

## ARTICLE

# Tacit Knowing: What it is and Why it Matters

Abida Malik 

Department of History, Philosophy and Religious Studies, School of Sciences and Humanities, Nazarbayev University, Nur-Sultan, Kazakhstan

Email: [abida\\_malik@yahoo.de](mailto:abida_malik@yahoo.de)

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## Abstract

Tacit knowing as a concept and legitimate topic of scholarship came up in philosophical research in the second half of the 20th century in the form of some influential works by Michael Polanyi (although similar concepts had been discussed before). Systematic epistemological studies on the topic are still scarce, however. In this article, I support the thesis that tacit knowing pervades all our common major divisions of knowledge and that it therefore must not be neglected in epistemological research. By this approach I am simultaneously giving a systematic back-up for Polanyi's claim that the tacit component is found in all knowledge.

**Keywords:** Tacit knowing; Michael Polanyi; knowledge; knowledge divisions; expertise; abilities

## Introduction

We all know the phenomenon when someone has a practical competence (e.g. in sports, in music) that the person herself cannot explain. Playing the piano is one thing, putting the process into (instructive) words is quite another. This inability to explain one's own know-how is just one common example of tacit knowing.

But what does this “knowing” consist in? And are we justified to call it that? Tacit knowing has been rather neglected in the history of philosophy.<sup>1</sup> Still today, philosophical studies on the subject are scarce. Though the concept is present in some form in a number of other thinkers, for a comprehensive account or definition we must mainly refer to Michael Polanyi's works from over 50 years ago and Georg Hans Neuweg's more recent research.<sup>2</sup>

<sup>1</sup>The term itself goes back to Polanyi (1962, 1966; see also Neuweg (2020a: 764) who stresses that point).

<sup>2</sup>Although the term was coined by Polanyi, we do find other thinkers discussing concepts very similar to tacit knowing or connected to important aspects of it. Plato, for example, tries to provide evidence for an intermediate realm between ignorance and knowledge (*Meno* 80d5–85d2; see section 1.3 for a discussion of this passage) [The Platonic dialogues used in the text follow the editions from Burnet (1903) and Duke *et al.* (1995)]. Heidegger (1967) draws our attention to the fact that our abilities only work correctly when we do not focus *on* our instruments but *from* them away to the object (he gives the example of not concentrating on the hammer while in the actual process of hammering (Heidegger 1967: §15: 69) – in Polanyi's terminology, the hammer would be the proximal, implicit term, of which we would only have subsidiary awareness, whereas we focus on the distal term, i.e. the nail (Polanyi 1962: 55; 1966: 10). Collingwood tries to point out the (tacit) presuppositions on which all knowledge ultimately rests (Collingwood 1998: esp. Chs IV and V). Likewise, Searle develops the notion of the Background (Searle 1992: 175–96), which seems to coincide with tacit knowing-that (see below, section 2.1). Ryle argues for anti-intellectualism

In this article, I am going to show that it is a mistake to think that we could carry out epistemological research without accounting for tacit knowing. Tacit knowing is not just another division of knowledge but transcends these common divisions as a fundamental epistemic characteristic – part of the basis for every form of knowledge.

In the first part, I will start out with (1.1) a discussion of Polanyi's and Neuweg's claims regarding the definition of tacit knowing, (1.2) reconsidering the conditions for the attribution of knowledge and (1.3) meeting the challenge of the possible non-existence of tacit knowing. I will then continue in the second part with an elaboration of my thesis that tacit knowing is all-pervasive by scrutinizing the different forms of knowledge<sup>3</sup>, i.e. (2.1) knowing-that, (2.2) knowing-how, (2.3) knowledge by acquaintance and knowledge by description, (2.4), theoretical and practical knowledge, (2.5) *technè* and

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by showing that translation of knowing-how into knowing-that would ultimately lead to an infinite regress and, moreover, would rest on a category mistake (Ryle 1950: 11–18, 30–32). Kuhn's explanations of paradigm changes in the sciences point to an "awareness of anomaly" (Kuhn 1996: 52) which leads, finally, to the explicit formulation of a new theory (Kuhn 1996: 52f.). The famous assertion from Wittgenstein (2001: I 43), "the meaning of a word is its use in the language", draws our attention to the tacit roots not specifically of theories, but of language itself. The Gestalt psychology on which Merleau-Ponty heavily draws also influenced Polanyi's account (Merleau-Ponty 1981 [1945]). Bourdieu's 'practical sense' also seems to enclose part of the concept of tacit knowing (i.e. tacit knowing-how, see section 2.2) when he equates it with "tact, skill, dexterity, delicacy or *savoir-faire*" (Bourdieu 1990 [1980]: 80, italics in original). He further stresses the inability of the practitioner to explain sufficiently what she is doing (Bourdieu 1990 [1980]: 91) and the immersion in the present moment so that "practice excludes attention to itself (that is, to the past)" (Bourdieu 1990 [1980]: 92) – attention which would be necessary, of course, if your aim is the later formalization of the action. Csikszentmihalyi has also emphasized the involvement in the present that characterizes "*flow activities*" (Csikszentmihalyi 1975: 36, italics in original; see also Csikszentmihalyi 1975: Ch. 4). Dreyfus and Dreyfus point out essential characteristics of tacit knowing when they describe the expertise stage in their five-stage concept of skill acquisition. Experts, especially in a case of crisis, act intuitively and adapt themselves to the specific situation they are immersed in. Dreyfus and Dreyfus classify such expert actions as "*arational*" (Dreyfus and Dreyfus 1986: 36, italics in original) to highlight how those actions lie in an intermediate realm between the purely rational and the purely irrational (Dreyfus and Dreyfus 1986: 30–36, 50). Popper seems to deny the possibility of any such phenomenon when he claims that it would be possible to rebuild our culture from scratch with just the help of knowledge written down in books (Popper 1972: 107f.; 1978; see also Neuweg 2002b: 42; 2004b: 133) who frequently takes this claim from Popper as a counterexample).

Outside of the philosophical realm, other scholars are concerned in some way with tacit knowing. In sociology, Collins attempts a definition of tacit knowledge (e.g. Collins 2001, 2010) and, together with Kusch, has developed a new distinction of actions as "mimeomorphic" and "polimorphic" (Collins and Kusch 1998: 31). Whereas the former are characterized by rule-following procedures, the latter are flexible and adaptive to different contexts and situations (at least the "*open polimorphic actions*"; Collins and Kusch also introduce "*occasioned polimorphic actions*" and "*playful polimorphic actions*" (Collins and Kusch 1998: 33, italics in original) which are open in the context or in the behaviour, respectively; see Collins and Kusch 1998: 37 for an overview chart) – they therefore require tacit knowing from the agent (Collins and Kusch 1998: 31–54). Schön, whose focus is on education, discusses Polanyi and Ryle to develop his concept of "*knowing-in-action*" to designate "the sorts of know-how we reveal in our intelligent action – publicly observable, physical performances like riding a bicycle and private operations like instant analysis of a balance sheet. In both cases, the knowing is *in* the action. We reveal it by our spontaneous, skillful execution of the performance; and we are characteristically unable to make it verbally explicit" (Schön 1987: 25, italics in original; see also Schön 1987: 22–6). Tacit knowing is also being discussed in management studies: Schreyögg and Geiger (2004), for example, argue for the impossibility of converting implicit into explicit knowledge.

