


# Gradable know-how

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## ABSTRACT



The gradation of know-how is a prominent challenge to intellectualism. Know-how is *prima facie* gradable, whereas know-that is not, so the former is unlikely to be a species of the latter. Recently, Pavese refuted this challenge by explaining the gradation of know-how as concerning either the quantity or the quality of practical answers one knows to a question. Know-how *per se* remains absolute. This paper argues, however, that in addition to the quantity and quality of practical answers, know-how also differs in how reliably the agent is supposed to fulfil the task given her default constitution. Intellectualism is still troubled by the gradability challenge.

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## 1. Introduction

Intellectualism construes know-how as a species of know-that. To know how to  $\varphi$  is to know, of a way  $w$ , that  $w$  is a method to  $\varphi$ . One challenge to intellectualism emphasises their difference in gradability: know-how is gradable, whereas know-that is not. On the one hand, know-that might have multiple standards, e.g. the ordinary vs. the scientific, but the state of know-that simpliciter is typically considered ungradable. On the other hand, know-how seems gradable because we often regard one agent as knowing how to achieve a task better than another agent. Intellectualism is thus endangered: know-how cannot be a species of know-that if they essentially differ in gradability (cf. Sgaravatti and Zardini 2008; Wiggins 2012). Recently, Pavese (2017) defended intellectualism by arguing that such gradation concerns only the *quantity* or *quality* of one's practical answers. Know-how *per se* remains absolute. This paper

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reinforces the gradation threat. I argue that aside from the quantity and quality of practical answers, know-how is also gradable regarding *how reliably* one is *supposed* to fulfil a task. Despite Pavese's defence, intellectualism remains challenged by the gradation issue.

My basic idea is simple: know-how is practical, and it is practical partly by virtue of one's reliable ability. Hence, know-how can be gradable according to one's reliability level – the more reliable one is at a task, the better one knows how to do it. Thus presented, the argument is hopeless in illicitly presuming the anti-intellectualist notion of know-how as reliable ability and then reading the gradation of ability into that of know-how. My aim is not to defend this disputable approach. Rather, I take a detour by offering a non-question-begging version of this argument. Instead of appealing to *actual* reliable abilities, I argue that one's *default* reliable abilities – as part of the background for assessing abilities – are also gradable. The conclusion is not that one better knows how to  $\varphi$  if one is actually more reliable at  $\varphi$ -ing, but that one better knows if one is *supposed* to be more reliable.

To prepare for this argument, I clarify the concept of default reliability and defend its constitutive role in know-how in §2. I then conclude the gradability of know-how from that of default reliability in §3. Objections are considered in §4. For convenience, I use 'know-how' and 'practical knowledge' as interchangeable terms.

## 2. The default reliability level and its relevance to know-how

Although intellectualists do not conceptualise know-how as ability, it is a consensus that know-how is closely related to practical success. Intellectualists widely agree with anti-intellectualists that know-how requires the ability to *act intentionally*, which involves an adequate grasp of the link between one's intentions and one's success (e.g. Hawley 2003; Hornsby 2011; Pavese 2015a, 2016, 2021; Setiya 2012; Stanley 2011b). Intellectualists have also proposed to regard know-how as practical by *guiding* us in successful performance (e.g. Bengson and Moffett 2011) or allowing us to follow a rule for the purported tasks (Pavese 2015b). Without evaluating these accounts, I propose that know-how minimally requires that one be *supposed to* reliably achieve the task. To know how to  $\varphi$ , an agent must have sufficient *default reliability* in  $\varphi$ -ing given her putative natural constitution. The following scenario clarifies this notion:

(Null) An intelligent species, group A, resembles humans in every respect except for its natural armless constitution. Members of this group use means other than human arms to engage in physical and social activities. Specifically,

these individuals never played baseball: playing the human version of baseball is unrealistic for this species. Meanwhile, suppose that these individuals somehow know about human activities. They know, in particular, that  $\Phi$  is the normal method for human batters to hit baseballs.

