

Evidence Against Pragmatic Encroachment*

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Abstract

We argue that a certain version of pragmatic encroachment, according to which one knows that p only if one's epistemic position with respect to p is practically adequate, has a problematic consequence: one can *lose* knowledge that p by getting evidence *for* p , and conversely, one can *gain* knowledge that p by getting evidence *against* p . We first describe this version of pragmatic encroachment, and then we defend that it has the problematic consequence. Finally, we deal with a worry that the consequence we find problematic is not, in fact, problematic.

We argue that a certain version of pragmatic encroachment has a problematic consequence. We first describe this version of pragmatic encroachment, and then we articulate the problematic consequence. Finally, we deal with a worry that the problematic consequence is not, in fact, problematic. To preview: The version of pragmatic encroachment in view says that one knows that p only if one's epistemic position with respect to p is practically adequate, and the problematic consequence is one can *lose* knowledge that

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p by getting evidence *for* p , and conversely, one can *gain* knowledge that p by getting evidence *against* p .¹

1. Pragmatic encroachers maintain that whether one knows that p requires more than having a non-gettiered true belief that p that has the right truth-conducive features. Knowledge also depends on the practical features of one's situation. This view comes in a number of varieties.² The usual presentation of pragmatic encroachment deploys the ideology of 'stakes'. The intuitive idea is the higher the stakes, the harder it is to know. Unfortunately, stakes are a messy affair. Indeed, it's not clear whether there is any one property of a practical situation that neatly tracks our use of 'stakes'.

Some defenders of pragmatic encroachment have been more precise. One particularly popular version of pragmatic encroachment, for example, says that one knows that p only if one's epistemic position with respect to p is 'practically adequate'. It is tempting to think that the claim that practical adequacy is necessary for knowledge is a regimented substitute for expressions of pragmatic encroachment in terms of stakes, though pragmatic encroachers have not been explicit about this connection. Whether practical adequacy is a regimented stakes substitute is irrelevant for our purposes; our discussion directly concerns practical adequacy, which certain pragmatic encroachers are committed to.³

What is it for one's epistemic position to be practically adequate? For any subject s and proposition p , s 's epistemic position with respect to p is practically adequate if and only if the gap between s 's actual strength of epistemic position for p and the strength of epistemic position conditional on p makes no 'practical difference'.⁴ And this gap makes a practical difference if and only if the action that is rational for s given s 's actual credences differs

¹By 'evidence for', we mean confirming evidence; by 'evidence against', we mean disconfirming evidence.

²Compare the views of Fantl and McGrath (2002, 2009) to Schroeder (2012) and Stanley (2005), for example. Fantl and McGrath are the main defenders of the type of pragmatic encroachment in view here. See also Anderson and Hawthorne (forthcoming) for discussion and for a characterization of pragmatic encroachment near identical to that given here.

³Fantl and McGrath (2002) are the most clear about their commitment to practical adequacy. Stanley (2005) is not so clear, but he comes very close to committing as well. At any rate, it is unlikely that the substitute is an appropriate one; see Anderson and Hawthorne (forthcoming).

⁴This characterization of practical adequacy is taken almost verbatim from Anderson and Hawthorne (forthcoming), p. 4. See DeRose (2009) pp. 7-9 for a general characterization of strength of epistemic position. We gloss strength of epistemic position purely in terms of evidence, but the points we make go through on other glosses as well.

from the rational action for s conditional on p .

Here's more detail. Assume that one can determine the rank-ordering of actions on the basis of standard decision-theoretic considerations. There are two steps to determining whether one's epistemic position is practically adequate. First, using one's actual credences, calculate the expected utilities of all the available actions and list them from greatest to least. Second, again calculate the expected utilities of all the available actions, except this time, use the probabilities of each proposition conditional on p , and list these results from greatest to least. If the lists have different actions ranked first, then the gap made a practical difference, and s 's epistemic position with respect to p is practically inadequate; if the lists have the same action ranked first, then the gap made no practical difference, and s 's epistemic position with respect to p is practically adequate.

