knowledge in practice', I have emphasised, is in an essential manner related to action in the world and therefore many of our experiences are acquired subsidiarily, without our being mentally aware of them, because our attention is focused on the goal of our activity. In relation to this kind of subsidiary experiencing our body has a large role to play, I have proposed, partly in supplying a background of unfocused attentiveness that lets relevant aspects not in the focus of our attention still be noticed, and partly in being the subject of the experience acquisition. As regards the last point, I have tentatively put forward the suggestion that the body might also in other respects be considered the subject of knowledge acquisition and maintenance and that actually the body has a much greater significance in the context of knowledge than it usually is accorded. In conclusion, I would therefore like to say that the relation between bodily being and 'knowledge in practice' remains a very exciting field of investigation – and one which I plan to delve into much more intensively in the future.

Bibliography

- Benner, P. (1984): *From Novice to Expert: Excellence and Power in Clinical Nursing Practice*, Addison-Wesley, Massachusetts.
- Churchland, P. (1985): "Reduction, Qualia, and the Direct Introspection of Brain States" in *The Journal of Philosophy*, Vol. 82.
- Dreyfus, H. & Dreyfus, S. (1986): *Mind over Machine – The Power of Human Intuition and Expertise in the Era of the Computer*, The Free Press, New York.
- Dreyfus, H. (1992): *What Computers Still Can't Do*, The MIT Press, Cambridge, Massachusetts.
- Goodman, N. (1972): "The Way the World Is" in Goodman, Nelson: *Problems and Projects*, The Bobbs-Merrill Company, Inc., Indianapolis.
- Göranzon, B. & Josefson, I. (eds.) (1988): *Knowledge, Skill and Artificial Intelligence*, Springer Verlag, London.
- Hacking, I. (1983): *Representing and Intervening*, Cambridge University Press, New York.
- Hanson, Norwood R. (1969): *Perception and Discovery: An Introduction to Scientific Inquiry*, Freeman, Cooper & Company, San Francisco.
- Heidegger, M. (1986): *Sein und Zeit*, Max Niemeyer Verlag, Tübingen.
- Jackson, F. (1982): "Epiphenomenal Qualia" in *Philosophical Quarterly*, Vol. 32.
- Jackson, F. (1986): "What Mary Didn't Know" in *The Journal of Philosophy*.
- Johnson, M. (1987): *The Body in the Mind*, University of Chicago Press, Chicago.
- Josefson, I. (1988): "The Nurse as Engineer – the Theory of Knowledge in Research in the Care Sector" in Göranzon, B. & Josefson, I. (eds.): *Knowledge, Skill and Artificial Intelligence*, Springer Verlag, London.
- Kanigel, R. (1986): *Apprentice to Genius. The Making of a Scientific Dynasty*, Macmillan, New York.
- Kuhn, T. (1970): *The Structure of Scientific Revolutions*, University of Chicago Press, Chicago.
- Latour, B. (1987): *Science in Action*, Harvard University Press, Cambridge, Massachusetts.
- Latour, B. (1993): *We Have Never Been Modern*, Harvester Wheatsheaf, London.
- Lave, J. (1988): *Cognition in Practice – Mind, Mathematics and Culture in Everyday Life*, Cambridge University Press, Cambridge.
- Lave, J. & Wenger, E. (1991): *Situated Learning – Legitimate Peripheral Participation*, Cambridge University Press, New York.
- Leder, D. (1990): *The Absent Body*, University of Chicago Press, Chicago.

- Lewis, D. (1994): "What Experience Teaches" in Lycan, W. (eds.): *Mind and Cognition*, Basil Blackwell, Guildford.
- Nagel, T. (1986): *The View from Nowhere*, Oxford University Press, New York.
- Nagel, T. (1991): "What is it like to be a Bat?" in Nagel, T.: *Mortal Questions*, Cambridge University Press, Cambridge.
- Nordisk Pedagogik: Journal of Nordic Educational Research*, No.3, 1997: *Special Issue: Apprenticeship – Learning as Social Practice*.
- Polanyi, M. (1964): *Personal Knowledge – Towards a Post-Critical Philosophy*, Harper & Row, New York.
- Polanyi, M. (1966): *The Tacit Dimension*, Doubleday & Co., New York.
- Ryle, G. (1949): *The Concept of Mind*, Hutchinson's University Library, London.
- Schön, D. (1983): *The Reflective Practitioner*, Basic Books, USA.
- Sheets-Johnstone, M. (1990): *The Roots of Thinking*, Temple University Press, Philadelphia.
- Wittgenstein, L. (1984): *Philosophische Untersuchungen*, Suhrkamp, Frankfurt am Main.
- Wittgenstein, L. (1984): *Über Gewißheit*, Werkausgabe 8, Suhrkamp, Frankfurt am Main.
- Zuckerman, H. (1977): *Scientific Elite*, Free Press, New York.