Intentional Action, Know-How, and Skill Proximity

Abstract

In the contemporary debate on knowledge-how, many authors endorse the "Simple Knowledge View," according to which, if an agent ϕ-s intentionally, she knows how to ϕ. The simple knowledge view has a hard time explaining intentional actions performed in novel circumstances; these are cases in which the agent, prior to acting, lacks knowledge of how to do what they nevertheless do intentionally. We should reject the Simple Knowledge View and accept something more cautious, what I dub the "Skill Proximity View." According to it, if an agent ϕ-s intentionally, she knows how to ψ, where ϕ is – in a sense that will be developed and defended – "sufficiently skill-proximal" to ψ. This not-so-simple knowledge view has a number of attractive features: it offers an account of learning how*, or how knowledge-how is extended, and it strikes a plausible balance between explaining the control characteristic of intentional action, on the one hand, and accommodating the luck that intentional action tolerates, on the other.*

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Few theses in action theory have more adherents than the Simple Knowledge View,[1] hereafter referred to as "SIMPLE":

SIMPLE: If S ϕ-s intentionally, S knows how to ϕ.[2]

But SIMPLE, in all its elegance and parsimony, is false. The aim of this paper is to present a counterexample to it (Sec. 1); and then motivate a more cautious and theoretically preferable position, the Skill Proximity View, hereafter referred to as "SKILL" (Secs. 2-3):

SKILL: If S ϕ-s intentionally, S knows how to ψ, where ϕ is sufficiently skill-proximal to ψ.

SKILL is more cautious than SIMPLE in the sense that it is a strictly weaker position; as we will spell out below, when an agent knows how to ψ, ψ-ing will always be sufficiently skill-proximal to itself. And SKILL is theoretically preferable to SIMPLE for three related reasons (Secs. 4-5). First, SKILL avoids the counterexamples to SIMPLE. Second, SKILL is much better positioned to explain the phenomenon of *learning how*. Third, SKILL brings into relief certain nuances in the relationship between the various forms of control characteristic of intentional action and the kind and degree of luck such forms of control can tolerate.

1. SIMPLE

1.1. Intentional action requires know-how: some motivations

The motivations for the SIMPLE primarily concern a theoretical need to rule out cases of accidental or too-lucky success as intentional.

Hawley (2003: p.27) offers the following three widely cited cases taken to support this rough but intuitive idea:

Avalanche: Sally is caught out in an avalanche. Having no idea of how to escape them, but mistaking the incoming snow for water, she begins to make swimming motions, frantically paddling her way to safety.

[1] So-called because of the resemblance it bears to the "Simple View" of intentional action attacked by Bratman (1984, 1987), according to which ϕ-ing intentionally requires an intention to ϕ. See also di Nucci (2009, 2010), McCann (2010, 2011), and Amaya (2018) for extended discussion.

[2] A partial list of proponents includes Ryle (1949); Stanley & Williamson (2001); Hawley (2003); Hornsby (2004, 2011); Stanley (2011); Setiya (2012); Pavese (2018, 2020, 2021a, 2022); Carter and Navarro (2017), Shepherd and Carter (2021), and Beddor and Pavese (2022). Some authors (e.g., Hawley 2003; Setiya 2012) endorse a biconditional version of this principle (regarding what S is able to do intentionally, rather than what S does intentionally), but I will set aside that stronger idea here.

Annoyance: Susie likes to annoy Joe, and Susie believes that she annoys him by smoking. Joe is annoyed not by Susie's smoking, but instead by Susie's tapping her cigarette box, which she happens to do whenever she smokes.

Cake: Shelley, having no clue how to make a cake under normal circumstances, attempts to make one by putting together everything that happens to be in her kitchen cabinets. Luckily for her, her cabinets contain precisely the right ingredients (and in the right proportions) for her to succeed.

In each case, there is both a failure to act intentionally and a lack of knowledge-how that explains it.[3] In **avalanche**, Sally survives by sheer dumb luck, mistaking snow for water and exercising knowledge of how to swim. Her failure to escape intentionally is explained by her lack of knowledge of how to escape avalanches; her knowledge of how to swim seems more or less irrelevant.[4] In **annoyance**, since Susie misconstrues the situation, she plausibly doesn't know how to annoy Joe, and this explains her failure to do so intentionally.[5] And in **cake**, Shelley's circumstances conspire so as to guarantee her success through haphazard methods, ones that would fail in almost any other kitchen.[6] That Shelley doesn't know how to bake a cake is evident once we consider the culinary monstrosities that would spawn from counterfactual kitchens with different ingredients.

These verdicts are more or less anchor points for many theorists of action, and so is SIMPLE, which plausibly explains them. Again, according to this principle:

SIMPLE: If S ϕ-s intentionally, S knows how to ϕ.

Because Sally, Susie, and Shelley lack knowledge of how to do what they succeed in doing, their successes are not attributable to them as intentional actions. They are, in a sense that SIMPLE purports to capture, too lucky.

Being able to adequately characterize and explain the incongruity between the control that practical agents exhibit over their behavior so as to render it intentional, on

[3] It's worth noting that these examples also lend intuitive support, independently, to the idea that ability possession is insufficient for know-how – a point that is generally accepted by both intellectualists as well as anti-intellectualists about know-how. For discussion, see Pavese (2021b, §5).

[4] Bengson and Moffett (2012) explain Sally's failure to act intentionally in terms of her having an inadequate grasp of the fact that swimming motions are a way to escape avalanches.

[5] A separate kind of diagnosis of **cake** might proceed as follows: even if ability attributions do not generate referentially opaque contexts (see, e.g., Williams 2008), intentionality attributions do generate such contexts.

[6] For a structurally similar case to Hawley's (2003) **cake** case, see Sosa's (1997, 418) tomato ripening case.

the one hand, and the luck with which they succeed, on the other, is among the chief *desiderata* of any plausible theory of action. Luck is, in some intuitive sense, control-*diminishing*. Consider:

> **Darts**: Brimming with the confidence of a few beers, Tim signs up to play his first ever game of darts, fully intending to hit the bullseye on every throw. On his first turn he looks at the bullseye, makes some arm movements that, for all he knows, resemble the arm movements of genuine dart players, and sends the dart on a wing and a prayer. Lo and Behold! Tim hits the bullseye. As it turns out, he goes on to whiff every subsequent throw and loses badly.

Darts is not a case in which Tim intentionally hits the bullseye; it is not even a case in which Tim intentionally hits the dart board![7] There is, to be sure, more agency to Tim's hitting the bullseye in **darts** than there would be if Tim had only hit the bullseye after sneezing while noting a dart's heft. SIMPLE explains why: Tim doesn't know how to do what he succeeds in doing. The best we can say, perhaps, is that he intentionally *tried* – something he might not have done had Tim believed (bizarrely) the feat to have been impossible.[8] But there remains a gap between intentionally trying[9] to hit the bullseye and intentionally hitting the bullseye.[10]

To fill in the details a bit, we can even suppose that Tim, despite never having played darts himself, had watched a few games played on television, so he was not totally in the dark as to what a proper throw looked like; he could at least spot good technique as well as any living-room coach. So we needn't think that Tim was entirely self-deceived (at least not in the way that Sally was) about how one generally goes about hitting bullseyes.

