Normative sceptical paradoxes

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Some sceptical arguments rely on possibilities of error. Others on regresses of reasons. This paper discusses sceptical arguments of a third, less familiar, type. Like more familiar ones, they may be used to argue that we do not know some things but also that we are not justified or rational in believing some things or in being certain of some things. What is distinctive about them is to focus on the normative consequences of their target. If you know something, they say, it is justified, appropriate or rational for you to have certain attitudes or do certain actions. But, they say, it is not justified, appropriate or rational for you to have these attitudes or to do certains things. So you do not know. *Ditto* for "justifiedly believe", "are rationally certain of" and so on instead of "know". Some such arguments have plausible premises and implausible conclusions. They are *normative sceptical paradoxes*.

These paradoxes have been influential. They underlie the widespread view that we should not be certain of pretty much anything. If you could be certain of p, it is said, you could assign a credence 1 to p; if you could assign a credence 1 to p, you could be disposed to bet on p at any odds whatsoever. But (for pretty much any

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p) you should not be so disposed. So you should not be certain of p.[1] They also underlie so-called "high stakes" cases that have generated a lot of debate recently. If you know p in some ordinary situation, it is said, you would know p in a similar situation in which being wrong about p and yet acting on it would be disastrous. If, in the latter situation, you did know p, it would be rational for you to act on it. But it would not be.[2] Some have concluded that knowledge ascriptions are context-sensitive: we tend to restrict "know" when considering "high stakes" cases — so the argument equivocates.[3] Others that knowledge itself is sensitive to stakes: you would not know p in the "high stakes" situation, even if it only differed from the ordinary one in terms of what is at stake — so the first premise fails.[4] Others that it is not always rational to act on what you know — so the second premise fails.[5] They underlie the "dogmatism paradox". If you know p, it is said, you know that all evidence against p is misleading. If you know that all evidence against p is misleading, it would be rational for you to dismiss any counterevidence to p. But (for most p) it would not be.[6] Some think the argument puts pressure on the idea that deduction preserves knowledge: perhaps you know that p, but fail to know that all evidence against p is misleading, even though you competently deduced the latter from the former.[7] Some think you know that all evidence against p is misleading but would loose that piece of knowledge whenever you would be in position to disregard counterevidence against p — so the second premise fails.[8]

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[1] See *e.g.* Maher (1993, 133) and Christensen (2004, 21–2).

[2] See note 13 below for examples from recent literature.

[3] DeRose (1992, 913–4); Cohen (1999, 58).

[4] Hawthorne (2004, 176); Stanley (2005, 5–6); Fantl and McGrath (2009, 26–7); Weatherson (2012, 83–4).

[5] Brown (2008, 176–8); Reed (2010, 228–9).

[6] Kripke, 2011, 39–25, 48–9; Unger, 1975, chap. 3. See also Fantl and McGrath, 2009, 226.

[7] See Nozick (1981, 237), who does not endorse that solution.

[8] Harman, 1973, 148–9, Sorensen, 1988, 438–9, Hawthorne, 2004, 73.

Unger concluded that we know next no nothing.[9]

These paradoxes have hardly been discussed systematically.[10] Most authors assume without much ado that they must receive answers of a certain broad type, which I call *Possibilist*. Where p is some proposition and $A(p)$ some p-related attitude or action — such as being certain of p, being disposed to ignore evidence against p or otherwise acting on p —, normative sceptical paradoxes have the following form:

> If you know that p then it is rational for you to $A(p)$.
>
> It is not rational for you to $A(p)$.
>
> So you do not know that p.

Or an analogue form with some other epistemic standing for "know" — *e.g.* justifiedly believing — or some other normative notion for "rational" — *e.g.* justified or appropriate. Possibilist answers share the idea that it is rational for you to $A(p)$ unless not-p is in some relevant sense possible. (The sense in question will be clarified in due course.) They disagree among themselves over whether the second premise actually holds and over whether not-p being possible in the relevant sense is compatible with the epistemic standing in question. But they all agree that denying the second premise requires a not-p possibility.

Because they mostly debate among themselves, Possibilists tend to neglect issues they all share. Normative sceptical paradoxes are fairly general: one can build instances for pretty much any p. Hence Possibilists should say whether they hold certain apparently irrational actions or attitudes rational, countenance an inflated space of possibilities, or adopt some third solution. Yet the trilemma

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[9]Unger (1975, chap. 3).

[10]Unger (1975, chap. 3) comes closest.

attracts little attention.

They also tend to neglect alternative options. An alternative broad type of answer, which I call *Re-evaluative*, holds that $A(p)$ is irrational (unjustified, etc.) even if not-p is not a possibility in the relevant sense. One class of Re-evaluative answers, which I call *Bad Habit* views, is particularly worth of study. The gist of such views is that even if $A(p)$ would be the best thing to do given p, it is not rational to do it because in doing so one would display or foster a bad disposition. Such views are easy to motivate and provide an elegant resolution of the paradoxes, though they face some difficulties of their own.

Section 1 illustrates normative sceptical paradoxes, gives them an explicit schema and shows how to generalize them to pretty much any proposition. Section 2 spells out Possibilist solutions, shows that they are widely endorsed and highlights the trilemma they face. Section 3 introduces Bad Habit solutions, details some of their implications and discusses salient objections. Section 4 takes stock.

1 Normative sceptical paradoxes

1.1 An instance

Your mischievous flatmate has got hold of grapefruit seed extract. While harmless and almost odourless, the extract tastes extremely bitter, making it ideal for all sorts of pranks. Your flatmate has filled two glasses of water, poured a hefty dose of the extract into one, and now offers you to pick and drink for a dollar. You do not think that a dollar is at all worth a persistent bad taste in your mouth. Luckily,

however, your flatmate is much less clever than mischievous. He has prepared the glasses in front of a mirror and you saw that he poured only water in the shorter one. Should you accept the offer? Well, it seems rational — rationally permissible — to do so. For you know that the short glass only contains water. So you know that if you drink it, you will only drink water and relieve him from a dollar.

But consider now a similar story in which your flatmate is downright evil. He has got hold of cyanide potassium, a powerful and almost odourless poison that inhibits cell respiration and can cause severe heart and brain damage up to death. As before, he offers you to play his little game without realizing that you saw him preparing the glasses. Is it rational to accept?[11] Many — I, for one — would say not. Even if you accepted and won, they would still say such such things as "it was crazy to do that, you could have been poisoned", "it is stupid to take such risks just for fun" or "you should not accept offers like that". What such claims entail and whether they are right will be discussed later on. For the moment, let us go along with the judgement.[12]

If it is indeed not rational to accept, then it seems that you do not really know that the glass contains only water. For if you did, you would know that by drinking the short glass you would only drink water and relieve him from a dollar. And if you knew that, it would seem rational for you to drink. On the other hand, it seems

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[11]Some use "rational" in a quasi-stipulative sense that merely requires some sort of coherence among one's desires, preferences and intentions. Here I am using "rational" in the ordinary sense that Parfit (2011, 33) characterizes as follows: "When we call some act 'rational', using this word in its ordinary, non-technical sense, we express the kind of praise or approval that we can also express with words like 'sensible', 'reasonable', 'intelligent', and 'smart'. We use the word 'irrational' to express the kind of criticism that we express with words like 'senseless', 'stupid', 'idiotic', and 'crazy'." I assume that rationality in that sense does not just require some sort of coherence among beliefs, preferences and desires. So the question above is not settled by noting that some coherent sets of beliefs and preferences would license accepting and others not.