An example is helpful. A sea captain is just about to take a ship full of 200 passengers for a harbor tour. Now consider the following proposition: the sea captain's ship is seaworthy. Suppose that her rational credence that the ship is seaworthy is .9, and accordingly that her rational credence that the ship is not seaworthy is .1—fill in the details however you like to get these numbers. We use ' C ' represent an agent's rational credence function. In this case, then, $C(\text{seaworthy}) = .9$ and $C(\text{not seaworthy}) = .1$ Furthermore, she has two available ways in which she could act: she could depart immediately or she could delay the harbor tour to do some further checking to raise her confidence that the ship is seaworthy.

This setup has two possible options for action and two possible states of the world, so accordingly, there are four possible outcomes to consider. First suppose that the sea captain chooses to start the harbor tour on time. If the ship is not seaworthy, then everyone drowns. If the ship is seaworthy, then everyone has a pleasant harbor tour and none of the passengers get upset due to a delay. Now suppose that the sea captain delays the cruise to do some further checking. If the ship is not seaworthy, then the sea captain will discover this and cancel the harbor tour. This would make the passengers angry, and it would lose the captain the revenue that would have been generated by the trip. If the ship is seaworthy, then the captain's extra checking would delay the departure a half hour, and this would make some of the passengers mildly upset.

We can represent the sea captain's scenario with the following table:

	ship is seaworthy	ship is not seaworthy
start the tour on time	+10	-10,000
do some further checking	-10	-200

We use ‘ EU ’ to represent an agent’s expected utility function. In this case, $EU(\text{start on time}) = .9(10) + .1(-10,000) = -991$, whereas $EU(\text{do further checking}) = .9(-10) + .1(-200) = -29$. Given her actual credences, the sea captain ought to do some further checking, since that action maximizes expected utility for her. Conditional on the ship’s being seaworthy, however, $EU(\text{start on time}) = 10$, while $EU(\text{do further checking}) = -10$.⁵ Conditional on the ship’s being seaworthy, the sea captain ought to start the harbor tour on time, since that action maximizes expected utility for her.

Thus, the order of the sea captain’s actual rankings differs from her rankings conditional on the ship’s being seaworthy. The gap for the sea captain makes a practical difference, and accordingly, the sea captain’s strength of epistemic position with respect to the ship’s being seaworthy is practically *inadequate*.

Let’s now consider a subject whose strength of epistemic position, with respect to this same p , is practically *adequate*. Consider Kenji and his friend Smith who both happen to walk by the ship mentioned above right as it is scheduled to start its harbor tour. Kenji likes to bet on everything, so he proposes the following set of bets to Smith. If Smith bets that the ship will sink during its next harbor tour and he’s right, then he wins \$5, and if he’s wrong, then he loses \$5. Also, if Smith bets that the ship will *not* sink during its next harbor tour and he’s right, then he wins \$5, and if he’s wrong, then he loses \$5.

It turns out that Smith has the exact same evidence that the ship is seaworthy that the sea captain has, and accordingly $C(\text{seaworthy}) = .9$ and $C(\text{not seaworthy}) = .1$. We can represent Smith’s scenario with the following table:

	ship is seaworthy	ship is not seaworthy
start the tour on time	+5	-5
do some further checking	-5	+5

⁵ $1(10) + 0(-10,000) = 10$; $1(-10) + 0(-200) = -10$. The second column of the decision table becomes irrelevant when one’s probability that the ship is not seaworthy is 0.

$EU(\text{bet seaworthy}) = 4$, whereas $EU(\text{bet not seaworthy}) = -4$. Given Smith’s actual credences, he ought to bet that the ship is seaworthy, since that action maximizes expected utility for him. Further, conditional on the ship’s being seaworthy, Smith ought to do the same. This is because, conditional on the ship’s being seaworthy, $EU(\text{bet seaworthy}) = 5$, while $EU(\text{bet not seaworthy}) = -5$. Thus, the order of the Smith’s actual rankings do not differ from his rankings conditional on the ship’s being seaworthy. The gap here makes no practical difference, and accordingly, Smith’s strength of epistemic position with respect to the ship’s being seaworthy is practically *adequate*.

