Practical Knowledge

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The contribution deals with knowledge of what to do, and how, where, when and why to do it, as it is found in a multitude of rules, procedures, maxims, plans, and other instructions. It is argued that while this knowledge is conceptual and propositional, it is still irreducible to theoretical knowledge of what is the case and why it is the case. It is knowledge of goals, of ends and means, rather than of facts. It is knowledge-to that is irreducibly practical in having world to mind direction of fit and the essential function of guiding as yet uncompleted action. While practical knowledge is fundamentally different from theoretical knowledge in terms of mind-world relations, the practical and theoretical domains are still parallel in terms of justificatory and inferential relations, they are like mirror images of one another. It is shown that if this view of practical knowledge is accepted, convincing Gettier cases for practical knowledge can be constructed. An extensive analysis of these cases demonstrates the usefulness of the notions of practical deduction, abduction, and induction.

1. Introduction: knowledge and the theory bias

There is a ubiquitous bias for the theoretical over the practical in contemporary philosophy that I will call the "theory bias." It is manifest, for example, in the idea of a general truth-conditional semantics; of deductive reasoning as being theoretical and logical consequence as being entirely accountable in terms of the preservation of truth; in cognitivism in metaethics; in accounts of actional experience that treat it as a kind of perceptual experience, and accounts of intention that treat it as a kind of belief. But the theory bias is perhaps nowhere more evident and more pervasive than in philosophical accounts of knowledge. Whereas theoretical knowledge has always been a central topic, even an obsession, of Western philosophy, there is comparatively very little work on practical knowledge. Indeed knowledge is traditionally defined as justified true belief, and even those who reject the traditional definition tend to think of knowledge as a form of belief. But it is, to say the least, not obvious that knowledge of what to do, and where, when and how to do it are forms of belief.

Moreover, when practical knowledge is discussed, the notion of practical knowledge in play tends to be rather restricted. So for Elizabeth Anscombe (1957) and her followers practical knowledge seems to be just a special kind of knowledge of what is the case, based on special, practical sources of evidence like one's own actions or plans. The prime example would be knowledge of what one is currently doing based on the experience of doing it rather than on observation. But it is hard to see how, for example, knowledge of what to do in the event of a fire could be assimilated to this way of thinking about practical knowledge. The other topic that has been discussed under the heading of "practical knowledge" is of course know-how in the sense of skill. This also plays some role in Anscombe, but it is most closely associated with Gilbert Ryle (1949), who famously and influentially argued that know-how had been disregarded in favour of knowing that. Ryle took know-how to exclusively consist in non-discursive skills and capacities and did not discuss, at least not under this heading, the vast discursive, conceptual practical knowledge we have in the form of maxims, rules, recipes, and other instructions, ranging from how to make pie and atom bombs to what to do in the event of a fire or earthquake.

Recently Stanley & Williamson (2001; see also Stanley 2011) have challenged the established Rylean view of know-how. They argue that all know-how (or "knowledge-how") is reducible to propositional knowledge-that of ways of performing actions. There are no Rylean irreducible skills – or at least they should not be called "knowledge-how." For example, on their view to know how to ride a bicycle is to know, with regard to some x, that x is a way of riding a bicycle, with the further condition that this way of riding a bicycle be represented under "a practical mode of representation." I believe that Stanley & Williamson's account is an improvement over Ryle's in so far as – but only insofar as – it emphasizes that knowledge-how can be conceptually articulated. But the problem with their account is not only that it falls into the opposite extreme of Ryle's by denying that "know-how" ever refers to mere skill and by thus reducing all know-how to conceptual, propositional knowledge. Naturally interpreted, Stanley & Williamson further propose to reduce practical conceptual knowledge of how to do things to theoretical conceptual knowledge of what is the case. To put the same point differently, they reduce knowledge of means and ends to knowledge of facts. Strikingly, Stanley & Williamson seem to take this aspect of their position for granted and show no sign of even being aware that they are engaged in this second reductionist project. They only discuss the first project of reducing all know-how to conceptual knowledge, and the sizable literature that their article has inspired, while often critical of their reduction of skill, has followed them in this regard. There thus appears to be a blind spot in the current philosophical outlook for knowledge that is conceptual but yet irreducibly practical in the sense of being knowledge of goals, of means and ends, rather than of facts. I think this pattern supports the diagnosis of a deep-seated theory bias in contemporary philosophy. The mind-set behind this might be glossed as follows: if it is thought, if it is conceptual, intellectual, if it essentially involves reasoning, it surely must be theoretical. The practical, if it exists at all, is just the lower, non-intellectual level of non-conceptual, non-discursive skills.