[12]As we see below, many normative theories are ultimately able to back it up.

absurd to deny that you know. You just saw the flatmate preparing the glasses. So we have a paradox.

The paradox deepens by comparing the two cases. If you do not know in the poison case, then arguably you did not know in the original case. But it plainly seemed you did.[13]

1.2   An explicit statement

The paradox can be given the simple form presented in the introduction. If you know that there is only water in the short glass, then it is rational for you to accept the offer. But it is not. So you do not know. It will be useful, however, to spell out the paradox a bit further. In particular, it is worth unpacking the reasoning behind the first premise. To do so we will use a notion of *rationally taking p for granted* (justifiedly taking p for granted and so on) that we define in terms of decision tables.

In any concrete situation you face a number of choices. Each choice involves options that are rational or not.[14] Often, if not always, what determines whether

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[13]Similar cases have been discussed in recent literature: DeRose's Bank and Tavern/Investigation cases (1992, 913 and 2009, 4–5), Cohen's Plane cases (1999, 58, see also Turri, ming), Fantl's and McGrath's Train cases (2002, 67–8), Neta's State an Main cases (Neta, 2007, 182–3) Brown's Betting One's Home, Surgeon, Affair and Exam Result cases (2008, 176–7), Reed's Stress Study case (2010, 228), Weatherson's Violinist case (2012, 83), Sripada and Stanley's Nut Dish cases (ming, see also Buckwalter and Schaffer, ming) and Ross and Schroeder's Peanut Butter Sandwich cases (ming), Feltz and Zarpentine's (2010) Rickety Brigde and Pinillos' (2012) Proofreading. Most involve types of knowledge such as testimony or prediction about which intuitions are somewhat unstable (see Williamson, 2005, 232; see also Buckwalter and Schaffer, ming for an overview of the empirical studies of the cases, where it can be seen that subjects tended to cluster around 3 on 5-points scales). If, as I claim, the paradox is fully general, it arises with paradigmatic cases of knowledge such as vision. That is why I prefer the case above. The mirror is here only to make sure that the flatmate does not realise that you know — otherwise his offer would suggest foul play.

[14]I describe options as actions such as drinking a glass. I remain neutral on whether options are strictly speaking *decisions* to carry the actions rather than the actions themselves. See Hedden

they are rational can be adequately captured by a *decision table*. As I use term here, a decision table is an abstract specification of a choice. It includes an agent's options, states — ways things might be —, outcomes of each option at each state, evaluations of outcomes, and often some sort of weighing of states or states–options pairs such as a probability distribution. Decision principles take these as input and yield *rankings* or *categorizations* of options as output. Here we will work with principles that categorize options as *allowed* or not allowed. When a table adequately captures *rationality* in a choice you face in a concrete case, it is *rational* to decide something in that case if and only if the corresponding option is allowed on the table.[15]

Any given table encodes, or as I will say, *assumes* some information. For instance, if p holds at every state of a table, the table assumes p. More subtly, if a state p and an action A are associated with outcome O, the table assumes that *if $p\&A$ then O*. If an action A has an outcome O at every state, then the table assumes that *if A then O*.[16] And so on. For simplicity we may take the information to be closed under logical consequence: if a table assumes p, it assumes all the logical consequences of p; if it assumes p and it assumes q, it assumes $p\&q$. I will point out where the closure assumption is problematic.

I say that *it is rational to take p for granted* in a case if and only if p is assumed by every table that adequately captures rationality in some choice in that case.[17]

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(ming) for discussion.

[15]Similarly for "justifiedness" and other normative notions instead of rationality. Adequateness requires more than coincidence between allowed options and rational actions. The list of options, states, outcomes, evaluations and weights must reflect the determinants of rationality in the situation (see Weatherson, 2012, 81–2 for discussion). But here we only need the claim that adequateness entails coincidence.

[16]Everything that we will say is compatible with such conditionals being material ones.

[17]More generally, for any normative notion N such as justifiedness: it is N to take p for granted in a case if and only if p is assumed by every table that adequately captures N in some choice in

Given the assumptions just made, what it is rational to take for granted is closed under logical consequence. Depending on how the notion is used that may have implausible consequences. To avoid it one would need finer-grained tables whose information is not deductively closed. As the issue is mostly irrelevant to the paradoxes, it would needlessly complicate matters here.[18]

I say that an option is *unsurpassed* on a table if at every state its outcomes are at least as good as those of alternatives. Now let a be the poison case, p be the proposition that there is only water in the glass, and A the option of drinking the short glass. The following seems true:

(1)   If it is rational to take p for granted in a, then A is unsurpassed on any table that adequately captures rationality in a. *(Dominance claim)*

For suppose that only tables that assume p adequately capture a. Then it seems that such tables would have to be along the following lines:

	short glass only contains water (p)
drink short (A)	flatmate looses \$1
drink tall	flatmate looses \$1 but unpleasant
refuse the offer	status quo

In saying that I make a host of assumptions about the particular case: for instance, that it is rational for you to take for granted that the flatmate will loose \$1 if you drink the glass. We need not inquire into what exactly the assumptions are. Suffice it to say that the table looks correct — on the supposition that it is rational to take p for granted.

For present purposes we may treat the following as unassailable:

that case.

[18]Solutions that appeal to a failure of closure are not particularly promising, see note 44 below.

(2)   Unsurpassed acts are allowed. (*Dominance principle*)

If an option is guaranteed to be as good as others no matter what, it is permissible.[19] From the two claims and the characterization of adequateness we get:

(3)   If it is rational to take p for granted in a, it is rational to A in a. (*Possibilist lemma*)

Now the following principle linking knowledge and rationality appears correct, and we assumed it when reflecting on the seed extract case:

(4)   It is rational to take what one knows for granted.[20]
        (*Knowledge–Rationality principle*)

The principle and the lemma together yield the first premise of our original argument: if you know that p in a, it is rational to A in a. So they are compatible with two *prima facie* plausible claims about the case:

(5)   In a, you know that p. (*Moorean claim*)

(6)   In a, it is not rational for you to A. (*Prudence*)

More generally, the paradox arises for every case a where we can find a proposition p and an action A such that A appears irrational yet unsurpassed if p is rationally taken for granted.[21]

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[19]The principle faces apparent counterexamples when states causally or evidentially depend on actions (see *e.g.* Jeffrey, 1983, 8–10). The counterexamples may be blocked by saying that they involve inadequate tables. At any rate no such concerns arises in our discussion.

[20]Williamson (2005, 230–2), Hawthorne and Stanley (2008) and Fantl and McGrath (2009, chap. 3) defend similar principles. See also Unger (1975, 206), who defends something close to the converse principle that is not rational to take what one does not know for granted.

[21]The statement avoids two drawbacks of current debates. The first is to rely on a semi-technical notion of "preferring/acting as if p" (Fantl and McGrath, 2002, 72, Weatherson, 2005) or "doing

Similar paradoxes can be formulated for other epistemic standings and normative notions. The analogues of the Knowledge – Rationality principle *Epistemic – Normative Bridge principles*. They relate the epistemic standing targeted by the paradox — which may itself be normative, such as justifiedly believing p — to the relevant norm of taking for granted — such as its being rational or appropriate to take p for granted. Here is an illustration with "being justifiedly certain" instead of "know" and "justified" instead of "rational".

