



Knowledge-how and the limits of defeat

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Abstract

How, if at all, is *knowing how to do something* defeasible? Some, the “intellectualists”, treat the defeasibility of knowledge-how as in some way derivative on the defeasibility of knowledge-that. According to a recent proposal by Carter and Navarro (Philos Phenomenol Res 3:662–685, 2017), knowledge-how defeat cannot be explained in terms of knowledge-that defeat; instead, knowledge-how defeat merits and entirely separate treatment. The thought behind “separatism” is easy to articulate. Assuming that knowledge of any kind is defeasible, since knowledge-that and knowledge-how are fundamentally different beasts, the best accounts of their defeasibility must reflect the underlying differences between them. I reject a separatist treatment of the defeasibility of knowledge-that and knowledge-how. One can acknowledge certain important differences between knowledge-that and knowledge-how without thereby needing two theories of defeasibility. Ultimately, though, I’ll argue that the defeasibility of *basic* knowledge-how, unlike *non-basic* knowledge-how, is a much more difficult issue than has been acknowledged.

Keywords Epistemology · Knowledge-how · Defeasibility · Basic knowledge

Contemporary epistemology is by and large fallibilist; it is widely agreed that what was once knowledge can be lost in light of new information. In such cases, this new information is said to “defeat” one’s prior knowledge.

Some have suggested that defeat functions differently for different kinds of knowledge; in other words, our best account of the defeasibility knowledge-that may not shed light on the defeasibility of knowledge in general. Carter and Navarro (2017), to take a recent example, have argued that the defeasibility of knowledge-how merits an entirely separate treatment. Because they call for separate treatments of the defeasibility of knowledge-that and knowledge-how, call such philosophers “separatists.”

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1 Defeat as the rational loss of knowledge

1.1 Knowledge-that

When discussing familiar cases of knowledge-that defeat, all parties should agree that defeat is the *rational loss* of knowledge, rather than simply the *loss* of knowledge.¹ To bring out this distinction, compare the following trio of vignettes:

SMOKE 1: Tia wakes up and sees smoke out the window of her Tucson home. She comes to believe that there's a fire on Mount Lemmon. Shortly thereafter, Tia learns that industrial-grade Hollywood smoke machines have gone haywire en route to Los Angeles, resulting in a massive amount of smoke in the air around Tucson. In light of this information, Tia no longer believes that there's a fire on Mount Lemmon.

SMOKE 2: Tig wakes up and sees smoke out the window of her Tucson home. She comes to believe that there's a fire on Mount Lemmon. Shortly thereafter, Tig becomes so fearful and anxious when reflecting on the idea that Mount Lemmon is on fire that she convinces herself it cannot be true. After this process concludes, Tig no longer believes that there's a fire on Mount Lemmon.

SMOKE 3: Tim wakes up and sees smoke out the window of his Tucson home. He comes to believe that there's a fire on Mount Lemmon. Shortly thereafter, Tim falls and hits his head at *just* the right angle and with *just* the right force so as to forget about the smoke he saw moments earlier. Dazed and confused, Tim no longer believes that there's a fire on Mount Lemmon.

Suppose that, despite the haywire smoke machines, there really was a fire on Mount Lemmon, and that Tia, Tig, and Tim were each seeing its smoke. It's plausible, in such a situation, that Tia, Tig, and Tim each *know that there's a fire on Mount Lemmon* when they look out the window. The important contrast between **SMOKE 1–SMOKE 3** is simply with how each protagonist loses that knowledge; Tia's loss of knowledge is *rational*, while Tig's and Tim's losses of knowledge are not. There are, of course, differences between Tig and Tim: Tig's loss of knowledge is *irrational*, and Tim's

¹ I mean to use 'rational' in a way that is consistent with, say, non-evidentialism or externalism. I certainly don't mean to use the phrase "rational loss of knowledge" so as to rule out views like Graham and Lyons (2021), who prefer to talk in terms of "warranted losses of knowledge."

loss of knowledge is *a-rational*, but these are simply two ways in which the loss of knowledge might be irrelevant to the phenomenon of defeat.

To say that Tia's loss of knowledge is rational, while Tig's and Tim's are not, is not to stack the deck for or against any particular theory of rationality. Whether one thinks that rationality consists in following one's evidence, forming beliefs reliably or accurately, manifesting epistemic virtue, and so on, there is a clear normative contrast between what happens with Tia (**SMOKE 1**) and what happens with Tig (**SMOKE 2**) and Tim (**SMOKE 3**).

While it may seem obvious to many readers that **SMOKE 2** and **SMOKE 3** are not instances of defeat, it is important to emphasize this distinction between rational, irrational, and a-rational losses of knowledge when considering less familiar or paradigmatic cases of defeat. Our best theory of defeat in general—one which characterizes knowledge-that as well as knowledge-how defeat—must not mistakenly lump together these various ways of losing knowledge all under one heading.

1.2 Intellectualism and anti-intellectualism

A recent paper by Carter and Navarro (2017) argues that intellectualists—those who maintain that *knowledge-how* is reducible to *knowledge-that*—have problems accounting for certain kinds of defeat, namely, *knowledge-how defeat*.

The idea behind their criticism is straightforward: if intellectualism is true, knowledge-how is just a kind of knowledge-that. Knowledge-that is defeasible; if knowledge-how is just a kind of knowledge-that, knowledge-how should also be defeasible, and in largely the same way.²

Let's briefly consider the contours of the debate between intellectualists and anti-intellectualists, which can be boiled down to the question: what is the relationship between knowing that something is true, and knowing how to do something?

Intellectualists say that both kinds of knowledge are propositional: my knowing that snow is white involves my having a propositional attitude, the content of which is "snow is white," and my knowing how to drive a snowmobile involves my having a propositional attitude, the content of which is "for some way W, W is a way to ride a snowmobile."³ In a slogan: intellectualists treat knowledge-how as a special kind of *de se* knowledge-that.⁴

Anti-intellectualists deny that knowledge-how is a special kind of *de se* knowledge-that, but the resulting space of positions is somewhat heterogenous. On the one hand,

² This is an instance of a much more general challenge—or family of challenges—to intellectualism according to which the epistemic properties of knowledge-that and knowledge-how seem to diverge, contrary to the reductive ambitions of intellectualism. Here, I focus on the question of whether and to what extent knowledge-how is defeasible, but others have focused on, for instance, whether knowledge-how is subject to the same sorts of anti-luck conditions as knowledge-that (Cath 2011, 2015, 2020; Pavese 2021), and whether knowledge-how is necessarily belief-entailing (Brogaard 2011).

³ See, e.g., Stanley (2011), Stanley and Williamson (2001), Pavese (2017, 2018, 2020, 2021), Brogaard (2009, 2011), Cath (2015), and Waights Hickman (2019).

⁴ See, e.g., Pavese (2015), Stanley (2011). There are idiosyncratic but nevertheless interesting intellectualist positions, like Bengson and Moffett's (2011), that claim instead that knowledge-how is grounded in but irreducible to (this special kind of) *de se* knowledge-that.

there are “strong” or “radical” anti-intellectualists that think knowledge—that is ultimately reducible to or grounded in knowledge-how, skill, or ability. For instance, some think that an agent’s knowledge that p is ultimately grounded in her ability to accurately represent p ,⁵ reducible to her ability to act or believe for the reason that p ,⁶ and so on.