With this understanding of practical adequacy on the table, we are now in a position to formulate the practical adequacy version of pragmatic encroachment: one knows that p only if one’s epistemic position with respect to p is practically adequate. This characterization of pragmatic encroachment is prominent in the literature. Anderson and Hawthorne (forthcoming) do not defend the view, but they formulate pragmatic encroachment in just this way (see especially p. 4). Fantl and McGrath (2002), in the first systematic defense of pragmatic encroachment in the recent literature, write, “ S is justified in believing that p only if, for all acts A , S is rational to do A , given p , iff S is rational to do A , in fact” (p. 78). This is a practical adequacy condition on justification, but Fantl and McGrath make clear that they mean to defend a similar view about knowledge as well. They defend the practical adequacy version of pragmatic encroachment again in Fantl and McGrath (2009). We, however, make no attempt to motivate or defend the view. We point you to its proponents, in particular Fantl and McGrath, for motivation and defense.

2. The problematic consequence of the practical adequacy version of pragmatic encroachment is this: one can *lose* knowledge that p by getting evidence *for* p . Conversely, one can *gain* knowledge that p by getting evidence *against* p .

Consider the following decision table:

	p is true	q is true	r is true
do A	+100	-100	-1
do not- A	-100	+100	+1

Suppose that p , q , and r are each satisfiable sentences that entail the nega-

tions of the other two, and that they exhaust the epistemic space. It is easy to see that, conditional on r , one ought to do not- A . But what is the minimally strong epistemic position with respect to r that is practically adequate?

One needs $EU(\text{not-}A) > EU(A)$ given one's actual credences, since conditional on r , $EU(\text{not-}A) > EU(A)$. It turns out that the demands of practical adequacy with respect to r depend on the relationship between one's credences for p and q .

When $C(p) = C(q)$, it's easy to be in a practically adequate epistemic position with respect to r . Proof. Let $C(p) + C(q) = x$, so $C(r) = 1 - x$. Then,

$$EU(A) = (x/2)(+100) + (x/2)(-100) + (1 - x)(-1) = x - 1,$$

and

$$EU(\text{not-}A) = (x/2)(-100) + (x/2)(+100) + (1 - x)(+1) = 1 - x.$$

For $EU(\text{not-}A) > EU(A)$, we need $1 - x > x - 1$, so we need $x < 1$. So long as $C(r)$ is non-zero, one is in a practically adequate epistemic position with respect to r when $C(p) = C(q)$.

However, when $C(p) = 2(C(q))$, it's difficult to be in a practically adequate epistemic position with respect to r . Again, let $C(p) + C(q) = x$, so $C(r) = 1 - x$, $C(q) = x/3$, and $C(p) = 2x/3$. In this case,

$$EU(A) = (2x/3)(+100) + (x/3)(-100) + (1 - x)(-1),$$

and

$$EU(\text{not-}A) = (2x/3)(-100) + (x/3)(+100) + (1 - x)(+1).$$

For $EU(\text{not-}A) > EU(A)$, we need $1 - 103x/3 > 103x/3 - 1$. We need $x < .03$, and thus $C(r) > .97$, to be in a practically adequate epistemic position with respect to r when $C(p) = 2(C(q))$.

One possible distribution of rational credences is thus: $C(p) = .1$, $C(q) = .1$, and $C(r) = .8$. In such a case $C(p) = C(q)$, so using the result from the first test case, one is in a practically adequate epistemic position with respect to r since $.8 > 0$. Thus, one can know that r in this case. But suppose one got some evidence for r , evidence that bumps $C(r)$ up to $.85$ and bumps $C(q)$ down to $.05$ and doesn't affect $C(p)$, which remains $.1$.⁶ In such a

⁶If you're worried that evidence can't alter credences this way, see Pryor (2004) pp. 350-51.