Against this, I want to argue in this paper that practical knowledge can neither be reduced to mere skill nor to a special way of knowing what is the case. Rather, states of practical knowledge are conceptually structured attitudes that are irreducibly practical in that they have world-to-mind direction of fit (Anscombe 1957, Searle 1983). That is, fit between mind and world is achieved by adapting the world to the contents of the mind rather than vice versa. These states are prescriptive rather than descriptive, and they constitute knowledge of goals, of ends and means, rather than of facts.

If this is right, practical knowledge is diametrically opposed to theoretical knowledge in terms of world-mind relations. But at the same time I want to show that there are deep structural parallels between practical and theoretical knowledge: they are mirror images of one another. For example, theoretical knowledge is a well-justified and successful kind of theoretical attitude, and we are often looking for knowledge of the causes of given effects, while practical knowledge is a well-justified and successful kind of practical attitude, and we often want to know how to achieve given ends, that is, we want to know the means for these ends, want to know how to cause them. It is therefore no accident at all that both kinds of states are called "knowledge": they are irreducibly different kinds of knowledge, but they are still both equally knowledge. To use a once much-abused phrase: they are separate, but equal.

In what follows, I will now first give a more extensive characterization of practical knowledge and then argue for each of the features just listed, that practical knowledge indeed has it. I will then enter into a discussion of practical knowledge Gettier cases. Some of those who resist Stanley & Williamson's first reduction of skill to knowledge-that have argued that if they were right, there should be Gettier cases for knowledge-how, but that there aren't any (see Stanley 2011: 216ff for discussion and references). And the examples that have been suggested are indeed unconvincing. However, I will show that the deep reason for this lies in the second rather than the first reduction: once we accept that practical knowledge is prescriptive, has world-to-mind direction of fit, and so on, we can construct practical

knowledge Gettier cases that are mirror images of the standard theoretical knowledge Gettier cases. The comparison and analysis of both kinds of cases will also reveal that the deep structural parallels between both kinds of knowledge extend to justification and reasoning. This will support the view that theoretical and practical knowledge are structurally parallel mirror images of one another throughout, and will provide the beginnings of an argument that this is also true for the practical and theoretical domains in general. In this way, the paper will also be a sustained argument to treat the practical as a separate and equal domain and to stop ignoring it or assimilating it to the theoretical in the way the theory bias perennially tempts us to.

2. Practical knowledge as knowledge-to

We need to get clearer about the scope and nature of practical knowledge. I have already emphasized that by "practical knowledge" I here mean knowledge that is discursive and conceptual. Its primary manifestations are speech acts and thoughts rather than bodily actions. And even when we restrict ourselves to conceptual knowledge, practical knowledge is not the same as know-how, in spite of their customary association. Practical knowledge is both more and less than know-how. It is less than know-how because there are many knowledge ascriptions using this term or its cognates which clearly do not ascribe practical knowledge, for example, when we say that Peter knows how Napoleon lost at Waterloo – a straightforward instance of theoretical knowledge. At the same time, practical knowledge is much more than know-how, because it also includes knowing what to do, and when, where and why to do it. Note that for all these varieties of practical knowledge ascriptions, there are corresponding varieties of ascriptions of theoretical knowledge once we leave out the "to": knowledge of what people do, and when, where and why they do it, is clearly theoretical rather than practical knowledge. Practical knowledge is thus much more adequately glossed as knowledge-to rather than as knowledge-how. It's the "to" that's the mark of the practical in the context of knowledge ascriptions and we will soon see why.

What about Anscombe's paradigm case of practical knowledge, knowledge of what one is currently doing? I believe that part of the reason that Anscombe focussed on this variety of knowledge is that despite her stated opposition to the theory bias with regard to knowledge – which she referred to as the "incorrigibly contemplative modern conception of knowledge" (1957: 57) – she did not completely overcome it. In particular she could not quite break free of the idea that like theoretical knowledge practical knowledge would need to be factive at least in the sense of providing a guarantee that the relevant action comes to pass. Knowledge of what one is currently doing seems to provide at least a better chance of meeting this constraint than practical knowledge that is prior to the relevant action. At the same time one can claim, as Anscombe does, that this knowledge is irreducibly practical because it is (primarily or solely) based on actional rather than perceptual experience. However, since this knowledge is essentially of a still on-going action it cannot really be factive since the action may yet fail to be completed. Part of what makes the action what it is, is what the agent is still about to do. For example, part of what makes what I am currently doing the writing of a paper is how I plan to continue and finish this action. And of course I may not succeed in finishing it for one reason or another.