The “weak” or “moderate” anti-intellectualists think that knowledge—that and knowledge-how are irreducibly distinct. The simplest way to cash out the distinction is to say that knowledge—that is propositional, while knowledge-how is dispositional.⁷ The paper will primarily be concerned with weak anti-intellectualism (hereafter: just “anti-intellectualism”).⁸

To get an example on the page: suppose that Juan knows how to ride a bike. This involves him knowing how to pedal, how to turn, and generally how to “keep the rubber side down” (avoid crashing). According to intellectualism, Juan’s knowing how to ride a bike consists in his knowing a range of propositions of the form: w is a way to pedal, w^* is a way to turn, etc. These propositional knowledge states might give rise to various dispositions that guide his behavior, but the intellectualist thinks that those dispositions are merely downstream markers of Juan’s underlying propositional knowledge state(s).

According to anti-intellectualism, Juan’s knowing how to ride a bike consists in Juan possessing a certain range of abilities (or dispositions): the ability to lean right when initiating a left turn, for instance, or to raise his left leg when his right leg applies force downward, etc. Juan’s abilities are such that, when put in the right conditions, reliably enough result in Juan successfully riding his bike; this connection to success is what qualifies them as *knowledge*. The anti-intellectualist grants that these abilities may, for a sufficiently self-aware agent, give rise to certain propositional knowledge states (for instance, the knowledge that w^* is a way to turn), but those propositional knowledge states themselves are merely downstream markers of some underlying abilities or dispositions.

1.3 Motivations for Carter and Navarro’s anti-intellectualism

To my mind, Carter and Navarro are eager to disprove an idea from Stanley (2011), according to which “if knowing-how is a species of knowing-that, the properties of knowing-that should be properties of knowing-how,” which they take to imply that all

⁵ Hetherington (2011, 2017), Hartland-Swann (1956).

⁶ Hyman (1999).

⁷ See Ryle (1946, 1949), Carter and Navarro (2017), Dickie (2012). It’s worth noting that the kind of abilities most anti-intellectualists (including Ryle) will take to be of central interest correspond to multi-track dispositions rather than single-track ones.

⁸ There are a number of prominent views that escape this rough taxonomy or force refinements of it. Cath’s (2020) recent paper offers a dispositionalist account of propositional attitudes like belief, and Habgood-Coote (2019) combines features of moderate intellectualism with those of moderate anti-intellectualism, blurring normal battle lines within the debate. Others, like Bengson and Moffett (2011), reject *reductive* intellectualism, though still accept that knowledge-how is ultimately grounded in knowledge-that. Because my primary aim is not motivate a particular view within this taxonomy, so I won’t spend more time on the subtleties of classification.

the epistemological properties of knowing-that carry over to knowing-how (quoted in Carter and Navarro, 665). To cast doubt on Stanley's idea, they work through three cases, the first of which is quoted in full below:

GRENADE FACTORY: Ana and María work in a grenade factory during the Spanish Civil War. They are thoroughly instructed when hired, with examples and practical explanations. By controlled trial and error, they learn their job, and both continue working at the factory for years, believing they are making working grenades. However, one day each comes to realize that the other is making grenades in an importantly different way, and they identify the origin of the problem: as it turns out, the instructions were ambiguous and allowed for two different interpretations. The instructors were not aware of this, and there is nobody above them now who may say who is right. Given that the grenades may only be used in battle, which is very far away, neither Ana nor María knows whose grenades actually work, and so there is no way to find out who is making them the right way. As a matter of fact, Ana got the instructions right (she produces grenades in way *w*, which is the correct way); she is very successful in producing grenades that later work perfectly. It is María who got something wrong (she makes them in *w'*, the possible interpretation of the instructions that the instructors did not foresee), and her grenades are always duds. Unaware of this, both have reasonable doubts they did not have before, but they have to keep on working. (666)

What should we make of GRENADE FACTORY? (Keep in mind that their dialectical force is supposed to come from the idea that *whatever goes for knowledge-that goes for knowledge-how*.)

According to Carter and Navarro, this case is one in which the agents possess defeaters for their knowledge *that w is a way to make grenades*. More specifically, in GRENADE FACTORY, Ana has what is sometimes called a “psychological undercutting defeater”—she sees María making grenades differently, comes to believe that she herself learned how to make them incorrectly, and this undercuts her knowledge *that w is a way to make grenades*. But this situation is akin to self-doubt, which, as Carter and Navarro point out, is perfectly compatible with her still knowing how to make grenades!

In a variation of the GRENADE FACTORY case, GRENADE FACTORY*, Ana has a “normative undercutting defeater”—whether or not she comes to believe that she learned how to make grenades incorrectly, we imagine that she has a great deal of evidence indicating that she learned how to make grenades incorrectly. It would thus be irrational (or, short of that, “epistemically irresponsible”) for Ana to continue to believe *that w is a way to make grenades* (7). But this situation is, again, perfectly compatible with Ana's still knowing how to make grenades; she just shouldn't *believe* that she does, on pain of irrationality or a breach of epistemic responsibility.

Finally, in a third variation, GRENADE FACTORY**, the workers in the factory receive misleading evidence in the form of an announcement that they produced dud grenades. This supplies them with a “normative rebutting defeater” that directly attacks their beliefs *that w is a way to make grenades*. (They would also be supplied with a “psychological rebutting defeater” if they came to believe the announcement). But

here, as in the first two cases, Ana still knows how to make grenades; she's just not in a position to know that she knows how to make grenades, given her misleading evidence.

These cases are supposed to be problematic for intellectualism in the following respect. If intellectualism is true, then knowledge-how is a kind of knowledge-that. If Stanley's comment about intellectualism is correct, then whatever goes for knowledge-that goes for knowledge-how. But GRENADE FACTORY through GRENADE FACTORY** are constructed so as to have a certain structure: suppose that an agent *knows how to make grenades*, and that this consists in their *knowing that w is a way to make grenades*. The agent then receives information that defeats their knowledge that *w is a way to make grenades without affecting the fact that they know how to make grenades*. But, if intellectualism is true and whatever goes for knowledge-that goes for knowledge-how, each protagonist should lose knowledge-how! Since that is implausible, Carter and Navarro conclude that intellectualism is false; at best, intellectualism could be a theory of "the kind of knowledge-that which we may have *about our own know-how*" (669).

In the next section, we'll look at some cases that, according to Carter and Navarro, exemplify knowledge-how defeat. But before that, it is worth noting some points at which a neutral reader might depart from Carter and Navarro's explanation of the cases. For instance, it seems plausible that a committed intellectualist could appeal to *some* differences between characteristic features of knowledge-how and characteristic features of knowledge-that to explain why the agents in GRENADE FACTORY through GRENADE FACTORY** retain knowledge-how. This would involve a departure from the letter of Stanley's comment quoted above, but that does not seem like a particularly unpleasant bullet to bite.