<sup>3</sup>Starting from section 2.4 I follow the divisions given in Fantl (2021) (although in a different order). Polanyi (1966: 20) stressed the pervasiveness of tacit knowing: "But suppose that tacit thought forms an indispensable part of all knowledge", but did not provide a systematic scrutiny of it in the major divisions of knowledge, which I aim to provide here.

*epistêmê*, as well as (2.6) procedural and declarative knowledge. Finally, I will (3) sum up the conclusions and implications of this omnipresence of tacit knowing for epistemology in general. Ultimately, we will see that tacit knowing is a powerful concept that plays a large role in almost every aspect of even our everyday lives. We should be careful not to underestimate it.

## 1. Tacit knowing: What it is

### 1.1. State of the question

The expression “tacit knowing” itself is used quite loosely at times. Hoogenboom, for example, speaks of “synonyms for practical knowledge such as embodied, tacit or implicit knowledge” (Hoogenboom 2007: 83). Brandstetter stresses that dance leaves us “speechless” (Brandstetter 2007: 43) (although she does not use the term “tacit”) and characterizes this kind of knowing also as “situational knowledge” (Brandstetter 2007: 46). She locates the concept somewhere in between knowledge and non-knowledge, describing it as “knowledge that touches on the boundaries of knowledge and zones of non-knowledge” (Brandstetter 2007: 43; see also Brandstetter 2007: 43, 45–7).

Neuweg defines tacit knowing systematically: “The concept of tacit (or implicit) knowledge denotes that knowledge which manifests itself in behaviour in a wider sense, that is, in the processes of perception, judgement, anticipation, thought, decision-making or action, and which is not, not completely or not adequately explicable (verbalisable, objectifiable, formalisable, technicisable) by the subject nor, under some circumstances, by the analytical observer” (Neuweg 2008: 725).<sup>4</sup> This definition already contains a “weak and a strong concept of tacit knowing”<sup>5</sup> (Neuweg 2015 [2000]: 154). According to the weak concept, tacit knowing cannot be made explicit by the knowing subject. From a third person perspective, however, it is possible to convert it into a propositional form (Neuweg 2015 [2000]: 154). An example of the weak concept would be the case of a physicist who analyses the action of cycling and determines the corresponding physical rules the cyclist follows (without being aware of them). The weak concept of tacit knowing is completely compatible with an intellectualist position (that every knowing-how can ultimately be transformed into knowing-that). According to the strong concept, tacit knowing per se cannot be made explicit (Neuweg calls this non-formalizability), i.e. we are talking about a kind of knowing which can under no circumstances whatsoever be translated into a propositional form (Neuweg 2015 [2000]: 154). Being a radical anti-intellectualist<sup>6</sup>, Polanyi endorses the strong concept of tacit knowing (Polanyi 1966: 20f.; 1962: 53–5; Neuweg 2015 [2000]: 161).

<sup>4</sup>Neuweg draws heavily on Polanyi for whom tacit knowing signifies “a way to know more than we can tell” (Polanyi 1966: 18). It stands for the knowledge of what he calls the “proximal” term (p), and for the understanding of the entity of p and d (“distal” term) (Polanyi 1966: 10 [italics in original]) of which we have a “subsidiary awareness”, and a “focal awareness”, respectively (Polanyi 1962: 55 [italics in original]; see also Polanyi 1962: vii, 55f.; 1966: 10, 13). Also Searle underlines that, if we are not attentive of certain things, we nevertheless are conscious of them. He distinguishes different levels of attention and pleads for a distinction of the centre of attention and periphery (which must not be equated with consciousness and unconsciousness) (Searle 1992: 137–9). For the directedness of our consciousness (the proximal particulars point to the distal whole) see Neuweg (2004a), who provides a detailed explanation and also explains the ontological, functional, phenomenal, and semantic dimension of tacit knowing (see especially Neuweg 2004a: Ch. 9.3.1 and 10.1).

<sup>5</sup>All translations from German texts are mine. All italics in citations are from the original text.

<sup>6</sup>Radical anti-intellectualism is characterized by two things: (1) it negates the possibility of the reduction of knowing-how to knowing-that, and (2) it claims that knowing-how is primary. First we know how something is done and then we can provide a propositional explanation (see Fantl 2021: section 4, who discusses

Apart from the weak-strong distinction, Neuweg also distinguishes a narrow and a broad sense of tacit knowing. The narrow sense is captured by the definition outlined above and describes a “gap between knowing-how and the possibilities of explaining the corresponding knowledge base” (Neuweg 2020a: 764).<sup>7</sup> The broad sense, again, takes tacit knowing as a disposition and knowing-how in Ryle’s sense (Neuweg 2020a: 764).

Since I aim to discuss tacit knowing as a whole and not only specific subgroups of it, I will consider both the broad and the narrow sense, and, within the latter, both the weak and the strong concept. In section 2, I will show that neither the broad nor the narrow sense (not even taken together) are exhaustive definitions of the concept of tacit knowing. Both are too exclusive: the broad sense, being only concerned with knowing-how, excludes all cases of tacit knowing-that, whereas the narrow sense excludes some cases of both tacit knowing-how and knowing-that (namely those which are, in the end, explicable). In order to distinguish the all-encompassing sense of tacit knowing from Neuweg’s broad sense, in the following I will speak of the *wide sense* of tacit knowing.

In this wide sense, the concept of tacit knowing comprises, among other forms of knowing, all cases of knowing-how and competences or abilities in general. At first sight this could clash with Neuweg’s claim who, on the one hand, takes “Können [competence, ability, knowing-how]” as “something categorically different ... from knowledge” (Neuweg 2020b: 14). Still, on the other hand, he describes this ability as “knowing”. The apparent contradiction is dissolved if we consider that “knowing” needs to be strictly distinguished from “knowledge”. “Knowledge”, according to Neuweg, is “the freezing of practice” (Neuweg 2020b: 20), whereas abilities or competences are dynamic and can be equated with “knowing” since this form of knowing manifests itself only in its application (Neuweg 2020b: 14, 20): “Tacit knowing (or *implicit knowledge*) is practical by nature” (Neuweg and Fothe 2011: 340).<sup>8</sup>

In the following, I will speak of “tacit knowing” rather than “tacit knowledge”. In the cases when tacit knowing expresses some kind of practical knowing-how it seems clear that we should stick to the progressive form since “knowledge” would be a concept too static to adequately include this kind of ability or competence (see above).<sup>9</sup> If we say that someone is able to do something, this already implies that the person has the corresponding knowing-how,<sup>10</sup> which, under normal circumstances, is identical with the ability. Those cases of tacit knowing that coincide with practical knowing-how could maybe be described more adequately as manifestations of abilities, competences, or even body intelligence.<sup>11</sup> The capacity of adaptation, the flexibility, and situatedness characterizing tacit knowing seem to be typical for intelligence, whereas knowledge

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this position critically). Accordingly, Polanyi holds “tacit thought” to be “the ultimate mental power by which all explicit knowledge is endowed with meaning” (1966: 60). Volpert also considers how we have to learn how an action is executed practically first before we can provide an intellectual analysis of it (Volpert 2003: 146f.).

<sup>7</sup>In psychology, tacit knowing stands for the “dissociation between behavioral and verbal data” (Neuweg 2015 [2000]: 155).