(7)   It is justified to take what your are justifiedly certain of for granted.
        (*Justified Certainty – Justification principle*)

(8)   If it is justified to take p for granted in a, then A is unsurpassed on every table that adequately captures justification in a. (*Dominance claim*)

(9)   Unsurpassed acts are allowed. (*Dominance principle*)

(10)   It is justified to be certain of p in a. (*Moorean claim*)

(11)   It is not justified to A in a. (*Prudence claim*)

By the first three claims and the definition of adequateness, it follows that if it is justified to be certain of p in a, then it is justified to A in a. That is in turn incompatible with the latter two. Philosophers need not treat all instances alike. Many

what is optimal conditional on p" (Ross and Schroeder, ming). This tends to hide the Dominance claim that Re-evaluative answers reject. The second is to formulate it in terms of an attitude of "believing p outright" (Williamson, 2000, 99), "being disposed to treat p as a premise" (Williamson, 2000, 99; Hawthorne, 2004, 176), "relying on the premise that p" (Williamson, 2005, 227); "treat p as a reason for acting" (Hawthorne and Stanley, 2008, 577), "treating p as true in reasoning" (Ross and Schroeder, ming). The attitude introduces a moving piece: one can wonder whether knowledge rationalizes the attitude but also whether the attitude rationalizes action. While I except *its being rational to take p for granted* to match in extension with its being rational to rely on the premise that p, I have defined it so that the second question does not arise.

would reject the Moorean claim in the one above but the Knowledge–Rationality principle in one before, for instance.

1.3   Generalization

So far we have a paradox for the poison case. It is easy to see that it will arise for similar "High Stakes" cases.[22] But we can extend it to pretty much every proposition in every case, in two ways.

First, the *counterpart* route. Let b be a case where you plausibly know q. We find a case a, a proposition p and an option A on which we can run the paradox and such that the following appears true:

(12)   If you know q in b then you know p in a. (*Purist claim*)

For instance, to argue that you do not know in the seed extract case, we argue that if you knew in that case you would know in the poison case and we run the paradox on the latter. In the best instances of the strategy cases a and b do not differ in respects that are commonly thought to matter for knowledge — so-called "traditional", "truth-conducive", "truth-relevant" or "pure" factors (Hawthorne, 2004, 158; Stanley, 2005, 1–3; Fantl and McGrath, 2009, 27) such as belief, truth or reliability — but only in "impure" or "pragmatic" respects such as the availability of a disastrous course of action. The claim above then follows from the view that knowledge is a matter of "pure" factors alone ("Purism" in Fantl and McGrath, 2009, 28; "Intellectualism" in Stanley, 2005, 6).

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[22]I do not think that the notion of stakes as it is used in the present literature is well defined and I will not rely on it. See section 2.3 below for some discussion and ***Anderson and Hawthorne. For our purposes it is suffcient to note that all so-called "High Stakes" cases share the following structure: there is some A and some p such that, plausibly, A is allowed if p is taken for granted but not if it is not, because the outcome of $A \& \neg p$ is much worse than the outcomes of alternatives at $\neg p$.

Second, the *direct* route. Instead of comparing cases, we look for an action or attitude B in b itself that appears irrational yet unsurpassed if q is assumed. Certain *resolutions* fit the bill. In the seed extract case, for instance, one may *resolve to drink even if one learned that the alleged seed extract was poison*. The resolution is one that you have the opportunity to take; it appears unsurpassed if it is rational to take it for granted that the glass only contains water; and yet it appears irrational. Often we can build a direct paradox from a counterpart one: we consider the resolution to act even if one learned one was in the counterpart case.

Some *desires*, *hopes* and the like also fit the bill.[23] It is not easy to say when a desire or hope is allowed given some body of information. One could treat it as an action and look at the expected value of its consequences. But that does not seem right. It is rational to desire p, not when *desiring* p appears to have good consequences in view of one's information, but rather when p *would be good* in view of one's information. One way to make the idea more precise is this: we compare *minimally different* pairs of a p-state and a not-p state; if the p state is at least as good as its not-p counterpart in all minimal pairs and positively better in some, desiring p is allowed.[24] Now consider an ordinary case in which you seem to know that a glass contains water. On a table that assumes that the glass contains water, it appears allowed to desire to be offered to bet all your possessions for one cent on the glass containing water. For in every minimal pair of a state in which you are offered the bet and a state in which you are not, either you do not take the offer in the first and it is at least as good as its counterpart, or you take it

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[23]I am indebted to John Hawthorne for pointing that out.
[24]See Hansson (2001, chap. 6) for full-blown version of the idea.

and it is positively better. So if it was rational to take for granted that the glass contains water, it would seem rational to desire that such an offer comes up. But that seems irrational. We can also build direct paradoxes from a counterpart ones by considering a desire to be in the counterpart case.

If we substitute *disregarding evidence against p* for A in a normative sceptical paradox, we obtain Kripke's dogmatism paradox (Kripke, 2011, 39–25, 48–9, see also Unger, 1975, chap. 3 and Fantl and McGrath, 2009, 226). The standard solution assumes that the paradox has a counterfactual form: if you know p, you would still know p if you were in a position to disregard some evidence against it; if you were in such a position and still knew it, it would be rational for you to disregard it; but it would not. The solution rejects the Purist claim, arguing that receiving counterevidence would destroy your knowledge (Harman, 1973, 148–9, Sorensen, 1988, 438–9, Hawthorne, 2004, 73). I doubt it covers all cases, for an indication may be enough to mandate investigation without being enough to destroy knowledge.[25] Be that as it may, the solution does not address direct versions of the paradox. Before you get any counter-evidence it seems irrational to *resolve* not to look into any (Kripke, 2011, 49) or to decide to take a pill that will immunize you against all counter-evidence against it (Hawthorne, 2004, 181).

The two routes and the dogmatism version allow one to set up arguments against pretty much any claim to know. I you were given the option of pressing a button that will give you a lollipop if $1 + 1 = 2$ and destroy the planet otherwise, it would not be rational to press it (Hawthorne, 2004, 29). Nor is it rational for

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[25]Here is a case. A doctor knows that obesity is a factor of heart failures. Browsing the table of contents of a reputable journal, she spots the title "New research questions the link between obesity and heart failures". She still knows — after all, the title does not even tell which way the data goes. But it would be irrational for her to skip the article on grounds that its data is either misleading or in favour of the link.

you to now resolve to do so should the opportunity arise or to resolve to ignore any apparent evidence whatsoever that $1 + 1$ is not equal to 2. Yet the action and resolutions appear unsurpassed if you can take for granted that $1 + 1 = 2$.

A final *caveat*. Intuitions about paradox-like instances vary in puzzling ways. The dogmatic attitude appears sometimes rational, as when one resolves to ignore any defence of astrology (Nozick, 1981, 239; Kripke, 2011, 49). It sometimes appear rational to make a small car trip for a trifle pleasure — thereby "gambling" one's life for a small gain (Fantl and McGrath, 2009, 190). The generalisation is not that for *every* A and p such that A appears unsurpassed if p but disastrous if not-p, it appears irrational to do A. It is that for every p, one can find some A for which it is so. I will return to the variations in section (3.4).