If, as some intellectualists have variously claimed, knowledge-how is just knowledge-that under a *practical mode of presentation*⁹; or that knowledge-how is just knowledge-that *in a practical way*,¹⁰ or that knowledge-how is just knowledge-that *available for the purposes of initiating and sustaining action*,¹¹ then perhaps Carter and Navarro's examples don't encroach on intellectualism so much as prompt intellectualists to say more about "practical modes of presentation" or what it is for knowledge to be "available for the purposes of initiating and sustaining action" but not for other purposes, and so on. Thus, a neutral reader might see GRENADE FACTORY through GRENADE FACTORY** as speaking against a *flat-footed* intellectualism, one which acknowledges *no important differences* between knowing-that and knowing-how, rather than against intellectualism *tout court*.

Now, I don't mean to enter into exegesis about Stanley's (or Williamson's) considered opinion. And, admittedly, it's tempting to make a lot of this comment from Stanley, as Carter and Navarro do. But I want to emphasize, and I will go on to argue, that there is a lot of conceptual space between a version of intellectualism which holds that, since knowing-how is just knowing-that, *all* the familiar epistemological considerations of knowing-that carry over straightforwardly to knowing-how, and a

⁹ Stanley and Williamson (2001), Stanley (2011), Pavese (2015).

¹⁰ Cath (2015, 2020) and Waights Hickman (2019).

¹¹ Elga and Rayo (forthcoming) might be taken to hold such a view.

version which holds that we should be able to, somehow or another, “recover” many of the familiar epistemological properties of knowing-that when we look at knowing-how.¹² It is compatible with a more moderate intellectualism of the latter variety that not every interesting epistemological property of knowledge-that carries over to knowledge-how; in such cases, moderate intellectualists owe us a story about *why* they don’t carry over. My aim here is not to motivate a particular form of intellectualism, so I will not spend much time on that story. But it would be good to say something, even if only briefly.

Consider what Cath (2020) has called “practical attitude intellectualism,” the view according to which “S knows how to Φ iff for some way w , (i) S knows that w is a way for S to Φ , and (ii) in possessing this knowledge, S believes, in a practical way, that w is a way for S to Φ ” (6). Whether Carter and Navarro’s examples are problematic for practical attitude intellectualism depends on what it is to *believe (or know) in a practical way*. For Cath, knowing in a practical way (that w is a way for oneself to Φ) is a matter of having a certain dispositional profile: to be “disposed to Φ in way w when one intends to Φ in that way”, to be “disposed to make adjustments when faced with obstacles when Φ -ing in way w , and being disposed to perform the next phase of an action of Φ -ing in way w at the right time”, and so on (ibid). In principle, this kind of intellectualist could argue that even if the misleading evidence Ana receives defeats her knowledge that w is a way to make grenades in some important, non-practical way, her ceasing to know it *in that way* leaves most (perhaps all) of the dispositions associated with her believing in a practical way intact. Thus, intellectualists of this stripe do not have to say that Ana ceases to know how to make grenades just because her knowledge that w is a way to make grenades is defeated in some way or another.¹³

To be clear, I’m not endorsing practical attitude intellectualism, nor am I offering an argument on behalf of that view for why knowing in a practical way is insulated from defeat, if and when it is. I am only gesturing at a way to block Carter and Navarro’s inference from the intuition that, in GRENADE FACTORY through GRENADE FACTORY**, the agents in question retain knowledge of how to make working grenades, to the conclusion that intellectualism is simply false, or, at best, a theory of a different phenomenon. The idea that *intellectualism* has a special problem of accounting for knowledge-how defeat is a red herring.

2 Losing knowledge-how

Set aside my plea, as modest as it is, on behalf of intellectualism to consider the putative range of cases of knowledge-how defeat. On Carter and Navarro’s proposal, what is distinctive of knowledge-how defeat is that “it is the *abilities* themselves

¹² Part of what makes Cath’s (2015, 2020) intellectualism “revisionary” (his terminology) is that it eschews an anti-luck condition on knowledge-how while embracing it for knowledge-that. If one form of revisionary intellectualism distinguishes knowledge-how from knowledge-that by how much luck (and of what kind) each form of knowledge tolerates, another form of revisionary intellectualism might distinguish knowledge-how from knowledge-that by whether and when each form of knowledge tolerates misleading evidence.

¹³ One might also argue that non-reductive intellectualists like Bengson and Moffett (2011) can avoid Carter and Navarro’s problem. But because Carter and Navarro are focusing on problems for reductive intellectualism, I’ll leave discussion of the more idiosyncratic, non-reductive views aside.

which are undermined when knowledge-how is defeated, rather than beliefs about those abilities, beliefs about ways for one to do something, or beliefs about anything else. In short: what we want to suggest is that it is not a propositional state of the agent, but the ability itself, the power, the capacity, that is compromised when her knowledge-how is defeated” (671). They hope to use this framework to explain a wide range of knowledge-how defeat left unexplained by intellectualism. Here are two such cases:

CHEF-A: A highly skilled chef becomes afflicted with arthritis, after which she can no longer prepare her signature dish of *Anginares a la Polita*. (671)

CHEF-B: A highly skilled chef becomes afflicted with Alzheimer’s disease, after which she can no longer prepare her signature dish of *Anginares a la Polita*. (671)

Carter and Navarro explore a contrast between CHEF-A and CHEF-B. The important difference, according to them, is that, in CHEF-A, her having arthritis does *not* remove her underlying ability, even though it does rob her of adequate “opportunity” to exercise that ability. The opportunity would be restored were she to take strong enough arthritis medication, or if the cold weather aggravating her arthritis were to recede, etc. In contrast, having Alzheimer’s disease removes the underlying abilities one would need an opportunity to exercise. Insofar as CHEF-B *loses her ability to prepare her signature dish*, Alzheimer’s seems to function as a *defeater* for her knowledge, or so claim Carter and Navarro. In short, they think of CHEF-B but not CHEF-A as a case in which the chef’s knowledge of how to prepare her signature dish is *defeated*, since Alzheimer’s would prevent her from manifesting her ability even if she were in otherwise favorable conditions.

They appeal to Sosa’s SSS account of competence, “SSS” standing for the “skill, shape, and situation” constitutive of competence. In Sosa’s view, “competences are a special case of dispositions, that in which the host is disposed to succeed when he tries, or that in which the host seats a relevant skill, and is in the proper shape and situation, such that he tries in close enough worlds, and in the close enough worlds where he tries, he reliably enough succeeds” (Sosa 2015, p. 23). Adopting this framework as a working model of knowledge-how, Carter and Navarro suggest that one’s ability to X is “genuinely defeated only when, even if the agent were in the relevant situation, in the right shape, and in her own seat, she would not be able anymore to [X] reliably enough if she tried” (674). This gives rise to three points at which one’s knowledge-how can be defeated: by way of affecting the agent’s situation, shape, or seat. Before I present any critical remarks, I’ll work through some of their examples of “situation defeaters,” “shape defeaters,” and “seat defeaters.”

2.1 Situation defeaters

Here are two examples of situation defeaters (674-5):

OBSOLETE BROKER: Laura has been an excellent stock broker for twenty years, during the 70s and 80s. She helped her clients earn a lot of money in those years, as did she herself. Unfortunately for Laura, the rise of new technologies has

caused the job to become very different from what it was. Everything relies now on complex computerized systems that Laura is unable to master. Overwhelmed by the mechanisms of high-tech trading, she finds herself unable to competently assess financial risk. Progressively, Laura's once satisfied clients abandon her, complaining that she does not know anymore how to make money for them.