<sup>8</sup>However, we need to bear in mind that “the use of the term ‘tacit knowledge’ outreaches the realm of doing” (Neuweg 2002a: 140). In the practical realm of education, Schön outlines the opposition between dynamic knowing and static knowledge (Schön 1987: 25f.).

<sup>9</sup>Although Polanyi himself sometimes uses “knowledge” (e.g. Polanyi 1966: 9f., 17, 22f.), he makes it very clear that “[k]nowledge is an activity which would be better described as a process of knowing” (Polanyi 1969: 132).

<sup>10</sup>It does not necessarily work the other way round, however (see footnote 13). I am also excluding cases of being able to do something out of sheer luck.

<sup>11</sup>For a detailed explanation of Ryle’s philosophy regarding the connection between intelligence and competence/ability, see Kemmerling (1975: 147).

gives the impression of being rather static.<sup>12</sup> Also Neuweg emphasizes being “interested in knowledge *in use* rather than in knowledge *as a state*” (Neuweg 2002b: 41). For these reasons, I am using the term “tacit knowing” interchangeably with competence or ability as long as we are talking about tacit knowing-how.<sup>13</sup> Neuweg also speaks of tacit knowing inhering in abilities/competences (that would be the reason for calling it “tacit”), which suggests two different concepts (Neuweg 2015: 7). Nevertheless, I consider such a separation as rather problematic, since ultimately both terms aim to capture the same phenomenon. Tacit knowing or abilities/competences inhere in actions, which are evidence to external observers that the subject is able to do something/knows tacitly how to do something.

In this context, the terms “competence” and “ability” are used in a very broad sense. After the foregoing explanations, we could intuitively object that in certain cases, competence, at least as long as the subject cannot adequately explain it or make it explicit (and that is mostly the case – unless we are talking about scientists analysing the rules they follow when they are cycling, for example), might have the same meaning as but still does not exhaust tacit knowing-how. For we can easily identify cases of tacit knowing-how which are *prima facie* not competences or abilities. Examples would be knowing what a melody sounds like or knowing what it is like to be a human being.<sup>14</sup> We cannot explain these cases of knowing in a propositional form, at least not sufficiently. Clearly, these cases do not represent expert knowledge or competence. However, it is worth looking again at Neuweg’s definition of his tacit knowing view. It includes not only cases of expertise but also in a very general way “processes (e.g. perception, judgment, action, thought, discernment, contrivance) and the underlying human dispositions” (Neuweg 2002b: 41). Consequently, these basic abilities or competences can also be subsumed under the heading of knowing-how. To sum up, the concept of tacit knowing-how includes cases of dynamic knowing which can express themselves both in masterful expertise and in forms of knowing at a more basic level.<sup>15</sup>

## 1.2. Conditions for the attribution of knowledge

The foregoing explanations show that the concept of knowing includes quite different phenomena. In the following, I am going to discuss possible conditions for attributing full knowledge to a subject. In general, we need to ask if there even are such uniform and necessary conditions for the attribution of knowledge, or if we are in fact dealing with particular phenomena so different<sup>16</sup> that it would be more sensible to speak only of family resemblances.

<sup>12</sup>If it were not static we would not be able to write it down in books. Nagel also acknowledges the term “tacit knowledge” to be a “technical barbarism” (Nagel 1995: 69).

<sup>13</sup>Excluding exceptions like not being able to do something because of a broken arm.

<sup>14</sup>Wittgenstein’s example of the clarinet (2001: I 78) and Nagel’s famous thoughts about knowing what it is like to be a bat (Nagel 1979). Both examples are, if we adopt Brendel’s terminology, cases of phenomenal knowing-how (which is separated from practical knowing-how, see Brendel 2013: 14f.). In English it does not seem so clear that we are dealing with cases of knowing-how here because the construction “S knows how to” is omitted. “S knows what it is like to be x”, however, also points to a knowing-how, because “being x” means that there is a certain way to be x.

<sup>15</sup>It is important to mention this aspect because the majority of articles concerning tacit knowing emphasize the expertise part (e.g. Brandstetter 2007; Hooogenboom 2007; Neuweg 2020a, 2020b). See also the mission statement of FORIM (a tacit knowing research network): <http://wipaed.jku.at/mission/>.

<sup>16</sup>Ginet (1975: 1–9) considers this possibility but almost immediately seems to reject it in favour of a general definition of knowledge (however, he only seems relatively sure about this rejection).

Many definitions of knowledge are limited to propositional knowledge (knowledge as justified true belief, *Theaetetus* 201c8-d2;<sup>17</sup> knowledge as justified true belief due to epistemic methodical security, Brendel 2013), thereby seemingly excluding a major part of tacit knowing (i.e. tacit knowing-how). Along these lines, scholars often argue for the reducibility of all forms of knowledge to propositional knowledge (so it does not matter if the definition of knowledge is restricted to propositional knowledge – since all the other seemingly excluded forms of knowing can finally be translated into propositional knowledge).<sup>18</sup>

Insofar as this position includes forms of tacit knowing which indeed can be reduced,<sup>19</sup> this reduction, assuming that we deal with cases of the weak concept, would be something doable only by a third person. On the classical definition of knowledge, then, the subject of tacit knowing sometimes has itself no such thing as explicit propositional knowledge (neither is it able to express its competence in true propositions nor can it give reasons for those propositions). Other persons, however, would indeed possess knowledge – knowledge that adequately and completely describes the subject's actions. Herein we can see the separation between explicit knowledge and praxis. Both can exist totally independently from each other. But it seems rather implausible not to attribute any kind of knowledge to the agent when the corresponding propositional knowledge – knowledge held by an external observer by meticulously analysing the process of action – depends precisely on the action and the knowing-how of this particular agent.

If we take the example of a cyclist, we can state that as long as she is able to keep herself steady she needs to have some kind of practical knowledge which a physicist can translate into propositions. I am not saying that the cyclist knows about the laws of physics in cycling. What I am claiming is only that she obviously obeys them without knowing them.<sup>20</sup> She has the competence of riding a bike and therefore she knows how to ride a bike.<sup>21</sup>

<sup>17</sup>In the Platonic dialogues as a whole non-propositional knowledge plays an important part. Wieland (1999) emphasizes this point. According to him, Plato “expects the possibility of forms of knowledge which cannot be told directly and therefore cannot be assigned directly to something ... like an assertion” (Wieland 1999: 11). “Capacities and skills, competences and conscious knowing-how, power of judgment, knowledge of use and experience” (Wieland 1999: 230), among others, could be classified as non-propositional knowledge. Wieland is interested in the “unequally more complex experience ... which one intends, for example, when speaking of an experienced doctor, an experienced craftsman, or an experienced trader” (Wieland 1999: 230). Experience he assigns to the “categorical type of dispositions” (Wieland 1999: 231). Moreover, he claims that we can only find signs for experiential/empirical knowledge which can be assigned to a “field of knowledge” (Wieland 1999: 231) and not to concrete particulars/objects. Furthermore, he emphasizes the situatedness and flexibility of experience: “Whoever has experience simultaneously has the capacity to move confidently within the corresponding field and to react adequately to every situation occurring in it” (Wieland 1999: 231). It is obvious that there is strong overlap with the concept of tacit knowing. Indeed, Wieland is of the opinion that the majority of our knowledge is non-propositional (Wieland 1999: 233).