2   Possibilist answers

We find normative sceptical paradoxes for pretty much any p, but we should not expect to answer them all the same way. There are bound to be some cases where the correct diagnosis is that you do not, after all, know p and others were A is in fact rational. Still, we can expect classes of similar paradoxes to receive parallel answers. In the recent literature on "high stakes" cases, it is often assumed that the most recalcitrant cases call for a similar answer, say, the failure of Purism. We may also expect answers to vary systematically with the notions involved. As we noted, many take a sceptical stance on the paradoxes against justified certainty but a Moorean one on the corresponding paradoxes against knowledge. Some views will also proscribe some answers entirely. While the Moorean and Dominance claim and Prudence are particular claims about the case, the Epistemic – Norma-

tive Bridge principles are universal. If we uphold one we cannot say that it fails in some case. Similarly, if we uphold Purism it is hard to say that the Purist claim fails in some case.[26] So even though we need not opt for one blanket answer to all normative sceptical paradoxes, it is worth considering the answers by type.

Authors who have discussed normative sceptical paradoxes overwhelmingly assume that they must receive answers of a certain broad type, which I call *Possibilist*. Debates are mostly confined between their variants. They tend to neglect problems that they all share and they ignore alternative options. Here I spell out what is common to Possibilist answers and map out their subtypes. I also outline a trilemma that they all face. I do not think it is fatal, but I find it more pressing than to decide which particular variant of Possibilism is correct. It also provides some motivation to look at answers of other types.

For concreteness I focus on the paradoxes targeted at knowledge. These are the ones that have generated the broadest range of answers. Authors do not always explicit which normative notion is involved. I focus on rationality.

2.1 Possibilism

An answer is Possibilist just if it holds onto the Possibilist lemma. Say that not-p is *practically possible* in a case just if it is not rational to take p for granted.[27] The lemma amounts to the claim that Prudence requires a practical possibility that not-p. Most authors assume Possibilism as a matter of course. Here are few

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[26]Though there is more room for manoeuvre here. Nagel (2010a, 421–2) upholds Purism but still rejects the Purist claims in some paradoxical cases, arguing that they involve unnoticed differences in "pure" factors. See note below, however.

[27]To be fully general we should that notion *rationality-relevant possibility* and similarly define *N-relevant possibility* for any normative notion N. But *practical possibility* will be a convenient shorthand.

illustrations.

Maher (1993, 133) writes a variant of the paradox against certainty, on a common Bayesian assumption that being certain is tantamount to assigning a probability of 1:

> [T]o give hypothesis if probability 1 is to be willing to bet on it at any odds; for example, a person who gave H probability 1 would be willing to accept a bet in which the person wins a penny if H is true, and dies a horrible death if H is false.

Subtleties aside, to assign probability 1 to p is to decide on a table that assumes p.[28] Thus Maher assumes that it is rational to be willing to accept that bet unless there is a practical possibility that not-p.

Hawthorne (2004, 175–6) considers a case in which you are offered life insurance and reason: "I will be going to Blackpool next year. So, I will not die beforehand. So, I ought to wait until next year before buying life insurance." He writes:

> [It] is intuitive to suppose that the practical reasoning is flawed and that that this is because the premise [. . .] is not known.

Here Hawthorne assumes that if it is not rational to draw the conclusion, that is so because it is not rational to rely on the premise. (He further claims that it is not rational to do so only if one does not know it, but leave that aside.) Presumably, it is rational to rely on p in practical reasoning if it is rational to take p for granted.[29]

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[28]The equivalence fails if not-p is practically possible despite having a 0 probability — as happens in some cases involving infinite state spaces — or if p is assumed but not given probability 1 — as happens if the table does not include a proability measure.

[29]See note 21 above.

Hence Hawthorne assumes that delaying is rational unless there is practical possibility of dying. Brown (2008, 176–7) introduces a case in which (it seems that) a surgeon knows which kidney she has to operate, but nevertheless checks the patient's records before operating. She writes:

> [The] relevant intuition in SURGEON is that the surgeon should not rely on the premise that it is the left kidney which is affected in practical reasoning.

Here as well, it is assumed that if there was no practical possibility that the affected kidney was not the left one, it would not be rational for her to check the records.

Examples can be multiplied.[30] Most authors assume that at least for the most interesting paradoxes, the Possibilist lemma obviously holds.

2.2 Prudent Possibilism

Among Possibilists, there is again a vast majority to uphold Prudence — at least for the paradoxes that are deemed worth discussing. We can see that in the quotes above: Maher thinks it is irrational to be willing to bet at any odds, Hawthorne that it is not rational to delay buying life insurance in his case, and analogously for Stanley and Brown. Most authors agree. Prudent Possibilism is the dominant view.

Given Prudence and the Possibilist Lemma, you cannot rationally take p for granted. That is, not-p must be practically possible. That leaves two main options: *Skepticism*, that denies the Moorean claim, and *Fallibilism*, that rejects the

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[30]See for instance Cohen (1999, 58), Fantl and McGrath (2002, 80), Stanley (2005, 11), Nagel (2010a, 421), Reed (2010, 229), Weatherson (2012, 83–4).

Knowledge–Rationality principle.[31] *Contextualists* are sophisticated Fallibilists who explain away the plausibility of the principle by arguing that "know" is context-sensitive in a way that makes it appear true.[32]

Impurists focus on counterfactual variant of the paradoxes that contrast a "low stakes" case with a "high stakes" case. They side with Skeptics on the high stakes case, but try to prevent Skepticism from spreading to "low stakes" cases by denying the Purist claim.[33] But the answer has no application to direct paradoxes.[34] Even in so-called "low stakes" cases, one can find resolutions and other attitudes that appear irrational if p is taken for granted. If Impurists reject Prudence about them, then it is unclear why they do not do it about "high stakes" actions as well. If they uphold Prudence about them, then they either endorse Skepticism or give up the Knowledge–Rationality principle. But if they do so, it is unclear why they should not solve "high stakes" cases similarly, as ordinary Fallibilists do. A Knowledge-.Rationality principle restricted to *currently available actions* (or

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[31]Unger (1975, chap. 3) defends a Sceptical solution. Brown (2008); Reed (2010) defend Fallibilist ones. (See also Hill and Schechter, 2007 against the Knowledge–Rationality principle).

[32]Contextualists about "know" such as Cohen (1999, 1988); DeRose (1992, 2009); Lewis (1996) may try to use their view to explain away Knowledge – Rationality. The guiding idea is that "know" tends to take a value as strict as required for all implications of Knowledge – Rationality *for actions under discussion* to be true. A semantics that delivers that result has yet to be worked out, though.

[33]Fantl and McGrath (2002, 2007, chap. 1, 26–29), Hawthorne (2004, 173–80), Stanley (2005, 2–6 and chap. 5), Weatherson (2012). Nagel (2010a, 421–2) rejects the Purist claims for some cases without rejecting Purism itself. On her view one of the "traditional" components of knowledge is whether your belief is well formed and one requirement of well-formed belief about p is that the cognitive effort is proportioned to the stakes in p. While she provides ample evidence that we do think one ought to put more cognitive effort before forming belief in a proposition one perceives as having high stakes, she says little about why that should be a condition on knowledge. The implicit idea seems to be that proportioned effort is really a condition on justification, and justification a condition on knowledge. But the idea that justification partly depends on perceived stakes is already a form of Impurism — at the very least, it is not on the list of "traditional" factors for knowledge.