While this prevents this variety of knowledge from being factive it is at the same time what makes it practical. Practical knowledge is essentially forward-looking, directive and prescriptive, and can therefore only be directed at yet unfinished actions. That is why ascriptions of practical knowledge use non-finite verb forms and why the "to" in particular is characteristic for practical knowledge. And that is also why practical knowledge cannot be knowledge of facts, but must be knowledge of goals, of ends and means. Further evidence in support of the claim that knowledge-to is an irreducibly practical attitude is provided by the

fact that just like verbs ascribing practical knowledge, verbs designating intentions always take the to-infinitive. The same is also true of verbs ascribing other practical postures – speech acts and attitudes – like promises, orders, and obligations. And then there is another class of verbs designating practical attitudes like wanting and desiring, whose clausal complements – when they have clausal complements – take either the to-infinitive or other non-finite verb forms. All this supports the contention that in the ascription of postures the presence of non-finite verb forms in general and the to-infinitive in particular indicates that a practical posture is being attributed.

3. Practical knowledge as providing answers to practical questions

It is an interesting fact that whereas theoretical knowledge can be ascribed both by means of questions pronouns, indicating that the ascribee knows the answer to a theoretical question, and more directly by means of that-clauses, practical knowledge can only be ascribed in the former, more indirect way. Compare (1) to (2):

(1) a. I know what I did last night.

b. I know what I did last night: I went to see a movie.

c. I know that I went to see a movie last night.

(2) a. I know what to do tonight.

b. I know what to do tonight: I will go see a movie.

b. I know what to do tonight: Let's go see a movie.

c. *I know to see a movie tonight.

(2c) and its equivalents are unacceptable in English, German, French, Italian and probably other Indo-European languages – though there may of course be languages where one can say things like that. In either case, I think we should take this to be primarily a fact about linguistic ascriptions of practical knowledge states rather than about the states so ascribed. There do seem to be states of knowing what to do and how to do it with specific contents, even if these contents cannot be specified in the same breath.

But what are these states exactly? The examples in (2b) reinforce the point that they are irreducibly practical. A practical question is a question about what to do, and the answer to such a question can be provided by an intention – as the expression of which, rather than of a belief "I will go see a movie" is naturally interpreted – or by an order, and so by a prescriptive, self- or other-directive posture with world-to-mind direction of fit. However, at the same time the fact that both these answers can be given points to an apparent further disanalogy between theoretical and practical knowledge and to a difficulty in more precisely determining the nature of the state that bears the status of being practical knowledge.

As was mentioned already, most epistemologists nowadays, even if they have given up on the project of specifying the x in the equation "(theoretical) knowledge = justified true belief + x" apparently made necessary by Gettier cases, still accept that theoretical knowledge is a form of belief. Recently some have begun challenging even that view though on the basis of experimental data showing that in some cases subjects are inclined to ascribe knowledge, but not belief. Whether these data really question the traditional view of theoretical knowledge depends – among other things such as what weight should be assigned to such results – on whether the subjects employ the same notion of belief as in the traditional view. If they do,

one possible conclusion would be that theoretical knowledge is not only an irreducible status of beliefs, but an irreducible state in its own right. The corresponding view for practical knowledge is also possible, but perhaps a more pressing question is what should be the counterpart of the traditional view. What practical state could be the bearer of the status of practical knowledge in the way that belief is the bearer of the status of theoretical knowledge on the traditional view? The difficulty is that if we answer "intention", it's not clear how we should deal with the other-directive case, since it's questionable that we can intend other people's actions. This difficulty may not be insurmountable though. While it does seem odd to say that we intend other people's actions, on the other hand it seems right that when we direct somebody to do something, we do intend to get them to do what we directed them to do. Another possibility is that the underlying attitude might be one of willing rather than intending. Or practical knowledge might turn out to be an irreducible state in its own right after all. I don't think we need to decide this in the present context. The crucial point for now is that, whichever of these alternatives turns out to be the right one, the relevant state is irreducibly practical. However, in what follows I will assume, for ease of reference, that intention can be the state that, under certain conditions to be determined, has the status of being practical knowledge.