<sup>18</sup>For example Ginet (1975: 3–9) and Brendel (2013: 17–24).

<sup>19</sup>Those will be referred to as “weak forms” in the following (analogously to the weak concept of tacit knowing). Non-formalizable kinds of tacit knowing will be called “strong forms”.

<sup>20</sup>For this point, see Polanyi (1962: 49) where he says “that the aim of a skilful performance is achieved by the observance of a set of rules which are not known as such to the person following them”.

<sup>21</sup>If one defends the thesis that knowing-how can be reduced completely to knowing-that one would also have to attribute the corresponding knowing-that to the agent, even if she is not capable of translating her knowing-how (in both cases, we are talking about knowledge, expressed verbally and non-verbally). However, we have just seen that we cannot attribute *complete* knowing-that to the agent (depending on the action, the agent could possibly describe insufficiently what needs to be done in which order).

Coming back to the positions mentioned at the beginning, which claim to give a general definition of knowledge by providing a definition of propositional knowledge (on the assumption that all forms of knowledge could be reduced to propositional knowledge),<sup>22</sup> we can extract the following necessary conditions for the attribution of knowledge: (i) opinion/belief, (ii) truth, (iii) justifiability (the classical triad)<sup>23</sup> as well as (iv) epistemic methodical security.

However, those are not the only conditions brought forth in the discussion: Noam Chomsky's theory of innate universal grammar seems to assume other (obviously less demanding) conditions for the attribution of knowledge. He assumes that the child has "tacit knowledge of these [i.e. linguistic] universals" (Chomsky 1965: 27; cf. Nagel 1995: 57f.). Nagel criticizes this view and calls this phenomenon "innate capacities that enable a child to acquire knowledge of a language" – a capacity, or competence which is expressly not knowledge (Nagel 1995: 61). Substantial conditions for the attribution of knowledge not fulfilled in Chomsky's theory would be, according to Nagel, (a) the capacity for consciousness and (b) internal evaluability/detachment from experience.<sup>24</sup>

- (a) According to Nagel, in order to attribute knowledge to the speaker it is not necessary to explicitly formulate the rules that we follow while speaking a language. The speaker can have this knowledge and still never actually be confronted with a propositional form of it. However, it needs to be in principle possible to bring this knowledge to the speaker's mind. When confronted with the corresponding rules, we could not speak of such an internal

<sup>22</sup>This is nothing less than the ongoing controversy between intellectualists and anti-intellectualists (for paradigmatic positions of both sides see Ryle 1950 and Ginet 1975).

<sup>23</sup>Gettier (1983 [1963]) famously has shown that those are not sufficient conditions for knowledge (not even for merely propositional knowledge). Whether we can also find Gettier cases in the context of knowing-how is controverted. Anti-intellectualists claim that knowing-how cannot be Gettiered and take this as an argument for the difference between knowing-how and knowing-that. Stanley and Williamson (as intellectualists) argue for Gettier cases of knowing-how in the following way: "Bob wants to learn how to fly in a flight simulator. He is instructed by Henry. Unknown to Bob, Henry is a malicious imposter who has inserted a randomizing device in the simulator's controls and intends to give all kinds of incorrect advice. Fortunately, by sheer chance the randomizing device causes exactly the same results in the simulator as would have occurred without it, and by incompetence Henry gives exactly the same advice as a proper instructor would have done. Bob passes the course with flying colors. He has still not flown a real plane. Bob has a justified true belief about how to fly. But there is a good sense in which he does not *know* how to fly" (Stanley and Williamson 2001: 435). However, if we put Bob on a real plane and if he had internalized the correct advice (which he has accidentally and luckily been given) and the practice he gained in the simulator, he would most certainly manage to fly the plane (Poston 2009: 743f.). And that is basically all there is to knowing-how. It does not matter if the learner has been taught the right method only by sheer luck. What matters is that he has been taught the right method. In this position, I am following Poston's (2009) argument, which also claims that the way one achieves knowing-how cannot have an impact on its status as knowledge. When we are talking about knowing-how, the result is what counts – and this is the big difference between it and knowing-that: If I accidentally identify the right barn within a large number of fake barns (and, if someone asked me, I would wrongly also identify the fake barns as real barns), then my knowing-that ("I know that there is a barn in this exact place") has been Gettiered and therefore we cannot call it knowledge (although the assertion above is true and justified) because I have not applied a sufficiently secure epistemic method (for the thesis of epistemic methodical security and the example of the barns, cf. Brendel 2013). Knowing-that achieved by luck is not knowledge, knowing-how achieved by luck is knowledge (see Poston (2009: 746) in a weaker version: "Knowledge-how isn't constrained by the same anti-luck intuitions as propositional knowledge").

<sup>24</sup>Nagel is actually still using the classical definition of knowledge here. This becomes clear when he characterizes (a) also as "innate *beliefs* or *assumptions*" (Nagel 1995: 61) and (b) as justifiability (Nagel 1995: 60–3).

recognition within the context of Chomsky's universal grammar because of its extremely high level of abstraction (Nagel 1995: 60f.).<sup>25</sup>

- (b) Nagel diagnoses a lack of justifiability in Chomsky's innate universal grammar. To test if an assertion is correct, we have to rely on the community of speakers. Therefore, truth is constituted only by the speakers' coherence. However, the mere fact that people behave from birth in a certain way or are convinced of certain assertions does not by far guarantee their truth. Therefore, we could not speak of "a priori or innate knowledge" (Nagel 1995: 63) in this context. Furthermore, Nagel cautiously equates language learning with the process of digestion: like digestion, language learning might be some kind of automatic process (Nagel 1995: 62–4).<sup>26</sup>

Is this kind of criticism enough to disqualify tacit knowing more generally as a form of knowledge? We should beware of making this judgment so quickly, since these conditions do not capture other forms of knowledge, either, like Russell's knowledge by acquaintance, which does not consist of true or false opinions or beliefs, but is usually accepted as a separate form of knowledge.<sup>27</sup> In the following, I am going to show that certain forms of tacit knowing coincide with Russell's knowledge by description (closely connected with knowledge by acquaintance) and that, therefore, it would be absurd to deny the label of knowledge to at least these forms of tacit knowing.<sup>28</sup> Furthermore, we will see in part two that tacit knowing plays a crucial part in all the basic divisions of knowledge.

### 1.3. Does tacit knowing exist?

Before looking at the different divisions of knowledge, we are confronted with a substantial challenge: the claim that tacit knowing simply does not exist. To define and investigate the concept of tacit knowing, of course, we need to show that there is sufficient evidence for its existence.

<sup>25</sup>If we applied Polanyi's example of the cyclist then Nagel would refuse to attribute knowledge to her. Under normal circumstances, no process of recognition would take place when the cyclist was confronted with the physical rules necessary for riding a bike. Nor would Polanyi attribute knowledge to her, but *tacit knowing*: the cyclist does not have knowledge of the physical rules but rides the bike as if she had knowledge of them (Polanyi 1962: 49f.; Neuweg 2015 [2005]: 116).