OBSOLETE GYMNAST: Ebba is a very successful gymnast who has won several Olympic medals on the vaulting table. In particular, her speciality is the extremely complex and demanding stunt E, which she has mastered to perfection. One day, the Olympic committee issued a surprise announcement. Due to evidence that certain aspects of gymnasts technique on the vaulting table have been linked to spinal cord trauma, these aspects have now been banned in competition. They were, however, crucial in Ebba's exceptional performance of E. With the new rules in play, Ebba is significantly limited in what she can accomplish on the vaulting table, and in particular, she does not know anymore how to finish stunt E correctly (i.e., in accordance with the rules).

Carter and Navarro invite us to think about these cases as ones in which changes in situation—the use of new technology by stock brokers, or the adoption of new gymnastics rules—leave the agents without the disposition to reliably succeed (in making money, in correctly finishing the stunt) when they try. These agents thereby lack an ability that they once had (before the situation changed), and the ability was the thing that underwrote or constituted their knowledge-how.

2.2 Shape defeaters

Here is one example of a shape defeaters (677-8):

WRECKED GYMNAST: Viggo is a very promising gymnast, who has always idolised the legendary Viktor, the most famous gymnast in their country's history. Viktor learned about Viggo's exceptional potential from their common trainer, and became jealous. After watching Viggo perform stunt V, Viktor makes a devastating—though completely unfair—criticism of Viggo's performance. Seriously affected by his idol's verdict, Viggo becomes very nervous whenever he thinks that Victor is watching him, which he expects to happen just in any important competition. If he suspects Victor is watching him when he is about to perform stunt V, he confuses, and can't remember, the steps required to execute the stung [sic]; consequently, he miserably fails, or (at least) performs very poorly.

Carter and Navarro invite us to think of these cases as ones in which changes in the agent's shape—Viggo's anxiety—leave him without the disposition to reliably succeed (in executing stunt V) when he tries. Viggo thereby lacks an ability he once had (before his shape changed), and as a result lacks the relevant knowledge-how.

2.3 Seat defeaters

Finally, here are two cases of seat defeaters (678-9):

ABSORBED BASEMAN: [...] Knoblauch was . . . voted best infielder of the year, but one day, rather than simply fielding a hit and throwing the ball to first base, it seems he stepped back and took up a ‘free, distanced orientation’ towards the ball and how he was throwing it—the mechanics of it, as he put it. After that, he couldn’t recover his former absorption and often—though not always—threw the ball to first base erratically—once into the face of a spectator (Dreyfus 2007, 354).

SYNAESTHESIA ARTIST: A patient, ‘Mr. I.’ was a successful artist, with a specialty in painting. Mr. I’s artistic skills were enhanced through his intense synaesthesia, which allowed him to experience musical notes as colours. At the age of 65, he was in an automobile accident after which he acquired cerebral achromatopsia, or colourblindness, and with the colourblindness, he lost his synaesthesia and his abilities to paint.

Here, Carter and Navarro invite readers to think that Knoblauch and Mr. I have fundamentally changed; it is their “seat,” something fundamental about the kind of agents they are, that has shifted. For instance, Knoblauch’s yips prevent him from reliably throwing a pitch down the center of the plate when he tries, and Mr. I’s car accident prevents him from reliably succeeding in painting what he tries to paint, given his prior reliance on synesthetic feedback in painting. These agents thereby lack an ability they once had (before their seat changed), and as a result lack the relevant knowledge-how.

3 Obstacles to knowledge

Let’s briefly take stock. We began by considering GRENADE FACTORY and some variations on it, which Carter and Navarro presented as problem cases for intellectualism. They concluded that, at best, intellectualism should be an account of the attitudes we might host *about our knowledge-how*, rather than an account of knowledge-how per se. They went on to offer a lot of cases of putative knowledge-how defeat, situated within Sosa’s SSS account of competence. The idea was that, since an agent’s competence is constituted by her situation, shape, and seat, there would correspond three categories of knowledge-how defeat: situation defeaters, shape defeaters, and seat defeaters. Situation defeaters were supposed to be brought out by OBSOLETE BROKER and OBSOLETE GYMNAST, shape defeaters were supposed to be brought out by WRECKED GYMNAST, and seat defeaters were supposed to be brought out by ABSORBED BASEMAN and SYNAESTHESIA ARTIST.

The problem with Carter and Navarro’s account, as I see it, is that *none of the motivating cases* presented in Sects. 2.1, 2.2, and 2.3 are genuine cases of defeat. These are, to be sure, cases in which knowledge-how is lost, but they are merely that. What Carter and Navarro have shown is that one might lose knowledge-how when one’s situation, shape, or seat changes. But crucially, defeat is not merely the loss of

knowledge, it is the *rational loss of knowledge* (recall the adage: “knowing less by knowing more”). None of these cases, at least as Carter and Navarro present them, are rational losses of knowledge; they are *mere* losses of knowledge, akin to losing knowledge by being hit very hard on the head, forgetting, or anxiously (but irrationally) doubting.¹⁴

Let’s return to the contrast between CHEF-A and CHEF-B. Neither arthritis nor Alzheimer’s disease are even candidate defeaters for knowing how to prepare *Anginares a la Polita*. Arthritis, to the extent that it is relevant to knowledge-how, is much more plausibly a mask of the first chef’s underlying ability to prepare *Anginares a la Polita*. In contrast, Alzheimer’s disease does not mask but entirely removes the second chef’s underlying ability. But these are simply two a-rational means of losing knowledge, not rational responses to new information which might result in the loss of knowledge. Again, a loss of knowledge by defeat, whether knowledge-that or knowledge-how, is a *rational* loss of knowledge.

These remarks apply generally to all the cases Carter and Navarro marshal out in favor of their proposed view. Merely changing situation, shape, or seat is not enough to have a case of defeat, since those changes in situation, shape, or seat might constitute *mere* losses of knowledge-how, rather than rational losses of knowledge-how.

As was hinted above, part of the problem seems to derive from running together defeating conditions, on the one hand, with other, non-normative conditions, on the other. In particular, the problem seems to stem from running together defeating conditions with masking and finking conditions. Masks are conditions that prevent (either to some degree, or entirely) an agent from successfully manifesting her abilities, or an object from manifesting some underlying disposition, in situations that would otherwise be conducive to their manifestation. For instance, bubble-wrap masks the fragility of my glassware; in conditions that would normally result in the glassware breaking (I drop it on the tile floor), the glass does not break, thanks to bubble-wrap. And perhaps, returning to WRECKED GYMNAST, anxiety has a similar effect on Viggo’s abilities. His anxiety about Victor’s criticism has the effect that, in conditions that would normally result in Viggo’s performing stunt V, Viggo fails to perform stunt V. But