[34]Unless one relativizes knowledge to choices within a single situation, a view that has no takers so far. See below 2.3.

currently actionable intentions) would deliver the result, but it appears *ad hoc*.[35]

[35]Fantl and McGrath (2009, 226–9) are the only ones to confront the problem. They consider the attitude of preferring *being offered to bet one's life on p and take the bet* ($b\&t$) to *being offered to bet one's life of p and not take the bet* ($b\&\neg p$). In their terminology the paradox takes the following form. (I slightly rephrase their KJ principle in a way that avoids some misunderstanding.)

(1) You know that p.

(2 = KJ) If you know p, then p is warranted enough to justify you in watever it justifies you in doing.

(3) If (2) and p justifies you in ϕ-ing, then you are justified in ϕ-ing.

(4) p justifies you in preferring $b\&t$ over $b\&\neg t$.

(5) You are not justified in preferring $b\&t$ over $b\&\neg t$.

(1-4) entail the negation of (5). (1) is the Moorean claim, (5) Prudence, (2 = KJ) their analogue of Knowledge–Rationality, (4) an analogue of the Dominance claim and (3) mostly definitional. Their strategy is to distinguish two attitudes that may be described as preferring $b\&t$ over $b\&\neg t$. They argue that the first is really harmless, so (5) fails for it, while the second is indeed reckless, but (4) fails for it. The first is a categorical preference of $b\&t$ over $b\&\neg t$, the second is a conditional preference of t over $\neg t$ given b. The crucial difference between the two is that the second would lead you to prefer betting if you were offered the bet, while the first may simply disappear upon being offered the bet. Let me grant that there are these two attitudes and that only the second is reckless and unjustified. I still do not see why they think (4) fails for it. (I *do* see a way in which it may fail, based on the Bad Habit view, but that is not what they have in mind and that undermines their diagnosis of "high stakes" cases as well.) In their discussion they give arguments why the conditional preference is unjustified, but that does not settle whether p justifies it. Consider in particular :

> Suppose, again, that you know that Grandpa smoked a pipe. You therefore know the truth of the conditional:
> (2) If I am offered the appropriate gamble, I would do best to take it.
> Can we find a reckless attitude that this justifies? You would be reckless to form a preference which, upon learning that you are offered the gamble, would lead you to accept it. This would be a conditional preference: preferring to accept rather than reject the appropriate gamble given that it is offered to you. Does your junk knowledge of (2) justify you in having this conditional preference? No, at least on the plausible assumption that the justification of a conditional preference for A over B given p goes by the conditional expected values of A and B given p. The conditional expected value of your taking the high-stakes bet given that it's offered is lower than that of your rejecting the bet given that it is offered. (Fantl and McGrath, 2009, 227–8)

The relevant question is whether *proposition (2)* justifies you in having the preference. But note that they answer it by saying that the conditional preference is not justified *simpliciter*. (Note in particular that p here is not proposition (2) but the proposition that the bet is offered.) Now I can grant that the conditional expected value of taking the bet *given that it is offered* is lower than that of rejecting it *given that it is offered*. That is so because, on their view, there's a slight epistemic possibility that the bet is lost. But the question is whether *proposition (2)* justifies the conditional preference, not whether the conditional preference is justified. To see that we would plausible have to see whether the conditional preference is justified *conditional on (2)*. This in turn would depend on whether the expected value of taking the bet given that it is offered *and (2) holds* is higher than the expected value of not taking it given that it is offered *and (2) holds*. But it *does* seem to be

2.3 A trilemma

Possibilists face a trilemma. Faced with particular paradoxes, most Possibilists opt for a Prudent answer. However, the paradox generalizes. So the question arises whether to apply Prudent Possibilist solutions across the board or to endorse some dose of Imprudence. The first option subdivide into two. Each of the three resulting views has difficulties of its own.

The first horn is to *let possibilities profuse*. If we apply Prudent Possibilism across the board, pretty much anything is practically possible. There are several worries with this. First, the profusion is hard to achieve. Ordinary tables always assume *some* things: that some action–state pair leads to a particular outcome, that some state has a particular probability and so on. These can be subjected to normative sceptical paradoxes. To get a full profusion one would need at least a hierarchy of higher-order probabilities. Second, it is unstable to defend profusion on the basis of the paradoxes alone. The Dominance claim in each paradox assumes that *some* things are rational to take for granted. For instance, we assumed that it was rational for you to take for granted that your flatmate will pay out if he looses. If the Prudent Possibilist endorses an argument to the effect that it is not rational to take *that* for granted, she looses her initial argument for the possibility of the glass not containing water. So profusion requires an independent motivation.[36] Third, it is doubtful whether we will recover intuitive verdicts on rationality. Profuse tables include the wildest possibilities. It is hard to assign

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higher. Since the conditional preference is in fact unjustified, but p justifies it, they must conclude (as they do in the "high stakes" cases) that p is not known.

[36]Many (*e.g.* Fantl and McGrath, 2009, 6–7) find such a motivation in sceptical arguments based on possibilities of error: the fact that people internally like us could be mistaken about many of the things we believe shows that many possibilities are compatible with our evidence. See Williamson (2000, chap. 8) for a critical discussion.

them probabilistic weights and values. If we introduce some practical possibility that some logical truths are false, we may be unable to assign proper probabilities at all. If the values are not commensurable or the weights not probabilistic, standard decision principles in terms of expected value may not be applicable. One may hope that the wild possibilities somehow wash out. But they should not completely wash out, since we want some to be weighty enough to make some actions and attitudes irrational. In the seed extract case, for instance, the possibility that the glass contains poison should not be significant enough to make it irrational to drink, but significant enough to make it irrational to resolve to drink even if you learned that you flatmate acquired poison. It is not guaranteed that any natural assignment of weights will deliver such results. Prudent Possibilists may of course question the intuitive verdicts. But they should then also reconsider the intuitions that lead them to Prudent Possibilism in the first place.

The second horn is to *relativize possibilities to choices*. We apply Prudent Possibilism across the board, but we say that possibilities are relative to choices. Hence even if p is not something that you can rationally take for granted relative to *some* choice you face, it may still be rational to take it for granted relative to some other choice you face. The proposal is incompatible with many conceptions of practical possibilities. Many, for instance, take practical possibilities to be just those that are compatible with one's evidence — whether they identify the latter with one's knowledge or not.[37] But few are willing to take one's evidence or knowledge to be relative to choice — so that it is at the same time true that you know p and that you do not, or that p is part of your evidence or it is not, depending on what choice is concerned. Some Impurists take practical possibilities to vary

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[37]See Weatherson (2012)*** for the first option, Fantl and McGrath (2009)*** for the second.

with practical environment, practical interests or what one is currently attending to. But that is not enough yet. For on their most natural understanding, these notions are not choice-relative either: one is only in one practical environment at a time, one has only one given set of practical interests at a time, one is only attending to one given set of things at a time. It may be suggested that practical possibilities vary with the *stakes* associated with each choice. However, stakes are themselves a matter of possibilities: whether a choice is a high-stakes one depends on what outcomes are (in some relevant sense) possible. If choice-relative possibilities are built from stakes determined on a background space of profuse choice-independent possibilities, the problems of the profusion horn recur. The difficulties with relativization are thus to motivate choice-relative possibilities and to provide a mechanism that delivers them.