<sup>26</sup>Moreover, Neuweg locates "Könnerschaft" between "rational planning-based behaviour and automatic behaviour" (2020b: 22). While we would certainly assign the process of digestion to unconscious and automatic bodily processes, this classification seems dubious in the case of language learning. Stanley and Williamson, however, even classify automatic processes (they are explicitly talking about the process of digestion) as actions. From the latter, they separate intentional actions (Stanley and Williamson 2001: 414f.). I, on the contrary, cannot see sufficient reasons to classify an unconscious and uncontrollable process like human digestion as any kind of action (see e.g. Volpert (1983: 18f.), who lists goal-directedness and consciousness as characteristics of actions, or Collins and Kusch (1998: 31f.), who separate actions (which are, qua action, always connected with an intention) from mere behaviour – "an action is the behaviour plus the intention" (Collins and Kusch 1998: 32)).

<sup>27</sup>Although a reduction to propositional knowledge seems to be possible (Ginet 1975: 4–6).

<sup>28</sup>Strictly speaking, we should still stick to the progressive form (for the reasons outlined above). Although Wieland does not speak of tacit knowing he seems to endorse the position that this phenomenon should be classified as knowledge. He writes: "One would have to assume an extremely narrow concept of rationality if one wanted to assign experience achieved non-discursively or the proof of this experience in its right use to the realm of the irrational" (Wieland 1999: 234). Moreover, he mentions Polanyi and Ryle as evidence that non-propositional knowledge is at least discussed in contemporary philosophy (Wieland 1999: 234).



Numerous empirical cases (masterful musicians, experts in different fields who cannot make their knowledge explicit, etc.)<sup>29</sup> already show that tacit knowing as a phenomenon does indeed exist. Interestingly, Polanyi uses a passage from Plato's *Meno* to support his claim that tacit knowing exists. The *Meno* shows us that we already possess innate (tacit) knowing of the Forms and that we simply need to reactivate it via recollection (*anamnêsis*).<sup>30</sup>

In the dialogue, Socrates provides evidence for this thesis by asking a slave for the solution to a geometrical problem (how to find the length of a side of a square when you double it). The slave has not been taught geometry (*Meno* 85d9-e6), does not give the correct answer at the beginning, but through Socrates's *elenchos* does come to the right (explicit) solution.<sup>31</sup>

Empirical examples, however, seem to me better evidence for tacit knowing than the example from Plato's *Meno* since the passage is not ideal to support Polanyi's thesis as a whole. To sum up the position of the *Meno*, we actually have the following states: (1) the state before reactivating our innate knowledge (dormant, 'inactive' true beliefs),<sup>32</sup> (2) an intermediate 'journey' (rather a process than a state, namely the process of recollection) which helps the slave finally to arrive at (3) the state after recollection (explicit knowledge). The *Meno* works perfectly to support Polanyi's thesis that "we can know things, and important things, that we cannot tell" (Polanyi 1966: 22),<sup>33</sup> and that there is an intermediate realm between (1) and (3).<sup>34</sup> However, what seems to be lacking in Plato's account (but to be substantial for Polanyi's theory) is the 'hint' or "intimation of something hidden" (Polanyi 1966: 22f.), a "tacit foreknowledge of yet undiscovered things" (Polanyi 1966: 23, 22f.). If tacit knowing is present it always manifests itself somehow (as some kind of foreknowledge or as expertise, etc.; see also Neuweg's definition mentioned in section 1.1). In the *Meno*, there is no real state of ignorance, at least not in the strict sense. What looks like ignorance turns out to be simply true beliefs in an inactive or dormant state. If we take these inactive true beliefs as instances of Polanyi's tacit knowing we would find ourselves in the strange situation of having hidden knowledge which is hidden simply too well. We would always need some wise person who knows that we have this hidden knowledge buried within us to draw it out of us. Otherwise, it would probably stay hidden forever. In state (1) the slave is not at all conscious of his hidden knowledge nor is he able to apply it. Neither does he come up with a correct answer nor does he indicate in any way the correct answer which he is not able to make explicit. Neither in the first state nor in the transition to (3) is there any evidence for tacit knowing (the hidden knowledge only comes to the fore through the Socratic method and thereby becomes explicit).<sup>35</sup> It is not the case that the slave

<sup>29</sup>See the examples from different professions in Neuweg (2020b).

<sup>30</sup>The doctrine of recollection (*anamnêsis*) is given as an answer to the *Meno*'s paradox which postulates the impossibility of learning. Either we already know what we are looking for or we do not know it and therefore do not know what we are looking for in the first place (*Meno* 80d5-e5).

<sup>31</sup>See *Meno* 82b9–85b7 for the whole passage from (seeming) ignorance to knowledge.

<sup>32</sup>Socrates talks about true opinions or beliefs (*alêtheis doxai*, *Meno* 85c7, 86a7) which are already present in the slave (and in every one of us) in the first state and which can be 'awakened' by questioning the subject, which then leads to a translation of these opinions into knowledge (*epistêmata*, *Meno* 86a8; *Meno* 85c4–86a11).

<sup>33</sup>Although Plato's Socrates would only talk about beliefs at that stage (see previous footnote).

<sup>34</sup>In (1) we are not interested at all in investigation or discovery since we falsely believe to have the right answer to the problem (e.g. at the beginning the slave is convinced of a false answer to Socrates' question, see *Meno* 82d8-e3, 84b9-c2).

<sup>35</sup>This is not analogous to learning empirically if a person possesses tacit knowing. We only learn that tacit knowing is present when it manifests itself in action (e.g. in playing the piano with great mastery).

already understands something (like the case of pattern recognition) or that he is acting competently (like the case of cycling) without being able to explain it or to put it into words (nor is this the case in the intermediate stage<sup>36</sup>). Exactly this, however, seems to be characteristic for tacit knowing if we follow Polanyi (and also Neuweg).<sup>37</sup> To conclude, it seems more sensible to base this investigation on the contemporary empirical findings that show the presence of something which we could call tacit knowing – and only partly on Plato’s exposition in the *Meno* since this dialogue undoubtedly provides us with an important aspect of tacit knowing, but not with the fully fleshed out concept.<sup>38</sup>

## 2. Tacit knowing: why it matters

How is tacit knowing a form of knowing? If we can locate it within the systematic divisions of knowledge and if it coincides with forms of knowledge which are recognized clearly as such, then tacit knowing more than deserves that label. The following analysis, however, will not only show that tacit knowing coincides with certain forms of knowledge, but that it plays a foundational role for knowledge per se.

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Playing the piano, however, only shows that tacit knowing is obviously present, not that it is explicit (exactly this explicitness, however, characterizes the state of knowledge the slave has when he comes to the right solution). To give the intermediate stage the label of tacit knowing would be debatable insofar as it covers only part of the concept (the slave still does not show that he knows the right solution, but he now at least wants to carry on the study, because Socrates has shown him that the proposed solution was wrong). And Socrates only knows about the slave’s hidden knowledge because he already knows that the souls have contemplated the Forms before entering a body.

Please note that I do not deny the hidden presence of knowledge in the slave’s soul. All I am saying is that we have no evidence or suspicion of its presence at the beginning. The transitional process would never have started without Socrates’ continuous questioning. And Socrates only does this because he already knows that we all have this hidden knowledge of the Forms. Scientists, however, normally have some kind of suspicion/hint/“awareness of anomaly” (Kuhn 1996: 52), which makes them carry on their investigation in that direction. Tacit knowing is characterized by showing itself somehow (like in the case of an athlete or a competent doctor who recognizes patterns of a disease) right from the beginning. And this aspect is lacking in the *Meno* example. The slave’s knowledge, although present in his soul, is completely dormant at the beginning.

