

Bengt Molander

The Practice of Knowing  
and Knowing in Practices

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EDITION

We have our simple pleasures.  
We have our anxiety and our worries,  
we have sorrows and joys,  
none of which cancels out the other,  
nothing is any different from what it is,  
indescribable. We can tell stories,  
tell the truth, as best we can.  
If only we always knew what we were doing.<sup>1</sup>

## Chapter 2: Tacit Knowledge and Silenced Knowledge. The Body, Culture, Action—and Language

### Introduction

Thomas Tempte has this to say about Gösta the boat-builder:

Gösta is a product of the old master-apprentice system of training. An advanced and complex body of knowledge could be transferred from the skilled to the unskilled without words. Which is not to say that anyone was against speech but that traditions had never been established to transfer knowledge in this way.

When you put questions to Gösta, his responses are very exact. Frequently after a pause for reflection. The skills are not unconscious or unassessed. He shows by doing. And then adds some minor remarks. What usually happens is that he will tell a story about an artisan who failed to act in a particular way and went wrong as a result. The effect this has is of being given a blueprint and rejecting the unreflected behaviour brought to light by the errant artisan. The newly gained insight is fixed with the help of the tale.<sup>2</sup>

“Tacit knowledge” developed into a key term in the discussions about professional knowledge held during the 1980s. One of the meanings common

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1 Extract from the poem “Lagårdsperspektiv,” in *Bland orrar och kor*, translated by Frank Gabriel Perry and Gabriella Berggren (Stockholm: Bonniers, 1989), 104. This chapter is a revised version of Bengt Molander, “Tacit Knowledge and Silenced Knowledge: Fundamental Problems and Controversies,” in *Skilj and Education, Reflection and Experience*, ed. Bo Göransson and Magnus Florin (London: Springer-Verlag, 1992), 9–31.

2 Tempte, *Arbetets ära*, 88.

to both "the silent" and "the tacit" covers the "wordless" transmission of knowledge, showing by doing.

Ingela Josefson refers to a conversation with Ms. Jones, who had previously worked as a nurse and had then been given the job of "serving as a connecting link" between computer technicians and nurses at a hospital. Ms. Jones said:

Unfortunately you can find many examples of inarticulate nurses. They may succeed at doing certain things exceptionally well and may be equally successful in the next difficult situation to come along. But if you ask them, can you describe what you did, they are unable to reply. There are, however, exceptions among nurses. Some of them are intelligent, articulate and above all enthusiastic when faced with technological change and the need to express themselves.<sup>3</sup>

Here we see reflected several of the major points of contention concerning "tacit" knowledge: *Why* are they unable to reply? Is it fear, or an unwillingness or inability to describe what they are doing? Is this a form of knowledge that cannot be described? If describing it is so difficult that only a few succeed, perhaps "traditions had never been established to transfer knowledge in this way"? Or perhaps they simply want to keep their knowledge to themselves? In the above quotation, a connection is established between articulateness and enthusiasm in the face of technological change—and intelligence. Connections of this kind made the issue of tacit knowledge a loaded one.

Another nurse told Ingela Josefson about a newly operated patient who at first seemed to her to be doing relatively well, although later she could see that there was something amiss. The chief resident examined the patient and said that there was nothing to worry about. The patient died two hours later.<sup>4</sup>

I could see that something was not right, said the nurse, and she added that during her working life—she had been working for more than thirty years in the same post-operative ward—she had probably experienced similar events: "I may have forgotten many of them but they would still remain with me as part of my skills."<sup>5</sup> This is not to imply that her knowledge is infallible. No knowledge is.

3 Ingela Josefson, *Från lärling till mästare. Om kunskap i vården* (Lund: Studentlitteratur /SHSTF, 1988), 9.

4 Based on Ingela Josefson, *Kunskapens former. Det reflekterade yrkeskunmandet* (Stockholm: Carlsson, 1991), 27–28.

5 *Ibid.*, 28.

Ingela Josefson comments:

The ability to see that something is not right although all the medical tests are normal is a skill that cannot be acquired through studying books. Propositional knowledge can provide us with an overall orientation but the mastery of seeing is only acquired in practice.<sup>6</sup>

Finding accounts of similar experiences from other fields is not difficult. We saw some examples of "tacit knowledge" in chapter 1. *Seeing, doing, and being* are, one might say, the tacit forms of knowledge. Attentiveness continues to play a key role here.

The aim of this chapter is to provide a survey, or an "overview," of some main points in the debate about tacit or unarticulated knowledge—and simultaneously to steer that debate away from being fixated solely on the term "tacit knowledge."

### Tacit Knowledge—an Ongoing Debate

The fact that from the beginning of the 1980s "tacit knowledge" developed into a key term in Sweden in the discussions concerning the nature of professional skills is largely due to successful—and controversial—research on working life.<sup>7</sup> It was controversial because of its epistemological perspective and its research team, which involved both artists and artisans. Thomas Tempte was one of the people involved in carrying out this research and we will be returning to it later. First, a reminder about previous discussions of this area.

Michael Polanyi's starting point in his book *The Tacit Dimension* (1966) was "we can know more than we can tell."<sup>8</sup> We know, and can do, more than we can express in words. Polanyi refers to "tacit knowing"; the participle

6 *Ibid.*, 28.

7 Research carried out within the Centre for Working Life (Stockholm) led by Bo Göransson. It was first described in book form in Bo Göransson, ed., *Da-tautvecklingens filosofi. Tyst kunskap och ny teknik* (Stockholm: Carlsson & Jönsson, 1983). See also the survey in Magnus Florin, *Skill and technology: the research theme Education-Work-Technology, 1977–1991*, trans. Keith Bradfield (Stockholm: Swedish Centre for Working Life, 1991).

8 Michael Polanyi, *The Tacit Dimension* (London: Routledge & Kegan Paul, 1966), 4.



is important here since his emphasis is on the active and personal aspect of knowledge. We are able, for example, to *recognise* objects and *do* things without being able to express how we recognise something or exactly what we are doing.<sup>9</sup>

Polanyi attracted a great deal of attention largely due to the reference in Thomas Kuhn's *The Structure of Scientific Revolutions* to Polanyi's book *Personal Knowledge*. Kuhn argued that much of the knowledge of a scientist is tacit, "knowledge that is acquired through practice and that cannot be articulated explicitly."<sup>10</sup> Knowledge of this kind is founded mainly on concrete examples. It must say something about the epistemological climate that this aspect of Kuhn's (and Polanyi's) ideas had so little impact on the epistemological debates of the 1960s and 1970s, apart, at least, from discussions pertaining to scientific knowledge.

Unarticulated and inarticulate knowledge has, however, long been a philosophical problem. It touches fundamentally on the relationships between theory and practice and between thinking and doing in relation to education and the maintenance of knowledge: What is knowledge? How do we learn? How do we teach? How do we take care of our knowledge? These are old questions to which many answers have been proposed.

In the course of the new debate about tacit knowledge, old questions were put once again, new light was shed on them and they acquired a greater urgency than before. Two factors appear to be particularly important in explaining why the concept of tacit knowledge had such an impact during the 1980s:<sup>11</sup>

9 See chiefly Michael Polanyi, *Personal Knowledge. Towards a Post-Critical Philosophy* (London: Routledge & Kegan Paul, 1978, first published 1958).

10 Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 2<sup>nd</sup> ed. (Chicago: University of Chicago Press, 1970), 4, footnote 1. Polanyi's concept "tacit knowing" is many-faceted; Kuhn fastens on *one* aspect.

11 In Sweden, a third factor was a restructuring of the Swedish system of tertiary education, with a focus on scientification, at both the institutional and ideological levels, cf. footnotes 13 and 14 below.

- The realisation that many kinds of practically mediated knowledge were being eroded and were difficult or impossible to replace.<sup>12</sup>
- The ideological and industrial project to computerise knowledge.

For most of the twentieth century, at least in Western Europe, there has been a profound belief in "scientification"—science-based knowledge and scientific rationality—as a vital factor in the continued *enlightenment* of human beings and the ongoing modernisation of society.<sup>13</sup> Verbalisation and theory-building are the hallmarks of scientification<sup>14</sup> according to the prevailing conception of science. Many people hoped that a broadening of college and university education would also broaden the very concept of scientific knowledge. Very little or nothing came of this in practice. Attempts to scientific different forms of practically mediated knowledge have generally led either to an erosion of such forms of knowledge or to a growing gulf between various forms of practice and a newly created science of the field of practice, such as nursing science. For the past two decades, "knowledge-based practice" has been a leading ideology supporting the scientification process.