This scenario is designed to the effect that these armless individuals do *not* know how to hit baseballs via  $\Phi$ . Even with the intellectualist premise that know-how is not reliable ability, group A is too weak to have practical knowledge. To be sure, we can regard these agents as knowing that ' $\Phi$  is how *humans* hit baseballs'. They might even entertain  $\Phi$  under a derivatively practical mode of presentation by grasping how they *would* execute  $\Phi$  if they had human arms. Despite that, such epistemic states do not seem sufficient for knowing 'how to hit baseballs via  $\Phi$ ' simpliciter. The reason for this practical ignorance, I suggest, is that these individuals are not *supposed* to reliably hit baseballs via  $\Phi$ . They would trivially fail at this task given their natural armless constitution. This diagnosis is far from repeating the anti-intellectualist requirement of reliable abilities: such a move immediately runs afoul of intellectualist counterattacks. Aside from actual inabilities, these agents are defective also because their default level of reliability in baseball is minuscule. By 'default', we refer to an agent's usual conditions according to the natural group to which she belongs:

(DRL) The default reliability level of an agent for task  $\varphi$  via method  $m$  is the level of reliability to be expected given the natural conditions of her natural group.

DRL is not about actual reliable abilities. It pertains instead to the agent's profile *as* a member of a group. Individuals from group A are armless, and they are expected to be so as members of this group. In contrast, a human pianist, even when amputated (Stanley and Williamson 2001), is supposed to have two arms as a human. The 'default condition' in our sense, therefore, is determined by the group to which an agent belongs and not by her actual physical conditions.

Thus clarified, default conditions are admittedly not a usual topic in ordinary conversations. People are more often interested in an agent's actual ability than in her group's default condition. We also tend to ignore this factor because it is both implicit and constant in discussions of *human* abilities. Nevertheless, DRL is useful for analysing know-how. Based on our reading of (Null), we can assert that know-how requires a high default reliability level:

(DRLN) If S knows how to  $\varphi$  via method  $m$ , then S has a sufficiently high default reliability level in performing  $\varphi$  via method  $m$ .

DRLN is plausible as a modest claim about the practical nature of know-how. An agent knows how to  $\varphi$  only if she would at least reliably  $\varphi$  given her default limit. A human athlete may know how to jump 2.3 metres high, but not how to jump 100 metres high, for this task surpasses the limit of default human conditions. Similarly, had humans evolved differently to have less arm strength, which allows for only a 0.04% chance of hitting baseballs, they would not count as knowing how to hit baseballs – their default reliability level would be too low for genuine practical knowledge. These individuals might, of course, know ‘how to raise their chances as much as possible’, i.e. towards a rate of 0.04%, but this does not amount to knowing ‘how to hit baseballs’ simpliciter.

DRLN is plausible independent of the debate between intellectualism and anti-intellectualism. Instead of aligning with anti-intellectualists by requiring actual reliable abilities, DRLN refers only to the default reliability of the agent’s group. This idea agrees with the standard intellectualist treatment of the amputated pianist. As a human, the pianist should have two hands by default, so she is supposed to play the piano fluently given her propositional knowledge of piano playing. She does not fail the necessary condition for know-how as DRLN prescribes. DRLN also coheres with Bengson and Moffett’s (2011) intellectualist proposal according to which know-how is an epistemic state by which ‘some individual’ can exercise the relevant method to reliably fulfil the task. As DRLN, this qualification abstracts know-how from its bearer’s actual individual states: whereas DRLN does so by focusing on the agent’s natural group, Bengson and Moffett appealed to an abstracted ‘some individual’. Notably, this ‘individual’ has a presumed profile. The idea that the success or failure of such an individual is consequential for ascriptions of know-how to actual humans presupposes that her default condition is similar to ours. No individual from group A can use  $\Phi$  to hit baseballs, but we do not count this fact against know-how ascriptions to human baseball batters. Moreover, if a species both physically and intellectually superior to humans can use another method,  $\Theta$ , to hit baseballs with ultra-reliability, it does not follow that we know how to hit baseballs via  $\Theta$ . The practical success of such a species is irrelevant to our own. Thus, Bengson and Moffett’s abstracted ‘some individual’, when recruited to explain know-how, presumes a background of who or what the performer generally is.