Notice that SIMPLE explains **darts** even with these added details; on the plausible assumption that one doesn't know how to do something just because one has an ability to recognize it done well,[11] Tim's failure to hit the bullseye intentionally is

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[7] Note that this assessment does not concern whether Tim was able to form the relevant intention here, only whether Tim counts as hitting the bullseye (or dart board) intentionally.

[8] For discussion on this point, see Buckwalter et al. (2021).

[9] Compare: one could intentionally try to win the lottery and win the lottery without intentionally winning the lottery.

[10] For discussion on the significance of this distinction, see, e.g., Anscombe (1963, 52-3) and Paul (2009, 3-4).

[11] On this point, see, e.g., Bengson and Moffett's (2011, Ch. 1) distinction between knowing how to do something and knowing how *one* does something; in the case of skiing, for instance, a skier might know how to do a tricky jump in a way that the coach doesn't even if the coach knows how *one* does the tricky jump, and is able to teach it.

plausibly explained in terms of his lack of knowledge of how to hit it.[12] Even though he is not, as was suggested above, totally in the dark as to what a proper throw looked like, whatever knowledge he possessed in that regard was not available for the purposes of guiding his throwing, and certainly not after a few beers.

Against this backdrop, moreover, Tim's inability to hit a bullseye intentionally seems fairly robust. Even if Tim's track record were better than it actually was, with Mr. Magoo-like luck, say, and Magoo-Tim were to have hit one bullseye after another, each of his successes would have been unintentional. And the explanation is no different: despite his string of dumb luck, Magoo-Tim lacks knowledge of how to hit a bullseye, and so, according to SIMPLE, doesn't hit the bullseye intentionally.

SIMPLE offers a perfectly adequate explanation of **darts**, along with cases like **avalanche**, **annoyance**, and **cake**, ones where the agent is more or less skillless and clueless.

1.2. Problems for SIMPLE

As we move further away from cases of skilllessness, cluelessness, and beginner's luck – while at the same time *remaining* within the space of scenarios in which an agent doesn't (yet) know how to do what they succeed in doing – SIMPLE begins generating the wrong kinds of predictions.

Suppose Steve is a master of making and flying paper airplanes. Possessing such mastery involves a number of layers of skill. One involves picking the right piece of paper—considerations of thickness and weight are paramount. Another involves delicate folding—Steve did origami in his youth, which prepared him well. A third and obvious layer involves actually flying the plane: within a fairly robust range of conditions, Steve can, holding his paper airplane at about cheek-height, elbow aimed in the direction he wishes to throw, extend his elbow and snap his wrist with just the right force and timing so as to send the plane flying towards his target, typically a stop sign (assuming no errant gusts of wind). Now consider how Steve fares at darts:

> **Darts-2:** Steve hears about and decides to join the lively weekly darts tournament at *Che's Lounge*, and having never played a game of darts before in his life, Steve signs up to play, fully intending to hit the bullseye on this and every subsequent throw. On his first turn he looks at the bullseye, makes some arm movements that, for all he knows, resemble the arm movements of genuine dart players, and sends the dart on a wing and a prayer. Lo and Behold! Steve hits the bullseye.

[12] Though see §4.1 for an anticipated challenge of this assessment on behalf of proponents of SIMPLE, and our reply to it.

Steve's case (**darts-2**) is similar to Tim's (**darts**) in that neither Steve nor Tim know how to hit the bullseye; each is a total beginner *when it comes to darts*. This is so, to be clear, even though Steve (though not Tim) has a background that includes repeatedly extending his arm and contracting muscles in a dart-throwing-like way. But since neither knows how to hit a bullseye, SIMPLE generates the result that both Tim and Steve fail to hit the bullseye intentionally.[13]

And yet Steve's case differs from Tim's in that Steve – given his airplane throwing background – does *something* intentionally, when throwing the dart, that Tim does not. For instance, we can imagine that, when Steve takes aim at the bullseye with his dart, he is aware that he might be in a position to recruit certain of his other skills to meet this novel objective. Insofar as he does recruit those other skills with some awareness that they might suit his present needs, Steve's throw exhibits a certain kind of control that Tim's does not. That Steve's throw exhibits a certain kind of control that Tim's does not prompts us to think that there is something he succeeds in doing *on purpose* that Tim only succeeds in doing *by accident*.

As we've told the story, Steve hits the bullseye intentionally, but it might be told in other ways. One might, for instance, think that only maestros of darts hit bullseyes intentionally; at best Steve intentionally *hits the dart board*. We won't here comment on the plausibility of this more demanding standard. Instead, we can make the same point with a slightly weaker claim: If Steve fails to the bullseye intentionally, he nevertheless hits the *dart board* intentionally, whereas for Tim, *both* of the corresponding actions are unintentional because too lucky. But changing our focus to a slightly less demanding action does not change the fact that neither Steve nor Tim antecedently knows how to perform it; neither knows how to hit a dart board, and so SIMPLE implausibly predicts that neither Steve nor Tim intentionally hit the dart board. These agents are, as far as SIMPLE is concerned, actionally on a par.

Because SIMPLE incorrectly predicts that Steve's hitting the dart board is, like Tim's, unintentional, SIMPLE is false. What has gone wrong?

Even though neither Steve nor Tim know how to do what they succeed in doing, what Steve has and Tim lacks is knowledge of how to do *something else*, and in particular something else that is (in a sense to be specified in Sec. 3) not too distant from throwing a dart in a way that tends towards bullseyes. It's because Steve knows how to do something else suitably related to what he succeeds in doing that his success counts as intentional. And it's precisely this sort of skill-proximal relationship to which SIMPLE is insensitive.

A word of caution: we are not making the untenable claim that intentional action and knowledge-how stand in *no interesting relationship*. Far from it; SIMPLE is not

[13] Recall that even if Tim or Steve had Mr. Magoo-style luck, a lack of know-how would preclude their successes from being creditable to them in the right way to render them intentional.

totally lost at sea, and to think so would be to snub one's nose at the recent history of the theory of action.[14] Instead, we claim only that intentional action and knowledge-how stand in a more nuanced relationship than SIMPLE captures, and so more nuanced than has been appreciated thus far.

Let us now turn to introducing and fleshing out SKILL.

2. SKILL

Perhaps the most that can be said for SIMPLE is that it characterizes *central* or *well-ordered* cases of intentional action. We might even go so far as to say that SIMPLE explains intentional action *par excellence*. But even that way of putting things risks being misleading, since there is nothing *obviously* deviant or defective about the kinds of intentional actions that fall outside its scope, such as **darts-2**. And the problem magnifies when we consider that cases like **darts-2** are hardly idiosyncratic; after all, our practical needs oftentimes will require us to call upon our dispositions, acquired and refined for other purposes, when attempting to meet novel objectives. In fact, we might even expect that across the spectrum of novel objectives (i.e., playing darts for the first time, rollerblading for the first time), the *default* strategy we have at our disposal will be to simply call on (like Steve) what by our lights *looks* familiar and reliable as a way to do something similar.