case, $C(p) = 2(C(q))$, so using the result from the second test case, one is now *not* in a practically adequate epistemic position with respect to r , since $.85 < .97$. Therefore, *despite that* $C(r)$ would increase from $.8$ to $.85$ in virtue of this new bit of evidence, one would come to be in a practically *inadequate* epistemic position with respect to r . Supposing one satisfies all the other necessary conditions for knowledge in both cases, one *loses* one's knowledge that r by getting evidence *for* r . One can here, and in the cases that follow, reverse the order to see that one can *gain* knowledge by getting evidence *against* a proposition.⁷ This is an abstract example of the problematic consequence of the practical adequacy version of pragmatic encroachment.

⁷An anonymous reviewer helpfully pointed out to us that there is a gap in our argument vis-a-vis pragmatic encroachers of a certain type. In particular, it's open to pragmatic encroachers to have other necessary conditions on knowledge than truth, belief, a high-enough credence, and practical adequacy. On these views, it may be that one can get evidence against p , thereby come to be practically adequate with respect to p , but nonetheless still fail to know that p because of a failure to satisfy some other necessary condition on knowledge. Thus, we have supplied neither an abstract case nor a real life case to show that if the practical adequacy version of pragmatic encroachment is true, then one can get evidence *against* p and thereby *gain* knowledge that p . Our reply is four-fold. First, clarification. Our primary target in this paper are those pragmatic encroachment views according to which practical adequacy is the only practical condition on knowledge, and for such views there is no such gap. Second, concession. It's just true that this gap exists for those pragmatic encroachers who add in other pragmatic conditions in addition to practical adequacy. Third, a "yeah, but..." point. Yeah, but even given the gap, it's still true that we've shown that one can get evidence *for* p and thereby *lose* one's knowledge that p , and that's bad. Fourth, a gap-filling dilemma. Whatever these other necessary conditions are, they're either independent from or interdependent with practical adequacy. *Horn 1*: Suppose the other necessary conditions are independent from practical adequacy. Then we can stipulate that in the relevant cases the other necessary conditions are satisfied both before and after getting the new evidence against p . Thus, our point goes through. *Horn 2*: Suppose the other necessary conditions are interdependent with practical adequacy. Then, once we identify what, precisely, these conditions are, we should be able to build cases where practical adequacy comes *along with* these other necessary conditions when one gets the new evidence against p . (The necessary conditions couldn't work against one another; otherwise, knowledge would be impossible!) Thus, our point goes through. Either way, our point goes through. It would take us too far afield of the main point of this paper to explore whether this dilemma can be made to stick. In particular, we'd have to do some detailed exegesis of various pragmatic encroachers, and build cases for each proposed additional necessary condition. We leave that pending: at this stage, our dilemma serves only as a challenge to those pragmatic encroachers that would hope to avoid the possibility of gaining knowledge by getting evidence against a proposition by appealing to additional necessary conditions on knowledge. After all, "yeah, but...": even if the pragmatic encroacher meets this challenge, it's still true that one can get evidence *for* p and thereby *lose* one's knowledge that p .

3. *There are realistic cases.* Consider this decision table, where X is a vaccine that protects against disease D . To simplify things, suppose that exposure to D without having had X guarantees that one contracts D , and if one gets X , then one won't contract D even if one is exposed to it, and suppose that whether one is allergic to X is probabilistically independent of whether one will be exposed to D .

	I'll be exposed to D & I'm allergic to X	I'll be exposed to D & I'm not allergic to X	I'll not be exposed to D & I'm allergic to X	I'll not be exposed to D & I'm not allergic to X
get X	-100	-5	-100	-5
don't get X	-100	-100	0	0

Suppose one started with the following credences: $C(\text{one will be exposed to } D) = .2$ and $C(\text{one is allergic to } X) = .1$. So $C(\text{one won't be exposed to } D) = .8$ and $C(\text{one isn't allergic to } X) = .9$. Then,

$$C(\text{Not-Exposed}\&\text{Not-Allergic}) = C(\text{one won't be exposed to } D) * C(\text{one isn't allergic to } X) = (.8)(.9) = .72$$