Modernisation and scientification are closely connected with technological change, both in economic terms and in relation to the ideology of knowledge. For some time the computer industry and the development of computerised systems have been the focus of technological change of this kind. A backlash occurred in the 1980s when an increasing number of negative consequences of the use of such systems were discovered, including

12 "Erosion" is a useful term in this context as it suggests a gradual process. Cf.

"The Background" in Göranson, *Datautvecklingens filosofi*. Cf. also Maja-Lisa Perby, "Computerization and Skill in Local Weather Forecasting," in *Knowledge, Skill and Artificial Intelligence*, ed. Bo Göranson and Ingela Josefson (London: Springer-Verlag, 1988), 39–52, on the subject of meteorologists. A further but controversial example is the decline of nursing skills as an art.

13 Translator's note: the Swedish word "vetenskaplig," translated here as "scientific," is not restricted in application to the natural and applied sciences but can also apply to the humanities, where it suggests intellectual work with a firm foundation.

14 Scientification and scientificity are used throughout to refer to a belief in scientific rationality and science-based knowledge (and occasionally to social investment in such a belief).



their impact on professional skills in various fields. In terms of its social application, modern technology causes traditional professional skills to erode to such an extent that in a number of cases the computer systems are unable to receive the "input" of human knowledge required for the system to function in its role as support mechanism to that very same human knowledge.<sup>15</sup>

Underpinning the computerisation of knowledge projects—both as industry and ideology—is a particular conception of knowledge and way of looking at human beings. The following may serve to illustrate this point:

It has become increasingly common for key individuals to computerise a record of their unique experience before they retire.

This is called "draining" their brains.

On a computer like the one in Skellefteå it only takes a minute or two to retrieve an important passage in the "testament" of a miner, for example, or of a doctor.<sup>16</sup>

The person being interviewed is obviously not aware that certain kinds of knowledge can remain "tacit," nor that there are forms of knowledge to be found elsewhere than in the brain. There even existed a professional category, that of the knowledge engineer, whose job was to "drain" experts of their knowledge and skills and record them on a computer system. Nobody would express it exactly like that today; the "knowledge engineers" have gone and the hopes for artificial intelligence have largely disappeared. Belief in scientification, not least under the labels of research- and knowledge-based practice, is still strong. The project of "knowledge management"

seems to have absorbed the "draining" project, and placed it in more flexible settings. Still, much of the same knowledge ideology remains.<sup>17</sup>

Both the idea of scientification and the attempts to have computers preserve and process knowledge are founded on an ideology of knowledge that sees practice only as a source of information for the development of theory and as an area of application. This view is entrenched in a long tradition of theoretical knowledge in the West.

Other traditions of knowledge exist—practical ones. The examples given in chapter 1 are derived from a number of these. Knowledge within traditions of this kind is transmitted and created primarily by models or *exemplars* (from master to apprentice, for instance), through *training* and through *personal experience*. It is this knowledge that may be called "tacit knowledge." This is a useful descriptive term because the foundations of this form of knowledge are not to be found in one or other linguistic formulation, but in the execution and completion of tasks, in *doing*.

Forms of knowledge founded and transmitted in practice are frequently referred to as arts: the art of medicine, the art of cooking and so on—although sadly the term "art" used as a description of such forms of knowledge is beginning to disappear. The particular form of knowledge/the art is to be found in the doing and the judgements made in connection with such action. Embodied attention is at the heart of the matter: the correct use of the hand, having a good eye for what has to be done, and when.

It is living knowledge, as expressed and conveyed in human life and human commitment, that is the very focus of tacit knowledge, not what has been written down, nor what is abstract and detached.

The working life research mentioned earlier was based on a perspective that was antithetical to traditional scientification and to the self-image of techno-culture. This was seen by many as extremely provocative. As a result a polarisation developed, for and against tacit knowledge, both as a concept and as a fundamental empirical phenomenon. Different traditions of knowledge were clearly exposed. What was at stake here was to a large extent the power to control the concept of knowledge. These tensions remain in force.

17 Cf. Harry Collins, *Tacit and Explicit Knowledge* (Chicago: Chicago University Press, 2010), 3.

15 This was definitively borne out by the research carried out by the Centre for Working Life, both in domestic and in international terms. Cf. Göranson, *Datutvecklingens filosofi*, Göranson, *Practical Intellect*, Bo Göranson and Ingela Josefson, eds., *Knowledge, Skill and Artificial Intelligence* (London: Springer-Verlag, 1988), Bo Göranson and Magnus Florin, eds., *Artificial Intelligence, Culture and Language: On Education and Work* (London: Springer-Verlag, 1990), Bo Göranson and Magnus Florin, eds., *Dialogue and Technology. Art and Knowledge* (London: Springer-Verlag, 1991), Bo Göranson and Magnus Florin, eds., *Skill and Education, Reflection and Experience* (London: Springer-Verlag, 1992), Bo Göranson, ed., *Skill, Technology and Enlightenment: On Practical Philosophy* (London: Springer-Verlag, 1995). A survey of the period 1977–1991 can be found in Florin, *Skill and Technology*.

16 Statement made in an interview by Roland Fastberg, in Caj Norén, "Superdatorm lyfter glesbygden" *Dagens Nyheter*, December 28, 1987.



## The "Tacit" Is Everywhere—and Nowhere

A good concept is like flypaper, everything sticks to it, Adorno is supposed to have said. Many people in working life identified with the concept of tacit knowledge and started to feel that they could stand up for their experience and knowledge without being forced to articulate them in words. The effect in Sweden was for the concept to serve as flypaper. It captured what it was supposed to—and a lot more into the bargain. The term "tacit knowledge" had a liberating effect. It has, however, been used—and even misused—in a host of different ways. "The concept of tacit knowledge needs to be purified," Bo Göransson wrote in 1988.<sup>18</sup> There is still work to do. This section of the present chapter is intended as a contribution to both purification and criticism of the notion. It is primarily concerned with the strange view of language and knowledge which appears to lie behind a division of knowledge into the tacit and the explicit.<sup>19</sup>

This view of language and knowledge is a deeply rooted one. It is even manifested when many of those who "know better" write about description and articulation. It reveals itself, for example, when it is said that "thoughts can only be incompletely described with words."<sup>20</sup> Another variation is that there is always a "gulf" between the description and the reality being described.<sup>21</sup> In statements of this kind, description is made to seem a clear-cut matter without any allusion being made to methods of description, language, point of view, and above all to intention, or to their being presupposed. And we are often led astray by the image of thoughts and ideas as having an autonomous existence, independent of language, as objects

18 Editorial comment, in *Dialoger*, no. 6 (1988), p. 3. This issue of *Dialoger* has "Tacit knowledge" as its theme.

19 Perhaps too little attention has been paid to this very distinction. Collins, *Tacit and Explicit*, goes into this in some detail. His goal is however different from mine. The distinction is not very important for me, as will be seen later. I want to understand and give an account of knowledge as expressed in actions and practices.

20 Polanyi also puts forward a strange view of language of this kind—which sits uneasily with the other things he has to say. Cf. Polanyi, *Personal Knowledge*, ch. 5.

21 Cf. Schön, *The Reflective*, 276, for example. This may, of course, be said to be true—trivially true.

which one tries to fit words and phrases to, as though what was at issue was to find the most naturalistic depiction, or the most realistic photograph, possible. This image is a false one.

A tripartite division of knowledge was put forward as part of an epistemological perspective for the research on working life. It has stubbornly persisted within this research community and it has been widely disseminated in Scandinavia.<sup>22</sup> According to the division, knowledge comes in one of these forms: "propositional knowledge," "practical knowledge" or "knowledge of familiarity."<sup>23</sup> Somewhat crudely, this can be taken to mean that a distinction is drawn between 1) knowledge expressed in *statements*; 2) knowledge in the form of proficiency or skill—being able to do certain things; and 3) knowledge in the form of *familiarity* with certain phenomena. Familiarity was emphasised because the most common approach only distinguishes theoretical (i.e. propositional) and practical knowledge.<sup>24</sup>

22 See Tore Nordenstam, "Ett pragmatiskt perspektiv på datautvecklingen," in *Datautvecklingens filosofi. Tyst kunskap och ny teknik*, ed. Bo Göransson (Stockholm: Carlsson & Jönsson, 1983), 17–27, and Göransson, *Practical Intellect*, p. 82–83. This division can be defended within a field of practice, and it is in this way it would appear to be used in Göransson, *Praktiska intellektet and Practical Intellect*; this is, however, far from clear.