In this section, we'll explain and motivate SKILL, a weaker and more plausible thesis than SIMPLE.

Recall that SKILL says:

> *SKILL*: If S ϕ-s intentionally, S knows how to ψ, where ϕ is sufficiently skill-proximal to ψ.

There is a technical point that needs to be addressed in order to motivate this thesis. The variables ϕ and ψ range over act-types, which we can think of as bodily movements under descriptions. Particular tokens of these act types are the token bodily movements that, when caused in the right way, serve as candidates for actions (of that type) that agent performs intentionally.

One such act-type might be that of *hailing a cab*; in New York, various token movements of walking to the curb and raising one's arm above one's head fall under the description, 'hailing a cab.' Raising one's arm above one's head from the curb is a *means by which* one hails a cab in New York. Employing these means involves tokening certain movements that, when non-deviantly related to one's actually hailing a cab, render the latter intentional. Tokens of walking to the curb and giving passing cars a thumbs down are not; giving passing cars a thumbs down from the curb is not a means

[14] See, e.g., Hawley 2003; Pavese 2022, Hornsby 2004, 2011; Setiya 2012.

by which one hails a cab in New York. If one hailed a cab by tokening these other movements, one's success would be merely accidental.[15]

Another such act-type might be *bowling a strike*. In a bowling alley, various token movements of approaching the lane while holding a bowling ball, swinging one's arm behind one's body and then forward in a pendulum motion, and releasing the ball down the lane while planting the opposite foot fall under the description, 'bowling a strike.' These movements are the means by which, when non-deviantly causally related to one's actually knocking down all the pins – as they are in paradigmatic cases – one intentionally bowls a strike.

For any given act-type, there will typically be many interesting generalizations over token movements by which to intentionally bring it about. Call these "ways" or "means" of tokening an act-type. And for simplicity, we'll proceed as though there are certain *canonical* means of tokening an act-type, unless context requires we drop that simplifying assumption; as such, we may assume an agent skilled in ϕ-ing manifests this skill by employing *the canonical means of ϕ-ing*.

With these clarifications in place, consider that SKILL appeals to a notion of similarity between act-types, that of being "sufficiently skill-proximal." This invites two related questions: What determines skill proximity between act-types? And what makes two act-types *sufficiently* skill-proximal? Most of our time will be spent presenting an answer to the first and more general question; once that has been accomplished, the second question becomes much more tractable.

2.1. Skill proximity

Let's start with the first and more general question. Skill proximity is a kind of modal proximity – a proximity determined by facts about what *would* (tend to) bring about what. In particular, skill proximity between two act-types is a matter of the extent to which the particular movements in a token of one act-type (the means by which one succeeds in tokening an act of that type) would tend to bring about actions of another type in contexts over which the latter is defined. The rough idea, spelled out further below, is that the act-types are skill proximal *to the extent that the means of bringing about one will reliably serve to bring about the other*.

It is easy to see the potential payoff of exploiting this idea: if intentionally ϕ-ing involves knowing how to do *something sufficiently skill proximal to ϕ-ing*, then we

[15] Not, of course, if one who used one's downturned thumb had made a prearranged agreement with the particular cab drivers in the area, that that unusual means when used by that particular individual, would be honoured as a valid way to hail a taxi. But the point here remains: barring such special arrangements, were one to make such a motion in New York, and hailed a taxi by doing so, then even if one hoped those motions would yield a taxi – and indeed even if the taxi driver believed (incorrectly) there was some sort of prearrangement whereby such an unorthodox method would be used – the success would remain accidental in a way preclusive of hailing the taxi intentionally.

immediately have the resources to explain why Steve did something intentional in **darts-2** when he hit the bullseye (or more weakly: the dart board.) And the usefulness of these resources generalizes over to other cases like **darts-2**, where we – as so often – appropriate the means we do in intentionally performing novel action types.

But to really see the payoffs from SKILL, skill proximity conditions need to be precisified; and since skill proximity is (as we're relying on it) under the scope of know-how in SKILL, the conditions for sufficient skill proximity will need to be understood *in relation to* know-how. Some authors, given their substantive commitments about the nature of knowledge-how, will prefer to capture sufficient skill proximity in terms friendly to their own theories. Below, we'll discuss two general strategies for explaining skill proximity; the first will likely appeal to "intellectualists," those who think that skill is a special kind of *de se* propositional knowledge.[16] The second will likely appeal to anti-intellectualists, who tend to be broadly Rylean in their commitments; skills are (perhaps multi-track) dispositions or abilities. We won't argue that one way of going is preferable to the other; the aim is not to enter into the intellectualism debate. Rather, we hope that this menu of compatible explanations will make SKILL all the more appealing.

Here is one broadly intellectualist way to understand skill proximity. The proximity of two skills is determined by the proximity of *means by which* those skills are manifested. The basic idea is that an agent's skill in one act type consists in her possessing certain *knowledge of means*, the employment of which constitute (or cause[17]) an agent's tokening an action of that type. One skill is then proximal to another to the extent that the knowledge of means employed in one can be *co-opted* for the other. Thus, In slogan form: for the intellectualist, skill proximity is grounded in means-knowledge co-option or 'transferability' across action types.

Recall Steve, who knows how to accurately throw paper airplanes. When Steve throws accurately, he does so by employing means that are in some sense general, and in some sense particular: in general, the means include knowing how to position his body relative to his target, the angle at which to hold the plane, the force with which he extends his arm and snaps his wrist in the direction of the target. These will, within certain margins, remain fixed on any throw. But Steve also knows how to accommodate and modify his technique on any given throw in the face of particular environmental conditions like humidity and wind. We can say that Steve knows how to accurately throw paper airplanes *by means of M*, where 'M' stands in for this long list of movement-patterns Steve employs when he manifests this knowledge-how.

[16] For a related intellectualist-friendly account of skill, on which skill is a disposition to form relevant knowledge-wh, see Stanley and Williamson (2017).

[17] See Kelley (2022) for an argument that we can act non-basically through causal rather than constitutive means.

In front of a dart board, not all of Steve's knowledge of the means of throwing paper airplanes accurately carries over in the sense that not all of M is *relevant*. He does not, for instance, have to worry about how the weather might affect his throw when he's inside a bar; nor does he have to worry about what he knows about what makes paper airplanes *glide* at certain angles; this knowledge is inapplicable to heavier (non-gliding) darts. But a proper subset of Steve's knowledge of means *will* carry over, namely, the subset involving how to position his body relative to his target, or how to modulate the force of extending his arm and snapping his wrist, etc. Call this "M*." Employing M* will fairly reliably give rise to Steve's hitting the bullseye; when Steve positions himself, takes aim, and throws by employing means that are conducive to hitting bullseyes, and he hits them because of the means he employed, his success is non-accidentally related to something he knows how to do. And this is why throwing paper airplanes accurately and hitting bullseyes are fairly skill-proximal act-types; M* is a means of reliably hitting bullseyes, and it is a subset of M, the means Steve employs when accurately throwing paper airplanes.