DRLN has two advantages over the standard anti-intellectualist insistence on actual reliable ability. First, to accommodate the intuition that a pianist can still know how to play even when amputated, anti-

intellectualists often deny that she is entirely unable to play: her ability must be masked rather than lost. This reading is less plausible than the intellectualist denial of the pianist's ability. Indeed, having lost her arms, the pianist loses some related abilities rather than merely having her abilities masked. The strategy of specifying the task content – as if the pianist is invariably able to 'play with two arms' but unable to 'play without arms' (cf. Hawley 2003) – also does not help anti-intellectualism as it neglects this obvious change in abilities when the pianist loses her arms. Second, by ascribing ability to the pianist, anti-intellectualists would not easily explain the inability of species A vis-à-vis baseballs. More precisely, if the amputated pianist can invariably 'play the piano *with two human hands*', it is not clear why individuals of species A are unable to 'hit baseballs via  $\Phi$  *with two human hands*'. Anti-intellectualists might allege, of course, that these agents lack the neurological basis that would guide them to hit baseballs even if their hands somehow grew (cf. Noë 2005). They might also contend that these individuals lack the ability by noting that such counterfactual successes in overly remote possible cases do not constitute ability (see Hawley 2003). Notwithstanding the pertinence of these accounts, our notion of default condition enjoys explanatory superiority. By referring to the default armless conditions, we can immediately explain why species A cannot 'hit baseballs' whereas the amputated pianist may still know how to play. The default inability of species A and the default ability of the pianist create no theoretical tension to resolve.

At this point, it is helpful to distinguish 'default condition' from 'normal condition'. Abilities are known to be relative to circumstances. Typically, an agent's ability to cycle is assessed on her performance under normal conditions, e.g. where bikes are available and the weather is fine. The ability to cycle is thereby more precisely the ability to 'cycle when bikes are available, the weather is fine, etc.' The intellectualist ascription of reliable ability to the amputated pianist also assumes 'having two hands' to be a normal condition for piano playing. One might ask, therefore, why not specify the agent's profile in these 'normal conditions'? Is 'default condition' a redundant concept?

In response, these two notions are distinct in that current uses of 'normal condition' are *task-oriented*, while 'default condition' is *agent-oriented*. The term 'normal condition' is most frequently followed by 'for fulfilling the task' rather than by 'of the performer'. Thus, the content of 'normal conditions' is governed by what is needed to complete a task and not by the usual state of the agent. In particular, the task of 'hitting

baseballs' invariably involves 'having two hands' for its normal condition regardless of whether the performer is a human or an individual of species A. The default condition of the agent, in contrast, is fixed only by the usual conditions of the agent. Here, we cannot eliminate the concept of 'default condition' by relocating the agent's entire profile into the 'normal condition' – as if we can complement 'having two hands' with further properties of the agent. There is, after all, a limit on how much of an agent can we move into the task content. Whereas 'hit baseballs via  $\Phi$  using two hands' is a properly individuated task, 'hit baseballs via  $\Phi$  using two hands and two legs as a human who can normally do so' is not. As a result, we cannot incorporate every aspect of the agent into the task content.

To further defend DRLN, let us elaborate the notion of a group's default condition in light of putative obstacles. Consider the ski instructor (Stanley and Williamson 2001). Unlike the pianist, the instructor is never able to perform a complex stunt although he knows how to do so. If we concede this intellectualist intuition, DRLN will be threatened because the stunt may not be reliably performable for ordinary humans – the task is at least unrealistic for the *average* human condition. Therefore, knowing how to  $\varphi$  should *not* entail being reliably able to  $\varphi$  given the average condition of the performer's group. To address this issue, we can adopt the following qualification:

(DCO) The default condition of an agent in view of a task is the *optimal* condition available to her natural group for achieving this task.

Armed with DCO, our theses DRL and DRLN are compatible with the instructor's know-how: DRLN requires that know-how exhibit a high default reliability level; DRL and DCO define the latter in terms of the optimal condition of the agent's natural group. Because the complex stunt is performable under optimal human conditions, the instructor's know-how will not counter our view. This response via DCO is not *ad hoc*. Plausibly, what an agent is *supposed* to be reliably able to do given her default background nature is underscored by the optimal condition for members of her group, not by their average condition.

The combination of DCO, DRL, and DRLN still faces further threats when the putative ability surpasses a group's optimal limit, as in the following case from Bengson and Moffett (2011):

(Computation) Louis, a competent mathematician, knows how to find the  $n^{\text{th}}$  numeral, for any numeral  $n$ , in the decimal expansion of  $\pi$ . He knows the

algorithm and knows how to apply it in a given case. However, because of principled computational limitations, Louis, like all ordinary human beings, is unable to find the  $10^{46}$  numeral in the decimal expansion of  $\pi$ .