But doesn't this difficulty suggest deeper disanalogies between theoretical and practical knowledge and the two domains more broadly? I don't think so, for two reasons. First, I think we need to take into account that because much more attention has been given to the theoretical domain, there has also been much more unifying conceptual work in this area. Notably, a generic notion of belief has been established. If we had a corresponding practical notion, we would probably not feel the difficulties outlined above anymore. Second, the source of the apparent disanalogy is that practical knowledge can be self- as well as other-directive, but should there really be no analogous feature in the theoretical domain? It is tempting to think that the analogous feature is that I can enjoy my theoretical knowledge for myself, for my own consumption as it were, or pass it on to others. However, it seems to me an even better analogy is provided by the fact that my knowledge can be based on my own experience as well as on the testimony of others. The reason this analogy works even better is that it provides a mirror image of the practical case with regard to how other people mediate between the knowledge state and its satisfaction condition. In the testimony case the testimony of the other mediates between my knowledge state and the state of affairs, the fact in the world, that I know of, its satisfaction condition. And the direction of causation in this case is world-to-mind as always for cases of mind-to-world direction of fit. The witness is receptive to the world – perceptually receptive, let us assume, or else it would just be another link in a chain of testimonies which ultimately must bottom out in a perceptual episode – and I am receptive to her and thus succeed in gaining knowledge. In the practical case, the other applies my knowledge and thereby brings about its satisfaction condition if she applies it successfully – or else if she just passes it on provides another link in a chain of practical testimony which ultimately must bottom out in action. So the other's action mediates between my knowledge state and the state of affairs that I knew to be the goal to achieve or how to bring about. And the direction of causation in this chain is mind-to-world as always for cases of world-to-mind direction of fit. My directive caused the action of the other and that action caused my knowledge to be satisfied, that is, to be applied successfully.

As this example already illustrates and as we shall see shortly in the discussion of practical Gettier cases it is essential to take into account the differences in direction of fit and direction of causation in relation to satisfaction conditions when trying to construct practical analogues to theoretical cases (or vice versa). Otherwise one can easily be misled into finding disanalogies between the domains which are really just artefacts of a failure to understand their true differences as well as their commonalities.

4. The satisfaction condition of practical knowledge

I have already taken a stance on what the satisfaction conditions of states of practical knowledge are, but I want to make that stance more explicit and spent some more time discussing and defending its consequences and once again comparing my analysis to those of Stanley & Williamson and Anscombe. The satisfaction conditions of states of practical knowledge are the satisfaction conditions characteristic for forward-looking, prescriptive, world-to-mind-direction of fit states. Intentions and orders are satisfied when they are properly executed or realized; practical knowledge is satisfied when it is applied successfully. The parallel also holds with regard to the causal role of the relevant states or acts. Intentions and orders need to cause the intended or ordered action in order to count as executed and thus as satisfied (Searle 1983); practical knowledge likewise needs to cause the relevant action in order to count as having been applied successfully. Let us compare this with Stanley and Williamson's analysis of know-how. This analysis ascribes to practical knowledge the satisfaction conditions characteristic of theoretical knowledge. The satisfaction condition of the knowledge that some x is a way of riding a bicycle can be an already completed action: having observed somebody bicycling in a certain way, I now know that this way is a way of bicycling. Nor need this satisfaction condition be caused by the knowledge state. It will rather conversely have caused this knowledge state. In other words, the causal relations will be those characteristic for a state with a mind-to-world direction of fit.