In contrast, Tim lacks knowledge of M; he is, after all, knowledgeable about darts only to the extent that he knows a good throw when he sees one, but he is otherwise skilless. We can add that Tim lacks knowledge of M* too (Tim has never even heard of paper airplanes). So Tim enjoys no proximal skills he could carry over to the act type 'hitting the bullseye' so as to render his occasional success intentional.

To sharpen the (intellectualist-friendly) approach to skill proximity further, let's consider a further character, Nour, who is like Steve, but who always ends their paper-airplane throw with an additional kind of 'flourish' with the wrist, a movement that we can understand as just one additional movement beyond what Steve does (under the description of M) when throwing paper airplanes. Call Nour's means of throwing the paper airplane "M+," which simply includes all of Steve's means, M, plus the extra flourish. We can further characterize a proper subset of M+ (i.e., M+*) in terms of relevance (*vis-à-vis* darts): the means of throwing the airplane that would relevantly carry over to dart-throwing.[18] Since M+* will *not* include the Nour's flourish (irrelevant to darts) but everything else that features in M*, M+* and M* are coextensive. Would it follow (on our intellectualist-friendly gloss of SKILL) that, since M* and M+* are co-extensive, Nour intentionally hits the bullseye (when employing M+*) provided Steve intentionally hits the bullseye (when employing M*)?

An affirmative answer here will be problematic; this is apparent once we add two further details. First, (i) suppose that in all or most near-by worlds where Nour employs M+* when throwing the dart, they also employ the flourish; and (ii) that while M+* are means that would bring about hitting the dart board with a dart, the means consisting

[18] This will be a subset involving how to position the body relative to the target, or how to modulate the force of extending the arm and snapping the wrist, etc.

in {M+* + the flourish} are much less reliable. The flourish, suppose, often 'sabotages' the dart throw but not the airplane throw. When Nour uses {M+* + the flourish}, then, even when they succeed in hitting the bullseye using the means consisting in {M+* + the flourish}, their successful dart throw not only fails to manifest know-how (to hit the dart board), but further, Nour (employing means {M+* + the flourish}) fails to have hit the dart board intentionally.

The case of Nour suggests a tweak to the intellectualist account of skill proximity as it would feature in SKILL. Rather than to say that one skill is then proximal to another to the extent that the knowledge of means employed in one can be *co-opted* for the other, the intellectualist should say that one skill is then proximal to another to the extent that the knowledge of means employed in one can be *robustly co-opted* for the other; knowledge of means, A, can be robustly co-opted for knowledge of means B, just in case *not easily* would one co-opt one means for another only by also employing additional means the employment of which would, in conjunction with the co-opted means, issue in failure.

With this tweak in place, we can characterize SKILL, along intellectualist lines, as follows:

> $SKILL_{INTELLECTUALISM}$: If S ϕ-s intentionally, S knows how to ψ, where (i) ϕ is sufficiently skill-proximal to ψ; and (ii) ϕ and ψ are skill-proximal to the extent that S's knowledge of means M_{ϕ} employed in ϕ is *robustly co-optable* for S's knowledge of M_{ψ} employed in ψ.

$SKILL_{INTELLECTUALISM}$ distinguishes Steve as hitting the dart board intentionally from both Tim and Nour who don't. Even more, $SKILL_{INTELLECTUALISM}$ lines Nour up with Tim rather than Steve *without* any commitment to the idea that *anyone* who uses a (de facto dart-sabotaging) flourish in paper-airplane throwing would thereby fail to hit the dart board intentionally via co-optable means. Just suppose Nour* is like Nour with an important exception: whereas Nour uses the flourish in paper-airplanes (unlike Steve) and carries this flourish over to dart-throwing, Nour* knows that, given the difference in weight between the paper airplanes and the darts, it would be a mistake to employ means {M+* + the flourish} rather than just M+*. Since M+* was coextensive with M*, there is no barrier to Nour* counting as hitting the dartboard intentionally when employing means M+*.

Having laid out this broadly intellectualist account of skill proximity – as this would feature in SKILL – let's consider now how a broadly *anti-intellectualist* gloss of skill proximity might go. Start with the idea that an agent skilled in ϕ-ing possesses certain safe dispositions to successfully ϕ when she tries or intends to ϕ. Steve knows how to accurately throw paper airplanes insofar as he possesses certain canonical dispositions– call them "D"–to accurately throw paper airplanes when he tries or

intends to do so, and his accurate throws are attributable to him as intentional actions when and because they are manifestations of D. As in the intellectualist explanation above, not all of D will be relevant to Steve's hitting a bullseye with a dart, but some important subset of D, call it "D*," will; manifesting D* will be fairly conducive to hitting bullseyes.

We can see how then, for the anti-intellectualist, skill-proximity will be a matter of overlapping dispositions to succeed when one tries (as opposed to a matter of overlapping knowledge of means). And, as with the case of $SKILL_{INTELLECTUALISM}$, we don't want it to be the case that *mere* overlapping dispositions suffice for the kind of skill proximity that matters for acting intentionally, given that (as our case of Nour suggests) a set of dispositions might 'carry over' – viz., by being co-opted by an agent only by also importing over additional dispositions (from D) which (in conjunction with D*) are not success-conducive. Thus, as the 'robust' qualifier on co-optability is needed in $SKILL_{INTELLECTUALISM}$, the same will be the case for $SKILL_{ANTI\text{-}NTELLECTUALISM}$. Accordingly, and by parity of reasoning from $SKILL_{INTELLECTUALISM}$, we get:

> $SKILL_{ANTI\text{-}INTELLECTUALISM}$: If S ϕ-s intentionally, S knows how to ψ, where (i) ϕ is sufficiently skill-proximal to ψ; and (ii) ϕ and ψ are skill-proximal to the extent that S's safe ϕ-ing dispositions are *robustly co-optable* for S's safe ψ-ing dispositions.

Again, these two sketches of intellectualist and anti-intellectualist treatments of skill proximity are meant to highlight the overall neutrality and appeal of SKILL, not to make any substantive claims about SKILL's connection to the intellectualism debate.

2.2. Sufficiently skill-proximal

So far, we've suggested that skill proximity is a matter of the extent to which one's canonical knowledge of means (safe dispositions) employed in one skill can robustly "carry over" to or "overlap with" another so as to give rise to reliable success in a related activity. This puts us in a position to address the second question mentioned above: if overlapping knowledge of means (safe dispositions) makes for skill proximity, what metrics would then determine *sufficient* skill proximity?