Such limitation concerns a whole species, not particular agents. Louis knows how to calculate the numeral, but the default reliability level for humans to do so is minuscule: we are unlikely to finish the task.

Rather than resorting to current anti-intellectualist solutions to this problem (e.g. Markie 2015), I argue that the intellectualist reading of this case rests on an ambiguity of the content of the task. For instance, consider the task of ‘calculating the  $10^5$  numeral in the decimal expansion of  $\pi$ ’. As a competent mathematician, Louis knows how to do so. Compare this task with that of ‘calculating the  $10^5$  numeral in the decimal expansion of  $\pi$  within 12 seconds’. Apparently, Louis no longer knows how to complete this task using the ordinary algorithm. He knows how to complete a mathematical task, but it does not follow that he knows how to complete it within a particular time limit. In light of this contrast, we can infer that Louis knows ‘how to calculate the  $10^{46}$  numeral in the decimal expansion of  $\pi$ ’, as Bengson and Moffett insisted, but he does not know how to ‘calculate the  $10^{46}$  numeral in the decimal expansion of  $\pi$  within a human’s lifetime’. He lacks this know-how in a similar way as he does not know how to ‘calculate the  $10^5$  numeral in the decimal expansion of  $\pi$  within 12 seconds’.

What about Louis’s abilities? Obviously, Louis is unable to ‘calculate the  $10^{46}$  numeral in the decimal expansion of  $\pi$  within a human’s lifetime’. Calculating this numeral is not realistic given our current algorithm and the human lifespan. Now, is Louis also unable to ‘calculate the  $10^{46}$  numeral in the decimal expansion of  $\pi$ ’ simpliciter? The answer is less clear. If we construe this task as purely mathematical, then Louis possesses the required *mathematical skill*, which is abstracted from his human life expectancy. Louis would fail if he tries, of course, but this failure will be due to the limit of his *overall* human constitution and not to his lack of mathematical ability. We can conclude, therefore, that the intellectualist pair of statements about Louis’s know-how and inability relies on an ambiguity of the content of the task. For the task to ‘calculate the  $10^{46}$  numeral in the decimal expansion of  $\pi$ ’ simpliciter irrespective of human life expectancy, Louis has both the practical knowledge and the *mathematical* ability needed to succeed. In contrast, for the task of calculating this numeral within a human’s lifespan, Louis lacks both practical knowledge and *overall* ability.

Our response distinguishes an agent's *special skill* and her *overall ability*. Here, intellectualists cannot object by insisting that all abilities are general: a person is able to  $\varphi$  only if she would reliably  $\varphi$  when she tries, all things considered. This criticism is unpromising because we often assess an agent's skill independent of her overall condition. The popular thesis that abilities are maskable precisely assumes that abilities can be assessed in isolation from other aspects of the agent's life. This is true even for a group's default abilities. Indeed, when regarding individuals of group A as having null default reliability in baseball hitting, we only considered their armless constitution. Other aspects of this species are irrelevant to this particular default ultra-unreliability.

Before renewing the gradability argument with DRL, note that an agent's group can be individuated in many ways. Group A is a *species*, which is the usual background for evaluating abilities, but an individual's species need not be the sole reference for her default condition. Imagine that Neanderthals have somehow survived to the present day and evolved to possess almost the same natural features as *Homo sapiens*. In this scenario, we would not presume their default conditions to differ from those of ours. The Neanderthals' default conditions would not differ, not because their default levels happen to coincide with *Homo sapiens*, but because we would consider them as members of the same general group to which *Homo sapiens* equally belong. What, then, determines an agent's group for her default conditions? Answering this question requires a full inquiry into the relevant contextual mechanism, which lies beyond the scope of this paper. For the present purpose, it suffices to note that our proposal is not circular. We are not referring to an individual's group to fix her default condition and then using this condition to identify her group. For ordinary know-how talks, the group is already given in the background. DRL only *points out* what this group is. It does not *explain* how it comes to be.

### 3. The gradation of know-how in default reliability

To reinforce the gradability challenge to intellectualism with DRL, consider the following series of situations.