What is wrong with Stanley and Williamson's analysis can also be brought out by reflecting on the fact that this analysis could be satisfied by somebody who had the perceptual skill to recognize something as a way of riding a bicycle, while lacking both the actional skill to ride it himself and conceptual practical knowledge on how to do it. It might be objected though that this supposed counterexample does not take into account their additional condition that the relevant state of affairs be represented under a practical mode of representation. But while, as many commentators have pointed out, it remains unclear what precisely Stanley and Williamson mean by a "practical mode of representation", it seems at least safe to say that they think of it on the model of Frege's concept of "Sinn" or sense. That is, they have in mind a property of what is commonly called "propositional content", a special aspect under which the relevant state of affairs is represented. But I think it has been established that this solution won't do. Knowledge-how and practical knowledge more broadly cannot be accounted for in terms of a morning star / evening star kind of difference. This is because the difference between theoretical knowledge and practical knowledge is a matter of psychological mode – or, when we look at their linguistic manifestations, a matter of the force of the corresponding speech acts – rather than of propositional content. This is true no matter whether we think of theoretical knowledge as a form of belief and practical knowledge as a form of intention or willing, or of either or both as irreducible kinds of states in their own right. It is the mode that determines direction of fit and direction of causation and thus the – practical or theoretical – relation between a state and its satisfaction condition. It is, for example, because a state is an intention that it must cause the intended action in order to count as satisfied, not because of what is being intended, not because of the content of the intention, and therefore one cannot satisfactorily account for practical knowledge solely in terms of aspect or sense.

The picture I am proposing has a consequence already alluded to that can seem counterintuitive at first sight: it is possible for states of practical knowledge to fail to be satisfied. I may know what to do, and even where, when, and how to do it, and yet I or others may fail to apply this knowledge successfully. From the point of view of a way of thinking about knowledge that is primarily inspired by theoretical knowledge that may seem intolerable. But again, knowing what to do and how to do it is not knowledge of what is the case. It is not knowledge of facts, but knowledge of goals, of ends and means, and it is in the

nature of such knowledge that these goals may fail to be realized. It is a consequence of the prescriptive, action-guiding, world-to-mind direction of fit nature of practical knowledge that it may fail to be satisfied – through no fault of its own, as it were, but through the failure or absence of action applying it. This last condition is essential though. The mistake must be in the performance or lack thereof, not in the knowledge state itself. Therefore, a counterfactual success guarantee does hold. It must have been possible to apply the knowledge successfully. If I know how to cook Spaghetti Bolognese, this knowledge may not be applied successfully in a given instance, but it must be possible for it to be so applied. Otherwise it cannot be claimed that it was practical knowledge rather than just some idea or plan on what to do. If practical knowledge fails to be applied successfully "the mistake is in the performance, not in the judgment" as Anscombe (1957: 82) puts it, quoting Theophrastus. The knowledge state must still have been well-justified in the sense of being properly based on practical reasoning and / or practical experience. It still must have been a success as far as its purely intellectual credentials are concerned. Incidentally this result also highlights the failure of Stanley and Williamson's first reductionism. Intellectual success is not everything: non-intellectual skills are still required for the successful application of practical knowledge in action and not reducible to it.

5. Practical knowledge as based on practical experience and practical reasoning

Practical knowledge is also irreducibly practical in how it is guided by and essentially assessable according to practical criteria of adequacy. For example, if I claim to know how to open the door, I do not just claim the (theoretical) knowledge that if I do x, the door will open. Rather, it will be understood that I claim to know a means that is also acceptable according to practical criteria of adequacy. Smashing the door with an axe will only count as acceptable if it is really urgent to open the door, if there is no less damaging way of opening it, or if the door is not very valuable, we wanted to get rid of it in any case, or smashing it just seemed an outrageously cool thing to do, etc. Likewise, when we say that somebody always knows what to do, we do not merely mean that that person always has some idea or plan, however crazy, on what to do. We mean that these plans are well-justified, that they are based on adequate practical reasoning, that they are good plans according to practical criteria. Finally, when we consider general practical knowledge of the kind we find in recipes and knowledge of various kinds of procedures, for example, technological procedures, such knowledge is based on practical experience. That is, this knowledge specifies means and ends that have been tested for their practical adequacy, that have been found to be worthwhile and appropriate through experience that evaluated them according to practical criteria of adequacy. Such a process can be called one of "practical induction", where particular successful applications of a general rule, procedure, recipe, or plan support or confirm this rule, procedure, recipe, or plan.