The third horn is to *accept an Imprudent core*. That is, we block the profusion by adopting an Imprudent answer to some paradoxes. Hence in each case there is a *Practical Core* of propositions that it is rational to take for granted. Various candidates can be suggested: obvious logical truths, propositions about one's current experiences and one's inner mental states such as one's beliefs, desires and so on, propositions about one's observed environment, some or all of what one knows, and so on. It is tempting — though by no means necessary — to identify one's Practical Core with one's evidence. Imprudence has intuitive costs that can be alleviated in different ways; we return to those in the next section. Here I want to stress the following. Many Possibilists are tempted by Prudent answers on a few salient paradoxes. If, however, they avoid profusion and relativization by endorsing a non-empty Practical Core, they have to explain why they do not endorse Imprudence across the board. That is particularly so if they adopt some

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strategy to alleviate the intuitive cost of Imprudence that could be applied beyond their chosen Core.

2.4 Imprudence

Suppose that that there are some propositions that it is rational for you to take for granted — a Practical Core. On a Possibilist view, it is rational to take all sorts of actions that appear unsurpassed if these propositions are true. For instance, it will be rational to bet all of your possessions against one cent that those propositions are true. In many cases that seems plainly wrong. It does not seem rational to "gamble" a whole lot for a tiny gain even on logical truths or facts about one's current experiences.[38] Imprudent Possibilists can try to alleviate the cost. Here are four mutually compatible strategies they may adopt.

First, *normative anti-sceptical arguments*. They may use arguments of the following form. Action A is rational; it would not be so unless it was rational to take p for granted; so it is rational to take p for granted.[39] The difficulty here lies with the second premise. There are many tables that allow it without assuming p. Some may be very similar to tables that assume p by merely giving not-p a tiny probability. The premise must be defended against the suggestion that some such table better captures the case.

Second, *error theories*. In many of the paradoxes, the description of the action involved brings into salience the possibility of costly mistakes. Attending to such

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[38]Hawthorne (2004, 29) and Unger's discussion of Malcolm***.

[39]Arguments of this kind appear much older than normative *sceptical* ones. Stoics often pointed out that Academic Sceptics did accept some claims, since they fed themselves, avoided falling into trenches and so on. That is usually seen as an *ad hominem* remark intended to show that Sceptics did not live by their own doctrine. However it is easily recast as a normative anti-sceptical argument: it is rational to avoid the trench; it would not be so if you did not know that there was a trench, so you do know that there is a trench. REFS***

possibilities tends to makes us cautious (Hawthorne, 2004, 161–4; Nagel, 2010a, 409–14). Such psychological mechanisms may lead us to evaluate those actions incorrectly.[40]

Third, a *Double Duty* view. You must decide whether to A. But typically you must also decide whether *it is rational to* A. In the paradoxical cases, the first roughly depends on whether p, but the second roughly on whether *you know* that p. If you know that p without knowing that you do, it may be that it is both rational for you to A and *not* rational for you to believe that it is rational for you to A. More generally, such mismatches are expected at some level as soon as knowledge fails to iterate. Now say that one is *inter-level imperfect* when one does A without believing that it is rational to A.[41] In such cases doing A is rational but requires either an irrational higher-order belief or inter-level imperfection. Once we distinguish the former from the latter two, we see how doing A can be rational yet requires some irrationality or imperfection. If we further assume that we look more sternly at higher-level irrationality or imperfection in the paradoxical cases, we can explain our Prudent leanings (Williamson, 2005, 231–5).[42]

Fourth, a *Double Standards* view. A rational action may fail on some other normative dimension. One may argue that acting in the paradoxical instances,

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[40]Williamson (2005, 226) and Nagel (2010b, 301–6) argue on similar grounds that we are liable to erroneously disavow knowledge when confronted with the paradox.

[41]The view may or may not consider inter-level imperfection as irrational.

[42]The Double Duty view is distinct from two other views that appeal to the failure of knowledge to iterate. One says that — in the paradoxical cases at least — it is not rational to take p for granted unless one knows p, knows that one knows it, knows that one knows that one knows it and so on. Insofar as knowledge fails to iterate, there will be cases where one knows p but not-p is practically possible: the view is an instance of Fallibilism. Another says that even if p is true, *doing A while not knowing that doing A is rational* is itself bad. On that view the Dominance claim may fail: doing A may be worse than doing it on a p-state of the table at which one does not know that doing A is rational. The view is a deontological Re-evaluative answer. See fn. 43 below. As opposed to the first, Imprudent Possibilists maintain that it is rational to take p for granted; as opposed to the second, they maintain that doing A is rational.

while rational, requires *bad dispositions* on the part of the agent — dispositions that would lead them to disastrous choices in relatively similar circumstances. Once we distinguish the evaluation of an agent from the evaluation of their actions, we can see how the later can be rational and yet defective (Hawthorne and Stanley, 2008, 589).

All Imprudent Possibilists countenance the rationality of intuitively irrational actions and attitudes. Double Duty and Double Standards mitigate the cost by introducing another duty or norm that acting would violate. They do not reach an unequivocal verdict on whether to act in the paradoxical instances.

Possibilists face a trilemma between profusion, relativization and Imprudence. I have outlined salient difficulties for each option. They are not fatal, but they provide some motivation to look beyond Possibilism.

3   Re-evaluative answers

In the best instances of the paradox, some option A has an immediate outcome that is slightly better than alternatives if p but disastrous if not-p. (And it is rational to take for granted that it does.) Possibilism seems inescapable: either A is irrational or p itself cannot be taken for granted. *Re-evaluative* answers reject Possibilism by denying that doing A is better that alternatives even on the assumption that p. Accordingly, they reject the Dominance claim. In this section I explore a family of such views: *Bad Habit* solutions.[43] I present their motivation, their variants,

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[43]Another type of re-evaluative solutions would be *deontological* solutions: one has an obligation not to do A, irrespectively of known consequences. Weatherson (2012, 93) defends such a solution on the basis of moral considerations for some cases where the apparently irrational action impact others, such as Brown's (2008, 176) Surgeon case. Another type of deontological solution invokes a duty to be rational and failures of knowledge to iterate (see footnote 42 above). We leave

some objection and replies, and two applications.[44]

3.1 Bad Habit solutions

Let p be the proposition that taking a bit of cocaine just once would be fun and totally harmless. Suppose you know p and your flatmate offers you a sample. Assume it is rational to take what you know for granted. It may look as if you face the following choice:

	p
Accept	harmless fun
Refuse	nothing

And if so, it is rational to accept. However, many would say it is not. They do not have to argue that not-p is a practical possibility. Rather, they may simply argue that a crucial consideration has been left out: trying cocaine once may lead you to want more. So your choice is rather:

	p
Accept	harmless fun + potential bad habit
Refuse	nothing

And accepting may not come out as best.

Now consider a variant of the seed extract case. Suppose you know that both glasses additionally contain a liquid that will instil in you a habit of acting sim-

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them aside here.