23 Nordenstam, "Ett pragmatiskt perspektiv," 20–21.

24 The main architect of this design is Kjell S. Johannessen. He refers to knowledge of familiarity as early as 1980, cf. Kjell S. Johannessen, "Language, Art and Aesthetic Practice," in *Wittgenstein – Aesthetics and Transcendental Philosophy*, ed. Kjell S. Johannessen and Tore Nordenstam (Vienna: Hölder-Pichler-Tempsky, 1981), 108–26. Since then, Johannessen has considerably developed his views, in terms of "analogical thinking" and "intransitive understanding." Cf. Kjell S. Johannessen, "Rule-Following and Intransitive Understanding," in *Artificial Intelligence, Culture and Language: On Education and Work*, ed. Bo Göransson and Magnus Florin (London: Springer-Verlag, 1990), 37–44, "Language, Computer Science and Tacit Knowledge," in *Wittgenstein and Contemporary Theories of Language*, ed. P. Henry and A. Utaker, (Bergen: University of Bergen, 1992), 28–44, "Art, Philosophy and Intransitive Understanding" in *Wittgenstein and Norway*, ed. Kjell S. Johannessen, Rolf Larsen and Knut Olav Amås (Oslo: Solum, 1994), 217–250, "Action Research and Epistemology. Some Remarks Concerning the Activity-Relatedness and Contextuality of Language," *Concepts and Transformation 1*, no. 2/3 (1996), 281–297, "Knowledge and Reflective Practice," in *Dialogue, Skill & Tacit Knowledge*, ed. Bo Göransson, Richard Ennals and Maria Hammerén (Chichester: John Wiley & Sons, 2006), 229–42,



At this point, however, I want to attend primarily to the dualism that is implicit in considering “propositional knowledge or theoretical knowledge” as *articulated*, explicit knowledge, whereas the other two categories are seen as forms of *tacit knowledge*. Is it fruitful to draw a dividing line of this kind?

The answer is yes. Although only if these three forms are not seen as different types of knowledge but as *aspects* of knowledge—that is to say—knowledge seen from different perspectives. One could, in fact, argue both that no form of knowledge is completely tacit and that all knowledge is fundamentally so.

First, the argument that all knowledge is fundamentally tacit. It is obvious that one can do many things without being in a position to provide an exhaustive description of how one is acting and why one does something when one does it—what is needed is skill, practical application and sound judgement. These are fundamentally tacit.

The statements that “mass is equal to energy” and that “each transformational rule is defined by a *structural analysis* stating a condition on the class of phrase-markers to which it applies and specifying an analysis of the terminal string of this phrase-marker into successive parts” are not particularly difficult to articulate. I can do this as well as anyone who is able to read. I understand the first statement but not the second because I have acquired a familiarity with physics and not with linguistics. It is obvious that no knowledge is to be found in the sentences themselves. The possibility of knowledge only exists if one *understands* the constitutive *concepts* and the *contexts* in which the sentences are normally used, which is a different matter from being able to repeat them parrot-fashion. This is valid for all sentences. Our understanding and our actions, which are in some sense tacit, give the words their meaning. As a result it becomes clear that all knowledge is, fundamentally, tacit.

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and “Rule Following, Intransitive Understanding and Tacit Knowledge: An Investigation of the Wittgensteinian Concept of Practice as Regards Tacit Knowing,” in *Dialogue, Skill & Tacit Knowledge*, ed. Bo Göransson, Richard Ennals and Maria Hammerén (Chichester: John Wiley & Sons, 2006), 269–294.

This means that “propositional knowledge” ceases to hold any attraction as a special category of knowledge. It both presupposes and is permeated by tacit knowledge.<sup>25</sup>

Let us turn to the second half of the argument, which proposes that no knowledge is completely tacit. Too much discussion about knowledge has been based on what it means “to have knowledge” as a *state*, whether as a belief, a mental state or a neurophysiological condition. Polanyi is one of the few who consistently stresses the active dimension of knowledge, “knowing” rather than “knowledge.” Like Polanyi, we should regard knowledge primarily as something dynamic and in motion. One could say that only knowledge in use *is* knowledge.

Two typical examples of tacit knowledge are “(knowing how) to cycle” and “(knowing how) to recognise a face.” It is obvious that no one can provide a complete description of bicycling in the sense of setting out instructions one could read and absorb so that one could then mount a bicycle for the first time and ride off straight away. It is also obvious that one could learn to ride a bicycle without ever knowing how to provide even an approximately accurate description of what happens from the *point of view of physics*—that being the perspective that is usually the norm. The same can be said about how one recognises a face.

However, and it is an important however, “descriptions” (including instructions, good advice, tips and so on) often play an important role when one is learning something—step on it, don’t look down at the ground, keep your eyes fixed on where you want to go—as well as when improving a skill by training, which can be done with regard both to bicycling and to recognising a face. Words are sometimes needed. No human activity involving knowledge is carried out entirely without words.<sup>26</sup>

Bicycling and the identification of faces are usually without significance in themselves. They *form part* of various meaningful activities; they serve purposes of different kinds. What human beings do forms part of complex

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25 Both Nordenstam and Johannessen have consistently argued in favour of this point. My criticism is that they have been somewhat careless in the way they refer to “different sorts of knowledge.”

26 The key issue being that some form of external system of signs, most commonly ordinary language, is used for communication.



systems of actions with a variety of goals, purposes and functions. This is obvious in relation to professional skills of various kinds. It is, in contrast, often far from obvious exactly what the tasks and the objectives are and how they should best be achieved. It is here that language plays a decisive role in the formation of knowledge, *within* an area of activity. Moreover, accurate *descriptions* of the subject matter that an activity or profession deals with may be important, for judgments, choices and attending to the right things. However, a set of such descriptions become (part of) a body of knowledge only as used, or prepared for use.<sup>27</sup>

In every occupational field, in every area of knowledge, the giving of advice takes place and *disagreements* occur. In such cases *reasons* have to be given for doing one thing or another and *arguments* for and against have to be made. Descriptions of various kinds are often useful as instruments, but "description" can mean many different things depending on the means of description, the method and above all the objective.

If we disregard artificial or isolated examples—bicycling, the recognition of faces and so on—what becomes clear is that there is no activity that is completely tacit, and therefore no completely tacit knowledge.<sup>28</sup>

"The tacit" is to be found everywhere and nowhere.

### And Yet There Is Much that Remains Unspoken—and Perhaps Unsayable

Despite what I have said, there may, of course, be some point in speaking of "tacit knowledge," the "tacit" aspects of knowledge, or saying that something "cannot be described" and so on. At this point, my aim is to distinguish three different senses of "tacit" or "indescribable" knowledge. Distinguishing

27 Cf. the discussions about "subject knowledge" and "theory" in Christopher Winch, *Dimensions of Expertise. A Conceptual Exploration of Vocational Knowledge* (London: Continuum, 2010), ch. 1 and 6.

28 Language and action interact in a hermeneutic circle. Cf. Charles Taylor, "Interpretation and the Sciences of Man," in *Philosophy and the Human Sciences. Philosophical Papers 2* (Cambridge: Cambridge University Press, 1985), 15–57, and Hans-Georg Gadamer, "On the Circle of Understanding," trans. J. M. Connolly and T. Keutner, in *Hermeneutics Versus Science. Three German Views*, ed. J. M. Connolly and T. Keutner (Notre Dame: University of Notre Dame Press, 1988), 68–78.

three senses in particular is rather arbitrary. However, these three appear to be the areas of major significance in discussions of professional and occupational knowledge.

The first sense of "tacit knowledge" refers to knowledge that *cannot* be described or expressed in words. The questions "What is describable?" and "What is not describable?" have no meaning outside of a particular context: "description" by whom, by what means, to what end? And yet there is still something to be said about "the indescribable."

A description of something is not normally identical with what is described. An action is not the same thing as a description of it. A description of a sound is not the same thing as the sound itself, and so on.

It may be perfectly correct to say that "I cannot describe how this is done" even though I can do it. The person then, normally, means that she cannot describe it in such a way that the questioner can (fully) *understand* or (adequately) *reproduce* it herself. And it is perfectly obvious that no one, in the normal course of events, can learn to do something solely on the basis of descriptions. The same appears to apply to utterances of the kind "I cannot describe my feelings to..." The point being that a *description* is not sufficient to make the listener or the reader understand. There are, however, always innumerable ways to describe, depict or give form to actions, feelings, etc.