Consider that the sorts of activities one is engaging in will determine just how reliably one has to succeed in order to count as intentional. Take, for example, recent work by Romy Jaster (2020), building on Manley and Wasserman (2008). Jaster argues that an agent has the ability to ϕ intentionally only if the agent ϕ's in a sufficiently high proportion of the relevant situations in which she intends to ϕ.[19] To be able to bake a

[19] Jaster's view of agent's abilities is doubly contextualist; context determines which situations are relevant *and* the weight that various relevant situations are given (see especially her Section 4.3).

loaf of bread, one must at least be able to do better than chance in the relevant intention-situations; if, say, 90% of my attempts resulted in a collapsed brick of dough, it would not be appropriate to say that I was able to do so intentionally; my successes would be merely accidental. Intuitively, the explanation of this fact is that I wouldn't count as knowing how.

In other sorts of activities, a sufficiently high proportion of the relevant intention-situations may be low in some absolute terms.[20] For instance, Steve Kerr, the record-holder for three-point percentage in the National Basketball Association, made 45.4% of his three-point shots over his career (Steph Curry, arguably the best current shooter, sits at a "mere" 42.77%). And outfielder Ty Cobb had the highest career batting average in Major League Baseball history at 36.6%. Knowing how to sink a three-pointer, or to hit a fastball, does not require success better than chance. In fact, success better than chance would be incredible.

Given that the activity-type sets some lower bounds on just how reliable one must be to count as knowing how,[21] one might think that the activity-type likewise sets a lower bound on how safely proximal skills must give rise to success in order for an agent to succeed intentionally. We can thus introduce the "relative safety" of one means, given another act type. If M_ψ is a means to ψ, the relative safety of M_ψ, given ϕ is determined by how often one succeeds in ϕ-ing by M_ψ-ing. In these terms, the relationship between M_ψ, given ψ, sets a plausible upper bound on relative safety; nothing is more skill proximal to ψ than ψ itself. (Note that, for this reason, SIMPLE comes out as the special, limiting case of SKILL.)

According to this proposal, the higher the relative safety of M_ψ, given ϕ, the more skill proximal ψ and ϕ will be. And the more skill proximal ψ and ϕ are, the more pressure there is to deem successful ϕ-ings that employ M_ψ intentional. We've gestured at one way to set a threshold that would determine sufficiency: the type of activity one is engaging in often supplies some lower bound of safety below which successes are too fortuitous to count as intentional, whether or not they employ proximal skills. It's possible that not all activities provide us with such clear-cut lower bounds, and so there may sometimes be a penumbra of indeterminacy around whether an agent brings to bear skills the relative safety of which ensures sufficient proximity.

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[20] For discussion on this point, see, e.g., Greco (2010, 60) and Carter, Jarvis, and Rubin (2015, 1065).

[21] The matter of just *how* a given activity type sets such bounds may depend on just how formalised the norms governing what counts as good performance (within that activity type) are codified. In some performance domains (e.g., chess, baseball, etc.) statisticians keep track of thresholds that are known by the wider community that values good performance, and assessments are made with reference to such known reliability thresholds (e.g., .300 average in baseball). Other performance domains have less formalised success criteria (e.g., knowing how to keep a house in order, etc.). For discussion, see Sosa (2010).

But this tolerance for a certain amount of indeterminacy is a feature of *any plausible* account of the relationship between what an agent can do intentionally and what she knows how to do, not a bug. To get a sense of why it is a feature, consider an observation from Jaster (2020):

> Someone who has driven a car once or twice and manages to get from A to B without running someone over, but drives extremely poorly otherwise, may be counted as having the ability to drive in one context, but not in another, for instance. When asked whether she can drive, she may truly say "yes" when a car needs to be moved from one space in an empty parking lot to another, say, but she may truly say "no" when a car needs to be moved from one neighborhood of a crowded city to another. (27)

There are many activities on the spectrum between moving a car from one space in an empty parking lot to another, and moving from one neighborhood of a crowded city to another. For instance, moving a car from one space in a crowded parking lot to another, or moving from the airport's waiting lot to the arrivals terminal, fall somewhere between the extremes Jaster identifies.

In these middling cases, it's not obvious whether the driver has the ability to get from A to B intentionally; there may be no fact of the matter. But across all these cases, middling and extreme alike, the driver's skills and know-how remain fixed; what shifts is whether, according to facts about the activity and context, those fixed skills and know-how engender enough success across modal space for her actually getting from A to B to be attributable to her as an intentional action (or for us to say truly that she could intentionally get from A to B).

Any plausible account of the relationship between skills and intentional action will be saddled with some indeterminacy, but this indeterminacy is just a reflection of the extent to which facts about activity and context settle a threshold for success. When and to the extent that they do, possessing *sufficiently* proximal skills is just possessing skills the relative safety of which exceeds this activity- and context-dependent threshold.

3. Taking stock

Let's take stock. In §2, we introduced the Skill Proximity View, captured by SKILL:

> *SKILL*: If S ϕ-s intentionally, S knows how to ψ, where ϕ is sufficiently skill-proximal to ψ.

SKILL is an improvement on SIMPLE because it can accommodate cases in which an agent, lacking knowledge of how to do the task at hand, employs other know-how to succeed. SIMPLE seemed to predict that **darts** and **darts-2** were both cases of unintentional success. But Tim (**darts**) was a total novice succeeding by beginner's luck, and Steve (**darts-2**) was skilled in a proximal activity, that of accurately throwing paper airplanes, and he employed those proximal skills in succeeding.

We argued that skill proximity could be understood in two ways, one friendly to intellectualists about know-how, the other friendly to anti-intellectualists about know-how; both approaches to know-how, accordingly, (via reference to $SKILL_{INTELLECTUALISM}$ and $SKILL_{ANTI\text{-}INTELLECTUALISM}$) can deal with cases like **darts-2** in a way previously unavailable, as well as with more complex cases like Nour and Nour*. In order to get these results, on the intellectualist telling, skill proximity was a matter of overlapping knowledge of means.[22] And in the anti-intellectualist telling, skill proximity was a matter of overlapping dispositions to succeed when one tries. *Sufficient* skill proximity was relative to activity; activity-types set lower bounds on how reliably one must be able to succeed to count as knowing how, and sufficient skill proximity piggybacks off of this activity-dependance.

Let's now consider several potential criticisms against SKILL (on behalf of those sympathetic to SIMPLE), and then, after addressing them, to clarify further why SKILL plays – more compellingly so than SIMPLE – an illuminating role in thinking about (i) learning how and (ii) the connection between intentional action and luck.

4. Objections and replies

No doubt a SIMPLE-sympathizer will want to protest along a number of dimensions. Here, we will try to address the most promising lines of resistance.

4.1. The know-how defense

One way to defend SIMPLE is to insist that, in some important sense, Steve (**darts-2**) *did know how* to hit a bullseye, and it was precisely the fact that he manifested this extant knowledge-how that accounted for his intentionally hitting it. Perhaps what Steve lacked, according to this defense, was not knowledge of how to do what he did, but knowledge *that* he knew how.[23]

This first imagined objector grants that Steve hit the bullseye intentionally but insists that it is because he antecedently knew how to hit the bullseye. How plausible is it that Steve knew how to do what he did? To assess this, it's important to distinguish

[22] This is, in summary form, the gist of the idea. Additional details were made explicit, e.g., concerning co-optability (as pertinent to cases like that of Nour).