[44]Possibilist and Re-evaluative answers do not exhaust all the possible answers to the paradox. Here are two further types that I leave aside. One is to *reject closure*: roughly, even though you know that p and that if p A is best, you do not know that A is best. Nozick (1981, 237) mentions it as a way to solve the dogmatism paradox but even he has little hope for it. Another is *all-out contextualism*: "knowledge" and "rational" are both context-sensitive in such a way that Knowledge – Rationality holds at every context while Prudence fails at some and the Moorean claim at others. Hence drinking in the poison case is "rational" in a sense and "not rational" in another sense. That is not easy to make sense of.

ilarly in sufficiently similar situations.[45] That is, the product would lead you to play similar games when you are similarly confident to win. You may be more reluctant to accept the flatmate's offer. For there is some chance that in some later replay of the game, you are equally confident that a glass does not contain seed extract but are mistaken. The instilled habit would then lead you to a discomforting experience. However, given that the discomfort is mild, and that overall the habit may allow you to relieve your flatmate of a significant sum, you may still opt for drinking. Contrast with a similar variant of the poison case. Even if a future mistake is unlikely, its consequences are so dramatic that the pleasure of relieving your flatmate from some money may not at all be worth it. So you may opt for rejecting the offer.

Similar considerations arise if do not know, but think it possible, that the glasses contain the habit-instilling liquid. They also arise whenever acting may instil a habit, whether or not some liquid or external mechanism is involved. In particular, they arise if simply *acting* in a certain way might instil in you a habit of acting similarly in similar cases.

Bad Habit solutions apply these considerations to the paradoxes. A disposition to act is *perfectly calibrated for knowledge* if whenever triggered it makes you act *exactly* on what you know. It is an uncontroversial form of human fallibility that our dispositions to act are not perfectly calibrated for knowledge. Any disposition to act we have would make us act on more than what we know in some cases and less in others.[46] Say that there is a *risk* that p in a case if and only if you do not know that not-p. In the paradoxical cases there is a risk that doing A will

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[45]Thanks to for suggesting this variant.

[46]The solutions only require a weaker claim, though: that we can never know that we are going to act on a perfectly calibrated disposition.

foster a habit to decide similarly in similar cases. Since the habit is not perfectly calibrated, it would lead you to act in some cases where you mistakenly take yourself to know. By the structure of the choice, the consequences in such cases would be disastrous. So the habit would be a bad one. Factoring in the risk of bad habit explains why it is irrational to do A. By contrast, in cases like the seed extract one, the impact of imperfect calibration is negligible; factoring the risk in does not lead to a different result than considering the immediate outcomes alone.

In Brown's (2008, 176–7) Surgeon case, Possibilists hold that if the Surgeon is right, operating straight away is no worse than checking the records first. Bad Habit solutions deny this: doing so risks instilling in the surgeon a habit that will later on have disastrous consequences. In DeRose's (1992, 913) "high stake" Bank case, Possibilists hold that if the bank is open on Saturday, delaying the deposit is best. Bad Habit solutions deny this, because delaying risks instilling a habit that would lead one to miss opening times in important situations later on. In Hawthorne's (2004, 175–6) life insurance case, Bad Habit solutions hold that even if it is assumed that you will live until next year, delaying subscription now risks instil in you the habit of delaying it indefinitely.

In some normative sceptical paradoxes, it seems that one knows that one will not foster a Bad Habit. We discuss these in the replies to objections below (3.3).

3.2 Variants

Habit considerations arise whatever one takes to be required for rationally taking something for granted.[47] Suppose that it is only rational to take for granted what one is certain of, for instance. Our disposition to act are not perfectly calibrated

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[47]Thanks to John Hawthorne here.

to certainty either. That is, any disposition we may acquire would sometimes lead us act on some things we are not certain of or to fail to act on some things we are certain of. Factoring in the potential consequences of those dispositions, we may rationally refrain to take some action whose immediate outcome is nevertheless best in view of what we are certain of. The same holds if rationally taking p for granted requires knowing p, knowing that one knows p and so on to infinite levels. Even if such states are accessible to us, our dispositions are not perfectly calibrated to them and Habit considerations arise.

Bad Habit solutions take different forms.[48] Say that a disposition is "bad" if its consequences in normal or otherwise relevant circumstances would be overall negative. One choice point is between *evidential* and *causal* decision-theoretic variants. On the causal version, doing A is bad insofar as it risks *causing you to acquire* a bad disposition. On the evidential version, doing A is bad not only if it risks breeding a bad disposition but also if it would indicate that you already have one. Another choice point is between *virtue-theoretic* and *consequentialist* variants.[49] On a virtue-theoretic view, merely *having* a bad disposition is bad. For instance, being disposed to trip vulnerable people for fun is a bad thing, whether or not you have the opportunity to do it. Thus an option incurs expected disvalue insofar as it makes it (causally or evidentially) likely that one *has* a bad disposition. On a consequentialist view, having a bad disposition is not itself bad; only its consequences are. On that view an option incurs disvalue insofar as it makes it (causally or evidentially) likely that one will act badly.

The Double Standard view and the Virtue-theoretic Solution resemble each

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[48]Thanks to John Hawthorne, Brian Hedden and Jeff Russell here.

[49]Our definitions only match a salient way to understand these labels. They are not meant to match all the ways in which the labels are used.

other but their diagnoses of the paradox are markedly different. The Double Standard view accepts that doing A is doing what is best in view of what you know and thus in one sense rational, though it is vicious and hence in some other sense unreasonable. The Virtue-theoretic Solution flatly denies that doing A is doing what is best is view of what you know because it is not worth the risk of fostering vicious tendencies. On that view no sense of "reasonable" need violate the Knowledge–Rationality principle.

3.3 Objections and replies

Some salient objections are worth addressing.

The first comes from *"just once" decisions*. In the poison case, it appears irrational to play the flatmate's game *just once*. But the option is unsurpassed on a table that takes for granted that the short glass only contains water. Bad Habits do not seem to help here. In reply, I point out that you do not know that this option is available to you.[50] For all you know, when you go ahead telling yourself "I'll do it just once", you foster a habit that will lead you to decide to do it "just once" next time as well.

The second comes from *unrepeated scenarios*. You may know that your flatmate will not ever again offer that game. If so there is no risk of future disasters; yet it seems irrational to play. In reply, I stress that the extent of our dispositions to act is not transparent to us. For all you know, playing that game now will lead you to later act similarly in some sufficiently similar choice situation not involving your flatmate nor that particular game.

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[50]One some views one's options concern (roughly) what one does here and now; on such views playing now *and not later* is not an option of your present choice at all. Thanks to John Hawthorne here.

The third comes from *near death cases*. In some variants of the paradox you know your action will not have dispositional consequences. For instance, you may own pills that prevent habit formation, or know that you are about to go to a habit-washing procedure, or that you are about to die. The Prudence intuition is no less strong in such cases. In reply, I point out, first, that the objection leaves Virtue-theoretic versions mostly untouched. On such views, having a bad disposition when you act is itself bad, irrespectively of whether the habit perdures or manifests itself. Second, it is not hard to argue that our intuitive verdicts go astray on such cases. Such situations are rare and our intuitions are likely to be shaped by mechanisms that are only suited to ordinary cases.