¹⁴ It might be suggested that Carter and Navarro are still offering a theory of *psychological* defeaters for knowledge-how, even if they are not offering a theory of normative defeaters. According to Lackey (2014), psychological defeaters are psychological states of an agent—however formed—that do their “defeating” by introducing intolerable incoherence, whereas normative defeaters are determined by the agent’s counter-evidence. There are at least two problems with this suggestion on behalf of Carter and Navarro. The first is that it is a live question as to whether psychological defeaters are more than defeaters *in name only*. See Graham and Lyons (2021) for an extended argument against Lackey’s distinction and in favor of a broadly Pollockian framework. It won’t help Carter and Navarro to read them as providing a theory of psychological defeaters if there aren’t any. The second is that, even if we are more concessive than Graham and Lyons to Lackey’s framework, we still might see psychological defeaters as somewhat derivative; in particular, one might reasonably claim that psychological defeaters only defeat when and because the agent’s attitude is doxastically justified, whereas normative defeaters defeat when and because the agent is propositionally justified in believing them, whether or not she in fact does. Thus, the relationship between psychological and normative defeaters may, on this third conception, simply reflect the doxastic and propositional justification distinction. This will likewise be of no help to Carter and Navarro since psychological defeaters would only defeat if properly based on a normative defeater. On this sort of view, much of what Lackey calls “psychological defeat” is simply incoherence precluding one’s knowing that P by rendering one unable to satisfy the belief condition on knowledge. Thanks to an anonymous reviewer for prompting me to say more on this point and to Juan Comesaña for discussion.

there is no more rationality to Viggo's anxiety interfering with his performing stunt V than there is to bubble-wrap interfering with the fragility of my glassware. That is why Viggo's case, if it is correctly described as a loss of ability at all, is not a case of defeat; it is merely a case in which Viggo's broader psychological features interfere with or prevent the manifestation of his ability to perform stunt V in situations that would otherwise be conducive to success.

Finks, in contrast with masks, do more than *prevent* the manifestation of an underlying ability; finks remove an underlying ability entirely, albeit in a special way. For instance, Martin (1994) and Lewis (1997) discuss cases in which the stimulus conditions of a disposition might themselves remove the disposition. Suppose that a dead wire is disposed not to conduct electricity when touched with a conductor. But we have an electro-fink, a device that recognizes when a wire is about to be touched by a conductor, and which makes the wire live. The electro-fink makes the *dead* wire, which is disposed not to conduct electricity when touched by a conductor, such that if it were touched by a conductor, it would conduct electricity!

Of course, these examples were originally wheeled out to cast doubt about a certain simple, conditional-style analysis of dispositions (endorsed variously in Ryle (1949), Quine (1960), and many of their followers). Whether the simple conditional-style analysis of dispositions is plausible is beside the point here. Instead, I mean to point out that the kinds of examples that Carter and Navarro treat as cases of knowledge-how defeat are much more plausibly cases of mere masks, finks, and other non-rational means of losing knowledge-how.

Where does this leave Carter and Navarro's project? Even if I'm correct that their advertised cases of knowledge-how defeat are really cases of something else, that something else is independently interesting. Let me briefly gesture at what I mean.

I think that Carter and Navarro are offering the beginnings of a systematic account of *obstacles to knowledge*. Obstacles to knowledge, intuitively, are things that robustly (though perhaps temporarily) prevent knowledge from being acquired, retained, or manifested.¹⁵ Here, I don't have anything like a full account of what makes something an obstacle to knowledge, but I hope that a working characterization will emerge in the discussion below.

Defeaters are a special kind of obstacle to knowledge. Recall that, when Tia (from **SMOKE 1**) looks out the window of her Tucson home, she comes to know that there is a fire on Mount Lemmon. But when she learns that industrial-grade Hollywood smoke machines have gone haywire en route to Los Angeles, she comes to know something that functions as an obstacle to her retaining knowledge that there is a fire on Mount Lemmon. This obstacle to knowledge is special in that it is itself something Tia knows (or is anyway in a position to know), and Tia's prior knowledge is defeated precisely because it is rationally lost in the face of this obstacle to knowledge.

But not all obstacles to knowledge are defeaters, even those obstacles that are broadly psychological. Viggo's anxiety is a broadly psychological obstacle to his manifesting knowledge of how to perform stunt V. And Tig's fearfulness (from **SMOKE 2**) about the prospects of a fire on Mount Lemmon serve as an obstacle to her knowing

¹⁵ See, e.g., Lewis (2020) for an outline of obstacles to abilities; here, I'm extending his notion of 'obstacles' in a way that I think is friendly to the spirit of his proposal.

that there's fire. This suggests—and Carter and Navarro's account can capture—that emotional interference can often serve as an obstacle to knowledge, whether it is knowledge-how or knowledge-that, by affecting an agent's "shape."

The chef's Alzheimer's disease, Mr. I's loss of synesthetic feedback after his accident, and Tim's (SMOKE 3) firm blow to the head with just the right force at just the right angle so as to render him momentarily dazed and confused are all obstacles to knowledge. Again, this suggests—and Carter and Navarro's account can capture—that conditions that diminish or change an agent's underlying "seat," even if only temporarily or partially, can serve as obstacles to knowledge, whether it is knowledge-how or knowledge-that.¹⁶

What I hope has emerged from this discussion is that, even if Carter and Navarro are not homing in on genuine knowledge-how defeat, we might charitably re-interpret their account as supplying an answer to a more general and independently interesting question regarding what sorts of things count as obstacles to knowledge. This is a more general question because defeaters are a special kind of obstacle, and it is independently interesting because it invites us to think systematically about the sorts of things that robustly prevent the acquisition, retention, and manifestation of knowledge-that and knowledge-how.¹⁷

4 A new perspective on knowledge-how defeat

4.1 Disjunctivism

So far, this paper has been largely critical. I suggested, in Sect. 1, that intellectualists do not have to accept Carter and Navarro's reading of GRENADE FACTORY through GRENADE FACTORY**. In particular, we can agree that those cases threaten an agent's knowledge *about* her own knowledge-how, perhaps among other things, but we need not accept that as particularly problematic for intellectualists. And in Sect. 3, I argued that Carter and Navarro's motivating examples of situation, shape, and seat defeaters were non-rational losses of knowledge-how and so not cases of knowledge-how defeat.

Where does this leave the idea that knowledge-how is defeasible? In this section, I'll argue for a disjunctive view according to which *non-basic* knowledge-how is defeasible in a familiar way, while *basic* knowledge-how is indefeasible. The appeal

¹⁶ What Carter and Navarro call "shape defeaters" and "seat defeaters" for knowledge-how look, when held up alongside similar instances of losses of knowledge-that, much more like *excusing conditions* and *exempting conditions*, respectively, rather than *justifying ones*. See, e.g., Kearl (2022) for further discussion.

¹⁷ Might an anti-intellectualist respond that we shouldn't expect knowledge-how defeat to be explained in terms of rationality? The issue is subtle. Perhaps the anti-intellectualist could argue that it is only an *incidental* feature of knowledge-that defeat that such cases are rational losses of knowledge, and that this incidental feature should not constrain our theorizing about knowledge-how defeat. The problem with this suggestion is, I think, twofold. First, the anti-intellectualist who likes this response owes us an explanation for why, for instance, Viggo's loss of knowledge (WRECKED GYNMAST) is a case of knowledge-how defeat while Tig's loss of knowledge (SMOKE 2) is not a case of knowledge-that, even though both cases involve losses of knowledge by way of emotional interference. And second, some losses of knowledge-how *are* rational, as I argue in Sect. 4, and so are good candidates for being cases of knowledge-how defeat. Thanks to J. Adam Carter for prompting me to think more about this criticism.

of this brand of disjunctivism is threefold: it is theoretically simple, it is (relatively) neutral with respect to the intellectualism debate, and, rather than seeing this limited indefeasibility claim as a last-ditch appeal to the Cartesianism of yesteryear, it is a natural consequence of thinking about the relationship between agency and the abilities that constitute it.