[23] For some discussion more widely of cases where one seems to be able to use abilities they 'didn't know they had', see Moon (2018).

different things it might be taken to mean, and in so doing help clarify what's really at issue between SIMPLE and SKILL.

Surely Steve antecedently knew how to perform whatever *basic* actions he actually performed: his moving his arm *thusly* (in a throwing motion), say. But the ability to perform that or similar basic actions can't be what's at issue, since beginners like Tim plausibly possess those abilities too, yet fail to hit the bullseye intentionally. And anyway, *hitting the bullseye* is not a basic action.[24] So the question at issue concerns the plausibility of Steve's antecedently possessing knowledge of how to perform the non-basic action he performs.

One way to flesh out this idea is to distinguish between "general" and "specific" know-how in a way that resembles the general/specific distinction within theories of ability (e.g., Honoré 1964, Kenny 1975, Mele 2002). In theories of ability, it is common to distinguish what an agent is (generally) able to do, given her training, skills, intrinsic properties and so on, from what an agent is (specifically) able to do in a context, given the options afforded to her by her environment along with her present mental and physical shape. In these terms, we might say that Roger Federer is generally able to serve at 100mph, even when he's snorkeling in the Bahamas. But it is only once he picks up a ball and racket (assuming he's awake, not dealing with injury, that the ball is regulation size and weight, etc.) that he is specifically able to serve at 100mph.

The corresponding distinction between general and specific know-how might be put as follows: there are things an agent (generally) knows how to do, given her training, skills, intrinsic properties, and so on, and there are things an agent (specifically) knows how to do, given the options afforded to her by her environment. Perhaps Steve, in virtue of his paper airplane skills, *already* possesses some kind of "general" dart-throwing know-how. And once we've come this far, why not say that it is in virtue of manifesting this general dart-throwing know-how that Steve's success is attributable to him as an intentional action, thereby vindicating SIMPLE?

There are two problems with this suggestion. The first is that the connection between what one does and what one *generally* knows how to do is too permissive to plausibly vindicate SIMPLE; it gives rise to an uncomfortable tension between SIMPLE and the cases taken to originally motivate it. For the sake of argument, grant that, despite never having played a game of darts in his life, Steve's training, skills, and intrinsic properties afford him general dart-throwing know-how. Moreover, grant that Steve's manifesting this general dart-throwing know-how renders his hitting the bullseye intentional. But if we've come this far, on what grounds can we deny that Sally (from **avalanche**) escapes the avalanche intentionally? After all, Sally's training, skills, and intrinsic properties plausibly affords her some kind of *general* avalanche-escaping

[24] If Small (2019) is correct, it might be more appropriate to say that *hitting the bullseye* is not a basic action *for amateurs* like Steve and Tim, although it might be for experts.

know-how. But the fact that Sally *didn't* intentionally escape the avalanche was supposed to be part of what motivated SIMPLE in the first place; the appeal to general know-how to defend SIMPLE seems instead to undermine it.

The second problem with attempting to vindicate SIMPLE by way of appealing to general know-how is that we only ever manifest *specific* know-how, just as we only ever manifest specific abilities. Or, more carefully, to the extent that it makes sense to think that we manifest general know-how, we do so derivatively, by manifesting specific know-how. The manifestation of general know-how merely piggybacks on the manifestation of specific know-how.[25] In order for Steve's bullseye to be attributable to him as an intentional action, this way of vindicating SIMPLE would require that Steve manifest general knowledge of how to hit a bullseye *by manifesting* specific knowledge of how to hit a bullseye. But if this defense of SIMPLE entails that Steve's hitting the bullseye is intentional because he had specific knowledge of how to hit a bullseye, it simply begs the question.

More realistically, since Steve already knows how to do something generally in the ballpark of hitting the bullseye, he is, perhaps in the course of hitting it, *extending* what he knows how to do. At the end of the game he might have put together a general 'recipe' for hitting bullseyes, a recipe he can knowingly deploy in future games. But to accept that he initially learns how to do it as he goes is to deny that he knew before he began.

This more realistic conception of extending one's know-how is bolstered when we relax Steve's training; perhaps he's a paper airplane *enthusiast*, or a *weekend hobbyist*, and his planes do not always fly straight, but when they do, it is generally to his credit. Hobbyist Steve still knows how to do something that Tim doesn't, something in the proximity of what one would have to do to hit the bullseye. But it cannot be that even Hobbyist Steve antecedently knew how to do it; that would seem to suggest an uncomfortably Platonic conception of how we come to acquire new skills—by "uncovering" them, say, since we had them all along.

To say this much is not to deny that there are, of course, cases where one realizes that one knew how to do something all along. Perhaps my lack of confidence prevents me from realizing I really do know what I'm doing, and it's only upon succeeding that I can overcome my own self-doubt. But these are the special cases, not the norm; hindsight biases shouldn't make us cavalier.

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[25] Note that this claim about *manifestations* of know-how and abilities is orthogonal to whether specific know-how and abilities are explanatorily or metaphysically prior to general ones, or *vice versa*. It can be true that we only ever manifest specific abilities (know-how) even if, for instance, specific ability is nothing but general ability plugged into the facts of circumstance (a position sometimes attributed to the "new dispositionalists" like Vihvelin (2004) and Fara (2008)), or if general ability is just a generalization over circumstances in which an agent possesses some specific ability (Maier 2015).

4.2. The no-intentional-action defense

Another way to defend SIMPLE is to insist that Steve *didn't* intentionally hit the bullseye. There are really two, distinct ways to develop this objection. According to one, Steve merely unintentionally hit it. According to another, Steve's hit is a "middling" or "non-intentional" action.

Consider the claim that Steve merely unintentionally hit the bullseye. In defense of this, one might suggest that Steve no more knew how to hit the bullseye than Sally did to escape the avalanche. And if Steve no more knew how to hit the bullseye than Sally did to escape the avalanche, his success was clueless, fluky, and sheer dumb luck.

The first thing to emphasize is that Steve is not nearly as clueless as Sally. Sally is simply mistaken; she thinks the oncoming avalanche is water, and she tries to breaststroke her way to safety. But Steve does not mistake the dart for a (rather hefty) paper airplane; he simply isn't sure that what he'll try will work.[26] Whatever the relationship between intentional action and knowledge of the conditions under which one acts, it is one thing to be totally lost, and another to be a bit unsure.

But here is something more concrete that distinguishes them: given Steve's background skills and general awareness of a similarity between what he knows how to do and what he's trying to do, he seems to be in a position to reasonably conclude in favor of throwing the dart more or less like a paper airplane. His throwing in the way he does–*thusly*–is sensitive to the actual features of his throwing environment, say the distance from his target, the position of the target on the wall, ambient conditions, and so on. Even if Steve's awareness of some similarity between what he knows how to do and what he's trying to do does not suffice for him to know how to hit the bullseye, it affords him a certain kind of control over his attempts.