<sup>36</sup>What does happen in the intermediate stage is that the slave comes to know that he does not know (the proposed solution he was so confident of earlier on turned out to be incorrect). That state is important because it is the starting point of investigation: the slave now wants to know what the right solution is (*Meno* 84a3-c7). However, there is still no sign of a ‘hint’ or anything of that kind which would lead him in his investigation (he still needs Socrates’ questions to guide him).

<sup>37</sup>Polanyi thinks that “the *Meno* ... shows” that “we can know things, and important things, that we cannot tell. The kind of tacit knowledge that solves the paradox of the *Meno* consists in the intimation of something hidden, which we may yet discover” (Polanyi 1966: 22f.) I completely agree with the first claim. The *Meno*, however, seems to lack the aspect of foreshadowing which initiates the process of discovery. If Socrates had not applied the method of the *elenchos* to the slave no one would ever have suspected that knowledge about diagonals and the doubling of squares could have possibly be present in the slave’s mind. If we distance ourselves from Polanyi’s definition and take every kind of non-explicit knowledge which does not necessarily have to show itself in any way (and would therefore be totally separate from its execution) as tacit, then we could take this passage as evidence. See Neuweg (2004a: 214–20) on his explanation of the *Meno*’s paradox. The passage from the *Phaedo* (argument from recollection) that Neuweg mentions seems to be the better reference point if we are looking for evidence or manifestations of tacit knowing (Neuweg 2004a: 217).

<sup>38</sup>The dialogue serves to show how investigation and learning are possible. Yet, tacit knowing in the definition I am endorsing in this article comprises more than that (the prime example would be the competent and skilled practitioner who is unable to put her knowledge into explicit terms).

Let us begin with the basic division<sup>39</sup> in (i) knowing-that, (ii) knowing-how, and (iii) knowledge by acquaintance. Neuweg has already shown that, depending on the form, tacit knowing coincides with either knowing-that or knowing-how (Neuweg 2004b: 138f.). Polanyi stresses that, in his use of the term, “knowing” comprises “both practical and theoretical knowledge” (Polanyi 1966: 7). Let us take a look at some examples for (i) and (ii) in order to evaluate subsequently if there might also be cases of tacit knowing in the realm of (iii).

### 2.1. Knowing-that

What do we mean when we speak of tacit knowing-that? Usually, we are talking about “knowledge taken for granted” and of which we are not even necessarily conscious (Neuweg 2004b: 139), such as information resulting from our complete (cultural) background and environment which is consolidated in our minds (Neuweg 2004b: 139). Is this kind of knowledge non-formalizable knowledge, and does it therefore represent the strong concept of tacit knowing? Not necessarily. If a certain knowing-that is required in a certain situation, and we can provide this knowing-that, it has obviously already been inside us tacitly. It only becomes apparent in its application (e.g. presupposing gravity, even before the actual law was formulated – on the basis of this assumption, we are careful when confronted with great heights and we can explain ourselves if required). Therefore, fundamental assumptions which do not even have to (but can) be present in us as (lost or unconscious) firm beliefs form part of tacit knowing-that. Maybe we could take Searle’s “Background presuppositions” (Searle 1992: 186)<sup>40</sup> as forms of tacit knowing-that but also unconscious beliefs.<sup>41</sup>

However, there also seem to be some other, less fundamental cases of tacit knowing-that. This form must not be confused with ordinary knowledge of facts which might not be present in our minds at the moment, such as historical knowledge acquired at school but to which we do not presently have access. Taking part in a quiz we still pick the right answer – with much uncertainty since this knowledge has been present in us only tacitly. This obviously seems to be a case of knowing-that which we have almost completely forgotten. Therefore, it is much harder to bring it back to our conscious mind.<sup>42</sup>

<sup>39</sup>See, for example, the beginning of Fantl’s article on knowledge-how (Fantl 2021).

<sup>40</sup>In the following, I will speak of the “Background” with a capital B (like Searle) to make clear that I am referring to Searle’s concept.

<sup>41</sup>Neuweg also seems to understand Searle’s explanations regarding Background presuppositions in this way (Neuweg 2004b: 139). Searle gives as an example our assumption concerning “the solidity of objects” (Searle 1992: 186; this assumption is manifest by our behaviour) while an unconscious belief would be fact knowledge which is not present to us at the moment (e.g. knowing who the current president is) (Searle 1992: 186; see also Searle 1983: Ch. 5, esp. 142–4). His claims regarding the concept of the Background are an interesting parallel for practical knowing-how. The Background, according to him, “consists of mental capacities, dispositions, stances, ways of behaving, know-how, savoir faire, etc.” (Searle 1992: 196). Since unconscious beliefs are principally explicable (if brought to consciousness) they would be excluded by the narrow sense of tacit knowing (and, of course, also by the broad sense since that one only captures knowing-how).

<sup>42</sup>The example of historical knowledge, originally from Colin Radford, I take from Brendel. She, however, does not talk of tacit knowing but of “*unbewusste Überzeugungen* [unconscious beliefs]” in order to defeat the objection that it would be knowledge which does not fulfil the usual conditions (true justified belief) (Brendel 2013: 32, see also 31f.). I agree that we could subsume this example under ‘unconscious beliefs’. The reason for listing it as a separate case here is due to the fact that Searle seems to talk of ordinary fact knowledge (currently not present to our minds) when he talks about unconscious beliefs (Searle 1992: 186).

## 2.2. *Knowing-how*

Tacit knowing-how seems to be the most prominent form of tacit knowing or at least the form in which tacit knowing shows itself most clearly. We are talking about expertise, or competence which cannot be made explicit by the subject (Neuweg 2004b: 138f.). It can be found in the strong as well as in the weak form (e.g. physical laws of cycling – these can be made explicit, but normally not by the subject; for this example, see Polanyi 1962: 49f.). We have to ask ourselves, however, if in the end tacit knowing-how can always (somewhere in the distant future when we will have better measuring methods) be given a complete account (from a third-person-view).<sup>43</sup>

Non-practical forms of tacit knowing also fall under this rubric, like knowing what a melody sounds like<sup>44</sup> or what a colour looks like. Similarly, these forms of perceptual knowing cannot be (completely or sufficiently) made explicit, though we can still visualize quite clearly a certain colour before our inner eye.

To sum up, this kind of tacit knowing can be found in various forms of expertise (music, sports, arts, etc.) but also in our basic perceptions.

## 2.3. *Knowledge by acquaintance and knowledge by description*

Knowledge by acquaintance, according to Russell, is concerned with (internal and external) sense data. It is direct knowledge of things of which we are “immediately conscious” (Russell 2001 [1912]: 25).<sup>45</sup> This kind of knowledge he contrasts with knowledge by description, i.e. indirect knowledge that we form out of sense data (Russell 2001 [1912]: 25f., 28).