Instead of talking about the impossibility of description, it is frequently better to speak of the *inexhaustibility* of reality. No description or other form of representation will exhaust a particular body of professional knowledge, for example.<sup>29</sup> This becomes obvious when one considers the embodied, or

29 The nature of the genuinely "unsayable" is a fundamental theme of philosophy. Some things can be shown but not all can be said. This is, for example, a consistent theme in the philosophical reflections of Ludwig Wittgenstein, both in *Tractatus Logico-Philosophicus*. Trans. D. F. Pears and B. F. McGuinness (London: Routledge & Kegan Paul, 1961, originally published 1922), and in *Philosophische Untersuchungen. Philosophical Investigations*, revised 4<sup>th</sup> German-English, ed. P. M. S. Hacker and Joachim Schulte, trans. G. E. M. Anscombe, P. M. S. Hacker and Joachim Schulte (Chichester: Wiley-Blackwell, 2009; originally published in German 1953). A limit for the sayable is pointed out in chapter 8 below. Certain issues to do with religious knowledge belong to the problem area of the "unsayable." But this lies outside my purpose in this book.



incarnate, dialogue, which is an important aspect of the skills of the physiotherapist.

The second sense of the "tacit" dimension of knowledge refers to what is tacitly presupposed or implicit. This is the obvious way of understanding "tacit" in many cases. It is impossible to deal with every kind of tacit presupposition and implication; here I shall focus on only a few major ones which are of prime importance to the discussion of the tacit aspects of various forms of professional knowledge.

Among the preconditions for knowledge—for all forms of knowledge—belong a number of habitual actions and convictions which we rely on. Knowledge cannot only be based on questioning. We learn a large number of habitual actions and convictions of this kind without ever reflecting on them. This applies to what we learn as part of our common culture as well as to what we learn within particular areas of activity.

Within a craft occupation one has to practise how to do things, which involves training manual skills and judgement.<sup>30</sup> Every occupation has, of course, a craft dimension, even the most intellectual. Arithmetic requires one to practise calculation; it cannot be learnt "entirely theoretically." The same applies to all of the more advanced "theoretical" fields. We are brought up in, or train ourselves in, ways to act and ways to think—this is what being brought up in a particular culture means; many of these ways of acting and thinking—including ways of *talking about knowledge*—make up the tacit basis for the understanding of other human beings and society.

Concrete models and paradigms—exemplary attempts and exemplary achievements—are important in all forms of knowledge formation.<sup>31</sup> Training in practical knowledge, e.g. apprenticeship, is based on concrete models of what to do—and equally concrete examples of what not to do.

Polanyi counts as part of what has been (tacitly) assumed the kinds of thing we are only indirectly or subordinately aware of when our attention is directed towards something else. When we look at a face, we do not normally

30 Donald Schön has pointed out somewhere that on many occasions one has to learn to do something first, and only afterwards can one learn *what* one is doing; one cannot *understand* first and then do.

31 Kuhn asserts the importance of models and paradigms in science, see "Post-script—1969" in Kuhn, *Structure*. I return to this matter in chapter 8 below.

notice the details but look at the face as a whole, as a *Gestalt*. When a blind person has learnt to use a cane, she is not aware of the cane but of what the ground feels like. This can be turned into a general proposition: when one has learnt to control a tool, it feels like part of the body. Practically acquired knowledge *becomes* part of the body.<sup>32</sup> Polanyi does say, however, that we are subordinately, or indirectly, aware of facial details, of how the cane or the hammer feels as an object in the hand, and so on.<sup>33</sup> Polanyi also says that these two kinds of awareness—or attentiveness—uncover an inherent structure of "the arts of doing and knowing"<sup>34</sup>; this structure is thus not only something "tacitly presupposed."<sup>35</sup>

There are those who, when referring to tacit knowledge, seem to include all the tacit presuppositions for both knowledge and the acquisition of knowledge *within* knowledge, while others do not. All too easily, this can lead to mutual misunderstanding.

The third and final sense of "tacit" knowledge refers to what has been silenced: to what has never acquired a voice, nor been allowed to acquire a voice. Here, what is of prime importance is not the issue of being able to describe in words what one knows, and knows how to do, but rather having the chance to stand up for, and gain recognition for, what one knows *as* knowledge. On occasion "silenced" knowledge refers back to the various preconditions for knowledge. If, for example, one is unable, or not allowed, to pay sufficient attention to one's own knowledge or to maintain a language rooted *within* one's professional field of activity, then that knowledge will erode.

32 The body as a "cultural artefact," perhaps.

33 Cf. Polanyi, *Personal Knowledge*, 55–63, 92; Polanyi, *Tacit*, 10–11, 16–17.

34 Cf. Polanyi, *Personal Knowledge*, 64–65.

35 Polanyi builds an intricate theory about this structure and its many manifestations in *Personal Knowledge* and *Tacit*. In *Tacit* he emphasises the notion of attending, in the forms *attending to* and *attending from*. As an example, he refers to human physiognomy. When we attend to a face, as a characteristic whole, we attend *from* its detailed features (*Tacit*, 9–11). My use of the notion of attentiveness is different from Polanyi's, which is too dichotomous; however, through the use of his notion he makes us attend to many important features of knowing in action.



The field of "silenced" knowledge can be developed in any number of directions. Certain "languages" can silence knowledge. The effect of demanding the articulation of knowledge may by itself silence it. The asking of questions is often felt to be and often becomes a process of *putting* someone or something in *question*. Keeping silent can form part of a resistance movement—in some cases in order to preserve knowledge, in others to obstruct it. Social status, power relations and other social structures can silence the knowledge possessed by certain groups and individuals and, as a result, may even totally eradicate it in some instances. "One member, one vote" simply does not apply in the "knowledge society."

### "The Expressions of the Tacit" 1: the Body

Our Western philosophical and scientific tradition has focused on the articulated aspect of knowledge: on statements and theories of various kinds. As a result, knowledge is seen as a form of belief or conviction—which "agrees" in some way with "how things are." At this point, however, we will consider several ways of approaching knowledge which can properly be seen as reactions *against* this tradition.<sup>36</sup> In this section and the two that follow it, I put forward three main lines of thought in the reactions against the tradition of knowledge and science which gives pride of place to articulated knowledge and to the kind of knowledge that can be articulated.

The central point of knowledge has a different *locus* in each of these three lines of thought. It is to be found respectively in:

- the body
- culture (community), and
- action.

Here, knowledge is to be understood in a broad sense and includes all the various forms of skill, understanding and (sound) judgement. The "locus of knowledge" also accommodates ignorance, gaps in understanding, a lack of clarity, intelligent mistakes and much else besides.<sup>37</sup>

<sup>36</sup> However, I defend parts of this tradition, including certain ideas of Plato and a radical tradition of enlightenment in chapters 3, 4 and 10 below.

<sup>37</sup> "Ignorance" in the broad sense is, however, a subject that does not automatically follow as a reflection of the way "knowledge" is considered. For the most

A number of important observations about the informed actions of experts form a common background to the first two of these three lines of thought. Chief among them is the view that the skilled practitioner *actively* takes a lot for granted within his or her field of activity; and that she acts "without thinking," as Hubert Dreyfus provocatively puts it.

The contributions made by Michael Polanyi and Hubert Dreyfus can both be used to illustrate the first of these lines of thought, with the *body* as the locus of knowledge. Dreyfus's thesis serves as a better illustration here because of its narrow focus.<sup>38</sup> Together with his brother Stuart Dreyfus, Hubert Dreyfus has elaborated a theory about a hierarchy of levels within the process of the acquisition of a skill.<sup>39</sup> I refer to this theory as the "Dreyfus scheme."

The Dreyfus scheme comprises five stages of skill acquisition.<sup>40</sup> I will only say a few words about the fifth—and final—stage, the level of *expertise*, and about the difference between the knowledge of an expert and knowledge at lower levels.

In the normal course of events, Dreyfus writes, "an expert does not *reason*. He does not *solve problems*. He does not *think*. That is what makes him an expert. He does what normally works and, of course, it normally works."<sup>41</sup> Only the person who is not an expert has to analyse matters, has to think.

The expert *reacts* immediately to a particular situation. The relationship between the situation and an appropriate expert response is what Dreyfus and Dreyfus call "holistic pairing." This means, if I have understood it correctly, that the expert *sees the whole situation*, recognises it immediately

part I leave this important subject aside here. However, cf. chapters 3, 7 and 10 below.

<sup>38</sup> Not that there is much here to do with living bodies—about as much as is needed to drive a car or play chess!

<sup>39</sup> Mainly in Hubert Dreyfus and Stuart Dreyfus, *Mind over Machine. The Power of Human Intuition and Expertise in the Era of the Computer* (New York: The Free Press, 1986).

<sup>40</sup> Cf. chapter 1 in Dreyfus and Dreyfus, *Mind*.