In contrast, Sally possesses the requisite background skills but lacks the general awareness of a similarity between what she knows how to do and what she's trying to do; since she thinks that the oncoming avalanche is a big wave, her frantic swimming motions are only accidentally related to her escaping the avalanche in the sense that they are not responsive to the actual features of the world that render them appropriate, or afford her the kind of control over what she tries to do and what she succeeds in doing that would prompt us to see the latter as intentional.

The second way to develop this objection is to deny both that Steve hit the bullseye intentionally and that he hit it unintentionally. Instead, one might think, Steve's hitting the bullseye is what Mele and Moser (1994) have called a "middling action," or a "non-intentional" one.

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[26] This is not to say that in no novel circumstances will an agent have such assurance when drawing upon a proximal skill. For instance, I might have never pushed a vase off a table before intentionally, but I know that reliance on means I've used to push similar sized objects off of similar surfaces will suffice to do the trick.

The problem with this suggestion is that non-intentionality, at least as Mele and Moser discuss it, paradigmatically applies to the foreseeable consequences of one's intentional actions. Consider a famous case due to Harman (1976) in which a sniper, firing his gun in trying to kill a soldier, knowingly alerts the enemy to his presence. While alerting the enemy to his presence is something the sniper *does*, it is not, according to Mele and Moser, something the sniper does intentionally. Still, because the sniper is fully aware that he will bring about this event in firing his gun, there is pressure to explain the nature of this action in different terms than, say, one of unwittingly alerting the burglars by illuminating the room.[27]

It's difficult to see how Steve's hitting the bullseye would count as non-intentional if that category is understood by way of similarity to actions that are the foreseeable consequences of intentional actions. There are two clear points of divergence. The first is that Steve has no business being highly confident that his way of throwing it is a way of hitting the bullseye, whereas Harman's sniper has every reason to be highly confident that his shooting will alert the enemy. Second, even if what Steve can foresee is that his way of throwing *just might* hit the bullseye, this is precisely what he intends to do. In contrast, the sniper only intends to kill the soldier, not also to alert the enemy.

4.3. The appeal to stone

Some authors might simply be unable to stomach the suggestion that we can intentionally succeed in doing one thing by intentionally doing something else. This *underlying but powerful feeling* that something about SKILL cannot be right merits some attention.

Compare Samuel Johnson's "refutation" of Berkeleyan idealism, sometimes called "the appeal to stone," as recounted by James Boswell:

> After we came out of the church, we stood talking for some time together of Bishop Berkeley's ingenious sophistry to prove the non-existence of matter, and that every thing in the universe is merely ideal. I observed, that though we are satisfied his doctrine is not true, it is impossible to refute it. I never shall forget the alacrity with which Johnson answered, striking his foot with mighty force against a large stone, till he rebounded from it, "I refute it thus."[28]

The (de)merits of Berkeleyan idealism aside, we should all agree that Johnson's appeal to stone missed the point (to the extent that it is an argument at all, it begs the question).

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[27] Davidson (1980)

[28] Boswell, J, *The Life of Samuel Johnson, LLD*, 1791.

Allow us to briefly defuse any sentiment amongst action theorists to similarly kick the stone regarding SKILL.

Firstly, there is some precedent to the idea that we can succeed in doing one thing intentionally by intentionally doing something else, and in that sense SKILL has partners in guilt. Consider two scenarios due to Kieran Setiya (2008) and Adam Carter (2019):

> **Bomb:** I am trying to defuse a bomb, staring with confusion at an array of coloured wires. Which one to cut? In desperation, not having a clue what the wires do, whether they will trigger the bomb or not, I disconnect the red wire—and the timer stops. Even though I did not know how to defuse the bomb, and managed to do so through dumb luck, I count as having defused the bomb intentionally. That is certainly what I meant to do, despite my uncertainty. (Setiya 2008: 404)

Setiya suggests, by attending to cases like **bomb**, that the relationship between intentional action and knowledge-how is disjunctive: ϕ-ing intentionally requires *either* knowing how to ϕ, or else it requires knowing how to ψ (cutting the red wire, perhaps), where ψ is a means to ϕ in the context. SKILL is not a disjunctive thesis,[29] but both SKILL and Setiya's proposal deny that, in order to ϕ intentionally, one must know how to ϕ. Now consider Carter's case:

> **Pole vault**: Paul is hoping to make his high-school pole vaulting team. In order to qualify, Paul must demonstrate that he has the ability to jump over the competition bar set at 10ft. Paul's dishonest nemesis told Paul the competition bar for tryouts was three feet higher—13ft—in an effort to dissuade Paul from attempting to make the team. Paul nonetheless showed up to tryouts and, setting the bar to 13ft rather than 10ft, proceeded to jump over the bar (impressing his coach and his nemesis). (Carter 2019: 2496)

Carter suggests, attending to cases like **pole vault**, that the relationship between what one does successfully and *which* abilities one manifests is nuanced; the manifestation of an ability is not necessarily a matter of the subject's doing what the ability is an ability to do (*pace* philosophers like Millar (2009)). In particular, **pole vault** is a case in which

[29] SKILL could be formulated disjunctively, as in: *if S ϕ-s intentionally, S knows how ϕ, or S knows how to ψ, where ϕ is sufficiently skill-proximal to ψ*. No doubt, this way of putting things is superficially closer to Setiya's own. But notice that, because nothing is more skill-proximal to ϕ than itself (Section 2.2), the first disjunct in this formulation is redundant.

the agent exercises his ability to jump over the bar at 10ft by doing something *else*, namely jumping over the bar at 13ft.

Although Carter is not interested in the relationship between intentional action and knowledge-how *per se*, his proposal might be understood as having implications for that relationship. In particular, we might think that his account, suitably modified, generalizes to the relationship between what one succeeds in doing *intentionally*, and which abilities one intentionally manifests. Consider **hole vault**:

> **Hole vault:** Hal is a skilled pole-vaulter trying his hand for the first time at "hole-vaulting," a new feat of skill and grace put together by the twisted minds at *cirque du soleil*. Hole-vaulting requires many of the same skills as pole-vaulting, but rather than vault over a pole at a given height, one must vault through a hole of a given shape at a given height. Hal, having some understandable reservations about whether he possesses sufficient aerial bodily control, proceeds to jump through the hole.

Hal's jumping through the hole is no accident; despite his understandable reservations, he employs a great deal of transferable pole-vaulting skill in his hole-vaulting success. To the extent that **pole vault** prompts us to think that one can manifest an ability to ϕ by ψ-ing (rather than ϕ-ing), **hole vault** should prompt us to think that one can manifest an ability to intentionally ϕ by intentionally ψ-ing (rather than intentionally ϕ-ing). Moreover, when we extend Carter's view in this way, we see that it is plausibly an instance of SKILL; pole-vaulting is, in these circumstances, sufficiently skill-proximal to hole-vaulting for Hal to intentionally hole-vault by manifesting his pole-vaulting know-how.