6. Practical knowledge and Gettier cases

If knowing-how is a species of knowing-that as proposed by Stanley & Williamson, one would expect there to be Gettier cases for knowing-how also. Consider a classic example of a Gettier case:

> Bill sees his colleague Fred driving in a Porsche. Believing on this basis that Fred owns a Porsche, Bill then infers that a colleague of his owns a Porsche. Unbeknownst to Bill, his other colleague Hannah owns a Porsche, which she had lent to Fred for the day. So

> Bill has a justified true belief that a colleague of his owns a Porsche. But intuitively, Bill's belief that a colleague of his owns a Porsche is not a case of knowledge. (Stanley 2011: 216)

Stanley & Williamson suggest the following as an example for a knowing-how Gettier case:

> 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. (op. cit.: 435)

However, many commentators have found this example unconvincing. On the basis of the account of practical knowledge developed so far we can now diagnose in which respects it is unconvincing and disanalogous to genuine Gettier cases and construct a case that is actually analogous. This will further support that account.

The crucial point is that the satisfaction condition for claims of practical knowledge is the successful application of that (putative) knowledge in action. The case invented by Stanley & Williamson feels disanalogous to standard Gettier cases because the glitch does not compromise the relation between the knowledge state and its satisfaction condition. It is tempting to think the cases must be analogous because in both cases the aberration affects the way the knowledge state was acquired. But only in the theoretical knowledge case does the aberration also affect the relation between the knowledge state and its putative object or satisfaction conditions. Let us look at this more closely.

In the theoretical knowledge case Bill's false belief that Fred owns a Porsche justifies his belief that a colleague owns a Porsche. This belief is true, but only accidentally so, because it is only true in virtue of Hannah's owning a Porsche, which Bill does not know. So the justification relation does not connect the knowledge state to the state of affairs in virtue of which Bill's belief that a colleague of his owns a Porsche is true. By contrast, in the flight simulator case Bob's relevant mental states are properly connected to their objects, their conditions of satisfaction. There is nothing accidental about the satisfaction of the states. If Bob skilfully applies the instructions he was given, they will be satisfied, that is, executed. Of course, Bob still acquired these states in an accidental way. But since this does not affect the relation between them and their satisfaction conditions, it does not threaten the claim of these states to be knowledge in the same way in which the claim to theoretical knowledge in the Porsche case is undermined. Also note there is a further disanalogy with regard to justification: whereas in the knowledge-that case the justification consists in an (apparently) observation-based belief regarding a particular matter of fact, in the knowledge-how it consists in practical testimony, in advice, which in the story is not clearly specified as being general or particular.

We can thus make sense of and indeed vindicate the difference in intuitions with regard to these cases. The cases are disanalogous because in the theoretical, but not the practical case, the aberration in the way in which the relevant state is acquired also affects the relation to its object, and there is a further disanalogy concerning justification. So what could an analogous case look like? On the basis of our reflections so far, we can describe it in the abstract. The aberration would need to affect the relation between the putative practical knowledge state and its application in action. This state would need to guide action that would turn out to be successful, but in such an aberrant, accidental manner that we would still not want to count it as an instance of practical knowledge. Further, for the analogy to be complete, its justification would need to involve a particular goal in a way analogous to how a particular (putative) fact is involved in the theoretical Gettier case. And such a case can indeed be constructed.

Consider the following case (somewhat artificially) designed to mirror the theoretical Gettier case:

> Michael wants to do something good for his nice colleagues before leaving the department. His means are limited, but he thinks he knows what to do: he will give just one present to one of them, in an exemplary fashion, and anonymously: his old Porsche. But how should he do it? He thinks he knows: he will give it to his colleague Fred by means of parking it in a driveway just around the corner, which he takes to be Fred's, with a note saying "Please accept this car as a gift!" However, unbeknownst to Michael, Fred has moved out of his house recently, but – you guessed it – Fred and Michael's colleague Anna has moved in, so that she ends up getting the car.

So Michael succeeds in giving a present to one of his colleagues, but did he know what to do? I think in this case we will be just as reluctant to ascribe this practical knowledge to him as we are reluctant to ascribe theoretical knowledge in the theoretical Gettier case. The reason is that while what Michael does brings about the satisfaction of his general intention to give a present to one of his colleagues, the particular means he chooses only accidentally leads to the realization of the state of affairs that is the satisfaction condition of his general intention. It is only a coincidence that he brings about this state of affairs in his failed attempt to execute his intention to park his Porsche in Fred's driveway, just like in the theoretical Gettier case it is only a coincidence that Bill's general belief that a colleague owns a Porsche is true, though his particular belief that Fred owns one, on which the general belief is based, is false. That is why we are reluctant to ascribe practical knowledge to him, even though he not only succeeds in doing what he set out to do, but can point to a justification for his putative knowledge, namely that he has a plan on how to reach his goal. That is why his intention, even though it is both satisfied and justified, is not an instance of practical knowledge, just like the beliefs in the standard Gettier cases are not instances of knowledge even though they are also both satisfied and justified.