(Null) Species A, as noted, resembles humans except for being armless. They know that humans hit baseballs via  $\Phi$ . They also know, under a derivatively practical mode of presentation, that  $\Phi$  is the way for them to hit baseballs *if* they had human arms. Nevertheless, their default reliability level for hitting baseballs via  $\Phi$  is null.



(Inferior Batters) Species B is identical to the human species aside from their weaker default arm strength. Due to their resemblance to humans,  $\Phi$  remains the best method for them to hit baseballs, and they know this to be so. With weaker arms, however, their default success rate of baseball hitting is at most 12%.

(Humans) For convenience, we label humans as the group C. As things stand, the best human batters have an approximately 40% baseball-hitting success rate, which is achieved via  $\Phi$ .

(Superior Batters) Species D is identical to the human species except for their superior strength. They know that  $\Phi$  is the best way for them to hit baseballs. Due to their superior constitutions, their best baseball batters have success rates of higher than 87%.

These groups are listed in ascending order of default reliability level for baseball hitting via  $\Phi$ . Their default reliability levels are respectively 0%, 12%, 40%, and 87%. We control everything else as the same and stipulate the other groups to differ from humans only in their default reliability levels. Such a setting may not be realistic, of course, because species with different constitutions are likely to develop different cultures. Additionally, we let group A know  $\Phi$  as how *humans* hit baseballs, while groups B, C and D only need to know  $\Phi$  as how they themselves hit baseballs, but we have left aside how group A acquired such knowledge about human activities. Nevertheless, our scenarios are possible. We can legitimately posit that the other groups resemble humans to a sufficient extent whereby they share, at least locally, the same notion of 'baseball' and a common ground for evaluating reliable baseball performances. The idea that different constitutions would lead to different cultures does not undermine this possibility. Nor does the holistic proposal that the meaning of a term depends on a system eliminate the possibility of isolating the same notion of 'baseball' for all four groups. Once this is granted, we can let the four groups differ primarily in their default reliability levels in baseball hitting and control everything else to be identical as much as possible.

With these qualifications, we can regard the four groups as differing in know-how according to their default reliability levels for baseball hitting. Let  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$  be four agents of the four groups, with their default reliability levels for baseball hitting being 0%, 12%, 40%, and 87%, respectively. Given the stipulation that these agents all know  $\Phi$  to be the most efficient means to hit baseballs, it seems plausible that  $\delta$  knows how to hit baseballs better than  $\gamma$ ,  $\gamma$  knows better than  $\beta$ , and  $\beta$  better than  $\alpha$ .

As argued,  $\alpha$  does not know how to hit baseballs at all because he has a null default reliability level.  $\beta$  knows better than  $\alpha$  because he is *supposed* to perform more reliably. The same holds for  $\gamma$  and  $\delta$ .

Notably, this chain of comparison does not concern actual reliable abilities. We are not simply embracing anti-intellectualism and therefrom deducing the gradation of know-how from that of ability. We may even concede that  $\gamma$ , when having lost his arms, still knows how to hit baseballs better than  $\alpha$  and  $\beta$  despite his lack of actual ability. Their disparity concerns how well they are *supposed* to reliably succeed.

Our point, if cogent, reveals a new view of know-how as gradable. In defending intellectualism, Pavese (2017) argued that know-how is gradable only according to the quantity or quality of practical answers. As an illustration of gradation in quantity, Pavese supposed that Gianni knows a recipe for *tagliatelle al ragù*, while John knows how to knead pasta to make *tagliatelle* yet not how to prepare the Bolognese sauce. Presumably, Gianni knows how to make *tagliatelle al ragù* more than John. According to Pavese, we should grade the quantity of practical answers apropos *tagliatelle* rather than know-how itself. Gianni knows more practical answers than John does to the question of how to make *tagliatelle al ragù*. Know-how itself remains ungradable. For gradation in quality, Pavese discussed Louis Armstrong, who knew how to play the trumpet better than his contemporaries. This gradation is non-quantitative because what Louis Armstrong knows is not primarily more methods of playing the trumpet but how to better perform these methods. Instead of grading know-how, Pavese suggests that Louis Armstrong knew better only due to the higher quality of his playing technique. There is a way, i.e. how to better play the trumpet than others, which Louis Armstrong knows to execute. Know-how remains intact. Our scenarios, however, do not fit either of these patterns.  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$  all aim at the same task of baseball hitting via the same method  $\Phi$ . Their know-how does not vary in the quantity or quality of their practical answers. Nevertheless, their difference in gradation remains: these agents differ in know-how according to the degree of their default reliability for the task. Intellectualism is still challenged by the gradability issue.