The motivation for my disjunctive view starts with a bit of action theory. Consider: some things we know how to do only in virtue of knowing how and when to do other things. For instance, I know how to tie my shoes only in virtue of knowing how to grab small things (like shoelaces) between my fingers, knowing how to perform certain movement sequences with my fingers and wrists (looping one shoelace over the other), and so on.

Not everything we know how to do is like that; some things one knows how to do not in virtue of knowing how to do anything else. Perhaps knowing how to grab small things between my fingers, knowing how to raise my arms above my head, or knowing how to hold my breath are examples of this kind of knowledge-how, but the content of the list is less important than what the list itself exemplifies: some bits of knowledge-how are *basic*. Others, like knowing how to tie one's shoes, are *non-basic*, so-called because they are "built out of" basic knowledge-how. Very often, non-basic knowledge-how is acquired by a combination of factors: one has some basic knowledge-how, and one gets information about ways to deploy this basic knowledge-how in various circumstances. The combination of basic knowledge-how and new information about how and when to deploy it begets non-basic knowledge-how.

According to this way of thinking about knowledge-how, the defeasibility of *non-basic* knowledge-how is fairly cheap and unmysterious: when an agent's non-basic knowledge-how is partly constituted by their background information (about what to do when), that non-basic knowledge-how can be defeated by *defeating the background information partly constituting it*. Thus, part of the defeasibility of knowledge-how simply piggybacks on our best account of the defeasibility of knowledge-that, since some of our knowledge-how is partly constituted by knowledge-that (perhaps only ever "in the background"). For instance, if my (non-basic) knowledge of how to prepare *Anginares a la Polita* depends not only on my knowing how to chop and sauté onions, but also on my belief that my cookbook is accurate (as an amateur chef, I sometimes need to reference the recipe), my knowledge-how can be defeated by defeating this latter belief.

If non-basic knowledge-how is defeasible in this cheap and unmysterious way, it might be initially puzzling as to why basic knowledge-how is any different. Doesn't this just amount to special pleading? On the contrary, *everyone* should accept that basic knowledge-how is indefeasible.¹⁸ Take an extreme case: some of what we basically know how to do makes us the kinds of things we are. Call this "constitutive basic know-how." For instance, there is no course by which one could rationally lose knowledge of how to make simple inductive inferences; an epistemic agent's capacities for simple inductive inferences are not built up piecemeal out of bits of knowledge that the future

¹⁸ Below, I discuss a way to qualify this suggestion in light of Pavese (2021).

resembles the past (for instance).¹⁹ Rather, it is those and related capacities that make an agent an epistemic agent; knowing how to perform simple inductive inferences is partly constitutive of epistemic agency. It follows, by our assumption that defeat is the rational loss of knowledge, that there are some things that epistemic agents know how to do that cannot be defeated.

My suggestion is that one's basic knowledge of how to perform simple inductive inferences is indefeasible, but unobjectionably so; its indefeasibility is simply a reflection of the fact that this knowledge plays a constitutive role in one's epistemic agency, one which precludes it from being *rationaly* lost, although it may be masked, finked, or otherwise non-rationally diminished.

Still, the justification for thinking that basic knowledge-how is indefeasible cannot be entirely captured by pointing to special explanatory role of *constitutive* basic knowledge-how, since not all basic knowledge-how is constitutive. For instance, my knowing how grab small things between my fingers or to raise my arm above my head do not obviously stand to my practical agency as my knowing how to perform simple inductive inferences stands to my epistemic agency. I could, for instance, lose the ability to control my arms (through paralysis, say) without ceasing to be a practical agent.

Even if knowing how to raise my arm above my head isn't constitutive of my practical agency, it is nevertheless a direct expression of the powers that are. My intentional arm-raising are intentional *precisely because* they are non-deviantly caused by my intending to raise my arm. For those inclined to use the language of "control", my practical agency is partly constituted by my intentions controlling my behavior. And the knowledge-how manifested in basic actions is special precisely because it exhibits this kind of control without being mediated by other actions. That is, basic actions exhibit this "intention-level control" *directly*.

Why does this bear on the question of whether basic knowledge-how is defeasible? The answer is that, if basic knowledge-how were defeasible, such knowledge-how couldn't play the ineliminable role it does in our action explanations, especially those that are somehow "defective." Consider the case of Susie, whose arm was recently paralyzed for a medical procedure.²⁰ As she is leaving the doctor's office, she is informed that the paralysis should subside after four hours. At home, she sits anxiously, often checking her watch, which indicates that only 90 min have passed. Susie firmly believes that she is presently unable to raise her arm, and this seems rational in light of the information she received at the doctor's office. On a whim, Susie thinks to herself, *what harm is there in trying?* She proceeds to raise her arm.

If we are *at all* inclined to say that Susie's raising her arm is something she does intentionally, then Susie's basic knowledge of how to raise her arm is not held hostage to the mountain of evidence that she can't.²¹ We should readily admit that Susie

¹⁹ Perhaps, as Carter and Navarro suggest, one's knowledge *about* how to infer can be defeated in this way, but this would only be a problem for the flat-footed intellectualism rejected in Sect. 1.

²⁰ This case is due to Setiya (2008). See also Setiya (2009, 2012). See Paul (2009) and Pavese (2021) for discussion.

²¹ Many authors accept the general claim that if S intentionally X's, S knows how to X. See, e.g., Ryle (1949), Stanley and Williamson (2001), Hawley (2003), Stanley (2011), Setiya (2012), Bengson and Moffett (2011), Pavese (2018, 2020, 2021), Cath (2015). Setiya (2008) offers a qualified version of this claim according to

is rather lucky; her paralysis wears off much earlier than she should have expected, given the information from the doctor's office. Her judgments are guided by this expert information, and this explains why she believes that she cannot raise her arm, even as she begins to raise it. Nevertheless, this is not the sort of luck that makes us think Susie merely unintentionally raised her arm, nor is it the sort of luck that makes us think Susie didn't *act* at all.²²

This suggests that Susie's evidence, along with her dispositions to proportion her beliefs to her evidence, play a rather superficial role in the drama of her raising her arm (by intending to do so). The cost of denying this is embracing the idea that Susie can rationally unlearn the ability to raise her arm (by intending to do so), merely on her doctor's say-so. But surely the building blocks of practical agency are not defeasible *by testimony!*²³

How does this bear on GRENADE FACTORY, which was supposed to be a difficult case for intellectualism? Ana's knowledge of how to make grenades is surely non-basic, involving a great deal of background beliefs about what to do when. And because it's non-basic, her knowledge-how can be defeated in the familiar way, namely by defeating those background beliefs. Thus, even if we concede that Ana rationally loses non-basic knowledge of how to make grenades, she retains basic knowledge of how to employ certain means intended to bring about a desired end. For instance, knowing how to perform certain delicate or precise hand movements (in putting together grenade parts), together with the intention and desire to make working grenades (even if these are not accompanied by a state of knowledge-that), may be enough for the agent to, in some sense, retain knowledge of how to make grenades.