So in this way we can construct a practical analogue to the theoretical Gettier case and this supports the general hypotheses that practical knowledge is both essentially different from theoretical knowledge in its direction of fit and the way representational success is achieved, and that its domain is a mirror image of that of theoretical knowledge. To further support these hypotheses I will now engage in a more detailed analysis of what is going on these examples with regard to inferential and justificatory relations. In so doing, I will make use of the notions of practical deduction, abduction and induction which I won't be able to fully explain and discuss in the confines of the present paper. But they will still help us to better understand the domain of practical inference and practical justification and how it is a mirror image of theoretical inference and justification.

7. Knowledge, deduction and abduction: theoretical and practical

To get clearer about the practical and theoretical Gettier cases, let me be maximally explicit about the states involved in both cases and the inferential and justificatory relations between them, beginning with the deductive relations. The singular belief / intention deductively entails the existential, general one. Just like believing that his colleague Fred owns a Porsche logically commits Bill to believing that a colleague of his owns a Porsche, intending to give a Porsche to colleague Fred logically commits Michael to intending to give a Porsche to a colleague.

We further need to include the belief that Fred drove the Porsche and its relation to the belief that he owns it and the plan to park the Porsche on the driveway and its relation to the intention to give it to Fred. I believe that both cases involve *abductive inference*. In the familiar theoretical case of abduction that Fred owns the Porsche is inferred as the best

explanation for the given fact that he drove one. I propose to think of the inference from the goal of giving Fred the Porsche to the means of giving it to him by parking it on the driveway as being likewise an instance of abduction, of practical abduction or inference to the best means.

It seems appropriate to group inference to the best explanation and inference to the best means under the same heading of abduction because they are mirror images of one another and both kinds of non-demonstrative causal reasoning – taking "cause" in a wide sense here. In the theoretical case, a subject asks *why something happened*, looking for a cause that best explains a given effect. In the practical case a subject wonders *how to make something happen*, looking for a cause that is the best means to bring about a given end. What is best is, respectively, determined by theoretical or practical criteria of adequacy: crudely, the best explanation is the one most likely to be true, and the best means the one that maximizes utility. (These slogans here are not meant to suggest that what is best can always or even usually be figured out by using decision theory or related formal systems which presuppose that numerical values can be assigned to likelihood and utility.) So Bill reasons that Fred and thus a colleague owning the Porsche is the best, most likely, explanation of him driving around in it, and Michael concludes that parking the Porsche in the driveway is the best means of giving it to him and thus to a colleague. Bill reasons to the cause of a given effect and Michael to a means for a given end, and if we took the trouble we could easily fill in some of their further beliefs and theories, respectively preferences and plans, that lead them to make the choices they do. Note how our two cases are mirror images of one another in so far as while Michael's intention to give the Porsche to Fred is the starting point of his abductive reasoning and represents an end and thus an effect relative to the means that he is looking for, Bill's belief that Fred owns the Porsche is the end point of his abductive reasoning and represents the cause relative to the effect that is his starting point.

8. Knowledge and justification

Let us now consider the justificatory relations between the relevant attitudes, respectively their objects, the states of affairs, facts and goals, they are directed at, and the reasons for them. (I will leave open here whether reasons themselves are attitudes or state of affairs.) These relations are arguably the crux of the whole matter, because the claim of a state to be knowledge essentially rests on its justification. So we need to get clear about in which sense Michael's intention to give a colleague a Porsche can be justified by his intention to give it to Fred or how that intention in turn can be justified by his intention to do this by means of parking the Porsche on the driveway, and why these justificatory relations should be considered to be the practical analogue of how Bill's belief that a colleague owns a Porsche is justified by his belief that Fred owns one and how that belief in turn is justified by the belief that Fred drove a Porsche. This task is made especially urgent by the fact that we are more accustomed to thinking of ends as justifying means rather than conversely of means justifying ends as I am suggesting here.