The gradation of know-how in our sense is *prima facie* plausible, but intellectualists might disagree. Why not classify default constitutions as 'nonmental abilities' (Pavese 2017, 376) that are irrelevant to knowledge? Before considering further objections, two arguments offer additional support for my thesis. The first appeals to the essential role of default reliability in know-how. The second highlights the more salient gradation

of know-how compared to that of know-that as well as its dialectical stance in current debates.

The first argument contends that know-how, being practical, essentially requires a high default reliability level. For instance, intellectualists who do not construe know-how in terms of abilities concede that ‘some individual’ with the same default profile must be able to reliably fulfil the task, as we noted in Bengson and Moffett’s (2011) proposal. Given this constitutive role of default reliability for know-how, we can properly expect the latter to inherit its gradability. Namely, if know-how essentially requires default reliability, and if default reliability is gradable, then we can legitimately regard know-how as gradable partly by virtue of the gradation of default reliability.

This argument is admittedly not supposed to be conclusive. After all, the gradation of a part does not entail the gradation of the whole. Propositional knowledge is a good example: albeit constituted by gradable features such as evidential support or reliable cognition, know-that is normally taken to be absolute. The same could be true of know-how. Perhaps an agent’s default reliability only needs to rise above a threshold level to constitute know-how. Perhaps higher levels no longer improve know-how once they are above the threshold.

The second argument for my thesis, fortunately, addresses this issue with a different observation. To wit, default reliability could indeed pose a threshold constraint: we can surely say that  $\alpha$  and  $\beta$  do not know how to hit baseballs due to their extremely low default levels, whereas  $\gamma$  and  $\delta$  do since their levels are ‘sufficiently high’. However, it does not follow that know-how is on par with know-that vis-à-vis gradability. The putative gradability of know-how is *more salient* than that of know-that. This is precisely why intellectualists took the gradation challenge seriously in the first place. Now, insofar as intellectualists have taken gradation as a real challenge, they must tackle its every facet. It would be dialectically incoherent for intellectualists to acknowledge this challenge, neutralise parts of it, yet refuse to consider other parts merely because these parts best fit anti-intellectualist accounts.

The gradation of default reliability is such a remaining part of the challenge. Know-how is in general *prima facie* gradable, and this gradability partly lies in how reliably one knows to achieve a task. This is immediately clear if we compare  $\Phi$  with  $\Psi$ , viz., a less efficient method of hitting baseballs. Through  $\Psi$ , batters usually have a lower success rate. We can accordingly say that an agent who knows how to use  $\Phi$  knows better how to hit baseballs than an agent who only knows how to use  $\Psi$ . Surely, Pavese will

regard the difference as only about the quality of these methods rather than the quality of know-how, but this precisely shows that the performer's reliability is *part of* the gradation challenge that needs to be attenuated. Now, when referring to the default profile of the agent, the gradation of reliability in our cases differs not only from the quality and quantity of practical answers but also from actual abilities that intellectualists have often attempted to discard as unnecessary. It is accordingly a remaining part of the challenge.

To recapitulate, my thesis poses threat because the gradability issue is commonly acknowledged as a challenge to intellectualism, while default reliability is part of the challenge that is not yet explained away.

#### 4. Objections: explaining the gradation away?

I have argued that default reliability cannot be dismissed by the usual intellectualist rationales, nor is it reducible to the quality or quantity of practical answers. Following Pavese's lead, however, intellectualists might hope to relocate this gradation to other parts of propositional answers. I consider four options, which resort to the practical method, the content of the task, the performer, and the representation of the method. I argue that none could succeed.

##### 4.1. Option I: a parameter of the method?

In light of DRLN, know-how is knowledge of how to *reliably* achieve a task given one's default constitution. This encourages us to read the related methods as *reliable ways* to succeed. Therefore, one might object that the gradation pertains to the disparity between methods and not that of know-how *per se*.  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$  differ not in their know-how but in the reliability of their methods.