To the extent, then, that we are inclined to say that the agents in GRENADE FACTORY (and its variants) retain knowledge of how to make grenades, it is because they retain knowledge of how to do something *else*, which, together with their intention to make working grenades, enables them to make working grenades. This may explain our urge to attribute (non-basic) knowledge of how to make grenades to the protagonists, when in fact they have only (basic) knowledge of how to do something else, something that in fact counts as a way to make grenades.

Footnote 21 continued

which, if S intentionally X's, S either knows how to X or S is doing X by doing other, more basic things he knows how to do. My proposal is consistent with both the general claim and Setiya's qualified version.

²² Pavese (2021) seems to disagree. She thinks that, if Susie's belief that she can raise her arm by so intending is defeated, Susie's arm-raising is not intentional. But to secure this verdict, Pavese distinguishes between two concepts of basic action, "basic action plus" and "basic action minus". Basic action minus is whatever Susie does when she raises her arm, absent the relevant belief. But basic action plus is specially suited to "enter into plans that are available to the subject at a time", and only such actions are "plausible candidates for being basic actions for a subject at that time" (S1605). This criterion strikes me as an *ideal* of practical agency, not a condition on it. But in light of the various forms of moderate intellectualism discussed earlier in this essay, one might question the assumption that Setiya and Pavese share, namely that Susie *in no way believes* that she can raise her arm if she so intends; perhaps she retains that belief *in a practical way*, in light of her retaining a certain dispositional profile. Either way, this is not the place to enter into an extended debate over a belief condition on basic action, although I have written on this elsewhere [e.g. Kearl (forthcoming)].

²³ For those inclined to deny that Susie intentionally raised her arm and insist instead that she merely intentionally *tried* to raise her arm, the same sort of argument can be run for Susie's basic knowledge of how to try.

4.2 Pavese's intellectualism

Now, I am not the first to propose some kind of indefeasibility constraint on know-how, nor am I the first to offer a competing perspective on GRENADE FACTORY, so it will help to flesh out my position by way of contrast.

In "Knowledge, Action, and Defeasibility," Carlotta Pavese offers an intellectualist reply to Carter and Navarro that is predicated on the distinction between *de dicto* and *de re* knowledge-how. The idea is that, in GRENADE FACTORY, Ana's misleading evidence really does defeat her *de dicto* knowledge of how to make grenades, but her *de re* knowledge of how to make grenades "is not at all defeated" (195). If all that is correct, then GRENADE FACTORY-style cases present no special problem for intellectualism.

Why think that this distinction between *de dicto* and *de re* know-how can shoulder this dialectical weight? According to Pavese, these two kinds of know-how "go along with different dispositions in behavior" (ibid). *De dicto* knowledge of how to make grenades is the kind of knowledge that, according to Pavese, "one needs to be able to make grenades *on demand* (to be in a situation such that, if asked to make grenades, Ana would do so). Ana does not have that ability: were she asked, after receiving [the relevant misleading evidence], to make grenades, she would now be at a loss" (194). We might build on this idea: *de dicto* knowledge of how to make grenades seems especially important for, among other things, monitoring one's own progress in attempting to make grenades, for instructing others on how to make grenades, for assessing whether the next year's grenade manuals offer more efficient means to make grenades than last year's, and so on. Contrary to Carter and Navarro's claim that "the doubts [Ana] acquires do not seem to imperil [her ability to make grenades] *in any sense*," Pavese articulates a clear sense in which Ana's ability is rationally imperiled, or at least diminished (8, emphasis added).

In contrast, *de re* knowledge of how to make grenades is a matter of knowing how to perform some task *t* that happens to be the task of making grenades, whether or not one knows *t* as such. Pavese thinks that Ana "still knows how to execute whatever task she was executing before [she received the relevant misleading evidence]" (195). And this idea has some initial plausibility: even if Ana is no longer in a position to manifest *de dicto* knowledge of how to make grenades (say, by making them on demand), she is still in a position to manifest *de re* knowledge of how to make *that thing by that method*, whatever that thing turns out to do.

In short, Pavese claims that Ana loses knowledge of how to make grenades in one sense (*de dicto*) but not another (*de re*). While the distinction between *de dicto* and *de re* knowledge-how is important and overlooked, I worry that the appeal of Pavese's reply turns on an ambiguity between two superficially similar theses:

BASIC DE RE: Ana retains *basic de re* knowledge of how to do something that is in fact a way to make grenades.

NONBASIC DE RE: Ana retains *non-basic de re* knowledge of how to make grenades.

Taken at face-value, at least, Pavese seems to endorse NONBASIC *DE RE*.²⁴ If NONBASIC *DE RE* is true, then Ana *fully retains* her *de re* knowledge-how in the face of her misleading evidence. But to fully retain one's *de re* knowledge-how, at least on Pavese's intellectualist view, is to fully retain the *de re* knowledge-that underwriting it.

Now, Pavese might not take herself to commit to any general claim about the (in)defeasibility of knowledge-how, only to a particular claim about a particular case. Whether or not that's correct, I am here interested in exploring the more general claim, namely what might special about *de re* knowledge-that such that Ana, in her particular case, enjoys a kind of immunity from defeat. Here, one gets the sense that Ana fully retains her *de re* knowledge-how because the *de re* knowledge-that constituting it is infeasible, not because she would need more (or different sorts of) evidence to defeat it; how else could the relevant knowledge-that be "not *at all* defeated" (195, emphasis added)?²⁵

But NONBASIC *DE RE* is much too strong, since *de re* knowledge-that isn't infeasible in general. Suppose that, as I walk into the bar and see Michael having a beer, I thereby come to know both (*de dicto*) that Michael is having a beer at the bar, and, by implication, (*de re*) that *that guy* is having a beer at the bar. *Only my de dicto* knowledge is threatened if, as I walk up to greet Michael, I receive misleading evidence that Michael won't be joining us; I'm told he's at a conference out of state. But *both my de dicto and de re* knowledge are threatened if, as I walk up to greet Michael, I receive misleading evidence that this bar is unlike any I've been to before; I'm told it's full of manikins holding beers to generate a sense of popularity to passers-by. Thus, it simply isn't plausible to think that, in general, when one's *de dicto* knowledge is defeated, there always remains an infeasible, *de re* shadow of it.

This example casts doubt on NONBASIC *DE RE* in the following respect. The idea that one's *de re* knowledge-how could be "not at all defeated" even if one's *de dicto* knowledge-how is entirely defeated is not generally true. That's because, if one's *de re* knowledge-how is non-basic, it is partly constituted by *de re* knowledge-that about what to do when, which can itself be defeated.

²⁴ Pavese has, in other work, defended an intellectualist account of the gradability of know-how; this opens up the possibility that a better thing for Pavese to say about GRENADE FACTORY is that Ana *partially* retains her *de re* non-basic knowledge-how (Pavese 2017). So even if we have to disagree with the letter of Pavese's reply in this instance, there is certainly a nearby reasonable view in its spirit: although the details matter, perhaps one could argue that Ana retains partial non-basic *de re* knowledge of how to make grenades, in virtue of the fact that she retains all the basic *de re* knowledge-how and some partial shadow of her prior *de re* knowledge that. This downgraded epistemic situation may still suffice for her to intentionally make grenades, to the extent we are willing to say that she does. And this preserves a version of the principle according to which being able to intentionally X requires knowing how to X, albeit partially knowing how to X (Compare Setiya 2008).