This form of knowledge shows close kinship with a certain form of tacit knowing: the recognition of patterns, for example in the case of facial recognition, seems to have strong similarity with knowledge by description (we recognize a face out of single sense data). Polanyi himself mentions this example and explains the process as an integration of proximal terms (in this case, single sense data (facial parts) but not all of them necessarily need to be given) to a distal term (the complete face) (Polanyi 1966: 4f., 9f.). Directly given are single facial parts. Our tacit knowing of the individual characteristics allows us to recognize the face. Therefore, we could talk about indirect knowledge, even though the perception of a face seems to be directly given (because we are not aware of the tacit integration and perceive the complete face directly). We find ourselves in the same situation when perceiving a physical object like a table. We perceive the table as a table and do not deduce the object from characteristics like the table’s colour or size (still, this case would be classed as knowledge by description; Russell 2001 [1912]: 25f.).

Of course, we need to bear in mind that Russell does not include cases in which we must mentally complete the picture. This, again, can play a significant role in facial recognition. Parts may be missing because the sight of them is impeded. Moreover, we are practically never confronted with the same face twice. Each time a face will have changed (maybe only to a small extent). That does not prevent us from recognizing the faces

<sup>43</sup>I do not want to claim that it is ultimately possible to find general rules for every kind of knowing-how. All I am saying is that if we analyse a single situation where knowing-how is required we maybe could express the tacit knowing with hindsight. Of course this would create a very specific “from case-to-case knowledge” (which probably would not have any kind of practical relevance for the future).

<sup>44</sup>See Wittgenstein (2001: I 78), who mentions the example of “how a clarinet sounds”. He adds: “If you are surprised that one can know something and not be able to say it, you are perhaps thinking of a case like the first [i.e. the height of the Mont Blanc]. Certainly not of one like the third [i.e. the clarinet].”

<sup>45</sup>He talks about “things immediately known to me just as they are” (Russell 2001 [1912]: 25).

of persons familiar to us. Russell, however, also includes knowledge about the mental states of other persons within knowledge by description (Russell 2001 [1912]: 28).<sup>46</sup>

Thus, examples for tacit knowing in this category would be perception of colour and shape,<sup>47</sup> memory (both are cases of knowledge by acquaintance since they all are immediately given),<sup>48</sup> and perception of physical objects (knowledge by description since they are formed out of sense data).

At first sight, basic perceptions can be assigned to knowledge by acquaintance: Via direct perception we “know” the colour red. Simultaneously, this leads to knowing-how since now we also know what the colour red looks like (without being able to sufficiently explain this sense perception).

This first overview shows us that tacit knowing pervades all the basic forms of knowledge. Therefore, we should be careful not to explain away tacit knowing as an epiphenomenon or as a mediocre form of knowledge. This pervasiveness is present in other prominent divisions of knowledge.<sup>49</sup>

#### 2.4. Theoretical and practical knowledge

Although tacit knowing often occurs in practical contexts, it is not identical with practical knowledge. It stretches into the theoretical realm as well, i.e. in processes of understanding. We can take the recognition of patterns again as an example. This recognition, first of all, represents an intellectual process. Every time we recognize something (e.g. a face or a pattern of a certain illness), this knowledge is based on tacit knowing to a large degree. Parts are given which we combine into a whole without being able to explain all of these parts or even to list them. Lacking parts are also possibly supplied by us.

Practical knowledge shows a similar structure when we still act intelligently and adequately, even though our data basis might be insufficient or imprecise. In these cases, competence or tacit knowing-how is expressed. Therefore, we could speak of a subdivision of knowing-how, i. e. knowing-how which comes to the fore in practical expertise.

Tacit knowing plays an even more foundational role in theoretical knowledge, however, since all theoretical or explicit knowledge ultimately rests on tacit roots. We could not understand any theoretical explicit statement without tacit presuppositions,<sup>50</sup> like the understanding of the context or the theory which we use to arrive at this statement. We focus on the object of our investigation, whereas the theory is instrumental – in the sense that we do not scrutinize it as theory but use it to conduct our investigation (Polanyi 1962: 59–62; Neuweg 2004a: 334–40). In fact, not even language itself, which we use to explicitly formulate our knowledge is devoid of a tacit component: namely, meaning. When we explain a theory, for example, we do not explain every word in the explanation. Accordingly, Polanyi states on various occasions that “[a]ll

<sup>46</sup>This form of knowledge “enables us to pass beyond the limits of our private experience” (Russell 2001 [1912]: 32). See Polanyi (1966: 5): “We recognize the moods of the human face, without being able to tell, except quite vaguely, by what signs we know it.”

<sup>47</sup>According to Polanyi, perception seems to be “the most impoverished form of tacit knowing” (1966: 7).

<sup>48</sup>See Russell (2001 [1912]: 26) on his explanation of memory.

<sup>49</sup>The following division of forms of knowledge is taken from Fantl (2021).

<sup>50</sup>Polanyi goes so far as to claim that “we have no clear knowledge of what our pre-suppositions are and when we try to formulate them they appear quite unconvincing” (Polanyi 1962: 59). He explains that “the actual foundations of our scientific beliefs cannot be asserted at all. ... They [i.e. certain presuppositions] are not asserted and cannot be asserted, for assertion can be made only *within* a framework with which we have identified ourselves for the time being; as they are themselves our ultimate framework, they are essentially inarticulable” (Polanyi 1962: 60).

knowledge is ... either tacit or rooted in tacit knowing” (Polanyi and Prosch 1975: 61);<sup>51</sup> “strictly explicit knowledge” would even be “self-contradictory” (Polanyi 1969: 195) and “unthinkable” (Polanyi 1969: 144) since the rules of how to apply or understand it remain tacit. We could, principally, put into explicit terms the rules for understanding a certain sentence by referring to the different words and then referring to their meaning and so on. The point is, however, that this would lead to an infinite regress (Polanyi and Prosch 1975: 61).<sup>52</sup> If we do not want to go on forever in explaining the meaning of a sentence we just uttered, we simply have to stop explicitly spelling out the meaning of the words used in our explanations and accept them as their tacit component. Using language is, according to Polanyi and Prosch, a “tacit operation” (Polanyi and Prosch 1975: 60).<sup>53</sup> They do not stop there but extend this claim to “all other explicit thought” (Polanyi and Prosch 1975: 60) and take measurement as an example. Everything we measure or state in mathematical formulae is understood only by tacitly referring to the meaning of what the measure or the formula stand for (Polanyi and Prosch 1975: 60f.; Polanyi 1969: 179). Consequently, explicit theoretical knowledge can never make explicit everything which is needed to understand it. We can choose to explain, for example, either the chemical structure of water or the words and grammar used in that explanation (which would transform our statement to a linguistic one).

It seems rather surprising, in fact, that we often still assume theoretical knowledge to be entirely explicit knowledge. Already in Wittgenstein, and later in Davidson, we have emphasis on implicit meaning, as Barry Stroud’s comparison between the two nicely shows. We cannot understand sentences if we do not already know what is meant by the different components of the sentence.<sup>54</sup>

## 2.5. *Technê and epistêmê*

Starting from a general definition of *technê* (“application-oriented expert knowledge or some practical professional skill – the reason why this expression can be used generally for artistic, craftsmanship, practical, scientific or philosophical disciplines” (Horn 2008)), those forms of tacit knowing located in the practical realm seem to be paradigmatic cases of *technai*. Aristotelian text passages manifest that *technê* designates that “which rules the movement of an *organon*” (Horn 2008). The instrument also plays an important role for Polanyi: e.g., a blind person controls her instrument (a stick) by indwelling it and not as such but as an instrument for something (recognizing

<sup>51</sup>Polanyi repeats this assertion almost literally in Polanyi (1969: 144, 195).