In response, even if legitimate practical methods must essentially be reliable, this reading does not capture our design. Methods might vary in reliability – as illustrated by  $\Phi$  and  $\Psi$  – but we are discussing the gradation of reliability via the same method of  $\Phi$ . This gradation is not a parameter of the method itself.

##### 4.2. Option II: part of the content of the task?

Perhaps what  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$  know is how to hit baseballs, via  $\Phi$ , *with success rates of 0%, 12%, 40%, and 87%*, respectively. Thus, instead of

varying their degrees of know-how, intellectualists might regard them as having different aims. To properly pursue this approach, one must read the success rate as a measure of counterfactual reliability rather than as a track record. A track record is not what one can aim for on a single occasion; e.g. we cannot achieve a track record of hitting baseballs 40% of the time with only one intentional act. Meanwhile, it is possible to aim to  $\varphi$  with a high likelihood of success. For the cogency of this view, one might refer to Sosa's (2015) remark that if an agent aims to  $\varphi$  simpliciter,  $\varphi$ -s reliably, but activates the reliable process only by accident, the performance would be defective. Hence, rather than being an objective feature of act, reliability should denote how we hope to achieve our goals. Now, if reliability can be an implicit part of the task, why not regard  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$  as attempting to perform 'to the best of their abilities' while the meaning of this phrase varies from person to person?

However, this approach does not effectively counter our view. People should indeed try to *reliably* succeed, but nothing prevents us from targeting higher levels than our own. In particular,  $\gamma$  may have only a 40% default success rate of hitting baseballs, but why can he not aim to hit a baseball with an 87% chance of success? The unfortunate truth is that we must often aim to outperform ourselves just to achieve our average level. Furthermore, if knowing 'how to  $\varphi$ ' is knowing 'how to  $\varphi$  to the best of one's abilities',  $\alpha$  would know how to hit baseballs because he knows how to do so to the best of his abilities, namely, with a 0% chance of success. This result conflicts with our intuition about the practical ignorance of  $\alpha$ . It trivialises know-how. Thus, the reliability featured in the task content cannot properly reflect the gradation of know-how in our sense.

### 4.3. Option III: referring to the performer?

Intellectualists standardly read sentences that ascribe know-how as involving unpronounced PRO. For instance, (i) should be read as (ii):

- (i) I know how to hit baseballs.
- (ii) I know [how PRO to hit baseballs].

PRO refers to the subject of the main clause (cf. Stanley 2011a). What an agent knows will then be how she herself should perform to succeed. Her practical answer is then expressible as ' $\Phi$  is a way for me to hit baseballs'.

Does this referral to the subject accommodate our sense of gradation in reliability? The answer is unclear: such a reference involves no saliently

gradable structure. Naturally, different individuals might have different reliability levels, but this is not explicated in the reference to the performers themselves. To explicate this information, intellectualists must accordingly interpret know-how sentences as involving the performer's default conditions. Knowing 'how to hit baseballs' would be knowing that ' $\Phi$  is a way for oneself, with one's default constitution, to hit baseballs'. This includes the agent's default profile as part of the propositional content.

A problem with this approach is that inserting the agent's profile makes no contribution to the relevant information in the practical answer. In general, we can add anything to the practical answer. I can know 'how to hit baseballs via  $\Phi$ '. I can also know 'how to hit baseballs via  $\Phi$  as a happy person who likes to dance after having a French dinner' even though the additional clause is irrelevant to my baseball skills. The agent's default profile is of the same kind: it does not specify what the task is, which method to use, or how the task is to be completed. Having a certain constitution does not conceptually entail being able to fulfil any practical task. One might suggest, of course, that the default profile implies the corresponding default reliability level required for the task. Articulating this reliability level, however, necessitates reading the target of know-how as 'succeeding with a certain degree of reliability', which falls back to Option II.