One can calculate the likelihood of the other columns as well:

$$C(\text{Exposed}\&\text{Allergic}) = (.2)(.1) = .02$$

$$C(\text{Exposed}\&\text{Not-Allergic}) = (.2)(.9) = .18$$

$$C(\text{Not-Exposed}\&\text{Allergic}) = (.8)(.1) = .08$$

With these credences, one's epistemic position with respect to Not-Exposed&Not-Allergic is not practically adequate. Conditional on Not-Exposed&Not-Allergic, $EU(\text{don't get } X) > EU(\text{get } X)$, but one's actual ranking of actions has get X at the top:

1. $EU(\text{get } X) = -14.5$
2. $EU(\text{don't get } X) = -20$

Suppose that one's evidence that one is allergic to X is that 20% of the population has some genetic trait G , and that half of those that have G are allergic to X . Accordingly, one's credence that one has G is .2, that one is

allergic conditional on one having trait G is .5, and thus one's credence that one is allergic is .1—just as it is above. Now suppose that one gets some new evidence that one is allergic to X , in particular, one gets screened for G , and this test comes back positive. However, this test gives lots of false positives, and thus testing positive only doubles one's likelihood of having G . Accordingly, one's credence that one has G conditional on one's positive screening is .4, and thus one's updated credence that one is allergic to X is bumped up to .2 by this new evidence; that is

$$C^+(\text{one is allergic to } X) = .2$$

Correspondingly,

$$C^+(\text{one isn't allergic to } X) = .8.$$

We can recalculate the others as well:

$$C^+(\text{Not-Exposed}\&\text{Not-Allergic}) = .64 \text{ (down from .72),}$$

$$C^+(\text{Exposed}\&\text{Allergic}) = .04 \text{ (up from .02),}$$

$$C^+(\text{Exposed}\&\text{Not-Allergic}) = .16 \text{ (down from .18), and}$$

$$C^+(\text{Not-Exposed}\&\text{Allergic}) = .16 \text{ (up from .08).}$$

With these new credences, one's epistemic position with respect to Not-Exposed&Not-Allergic *is* practically adequate, since one's actual ranking of actions has don't get X at the top:

1. $EU(\text{don't get } X) = -20$
2. $EU(\text{get } X) = -24$

These rankings are the same as those conditional on Not-Exposed&Not-Allergic. Thus, one has gotten evidence *against* Not-Exposed&Not-Allergic, as one's credence in Not-Exposed&Not-Allergic has fallen, and yet one has come to be in a position to know that Not-Exposed&Not-Allergic is true. To drive things home: one has come to be in a position to know that one *is not* allergic to X , since one has come to be in a position to know Not-Exposed&Not-Allergic, which entails that one is not allergic to X , by getting

evidence *for* the claim that one *is* allergic to X!⁸

4. We take it to be rather obvious that one ought not be able to go from not knowing that p to knowing that p by getting evidence *against* p , nor should one be able to go from knowing that p to not knowing that p by getting evidence *for* p . Thus, we take the consequence above to be obviously problematic.

The pragmatic encroacher demurs: ‘We have been saying all along that one’s practical situation, the stakes involved, can affect one’s knowledge—that one might know that p despite having a lower rational credence in p than another person who doesn’t know that p , just because of a difference in practical matters, because of a difference in the stakes. Thus, we shouldn’t be surprised that there are cases where one comes to know that p despite one’s credence in p lowering and cases where one loses knowledge that p despite one’s credence in p rising.’

This is not to the point. Pragmatic encroachers have defended the relevant claim by pointing to changes in one’s *practical situation*. But in the cases we’ve considered there is no change at all in the practical situation; the costs and benefits of being right or wrong have not changed, nor have the relevant propositions. All that changes is the agent’s *evidential situation*. We submit that even if it is plausible that changes in one’s practical situation can affect whether one knows that p , it is nonetheless implausible that coming to be better positioned evidentially with respect to p might take one from knowing to not knowing that p , and that coming to be worse positioned evidentially with respect to p might take one from not knowing to knowing that p .