The objection highlights a trade-off among versions of the Bad Habit views. Causal and Consequentialist ones rely on barely controversial assumptions, Evidential and Virtue-theoretic ones have a better match with intuition.

The fourth is the *lack of intuitive support*. We rarely take dispositional consequences into account. That suggests that they do not matter, or at least that the view cannot explain our intuitive verdicts. In reply, I would venture the hypothesis that we factor in dispositional consequences into without explicitly thinking about them. Consider two agents that are offered to gamble on p for a gain g and a loss l. The first is certain on p, but thinks that accepting will lead her to do the same in a number of identical gambles, with a rate of success r. She will gamble only if $rg - (1 - r)l \geq 0$. The second ignores dispositional consequences, but only has a credence x in p. She will gamble only if $xg - (1 - x)l \geq 0$. Thus second agent can act as if she took dispositional consequences into account by adjusting her credences.

The fifth is an *inscrutability worry*.[51] The view says that what it is rational to do depends on what dispositional consequences you can reasonably expect present actions to have. But what expectations are reasonable on that score is hard to tell. Hence rationality is inscrutable. In reply I note, first, that we may be sensitive to dispositional consequences without thinking about them, as said earlier. And I stress, second, that the task of finding out what we ordinarily know about the dispositional consequences of our action is not hopeless. It is much more tractable, for instance, than the task faced by some Fallibilists of finding a plausible distribution of non-null evidential weights to all logical possibilities or even more.

The sixth arises from *value reformulations*.[52] God tells you that doing A if p brings a little *good* but doing A if not-p a great *evil*. It may seem irrational to do A even if you know p. Bad Habit views have no application here, since God has already factored in any dispositional consequence by framing the outcomes in terms of good and evil. In reply, I say that the dispositional consequences of doing A if p look bad. If it is nevertheless good, they must be offset: for instance, the immediate outcome must be very good. If so, it is rational to do A.

3.4 Puzzling Variations again

Bad Habit solutions shed some light on puzzling variations in intuitive verdicts. The dogmatic attitude appears sometimes rational: it may seem rational, for instance, not to look into an astrology book that promises to challenged one's well-seated sceptical beliefs. Similarly, it often seems rational to drink water from your tap to quench a little thirst, thereby in effect "gambling" your health on the water

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[51]Thanks to Jeff Russell here.
[52]Thanks to Olivier Roy here.

not being poisonous for a tiny gain.

Thinking in terms of habits help making sense of such verdicts. If you decided to look into this astrology book, you risk fostering a costly habit of looking into many similar books. If you decide not to, you only risk missing a few opportunities to revise your general beliefs about the world, with little practical consequence. The dogmatic habit is preferable. Similarly, if you decided not to drink from the tap now, you would foster a habit to forgo drinking in similar situations. Given that they occur daily, the overall cost would be significant. If you decide to drink, you risk fostering a disposition to drink that has a small chance of later leading you to disastrous consequences. If the chance is small enough, the drinking habit is preferable.

3.5 Belief and action

Bad Habit views undermine the widespread argument that it is not rational to be certain of anything (Maher, 1993, 133; Christensen, 2004, 21–2). They show that it can be rational to to decline a bet that you are certain to win: namely, because you may not be certain that accepting it will not foster in you a disposition to take similar bets in cases in which you do not know. There is no quick argument from the irrationality of certain bets to the irrationality of being certain.

The diagnosis urges caution with the idea that credences (graded beliefs) are manifested in betting behaviour. Bad Habit views are compatible with an orthodox decision-theoretic framework in which a rational agent maximizes expected value. When applying the framework, however, many assume that the expected value of an option is strictly a function of its immediate outcomes. For instance, if every

dollar equally matters to you, it is assumed that the option that yields 1 dollar for sure has the same expected value as the option that has half a chance of yielding 2. But opting for one may have different dispositional consequences than opting for the other. When those are factored in, the expected value of the two options may differ. Hence if an agent takes dispositional consequences into account, a theorists who infers her utilities and credences by assuming that she does not is likely to get wrong results.

The Bad Habit view is nevertheless compatible with the view that in a derivative sense, it is rational to be uncertain of what you know. For suppose that you are the kind of creature that pays no attention to dispositional consequences. Then being certain may lead you to make choices that are — by the lights of Bad Habit views — irrational. And being less than certain may be the only way for you to act rationally. If so there is a derived sense in which it is rational for you to be less than certain. Similarly, if you are the kind of creature that certainty makes dogmatic, and being less than certain is the only way for you to believe rationally, there is a derived sense in which it is rational for you not to be certain.[53]

4 Conclusion

We may call *the* Normative Sceptical Paradox the problem posed by the collection of normative sceptical paradoxes. Such paradoxes arise for every case where p seems known, some action or state A seems unsurpassed if p is assumed, and yet doing A or being in A seems irrational. Dogmatism paradoxes are a special

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[53]Berker (2013) argues that epistemic justification cannot be instrumental. Similar considerations for epistemic rationality. If so the derived sense in which it is rational to be less than certain to avoid dogmatic habits of thought is not epistemic, but rather practical in view of an epistemic good.

case where A is a dogmatic attitude or course of action. Variants are obtained by substituting other attitudes or epistemic statuses for "know" and other normative notions of "rational". Such paradoxes can be found for pretty much anything we seem to know, either by comparing our case to some counterpart case where one finds a "high-stake" choice or by focusing on some resolutions or attitudes we can have.

The Normative Sceptical Paradox is a recent discovery. It has received only a fraction of the attention devoted to more traditional sceptical arguments. It exerts, however, an influence that is manifest in a range of debates. It is commonly used to justify the idea that we should not be certain of anything. It is also used to question whether we should act on what one knows. It has sparked the recent discussions over whether knowledge or knowledge ascriptions are sensitive practical considerations.

By formulating the paradox explicitly and with full generality, we have highlighted two shortcomings of current debates. The first is the *assumption of Possibilism*. It is assumed without examination that in the most interesting normative sceptical paradoxes, it is rational to do A if it is rational to take p for granted. This leaves unquestioned the *Dominance claims* that the relevant actions are unsurpassed if p is taken for granted. As our discussion of habits shows, there are good reasons to doubt the claims. Possibilism is not the only option. The second is the *Profusion Trilemma*. By failing to heed the generality of the paradox, Possibilists fail to address the trilemma that they all face. A number of questions relevant to the profusion are debated in formal (Bayesian) epistemology and decision theory: whether possibilities can be weighed probabilistically, what are reasonable priors, whether learning makes some propositions certain, how to aggregate value,

how to select options and so on. But current discussions of the paradox in "main-stream" epistemology ignore such questions and focus almost exclusively on how knowledge ascriptions distribute with respect to practical possibilities.

Re-evaluative answers to the paradox challenge the widespread assumption that solving the paradox requires either revisionary judgements about rationality or profuse possibilities. *Bad Habit* solutions, in particular, follow naturally from two relatively uncontroversial ideas: that our actions are not probabilistically independent, but tied to dispositions, and that our dispositions to act do not perfectly track what we know. The solutions show some promise in dealing with the paradox: they both Prudent verdicts and Moorean claims without rejecting the idea that it is rational to choose what is best in view of what we know. They also shed some light on some otherwise puzzling variations of our intuitions across cases and raise questions about some common assumptions about the relations between belief and action.

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