<sup>41</sup> Hubert Dreyfus, "Is Socrates to Blame for Cognitivism?" in *Artificial Intelligence, Culture and Language: On Education and Work*, ed. Bo Göranson and Magnus Florin (London: Springer-Verlag, 1990), p. 224; roughly the same formulation is to be found in "The Socratic and Platonic Basis of Cognitivism," *AI & Society* 2, no. 2 (1988), 106.



without analysing it or reflecting on it, and responds directly at an instinctual level. It may however, take many years of training and practice before the right instinct is acquired. To borrow a cogent metaphor from Harald Grimen, we could say that situations have faces.<sup>42</sup> We learn to recognise faces without analysing their features.

Dreyfus and Dreyfus set themselves against what is probably a fairly common view, that in the course of developing expertise, the expert has acquired and interiorised a more developed system of rules, or a more developed body of theory, for the activity she practices.

While rules and theories may be useful or even essential during the learning process, Dreyfus and Dreyfus say, once someone has become an expert, she will not act on the basis of rules and theories at all; she will act directly—she will react “intuitively,” as they put it. The belief that there are rules, or a theory, that the expert follows continues to be held, according to the Dreyfus brothers, because if one asks an expert to explain what she does, she will refer to rules and theories. These are, however, the rules and theories she acquired and used before she became an expert.

This might seem to be a plausible account. However, the theory and empirical evidence offered by Dreyfus and Dreyfus contain significant lacunae. I will mention only a couple of the most essential.

The philosopher Gilbert Ryle wrote insightfully about “knowing that” and “knowing how” in his book *The Concept of Mind*.<sup>43</sup> Unfortunately, this dichotomy has subsequently been adopted without reflection as a fundamental scheme for much epistemology. The problem Ryle was working on has been lost sight of and the scaffolding he erected has been elevated to the status of the building itself (which is, moreover, typical of much analytic philosophy).

Ryle is keen to emphasise insight and (re-)learning in relation to what he calls “intelligent performance” and “intelligent practice”—what I call knowledge in action. A key aspect is that in intelligent practice one consciously

42 Harald Grimen, *Aspects of Act-Identification and Intention-Identification. An Essay on Identificatory Practices in Human Life* (Bergen: Vitenskapsteoretisk Forum, Universitetet i Bergen, 1978), 188.

43 See chapter 2 in Gilbert Ryle, *The Concept of Mind* (Harmondsworth: Penguin, 1973, originally published 1949). He treated the topic in an earlier article: Ryle, Gilbert, “Knowing How and Knowing That: The Presidential Address,” *Proceedings of the Aristotelian Society*, New Series, 46 (1945–46): 1–16.

controls and is responsible for what one does.<sup>44</sup> This agrees with Thomas Tempte’s assertion that craftwork is not manual work but involves taking a series of decisions, frequently very difficult ones. It is wrong to see the actions of the expert solely as a response to particular situations.

Gilbert Ryle also wrote the following:

It is of the essence of merely habitual practices that one performance is a replica of its predecessors. It is of the essence of intelligent practices that one performance is modified by its predecessors. The agent is still learning.<sup>45</sup>

This is a vital consideration: it is not enough for an expert to know a lot; she should also *not have ceased to learn*. This would seem impossible to fit into the Dreyfus scheme without it breaking down. Learning and expertise are segregated in their scheme. Whatever the case, “knowing how” is embodied knowledge, embodied learning. The next section touches on a particular philosophical discussion about “knowing how” and “knowing that.” The reader who wants to skip it may well do so and proceed to the subsequent section, about culture as the second *locus* of knowledge.

### An Excursus: Knowing That versus Knowing How

In the beginning of his paper “Knowing How and Knowing That,” Gilbert Ryle first describes the position he will criticise and then what he will argue for:

The prevailing doctrine (deriving perhaps from Plato’s account of the tripartite soul) holds: (1) that Intelligence is a special faculty, the exercises of which are those specific internal acts which are called acts of thinking, namely, the operations of considering propositions; (2) that practical activities merit their titles “intelligent,” “clever,” and the rest only because they are accompanied by some such internal acts of considering propositions (and particularly “regulative” propositions). That is to say, doing things is never itself an exercise of intelligence, but is, at best, a process introduced and somehow steered by some ulterior act of theorising. (It is also assumed that theorising is not a sort of doing, as if “internal doing” contained some contradiction.) ...

In opposition to this doctrine, I try to show that intelligence is directly exercised as well in some practical performances as in some theoretical performances and that

44 See Ryle, *Concept*, p. 29, for example.

45 *Ibid.*, 42.



an intelligent performance need incorporate no "shadow-act" of contemplating regulative propositions.

Hence there is no gap between intelligence and practice corresponding to the familiar gap between theory and practice. There is no need, therefore, to postulate any Janus-headed go-between faculty, which shall be both amenable to theory and influential over practice.

That thinking-operations can themselves be stupidly or intelligently performed is a notorious truth which by itself upsets the assumed equation of "exercising intelligence" with "thinking." Else "stupid thinking" would be a self-contradictory expression and "intelligent thinking" would be a tautology.<sup>46</sup>

The conceptual pair, "knowing that something is the case" and "knowing how to do things," for short "knowing that" and "knowing how," is introduced subsequently as a convenient conceptual tool.<sup>47</sup> "Knowledge that" essentially covers "the operations of considering propositions." "Knowledge how" is a more wide ranging concept covering "intelligent" actions and practices, going beyond the applicability of the word "intelligent." Ryle refers to many different "intelligence-concepts," such as "shrewdly," "wittily," "clever" and "attentive."<sup>48</sup>

The position or doctrine Ryle is arguing against is, in these terms, that all knowledge how really is knowledge that, which can also be expressed by saying that all intelligence really is propositionally based intelligence. Ryle says:

I want to turn the tables and to prove that knowledge-how cannot be defined in terms of knowledge-that and further, that knowledge-how is a concept logically prior to the concept of knowledge-that.<sup>49</sup>

46 Ryle, "Knowing How and Knowing That," *Proceedings of the Aristotelian Society*, New Series, 46 (1945-46): 1-2. Many of the arguments in that article are the same as in chapter 2 of *The Concept of Mind*, with the same title as the earlier article. There are also differences. However, here I will focus on the shared content. The discussion in *Concept* is based much more on examples, to my mind, very good examples.

47 *Ibid.*, 4.

48 Cf. *ibid.*, 3, 5.

49 *Ibid.*, 4-5. I try to minimise the use of citation marks and hyphenised word constructions; thus I prefer to talk about knowing how and knowing that, and about other similar constructions functioning like names.

The last point means that "knowing that presupposes knowing how."<sup>50</sup> He supports this assertion by referring to the "intelligent operations" of discovering and establishing truths (or facts) as well as exploiting the truths (facts).<sup>51</sup> I will not go further into the details of Ryle's line of argument. It is however important to note that his aim was neither to give a full account of knowledge how, nor of knowledge that.

Nonetheless, Ryle's two texts on knowing how and knowing that contributed to establishing the conceptual pair as a fundamental dichotomy in epistemology. This dichotomy was not very much discussed in philosophy until Jason Stanley and Timothy Williamson published their paper "Knowing How."<sup>52</sup> The paper sparked a more critical discussion about Ryle's arguments, and created what could be called a new baseline for the discussion of the relation between knowing how and knowing that. The collection of essays *Knowing How*<sup>53</sup> is a documentation of the discussion as well as a foundation stone to elevate and legitimise the discourse prompted by Stanley and Williamson's paper. Somewhat paradoxically, through a thorough critique of Ryle, the discussion and the collection of papers have established the relationship between knowing how and knowing that as a specific and important subtopic within (analytical) epistemology. Here I will briefly describe the positions in this debate and discuss possible implications for my own account of knowing in action.

The discussion sparked by the paper by Stanley and Williamson is focused on the (syntactic) linguistic forms we use in talking about knowing that and knowing how, quite different from Ryle's references to how in ordinary language we talk about "intelligent actions." The main thesis of Stanley

50 *Ibid.*, 15. Jennifer Hornsby argues convincingly that Ryle's main claim is that the use of propositional knowledge, "knowing that," "requires a sort of knowledge that could not itself be propositional"; in "Ryle's *Knowing-How* and *Knowing How to Act*," in *Knowing How. Essays on Knowledge, Mind and Action*, ed. John Bengson and Marc A. Moffett, 80 (Oxford: Oxford University Press, 2011).

51 *Ibid.*, 15-16.