²⁵ If Pavese is interested only in responding to the *specific* purported counterexample laid out by Carter and Navarro, not in making a general claim about the (in)defeasibility of *de re* knowledge-how, one might think that, insofar as she identifies a plausible explanation that blocks Carter and Navarro's verdict *in Ana's case*, her reply to them succeeds in the terms she sets out for herself. My interest is not to foist a problem upon Pavese; as the discussion in the remainder of this section will show, our positions are—to my mind, anyway—orthogonal but mutually supportive. See also footnote 26. Thanks to an anonymous referee for prompting me to clarify my critical ambitions in discussing Pavese's views.

Return to Ana. Ana's grenade-making knowledge-how is plausibly non-basic; her *de re* knowledge of how to make grenades is partly constituted by *de re* knowledge-that about what to do when. Thus, her non-basic *de re* knowledge of how to make grenades can be defeated by defeating the *de re* knowledge-that partly constituting it. Suppose, for the sake of being concrete, that (perhaps a variant of) Ana's case is one in which her non-basic *de re* knowledge of how to make grenades is *de re* knowledge that *first one pushes this button, next one pulls this lever, and third one twists that gizmo thusly*. Ana's non-basic *de re* knowledge-how can be defeated by rationally undermining her belief that, for instance, the gizmo-twisting comes after the button-pushing and lever-pulling. She can, of course, still knowledgeably perform each of the more basic actions featuring in the list, even if her non-basic knowledge-that, sensitive to the order in which to perform them, is rationally lost.

To sum up this section: although there is something importantly correct about Pavese's suggestion (or rather a natural generalization borne out of that suggestion), namely that some kinds of knowledge-how are indefeasible, the idea that *de re* knowledge-how is indefeasible (full stop) is a thesis worth avoiding. Whether or not Pavese was attracted to that view or only to a weaker claim about Ana's particular circumstances is neither here nor there; we can incorporate her more general insight about the *de dicto/de re* knowledge-how distinction while still insisting that we must be careful to disambiguate between two theses with two very different upshots, BASIC *DE RE* and NONBASIC *DE RE*, corresponding to two kinds of *de re* knowledge-how at issue in Ana's case. Of the two, only BASIC *DE RE* is plausible, since only basic *de re* knowledge-how is plausibly indefeasible.²⁶ And this is precisely what one should expect given the disjunctivism motivated in Sect. 4.1.

4.3 Disjunctivism and the larger debate

I said earlier that this disjunctive view had three attractive features: it is theoretically simple, it is neutral with respect to the intellectualism debate, and it is a natural consequence of thinking about the relationship between agency and the abilities that constitute it. So far, I have only discussed the third of these. Let me briefly gesture at the first two.

One attractive (if ironic) aspect of this disjunctivism is that it gives rise to its own kind of theoretical unity: for instance, there can be undercutting and rebutting defeaters of normative and psychological varieties for knowledge-how, so long as non-basic knowledge-how is at issue. Recall the case in which my knowledge of how to prepare *Anginares a la Polita* is defeated because (i) that knowledge-how depends on my belief that my cookbook is accurate, and (ii) I am rationally convinced that it's not the case that my cookbook is accurate. Of course, (ii) might be the result of my being presented with a rebutting defeater (the angry food critic exclaims, "This is borscht, you amateur!") or an undercutting one (online reviews criticize my cookbook

²⁶ This isn't put forward as an objection to Pavese's view so much as a restriction on it in light of the positive proposal developed in the previous (and next) section(s). Our two proposals are orthogonal—the *de dicto/de re* distinction is, after all, independent of the basic/non-basic distinction. In fact, I think the best version of her view is one that embraces mine too, but this is just to advertise the relative theoretical neutrality of my disjunctivism within the intellectualism debate (more on that below).

for containing many erroneous recipe names and ingredients). Either way, I am no longer in a position to take the accuracy of my cookbook for granted, and given my prior reliance on the cookbook, this situation seems to be one in which my knowledge of how to prepare *Anginares a la Polita* is (at least partially) defeated. This theoretical unity suggests, although it certainly does not *entail*, that we do not need two theories of defeasibility, one for knowledge-that and another for knowledge-how, since there appears to be only one phenomenon going on in each case.

Another attractive feature of this disjunctivism is that it does not, all on its own, force us to take sides on the intellectualism debate. Whatever one's final stance on the relationship between knowledge-how and -that, one can accept that (i) basic knowledge-how is indefeasible, (ii) non-basic knowledge-how involves or contains knowledge-that, and (iii) knowledge-that is generally defeasible. While this conception of defeasibility does rest on basic knowledge-how having special epistemological features that knowledge-that lacks, it doesn't rest on some or another metaphysical picture of the ultimate nature of knowledge-how and its relationship to knowledge-that.

It would, however, be misleading to claim that my view has *no bearing whatsoever* on the intellectualism debate. After all, my view implies that there is an important difference between the defeasibility of basic knowledge-*that* and basic knowledge-*how*. In particular, since basic knowledge-that is widely (though not universally) considered to be defeasible,²⁷ an intellectualist cannot explain indefeasibility of basic knowledge-how in terms of the indefeasibility of basic knowledge-that. Whereas anti-intellectualists can point to the fundamentally different natures of basic knowledge-that and basic knowledge-how, the intellectualists owe us a special explanation of why basic knowledge-how is indefeasible when basic knowledge-that is generally defeasible (whether *de re* or *de dicto*).

Of course, what makes the sophisticated or revisionary forms of intellectualism defended by Pavese, Cath, and others *sophisticated* or *revisionary* is that they trade in precisely those kinds of special explanations, so I do not consider this to be anything like a damning objection to intellectualism; rather, it might help to re-orient how we think about what is at stake in the intellectualism debate, namely, whether and how the most fundamental manifestations of agency can be adequately represented solely in terms of knowledge-that.

5 Conclusion

This paper had three, related aims. The first two concerned Carter and Navarro's account of knowledge-how defeat: whether and to what extent intellectualism writ large had a problem accommodating GRENADE FACTORY and its variants, and whether and to what extent Carter and Navarro offered examples of knowledge-how defeat. If Carter and Navarro are right, we should embrace what I earlier called "separatism," the thesis that we need separate theories of defeasibility for knowledge-that and knowledge-how; I argued that they aren't and we shouldn't. I suggested that only

²⁷ This is an important point made in the recent literature on "exogenous defeaters" (Comesaña 2020; Weisberg 2009, 2015).

flat-footed intellectualists have a problem with GRENADE FACTORY, and that Carter and Navarro's examples were not cases of defeat because they didn't involve the rational loss of knowledge. Instead, it is more charitable to interpret their proposal as dealing with the more general category of *obstacles to knowledge*, of which defeaters are a special case. The third aim was to say something positive about knowledge-how defeat. To that end, I critically discussed Pavese's recent reply to Carter and Navarro on behalf of intellectualism and motivated a novel, disjunctive view that stands opposed to separatism.

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Declarations

Conflict of interest Not applicable.

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