<sup>52</sup>They explain that “[a]t some point we must have ‘rules’ of application (if we can call them that) which we cannot specify” (Polanyi and Prosch 1975: 61). Wittgenstein also emphasizes the danger of an infinite regress when every expression of a rule needs to be interpreted in turn (Wittgenstein 2001: 1 201 to which Stroud (2017: 135) already refers).

<sup>53</sup>See also Polanyi (1969: 145), where he stresses similarly that the way we use language would always be a tacit process.

<sup>54</sup>Stroud uses the example of snow being white. We “cannot know that the sentence ‘Snow is white’ is true if and only if snow is white” (Stroud 2017: 128) as long as we do not know what whiteness and what snow mean (Stroud 2017: 128). He then summarizes the convergence of Wittgenstein’s and Davidson’s theories: “The fundamental idea about the specification of meaning and understanding that Davidson and Wittgenstein share is that you cannot say what an expression means, or what someone understands by it, without using that very expression or others with the same meaning to *say* what the expression or the person means” (Stroud 2017: 129). Furthermore, Stroud stresses that this implicit understanding of the meaning of words must be shared by the community of speakers: “We do make sense of others, and of what they mean, but we can *say* or *specify* what they mean only by using words of our own to specify it. And we can do that only because we and our fellow speakers understand the terms and concepts we all use in making sense of one another as speaking agents with intentional attitudes” (Stroud 2017: 136).

the environment). Through this indwelling, the stick becomes the proximal term (Polanyi 1966: 12f., 16f.). Therefore, we could conclude that when skilfully using an instrument the person possesses *technê* or tacit knowing.<sup>55</sup>

Drawing a sharp distinction from *epistêmê* also seems very plausible since we are not dealing with classical theoretical knowledge here (knowledge which can be sufficiently explained and justified).<sup>56</sup> On a closer look, the binary division between *technê* and *epistêmê* is far too simple, however. Tacit knowing is more than mere *technê*. Even if it might lack in formalizability (at least in the strong form) and therefore is to be excluded from classical scientific knowledge (*epistêmê*),<sup>57</sup> it still intersects with Aristotelian *phronêsis*. The virtue of *phronêsis* “belongs to the intellectual (dianoetic) virtues” (Elm 2008) and at the same time designates practical knowledge. It is not concerned with the unchanging, eternal realm, but with things which can change. As in the case of tacit knowing, situatedness plays a significant role. When I possess tacit knowing or the virtue of *phronêsis*, I act flexibly and skilfully according to the particular case – at least in the case of *phronêsis* by using general knowledge<sup>58</sup> as a guiding principle for the particular case (Elm 2008).<sup>59</sup>

Furthermore, if we consider again the tacit roots of theoretical knowledge what has been said in section 2.4 can equally apply to the concept of *epistêmê*. If we understand *epistêmê* as true justified belief we do not also provide an explanation of the meaning of the words used in the formulation of this belief.

## 2.6. Procedural and declarative knowledge

If we follow Jeremy Fantl’s definitions, declarative knowledge is explicit knowledge which can be brought to consciousness whereas procedural knowledge is “knowledge that is manifested in the performance of a skill” (Fantl 2021: section 1.3). Thus, it seems clear that tacit knowing itself is not declarative, although the components of the declaration are tacit in the sense explained above (see section 2.4).

The definition of procedural knowledge is wide enough as to include tacit knowing. However, we need to take into account that tacit knowing does not designate automatic applications of procedures, but dynamic reactions to different circumstances.<sup>60</sup> Tacit knowing, therefore, does not fully coincide with either of these forms of knowledge. Tacit knowing is more flexible than procedural knowledge and cannot be put into rigid, explicit terms. However, that does not mean it cannot be found on a continuum

<sup>55</sup>It goes without saying that the explanations are different and must not be equated. Aristotle, of course, is not talking about focusing on a distal term while the instrument recedes into the background.

<sup>56</sup>I am using the definition of *epistêmê* according to the philosophical use here. The meaning varies greatly in the different ancient authors (Rapp 2008).

<sup>57</sup>Although also *epistêmê* ultimately rests on tacit roots (see section 2.4).

<sup>58</sup>These are not general theoretical rules, but knowledge concerned with the ethical realm (“of the good life as a whole, of the good for humans and for oneself, of ethical-political goals of action”, Elm 2008). Tacit knowing also seems to follow such a holistic approach, however, although it is not confined to the ethical realm (cf. the general recognition of patterns which can only be successful by directing one’s attention away from the particular characteristics toward the whole).

<sup>59</sup>Neueg also stresses the similarity with this virtue and emphasizes that, like in the case of *phronêsis*, there is “a direction to the right goals” (Neueg 2020b: 19). This characteristic sets it apart decisively from simple cleverness (*deinotês*, see Bywater 1890: VI 13, 1144a23–1144b1).

<sup>60</sup>See Neueg (2020b) who argues against the claim that knowing-how could be understood as procedural knowledge.

between procedural and declarative knowledge.<sup>61</sup> Tacit knowing could be described as non-rigid or dynamic procedural knowledge.

### 3. Conclusion

In this article I have discussed the definition of tacit knowing and its philosophical importance with respect to other forms of knowing or knowledge. The second part especially has shown that we cannot investigate tacit knowing separately from the other divisions of knowledge. On the contrary, tacit knowing occurs as practical knowing-how, concerned with the particular case, as well as theoretical knowing-that, and also as some subdivision of knowledge by acquaintance and knowledge by description. The focal characteristic of all these forms of tacit knowing is – apart from the obvious inability to express it explicitly – their capacity for change, vagueness, and an indeterminacy of the situation or data serving as a basis for actions or theoretical deductions.<sup>62</sup> Explaining this fuzziness and vagueness opens up promising fields of study for future research. For the present purpose it suffices to state that these special characteristics underline the linguistic claim for using the progressive form. Tacit knowing is so pervasive that in every epistemological investigation which purports to be extensive this concept must not be neglected – particularly if we take into account that even its apparent opposite, explicit knowledge, depends on it for being understood. Therefore, tacit knowing forms part of every major division of knowledge and seems to be a necessary and fundamental characteristic of knowledge itself.<sup>63</sup>

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<sup>61</sup>See Neuweg (2020b: 22) who locates “knowing-how between rational planning-based and automatic behaviour”.

<sup>62</sup>See also Neuweg (2020b: 16–18) for this characteristic.

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**Abida Malik** studied German–Italian Studies and Renaissance Studies at the Universities of Bonn (Germany) and Florence (Italy). Studies included literature studies, linguistics, and history of arts, among other disciplines. She obtained her doctorate in ancient philosophy at the University of Bonn with a dissertation on Plato's concept of character. During her doctoral studies she has been to the Universidad Panamericana in Mexico-City for a research stay and in the final phase of her doctorate she worked as assistant professor at the University of Mainz. Her dissertation ("Seelen im Wandel. Eine Studie zum Charakterbegriff bei Platon") was published in 2020.

From winter semester 2019/20 till summer semester 2021 Abida Malik has worked as lecturer at the University of the Arts Bremen. In September 2021 she started working as instructor in ethics at Nazarbayev University in Nur-Sultan. Her current main research interests include ancient philosophy and contemporary epistemology.