52 Jason Stanley and Timothy Williamson, "Knowing How," *The Journal of Philosophy* 98, no. 8 (2001): 411-444.

53 John Bengson, and Marc A. Moffett, eds., *Knowing How. Essays on Knowledge, Mind and Action* (Oxford: Oxford University Press, 2011).



and Williamson is this: "We contest the thesis that there is a fundamental distinction between knowledge-how and knowledge-that. Knowledge-how is simply a species of knowledge-that."<sup>54</sup>

Their arguments for this thesis refer essentially to linguistic theory about how to treat talk about "knowledge-wh," like knowledge-where, knowledge-why and knowledge-who, in a uniform way. According to the theory, knowledge-how expressions could and should be treated in the same way. From a linguistic perspective, they say, "very little is special about ascriptions of knowledge how."<sup>55</sup> This may be (almost) true, but what does this account say about (real) knowing in action?

In order to make a uniform treatment possible, a statement like "Hannah knows how to ride a bicycle" is interpreted, here in a slightly simplified form, as "For some way *w* which is a way for Hannah to ride a bicycle, Hannah knows that *w* is a way for her to ride a bicycle" and Hannah knows this "under a practical mode of presentation."<sup>56</sup> Introducing specified *ways* of doing things is not innocent, for example, when someone is (competently) experimenting in a practice.<sup>57</sup> However, this concerns topics that are yet to be treated in later chapters and therefore we should not go into details here. A more pressing question is whether the notion of "practical mode of presentation" can be understood without direct or indirect reference to knowing how. Isn't this just going around in circles? Stanley and Williamson answer that this concern reflects a misunderstanding of their purpose: "We are not engaged in the reductive project of reducing talk of knowledge-how to talk that does not involve knowledge-how. Our view is rather that knowledge-how is a species of knowledge-that."<sup>58</sup> This may give the impression that the linguistic (re)interpretation does not have any substantial or metaphysical implications. However, they end their article in this way:

54 Stanley and Williamson, "Knowing How," 411.

55 *Ibid.*, 431.

56 Cf. *ibid.*, 426, 430., my italics. Their interpretation and the different positions in the discussion are well described in Jeremy Fantl, "Knowledge How," in *The Stanford Encyclopedia of Philosophy (Winter 2012 Edition)*, ed. Edward N. Zalta.

57 Cf. ch. 6 below and my discussion about the holistic and open character of actions.

58 *Ibid.*, 433–434.

All knowing-how is knowing-that. Neglect of this fact impoverishes our understanding of human action, by obscuring the way in which it is informed by intelligence.<sup>59</sup>

This seems to make "intelligence" a propositionally based, or knowing-that intelligence, working with or on propositions, which is exactly what Ryle argued against.<sup>60</sup> What appears as only a question of systematic linguistics has turned into proposition-based metaphysics, bad metaphysics that is, as my account is intended to imply.

Jason Stanley has extended and modified his and Williamson's analysis in his more recent book *Know How*.<sup>61</sup> The thesis of the book is that knowing how to do something is the same as knowing a fact: "It follows that learning how to do something is learning a fact. For example, when you learned to swim, what happened is that you learned some facts about swimming. Knowledge of these facts is what gave you knowledge of how to swim."<sup>62</sup> However, according to Stanley, these are very special kinds of facts. He is critical of the "widespread assumption that factual knowledge is by its nature solitary, purely reflective, and detached from decision and action."<sup>63</sup> On the contrary, his guiding idea has been "that the value of knowledge lies in its connection to action."<sup>64</sup> However, the main arguments for the approach still refer to the representation of wh-knowledge expressions in linguistic theory. He stresses, however, that his account is a view about the nature of these states, and not a view in semantics.<sup>65</sup>

I cannot do justice to the details of the book. Let me just add a few remarks in passing. Stanley is still relying on an interpretation that refers to specific "ways of doing things." He refers essentially to "practical ways of thinking," though not exactly in parallel with his and Williamson's reference to practical modes of presentation. Stanley's discussion of practical ways of

59 *Ibid.*, 444.

60 Not exactly, Ryle presupposes that the agent should "avow" the actual propositions to him- or herself. This is not presupposed in the account of Stanley and Williamson.

61 Jason Stanley, *Know How* (Oxford: Oxford University Press, 2011).

62 *Ibid.*, vii.

63 *Ibid.*, viii.

64 *Ibid.*

65 *Ibid.*, 131.



thinking is interesting in itself; however, I cannot but think that the special “kinds of facts” Stanley wants to capture are exactly those facts that we only could learn by learning “how to do things.” Linguistically, put it any way you want!

Stanley claims, at the end of his book, that his approach explains the human capacity for skilled action and he ends the book by saying “that it is only when our behaviour is guided by intellectual recognition of truths that it deserves to be called ‘intelligent’.”<sup>66</sup> The question what kind of knowledge a person must have in order to be so guided is however the more important one, and is not answered. What we can learn from the above-mentioned works by Stanley and Williamson together and by Stanley alone is, I think, that there are ways of (re)interpreting talk about “knowing how” in terms of talk about knowing that (knowing facts), given some kind of “practical” ways of presentation or thinking. However, let us look at another, contrary position in the discussion about knowing how and knowing that.

At about the same time as Stanley published his book, Stephen Hetherington published a book that argues for the diametrically opposite position, namely that knowing that is a form of knowing how.<sup>67</sup> He describes it as follows: “... my practicalist hypothesis is that knowledge that *p* is the ability—the knowledge-how—such as to respond, to reply, to represent, or to reason accurately that *p*. (For short: it is the ability, the knowledge-how, to register accurately that *p*.)”<sup>68</sup> The main idea is that we should not focus exclusively on knowing that as a form of believing that; knowing is basically an ability to relate oneself in different ways to whatever is said to be known and to use it (sensibly) in various ways. Hetherington does not refer to linguistic theory. His account is more or less pure metaphysics, which is not necessarily bad. However, his metaphysics focuses on states of knowledge and abilities that exist and work “in” people. I should, then, also add that the metaphysics of Stanley, individually and together with Williamson, is almost equally restricted. In essence, pieces of knowledge are states of—and

in—human beings. There are virtually no references to living human beings in working life and other (real) social contexts.

So far I have described a few positions in the main line of discussion defined by and established by, at the one end, Stanley and Williamson’s “Knowing How” and, at the other end, Bengson and Moffatt’s *Knowing How*. Outside the main line there are also attempts to develop Ryle’s approach. I would like to mention in particular Christopher Winch’s book *Dimensions of Expertise. A Conceptual Exploration of Vocational Knowledge*. He discusses questions of competence, expertise and tacit knowledge in many dimensions and with an open eye to, and interest in, the complexities and richness of knowledge in education and social practices. This brief mention may serve as a link to the next and final topic of this excursus, viz. the possible relevance of the discussion about knowledge that and knowledge how for my own account of knowing in action.

In the preceding section I referred to Gilbert Ryle’s observation that it is of the essence of intelligence that the agent is still learning. This does not really depend on the notion of a sharp distinction between knowing how and knowing that (we will meet a similar observation by Schön with respect to “reflective practitioners” in chapter 6). I have not used “knowing how” as an important or basic category, and I will not do so in later chapters. Neither have I referred to “knowing that” as a contrast to knowing in action. I focus on human practices and on how human beings get around in practices, as well as in life. Sometimes we can talk about a specific way (for someone) to act or to carry on an activity; most often not, however, unless we count ways which are only possible to identify retrospectively. I can refer again to open experiments, open searches. But we can also refer to the open character of practices. David Pye writes about craftsmanship:

... the quality of the result is not predetermined, but depends on the judgement, dexterity and care which the maker exercises as he works.<sup>69</sup>

In general, to carry on a practice, together with others, is also to understand or to be familiar with the practice, its point and its presuppositions. I will later emphasise the holistic nature of human action. Many of our relations

66 *Ibid.*, 190.

67 Stephen Hetherington, *How to Know. A Practicalist Conception of Knowledge* (Chichester: Wiley-Blackwell, 2011).

68 *Ibid.*, 44–45.

69 David Pye, *The Nature and Art of Workmanship* (Cambridge: Cambridge University Press, 2010), 4.



with other beings—whether human or not—have a dialogical nature. Donald Schön talks about a dialogue (or conversion) with a situation we are involved in (cf. chapter 6 below). This seems incompatible with Stanley and Williamson's "ways" in which a subject acts in a world.

Moreover, as I stated in the preface, *knowledge exists primarily only in the form of skilful and knowledgeable human beings*. It is not a matter of characterising "states" of knowledge (of any kind) in human beings. These are some short hints to the effect that the main line of discussion, from Stanley and Williamson's "Knowing How" to Bengson and Moffatt's *Knowing How*, is largely irrelevant to my attempt to construct an epistemology for knowing in action. After this excursus we return to the main line of my own discussion.