#### **4.4. Option IV: different representations of the method?**

Pavese suggested that a method can have different representations. By explaining practical sense in light of computer programmes, she argued that just as different programmes can determine the same algorithm, there can be different representations of the same practical method (Pavese 2015b). In discussing the qualitative gradation of know-how, Pavese proposed that a person might be better at a task by better representing the method. For instance, two individuals can know the same recipe for making ravioli while one of them knows better by 'practically presenting' the recipe 'in a better way' (Pavese 2017, 377). With this proposal, intellectualists could object that although  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$  know how to use  $\Phi$ , they hold different presentations of this method:  $\delta$  represents  $\Phi$  as a more efficient method than  $\gamma$  does, who represents it as more efficient than  $\beta$  does, etc. There is no need to regard know-how itself as gradable.

Let us grant the distinction between practical sense and method, but can it explain the gradation in reliability? To answer this question, note

that  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$  do not represent  $\Phi$  as involving different instructions. When executing  $\Phi$ , they are following the same steps, such as ‘watch the ball’, ‘load and stride’, ‘keep the front leg stable’, ‘swing with hips’. Thus, their different representations can only concern (a) how these steps are efficiently or easily executable or (b) how reliably these steps lead to successful baseball hitting.

Regarding (a), I concede that  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$  might represent the steps differently. It can be *easier* for  $\delta$  to ‘keep the front leg stable’ and ‘swing with hips’ than it is for  $\gamma$ . Even when they both successfully keep their front legs stable and swing with hips, they could possess distinct representations of their bodily states: such acts are more effortlessly and efficiently performed for  $\delta$  than they are for  $\gamma$ . Let us also agree that the different representations are causally related to the different reliability levels.  $\delta$  is more reliable because of superior constitution, which is also the cause of his representation of  $\Phi$  being more easily executable.

The problem, however, is that we will be overly individuating practical answers by regarding such representations as constituting different practical senses. Everyone can have a slightly different representation of the same practical method. With different arm lengths, heights, and other bodily features, my representation of how I swim differs from your representation of how you swim. However, it does not follow that your practical answer to ‘How to swim?’ differs from mine. Know-how can be taught by one person to another. On the Fregean intellectualist account, knowing how to answer a practical question is to grasp a practical sense for a method. Thus, a swimming instructor should be teaching the same practical answer to a student despite their slightly different representations of how they would execute this method. As a result, practical representations must be sufficiently coarse-grained to properly individuate practical answers. Ascribing different practical answers to  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$  is accordingly not a plausible move.

Furthermore, even if we stipulate these agents to have different practical answers to ‘How to hit baseballs?’, it still does not explain their difference in reliability. After all,  $\delta$ ’s representation of ‘swing with hips’ as more effortlessly executable does not causally guarantee a higher level of reliability. Not all factors in one’s physical constitution that contribute to reliable performance are perceived, e.g. people with greater physical strength might not ‘feel’ their superior strength in completing related tasks. Why they more reliably succeed is not reflected in how they represent their practical methods. Similarly, the basis of  $\delta$ ’s superior reliability

might not be present in his representation of  $\Phi$ . Even if  $\delta$  represents  $\Phi$  as more effortlessly executable, his higher level of reliability might be a result of factors that are absent from his practical representation.

What about (b)? Obviously, since  $\delta$  is more reliable than  $\gamma$ , he can represent  $\Phi$  as more reliable for hitting baseballs. Instead of referring to different representations of how easily the method is performed, can intellectualists resort to different representations of how well the method succeeds? This approach is implausible. When we regard  $\delta$  as knowing how to hit baseballs better than  $\gamma$ , we are emphasising that  $\delta$  is supposed to be more reliable. The question of whether or not  $\delta$  represents the method as more reliably leading to success is irrelevant to his practical knowledge. To clarify, suppose that  $\beta$  often illusorily represents his successful performances as almost infallible when their actual chances of success are only 12%. Does it follow that  $\beta$  has more reliable know-how? The answer is 'no'. It is one thing how reliable one's know-how is and quite another how reliable one's method is represented. Thus, (b) does not explain away the gradation of reliability in our case.

## 5. Concluding remarks

This paper reinforced the gradability argument against intellectualism about know-how. By focusing on 'default condition', which is agent-oriented rather than task-oriented, I argued that know-how is gradable according to one's default reliability level. This sense of gradation does not concern the quality or quantity of practical answers. Referring to the agent's default profile, we are also free from the usual intellectualist dismissal of the necessity of actual reliable abilities. The gradation also cannot be relocated within the components of the relevant practical proposition: the default profile of an agent is part of the background for us to assess her know-how, not part of *what* she knows.

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