The pragmatic encroacher replies: ‘You assume too clean a line between practical situations and evidential situations. I think of practical situations, of stakes, in terms of practical adequacy, so I think of practical situations in terms of *expected* utilities. And *expected* utilities are affected by credences. So there is no clean line between evidential situation and practical situation; evidential changes *are* practical changes. Think about the vaccine case, for

⁸One might object that a credence of .64 is far too low to be in a position to know, that one must have a credence above some high threshold in addition to being in a practically adequate epistemic position. And whatever that threshold is, it had better be above .64. We grant this point. However, it doesn’t really matter. We’ve chosen the numbers above to make the math come out in a fairly simple way. Once one sets a threshold for knowledge below 1, we can build a case with just the contours of the example above that illustrates the problem for pragmatic encroachment. Since there is no standard credence threshold for knowledge, we’ve chosen the path of easy math rather than demanding credence floors.

example. It looks as though getting evidence that one is allergic changes the stakes of the case, in some intuitive sense of stakes. Sure, the goodies and baddies of the various outcomes don't change, but that doesn't mean the stakes haven't changed. Again, we understand stakes in terms of the standards for practical adequacy. The higher the credence needed to be practically adequate, the higher the stakes. A change in the stakes, therefore, shows up in the vaccine case as a change in how hard it is to be practically adequate with respect to the various propositions involved. And once you've seen that, you'll see that really there's no problem here, because all along we pragmatic encroachers have been saying that knowledge is easier to come by when the stakes are lower, and in the vaccine case, the evidence against Not-Exposed&Not-Allergic lowers the stakes, making it easier to know.⁹

We grant most of that speech. It is true that that pragmatic encroachers have been saying all along that the standards for practical adequacy impact the standards for knowing, and we grant here that one can precisify stakes in terms of practical adequacy. It's also true that the cases we describe are ones where, according to pragmatic encroachers, knowledge comes and goes because of changes in the standards for practical adequacy, despite credence changes that look like they should push the knowledge facts in precisely the opposite direction of the way they are in fact pushed. Putting these together, it's true that pragmatic encroachers have been committed to these cases going the way we say they go all along. It's just a consequence of their view that these sorts of things can happen. With this much we agree. However, not all consequences should be accepted. Some consequences serve as evidence against the views from which they follow. The consequences we've highlighted are like that: they constitute reasons to think that the practical adequacy version of pragmatic encroachment is false.

In other words, it's true that the cases we develop follow from what practical adequacy pragmatic encroachers have been saying all along about practical situations and their connection to knowledge. But pointing this out simply repeats the view. In the spirit of repetition, here are two reasons to worry about the practical adequacy version of pragmatic encroachment: you can get evidence *for* a proposition and *lose* knowledge, and you can get evidence *against* a proposition and *gain* knowledge.

⁹Thanks to an anonymous reviewer for pressing us to consider this reply.

References

- [1] Anderson, Charity & John Hawthorne (forthcoming). Knowledge, Practical Adequacy, and Stakes. In Tamar Szabo Gendler and John Hawthorne (eds.), *Oxford Studies in Epistemology*.
- [2] DeRose, Keith (2009). *The Case for Contextualism*. New York: Oxford University Press.
- [3] Fantl, Jeremy & Matthew McGrath (2002). Evidence, Pragmatics, and Justification. *The Philosophical Review* 111.1, 67-94.
- [4] Fantl, Jeremy & Matthew McGrath (2009). *Knowledge in an Uncertain World*. New York: Oxford University Press.
- [5] Pryor, James (2004). What's Wrong with Moore's Argument? *Philosophical Issues* 14, 349-78.
- [6] Schroeder, Mark (2012). Stakes, Withholding, and Pragmatic Encroachment on Knowledge. *Philosophical Studies* 160.2, 265-85.
- [7] Stanley, Jason (2005). *Knowledge and Practical Interests*. New York: Oxford University Press.