### "The Expressions of the Tacit" 2: Culture

Let us move on to the second line of thought, taking culture or the (social) community as the locus of knowledge. In essence, the formation of knowledge and the process of education are seen here as processes of socialisation and adaptation to a culture, in which the elements of culture are transmitted and transformed—Tempte refers to a process of "growing beyond." In many respects, this line of thought has a similar background to the first, i.e. the stress on the acritical stance in the transmission of practical knowledge and expert performance. However, the focus of the analysis has shifted here to the social and communicative aspects of cognitive processes, or expressed with a slightly different emphasis: the *hermeneutic* side of knowledge and science.<sup>70</sup>

I have chosen as my main illustration Thomas Kuhn's paradigm theory in *The Structure of Scientific Revolutions*. Partly because it is so well-known that it does not need a detailed explanation. Kuhn's theory may not be the best choice for illustrating hermeneutic perspectives.<sup>71</sup> But it will do.

70 A perspective that focuses socialisation and adaptation processes, and lets the cognitive stay in the background, is the idea about moving from peripheral to full participation as presented in Jean Lave and Etienne Wenger, *Situated Learning: Legitimate Peripheral Participation* (Cambridge: Cambridge University Press, 1991). Their focus makes the perspective well suited for empirical studies.

71 Cf. the presentations referred to in footnote 28.

According to Kuhn, scientific work is characterised by fairly long, stable periods of "normal science," during which scientists work within a community whose nature is largely determined by a paradigm (in the broader sense of the word). This paradigm is made up of fundamental convictions about the world and the human being, and of accepted theories and fundamental convictions relating to the nature of scientific research. Additionally, the paradigm itself is made up of *concrete examples* for the solution of problems (*exemplars* or paradigms in the narrow sense). The scientific enterprise is regarded as a *culture*, a collective enterprise into which scientists are schooled and which is maintained by a common practice and a common language.

A culture of this kind is to be found in the objects people work with, in the ways they ask questions, in the criteria used for assessing responses, in the norms for actions and habitual procedures, in various types of practice—these are all aspects of the cultural *community*. Our understanding—in science and in the other forms of knowledge—is based on the presupposition that we have learnt to take a great deal for granted. Our understanding is always based on a pre-understanding, our judgements are always based on pre-judgements, as it is usually expressed in the hermeneutic tradition. We never start from scratch and can never free ourselves entirely from the "horizon" of understanding set by tradition.

A culture is a collective entity, a community. Kuhn asserts the importance of the collective in the second edition of *The Structure of Scientific Revolutions*, when, for example, he refers to the shared exemplars used by scientists and the "intuition" that a scientist has and makes use of in the community. This intuition is not individual.<sup>72</sup> Kuhn focuses on various communities of scientists. The cultural dimension I want to present as my second line of thought is, however, in no way restricted to scientific knowledge.

Kuhn asserts that paradigms—in the sense of shared exemplars—are essential when one learns to recognise two different situations as belonging to the *same* type of situation. He goes on to say that there is no reason to assume that the judgement about "the same type of situation" can always be reduced to an exhaustive description of the kind "the same in respect of..." without reference to the concrete examples. These judgements work within

72 Cf. Kuhn, *Structure*, 191–192.



the culture, in the common practice of the scientists, in their shared examples and in their common language.<sup>73</sup> Once again, situations have faces. It would be easy here to talk about holistic pairing, as Dreyfus and Dreyfus do. However, as far as they are concerned, nothing outside the individual has any real relevance in terms of knowledge—when one deals with experts at least.

I offer this “cultural” perspective as an alternative to a view of science and knowledge which puts the spotlight on the articulated and “articulable” side of knowledge. It is, of course, true that we *speak about* and *describe* different aspects of culture in different ways and for different ends. And yet every description of this kind presupposes that, tacitly, we take much of the cultural community for granted. A culture is largely acquired acritically, as a *participant*.

### “The Expressions of the Tacit” 3: Action

The third line of thought I present could be described as the “pragmatic” perspective, which means that the focus is on human actions and habits of action and not on opinions, convictions and theories “in themselves.” There are a number of different approaches to be found under this broad heading and I indicate a few of these below.

The first one is the pragmatic perspective in Wittgenstein’s later philosophy, where concepts such as “practice” and “following a rule” play a key role.<sup>74</sup> In what is, in this context, a key book, *On Certainty*, Wittgenstein asks at one point:

73 Cf. *ibid.*, 192. Taylor, “Interpretation,” underlines the fact that one cannot reduce what is held in common to individual characteristics and ideas.

74 I build on Kjell S. Johannessen’s interpretation of Wittgenstein’s later philosophy, which means above all the book *Philosophical Investigations*, originally published in 1953 in German. Johannessen’s interpretation was also a major source for the pragmatic perspective underpinning the epistemological endeavours of the Centre for Working Life. See especially Johannessen, “The Concept of Practice in Wittgenstein’s Later Philosophy” *Inquiry* 31 (1988), 357–69. Later he has also used Wittgenstein’s notion of “intransitive understanding” in order to further develop his interpretation of Wittgenstein as well as his account of “tacit knowing.” Cf. Johannessen, “Rule-Following and Intransitive Understanding,” “Art,” “Action Research,” and “Rule Following, Intransitive

“An empirical proposition can be tested” (we say). But how? and through what?”<sup>75</sup>

And he continues in the next paragraph with further questions—and an answer:

What *counts* as its test?—“But is this an adequate test? And, if so, must it not be recognisable as such in logic?”—As if giving grounds did not come to an end sometime. But the end is not ungrounded presupposition: it is an ungrounded way of acting.<sup>76</sup>

Many of Wittgenstein’s insights bear on the key role that action plays in our lives: we cannot give grounds for our convictions and theories by referring back to basic assumptions or fundamental truths. All the arguments finally come to an end at some point and what remains is: this is what we actually *do!* A practice has “to speak for itself,” Wittgenstein says elsewhere.<sup>77</sup>

We might find a source for a pragmatic perspective at a different starting point, in the tradition of American pragmatism, for example, whose major proponents are Charles S. Peirce, William James and John Dewey. Although the three of them are very different as personalities and as thinkers.

The basic proposition of pragmatism, as I understand it here, is that the full meaning of words is shown and understood in action and in continued action (habitual actions). A purely “theoretical” meaning, without any orientation towards action, is impossible to imagine. The meaning can never be stated in words alone. This is why one is justified in referring to tacit knowledge.

Another way of describing the main point of pragmatism is that people’s ideas and theories about the world are empty “in themselves.” They acquire their primary meaning through their consequences in and for human actions. “Pure thoughts” are conceptions that have been removed from

Understanding and Tacit Knowledge.” For a more detailed discussion about rules considered from this perspective, see chapters 8 and 10 below.

75 Ludwig Wittgenstein, *Über Gewissheit/On Certainty*, trans. D. Paul and G. E. M. Anscombe. (Oxford: Basil Blackwell, 1974), § 109.

76 *Ibid.*, § 110.

77 *Ibid.*, § 139.



their proper sphere of life, one might say.<sup>78</sup> At this point I only want to put forward a single major idea from Peirce and from James.

Peirce's pragmatic principle led the way within the tradition. It has been formulated in several different ways. What follows is one of them:

The essence of belief is the establishment of a habit, and different beliefs are distinguished by the different modes of action to which they give rise.<sup>79</sup>

Another formulation which Peirce uses (shortly before the one I have just quoted) is that a conviction is a "rule for action." This can be interpreted in a number of different ways.

William James adopted something resembling Peirce's pragmatic principle.<sup>80</sup> An interesting idea in James's form of pragmatism is the view that what is "true" is "the expedient in the way of our thinking," expedient in the long run and on the whole.<sup>81</sup> In *life* as a whole. This is just as much an ethical theory as it is an epistemology.

James, like the other pragmatists and the later Wittgenstein, repudiates the view that true ideas and theories are some form of representation of reality, instead truths are things which *guide* us expediently through the world. We have to accept truths in the plural, James says.<sup>82</sup> Fully in keeping with this idea, he asserts that truths *are made*; they are made in and by verification processes in the richly diverse world which we inhabit.

*Action* appears to be central to all three of the lines of thought I have mentioned. No doubt this partly reflects the fact that I consider a pragmatic perspective to be the most comprehensive. The *cultural* perspective, however, does not need to locate action at the centre; in Kuhn's theory, human

78 These are not the exact words of any particular pragmatist, although similar formulations are to be found in the work of James and Dewey.

79 Charles S Peirce, "How to Make Our Ideas Clear," in *The Essential Peirce. Selected Philosophical Writings*. Vol. 1, ed. N. Houser and C. Kloesel (Bloomington: Indiana University Press, 1992, originally published 1878), 129-130.