Let me hone in on the kind of justification we are interested in by distinguishing it from other possible ways of justifying the general intention. One could elucidate the way in which the intended states of affairs would be desirable or good, one could point to its positive consequences, or one could deductively derive it from a yet more general maxim or rule to the effect that one should always give a Porsche to a colleague when leaving a department, which in turn might be supported by practical induction. But the most fundamental challenge to an intention is to claim that it can't be executed – because if it can't all other reasons for or against it are moot – and so to defend against or pre-empt such a challenge is to support or justify the intention. For example, if someone challenges my intention to climb a Dutch mountain by asking "A Dutch mountain – which Dutch mountain do you intend to climb?", I

could support my general intention by expressing a particular intention to climb Deneederlandseberg – the artificial mountain some people want to build in Flevoland province. Accordingly Michael can support his general intention to give his Porsche to a colleague by specifying the particular intention by means of which he wants to realize it. Of course generally the more interesting question is whether such a particular intention can be executed in a way that is consistent with other plans and not too costly, and so Michael supports and justifies his particular intention to give the Porsche to Fred (and thus also the general intention that it entails) when he finds a means to give it to Fred anonymously, as he planned to. If no such means could be found, this would be a reason to abandon the intention to give it to Fred, or even, if there were no suitable alternative, to abandon the general intention. So there is not only a sense in which ends justify and provide reasons for means, but means can also justify and provide reasons for ends, and the absence of means can provide reasons against ends.

It is easy to see that there is again an exact parallel in the theoretical domain, where we also find justificatory relations in both directions. The belief that Fred drove the Porsche supports and justifies the belief that Fred owns it which is inferred as the best explanation for it. But that this explanation is available also supports the belief in the (putative) fact that is being explained. Having a good explanation for a putative state of affairs makes it more likely that that state of affairs does indeed obtain and thus also that the corresponding belief is an instance of knowledge. If in our scenario the suggested explanation for Fred driving a Porsche were not available – say because Bill knew that Fred's finances did not allow him to own a Porsche or that he was strongly opposed to expensive sport cars – this could also undermine Bill's conviction that it had actually been Fred who was driving the car. It could even force him to abandon his belief if he thought no explanation for it could be possible, but it could of course also make him search for and find other explanations. In any case, the tighter a belief is integrated into a web of justification, of evidence and explanation for it, and the larger that web is, the more likely it is to be an instance of theoretical knowledge.

In the practical case analogously the tighter an intention is integrated into a web of justification, of reasons and plans for realizing it, and the larger that web is, the more likely it is to be an instance of practical knowledge. We are much more likely to accept that somebody knows what to do if there are not only considerations that make his end desirable, but if he also has a plan, a means for realizing it. Otherwise we will merely consider it to be some idea on what to do. So the fact that Michael has a plan for realizing his intention, by means of parking it in a certain driveway, supports and justifies the claim of his intention to be an instance of practical knowledge.

In conclusion let me again emphasize that all these parallels hold in spite of the fact that the theoretical and the practical are diametrically opposed in terms of the direction of fit and the direction of causation. This is evident in the way that the failure of Bill's belief to be an instance of theoretical knowledge is a mirror image of the failure of Michael's intention to be an instance of practical knowledge. Michael's general intention to give a colleague a Porsche is not an instance of knowing what to do even though it is supported through a corresponding singular intention to give the Porsche to Fred, which in turn is justified through a specific plan, a means of accomplishing this, and even though both the general intention and the means intention get satisfied, that is, executed. This is because the singular intention fails to get executed and the means intention only accidentally causes the satisfaction of the general intention. Bill's situation is parallel, except that the direction of fit and of causation between mind and world are reversed. His general belief that a colleague owns a Porsche fails to constitute knowledge even though it is supported through the singular belief that colleague Fred owns it, which in turn is based on the belief that Fred drove the Porsche, and even though this latter belief and the general belief are satisfied, that is, true. This is because the singular belief is false and the fact that Hannah owns the Porsche only accidentally causes the

general belief that makes it true, by being the cause of Fred's driving the Porsche, which in turn causes Bill to infer the false belief that he owns it.

All of this supports the contention that there is a variety of knowledge, conceptual practical knowledge, which is irreducible to, but structurally parallel with, theoretical knowledge. I presented at least the beginning of an argument that there are practical analogues for all theoretical justificatory and inferential relations, including practical forms of deduction, abduction, and induction. Finally, since this practical knowledge tends to be disregarded in current debates, notably in discussions of know-how, this also supports the diagnosis of a deep-seated theory bias in contemporary philosophy.[1]

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