These comparisons with Setiya and Carter and meant to cast SKILL in a kinder light, at least insofar as it makes the *sheer incredulity* underwriting the appeal to stone less tenable. In the next and final section, we hope to say something about the upshots of accepting SKILL for theorizing about *learning how*.

5. Learning how and agential contribution

Section 4 offered what might be thought of a "negative" defense of SKILL, at least insofar as it cuts off plausible avenues of retreat for SIMPLE. Here, we offer a more positive defense of SKILL in terms of its relationship to learning how, and in terms of the perspective it affords us on the relationship between luck and an agent's contribution to her purposive behavior.

Learning how to do something is a way of extending one's knowledge-how. Sometimes, learning how to do something is a matter of accidental success; one sees how one's actions affect the world and one learns how to act so as to bring about certain desired outcomes. Famously, penicillin was discovered by accident; Sir Alexander

Fleming returned from a holiday to find that one of his Petri dishes contained a mold that prevented Staphylococcus bacteria from growing. Fleming and his team sought to then isolate pure penicillin from the mold. (It proved untenable, and it wasn't until years later that an Oxford laboratory established successful methods of production.)

Other times, learning how to do something is the result of deliberate individual practice. When Tim learned how to flip eggs in a pan, the process took a great deal of patience and spare eggs. But each attempt aimed at a kind of mastery–or sufficient reliability–in bringing about an antecedently known outcome. Tim knew what he wanted to do, and he tinkered with various ways of doing it so as to reliably produce the desired outcome.

And still other times, learning how is a matter of testimony. Hawley (2010: 400) gave a non-exhaustive list of ways we come to learn how from others in this sense:

- A describes to B how to X
- A gives B imperative instructions how to X ('do this, do that')
- A describes to B how A does X (or something like X)
- B overhears A talking to someone else about how to X (or about how A does X)
- A intentionally shows B how to X, and B imitates A
- B observes A X-ing and imitates A
- B observes A trying and failing to X, and thereby works out how to X (maybe A intends this, maybe not; maybe A thinks she knows how to X, maybe not)
- Intentionally or not, A forces or encourages B to come to know how to X (to use trial and error, to practice, to pay for lessons?)

When Steve first learned how to make paper airplanes (before he learned to accurately throw them), he was given instructions by his friend, Raymond. Raymond told Steve to first fold the paper in half lengthwise, then to fold the two top corners into the center of the page, then…, and he showed Steve what he was doing each step of the way. Steve then imitated Raymond, keeping his instructions in mind, and through enough trial-and-error came to produce what he saw Raymond produce.

Whether one learns how by observing accidental successes, by deliberate individual practice, or by testimony, learning how begins with knowing how. Of course, the know-how with which one begins is not what one learns how to do. It is, rather, knowledge of how to do something *else*, something appropriately related to what one learns how to do.[30]

[30] This point has parallels in theoretical as opposed to practical learning. For instance, proponents of knowledge norms on inquiry (e.g., Willard-Kyle 2022) stress the importance of possessing and using propositional knowledge we have in the service of acquiring knowledge of propositions of which we are ignorant. A scientist, for instance, comes to learn that some claim of interest - X - is true by first learning that various X-adjacent facts are true. More mundanely, an inquirer might gain predictive knowledge of

Fleming knew how to culture cells in Petri dishes, Tim knew how to make certain grabbish and wrist-flickish motions, and Steve knew how to grasp small things (like edges of a piece of paper) between his fingers and fold them. Learning how to produce penicillin mold, to flip eggs, and to make paper airplanes was a matter of recruiting and re-purposing prior know-how to new ends.

In general, it is not true that learning how to do something *just happens* to us, certainly not in the way that non-actions just happen to us. Nor is it generally true that, in learning how to do something, our successes are unintentional or merely foreseeable consequences of what we do intentionally. Granted, some successes in learning how are accidental; perhaps Tim's first successful egg-flip was beginner's luck. But tinkering with various ways of flipping tended towards successes and away from failures; at some point in learning how, one begins to succeed intentionally, even if a bit shakily (because one does not yet know how).[31]

One of the more interesting and substantive upshots of SKILL is that it captures the sense in which agents still learning how to do something can succeed on purpose. After all, succeeding on purpose reinforces the employment of certain means over others, ones which become reliably employed to bring about success across a wider range of situations and ground an agent's know-how. If SIMPLE were correct, learning how to do something would be a process devoid of intentional success, and would seem to inappropriately undermine the sense in which the learning agent contributes something to her own behavior. The agent's contribution to her purposive success in learning how would diminish to the point of being uninteresting.

What the agent contributes to intentional success is a certain kind of *control*. Luck tends to be control-undermining; but to think that anything short of knowing how to do what you in fact do renders success too lucky to be intentional is to adopt an overly demanding conception of the control characteristic of intentional action. It is perhaps the control characteristic of intentional action *par excellence*, but this is not the yardstick by which we measure agents with lesser degrees of mastery or skill, those still practicing and learning.[32]

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the behaviour of a pet in a new circumstance by track-record observation of that pet's behaviour in old circumstances.

[31] The learning process, plausibly – though this goes beyond what we have space to argue for here – does not terminate in merely acquiring the know-how by which one counts as intentionally performing. On the minimal assumption that, say, Tim is a reflective agent acquiring track-record evidence of his process along the way, there will be a point at which he not only makes the eggs intentionally, but know that he does this intentionally (and under this description) – and at this point – satisfies a stronger kind of Anscombian 'practical knowledge' condition on intentional action.

[32] It might be objected that our position relies on a contentious conditional C: *if S learns (how to) F, S didn't already know (how to) F*. After all, some experts are lifelong learners. And what could these agents be doing except learning (how to do) what, in some sense, they already know (how to do)? We think the plausibility of denying C trades on imprecision and ambiguity. Of course, lifelong learners can keep

6. Concluding remarks

It is a fixed point of action theory that too much luck is incompatible with intentional success. There is no doubt that part of SIMPLE's long-standing appeal is its ability to exclude too-lucky successes from one's theory of intentional action. What counts as a too-lucky success, in this view, is success without knowing how to do what one in fact does. In this paper, we've challenged this thesis and argued for an alternative view, one that is grounded in the relationship between proximal skills. SKILL is likewise luck-excluding, albeit in a more nuanced way than SIMPLE. What counts as a too-lucky success, according to SKILL, is success without knowing how to do things sufficiently skill-proximal to what one in fact does. One of SKILL's chief advantages over SIMPLE is its ability to explain intentional successes for agents still learning how, and for agents attempting – as we do so often – to meet novel objectives.[33]

learning how to do things they already *generally* know how to do; an intermediate chess player can learn how and when to employ the Sicilian Defense, even if they generally know how to play chess. And a highly skilled chess player can learn how to employ the Ruy Lopez in a wider range of conditions, or against players of differing styles, even if they generally know how to perform the Ruy Lopez. But in either case, the player is learning something–how to perform a new maneuver, or the conditions under which to employ an old one–that they didn't already know.

[33] [Acknowledgments removed]

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