80 See William James, *Pragmatism and The Meaning of Truth* (Cambridge, MA: Harvard University Press, 1978, originally published 1907 and 1909), 28-29.

Considerable differences also exist between them. Peirce only makes use of his pragmatic principle to explain the meaning of beliefs. James "broadens" it to include the concept of truth.

81 James, *Pragmatism*, 106, cf. also 42.

82 *Ibid.*, 104.

action or praxis constitutes only one of several vital components. What Dreyfus emphasises is the body, above all bodily *reactions* and *intuitions*, rather than actions. These three aspects highlight three different ways of approaching tacit knowledge—to some extent, however, each of them is my abstraction. None of these approaches is completely autonomous, but in the work of the various thinkers I have referred to, one of the aspects is regarded as being more fundamental than the others.

### Why All This Talk about Knowledge?—or: You Can Do More than You Know...

I have referred in this book to "tacit knowledge" and made use of compound terms such as propositional knowledge and knowledge of familiarity. I have used the word "knowledge" on many occasions, but only rarely referred to ignorance and lack of knowledge. The terms "tacit knowledge," "professional knowledge" and "knowledge in action" are not, however, solely to do with knowledge itself, and it is this which forms the theme of this section.

We could just as well, or perhaps even *better*, refer to "tacit knowledge" by other terms such as:

- understanding, skill, assurance, mastery (of an art), judgement, talent, attentiveness, familiarity, experience, personal commitment....

Understanding (mastery, judgments) covers both a "body of knowledge," which may well be scientific, and an understanding of the point or ethos of an activity or occupation. However, what is at stake is this understanding in use, not a particular articulation or description of it. We focus therefore on the action-oriented aspects:

Within an occupation or profession it is essential that the right thing is done at the right time, which amounts to rather more than possessing a number of special skills.<sup>83</sup> It is important to know (understand, realise, be sure of...) which tasks one is competent to perform and which one is not.

83 On the inspiration of Ulrich Nitsch, I have referred to this as "bondförmuft." Cf. Nitsch, "Bondförmuftet oumbärligt," *Lantmän och Andelsfolk*, no. 10 (1984), 462-463, and "Computers and the Nature of Farm Management," *Knowledge in Society* 3, no. 3 (1990): 67-75. I return to this matter in chapter 7 where "bondförmuft" is translated as "the practical wisdom of the farmer."



One has to be able to rely on one's knowledge and one's experience but at the same time to "know" their limits; one has to be able to shift perspective—this is a matter of insight, attentiveness and, above all, ethics.

A lack of self-confidence forms a barrier to acquiring knowledge and an obstacle to allowing the knowledge one has to be put to use, "you can do more than you know." In order to carry out a task in the best way, a level of personal commitment is required—which may, of course, be different for different activities—this is a question of *disposition* (*attitude, inclination, etc.*), which is clearly not knowledge but is necessary to make—and keep—knowledge alive when dealing with reality.<sup>84</sup>

On the other hand: too much self-confidence can stop someone from acquiring knowledge. The acquisition of certain forms of knowledge can become impossible as a result of a strong personal involvement. There is no *one* attitude or approach which is linked—of necessity—with all forms of knowledge.

An embodied dialogue (and hence an embodied openness) may constitute one of the preconditions for knowledge. As the physiotherapists referred to above emphasised, this has to do with being, with what we *are*, and not simply with a particular attitude or disposition.

I could continue at some length to list the kinds of thing that fall under the heading of professional knowledge and occupational skills, and go on to list the kinds of thing required to make knowledge live and to keep it alive. Unless one were to go in detail into particular areas and to provide specific examples, this would simply be a list of fine-sounding words: openness, responsibility, attentiveness and so on. A few suggestions will therefore have to suffice at this point.

Is it appropriate that "knowledge," including all the compound terms and phrases combined with "knowledge," should cover as extensive an area as has been covered here? A note of caution has to be sounded. The conceptual diversity available in our language should obviously be exploited to the full. There may, however, be good reasons to refer to knowledge in a very *broad* sense, which also includes understanding, judgement and attitudes, etc. This would apply in those cases where one can refer to (more

84 Cf. chapter 7 below.

or less) *correct* or *valid* understanding, (more or less) *correct* judgement and so on—which can frequently be done in most areas of professional activity. Simultaneously I want to caution against accepting an apparent uniformity.

Labelling something knowledge may be an act aimed at attributing increased social and political status to a form of action or a particular attitude. It must be obvious that the term "tacit knowledge" has been used in this way on occasion. Issues of power and influence are always to be found in the background of any discussion of knowledge.

The extensive use of the word "knowledge," particularly in relation to compound terms such as "tacit knowledge," has, however, meant that too little attention has been paid to what is not knowledge, whether this be *ignorance* (in the sense of lack of knowledge) or something that is *neither knowledge nor ignorance*, to the latter notion in particular, perhaps. We shall be returning to this point.

Many of these compound terms, such as "tacit knowledge" and "knowledge in action," are used in two senses. On the one hand, they stand for the kind of thing that really is knowledge, that which is *correct* in one sense or another. On the other hand, they are used as descriptive terms for fields of possible knowledge. Tacit knowledge then refers to a sphere in which what knowledge there is, is tacit. That field, for example, which relates to personal experience involving the whole body (as in physiotherapy). People may, however, be *mistaken* in relation to the body as well.<sup>85</sup> The field of "tacit knowledge" in this sense also includes "tacit ignorance," a wordless lack of knowledge.

In this book I, too, use "tacit knowledge" and "knowledge in action" in both these senses. The sense in question should be interpreted from the context.

### ... And Then There's Language

Let us return to Ingela Josefson and her conversations with nursing staff. Here, she is quoting Barbro's reflections:

I have often wondered what goes on in the head of a nursing assistant when the nurse has given a very clear report of the patient's medical condition in the

85 This is underlined in Engelsrud, "Kroppen."



morning and goes on to say that this patient needs a little extra attention before she goes on to the next patient. What does extra attention mean? It could be anything from popping my head round the door every quarter of an hour to taking the patient to the cafeteria or my needing to check that the patient is not getting pressure sores or that I should chat to him because he is a bit down and needs some human contact.<sup>86</sup>

A little later in the book *Kunskapens former* (The Forms of Knowledge), Ingela Josefson discusses the issue of the development of a "common language" for nurses, which would serve in both training and practice. There are those who think this is both possible and desirable for reasons that include "being able to clarify tacit knowledge."<sup>87</sup>

Ingela Josefson makes the following comments:

Finding a language that is common to the experienced teacher and the young trainees is not, I think, possible. The language of the nursing tradition is steeped in the practice in which it has developed. It is full of the experience of the vocation it has evolved within. This experience is normally lacking in the young trainee. She will acquire this language once she has become trained in the practical activity. If she *fails* to do this, she will probably not remain within the profession, she will not participate in its common language. Finding a starting-point to bridge the gulf between the experienced teacher and the student requires practical examples which speak to the younger person and gradually—with increasing experience on her part—fill her language with meaning.

The clarification of knowledge of familiarity should start from specific examples and use narrative language. Let us tie this in with Barbro's account above. She considers it an expression of linguistic inadequacy when the nurse in her report says to the other nursing staff that the patient needs a "little extra attention." I do not believe this is the case. The nurse probably has her experienced colleagues in mind when she says this. She is relying on the fact that they will use their judgment and their experience in caring for the patient. Nothing more needs to be said is what she thinks or so one assumes. That would be stating the obvious. This does not of course apply to the student nurse. She needs to be told what needs to be done. The problem does not lie in the fact that the nurse has no language but that the "new" nurse needs instructions that the older ones do not. Clearly it is a shortcoming when that need is not met, but it is not a *linguistic* inadequacy in the

86 Ingela Josefson, *Kunskapens former. Det reflekterade yrkeskunmandet* (Stockholm: Carlsson, 1991), 24.

87 See *ibid.*, 36.

real sense. It cannot be the ideal, however, that nurses in every situation should be compelled to formulate what is obvious to them.<sup>88</sup>

"Language by itself" is not enough. It has to be filled with experience. Put that way, one could go on to say that all knowledge is really tacit. But can language really be anything "in itself"?

In this chapter I have mainly associated tacit knowledge with practical traditions of knowledge which are distinguished by the fact that knowledge is created and maintained by judgements, personal experience and training. Language is, of course, important in these traditions as well, language as it is *used* within each respective tradition. We may, however, also apply all I have said about (other) practical traditions of knowledge to the living language, *language as a practice*. Then language, too, becomes a clear example of tacit knowledge.

88 *Ibid.*, 36–37.