**Easy Knowledge, Transmission Failure, and Empiricism**

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**Introduction.** In this paper I discuss a particular epistemological puzzle that is a version – and, I think (though I shall not argue it here), the most fundamental version – of what has sometimes been called “the problem of easy knowledge”. I’ll begin by spelling out, in section I, what I take the problem to be. Then, in sections 2 – 4, I’ll argue that recent attempts to address the problem (from Jonathan Weisberg, Michael Titelbaum, and Chris Tucker) all fail. In section 5, I’ll articulate a principle (very similar to one that Crispin Wright has recently defended) that solves the problem. The common objection to this principle – an objection that Wright, for instance, accepts – is that it is inconsistent with a plausible empiricism. I argue that this objection fails: in fact, the principle is fully consistent with any plausible empiricism.

**Section 1**.  The phrase "the problem of easy knowledge" has been used as a label for various epistemological puzzles.  Let me be explicit about the particular puzzle that I'll be discussing here.  The puzzle that I'll be discussing here is really a puzzle about *doxastic justification*, i.e., a belief’s being justified, and its relation to *propositional justification*, i.e., a person’s being justified in believing something (whether or not she believes it).  The reason that I discuss justification instead of knowledge is that the epistemological puzzle that I want to discuss is a puzzle that arises in respect to beliefs that need not be true.  And justification, unlike knowledge, does not require truth.

The puzzle arises if we assume, as I do, that doxastic justification is closed under undefeated competent deduction, where by “competent deduction”, I mean a deduction that one makes from premise set P to conclusion C because one understands that C is entailed by P, and where a competent deduction is “undefeated” if one has no reason for believing that it is unsound.  For if we assume the closure of justification under undefeated competent deduction, then we may wonder what to say about the competent deductive inferences that take place in the following four hypothetical cases.

 **Testimony Case**.  You are walking around St. Andrews looking for Market Street, and so you ask some passerby (who is utterly unknown to you) where Market Street is.  She tells you it is 3 blocks North, and that's the end of your conversation with her.  There is, let's stipulate, nothing unusual about the situation, or about your interlocutor.  Now, you competently reason as follows, and thereby arrive, for the first time, at a belief in the proposition (3), a proposition that you had not heretofore doubted or questioned:

(1) My interlocutor said that Market Street is 3 blocks north of here.
(2) Market Street is 3 blocks north of here.

(3) On this occasion, my interlocutor told the truth.

 **Gibonacci Case**.  You are calculating sums of the first 10 elements of various Fibonacci sequences using the procedure of multiplying the seventh element of the sequence by 11.  (Let's call this the "Gibonacci procedure", for the generalized Fibonacci procedure.)  For the sequence:

x
y
x + y
x + 2y
2x + 3y
3x + 5y
5x + 8y
8x + 13y
13x + 21y
21x + 34y

you calculate the sum of these 10 elements by multiplying the seventh element by 11, and you get:  55x + 88y.  Then you competently reason as follows, and thereby arrive, for the first time, at a belief in the proposition (3’), a proposition that you had not heretofore doubted or questioned:

(1') According to the Gibonacci procedure, the sum of the first 10 elements of the Fibonacci sequence whose first 2 elements are x and y is 55x + 88y.
(2') The sum of the first 10 elements of the Fibonacci sequence whose first 2 elements are x and y is 55x + 88y.

(3') The Gibonacci procedure gives the right result.[[1]](#footnote-1)

 **Leaky Memory Case**.  You have heard that some people have unreliable memories, but you have no reason to suspect that you are one of these people. In fact, you have learned (though you can’t now recall just how it is that you learned this) that your own recall is highly reliable, in the sense that, usually, when you seem to recall that p, it is true that p. And so you competently reason as follows, and thereby arrive, for the first time, at a belief in the proposition (3’’), a proposition that you had not heretofore doubted or questioned:

(1'') I seem to recall that my recall is, for the most part, highly accurate.
(2'') My recall is, for the most part, highly accurate.

(3'') On this very occasion, my recall is accurate.

**Proof Case**. You have just done a very careful 200-step mathematical proof of the following form:

a + b = c

c + d = e

e + f = g

…

a + b + c + d + … = z.

The conclusion of the proof states the sum of 201 numbers. Now, having just done the proof and come to believe the conclusion on its basis, you reason as follows, and thereby arrive, for the first time, at a belief in the proposition (3’’’), a proposition that you had not heretofore doubted or questioned:

(1’’’) I have just done a proof that C.

(2’’’) C.

(3’’’) If I made any mistake of addition or transcription in this proof, that mistake was compensated for by some other mistake.

There is a problem about doxastic justification that is common to each of the four cases above.  In each case, the protagonist justifiably believes the first two premises – let’s stipulate that she does.  Furthermore, in each case, the protagonist competently deduces the conclusion from those premises – again, we can stipulate that she does.  Given the closure of justification under competent deduction, it follows that the protagonist justifiably believes the conclusion of each argument.  But, in a situation in which the protagonist's justification for believing the second premise depends upon her justification for believing the first premise, the protagonist cannot gain justification for believing the conclusion by performing any of the deductive inferences just sketched, no matter how competently she reasons.  For example, if what justifies your belief, in Testimony Case, that Market Street is 3 blocks north of here, is simply that your interlocutor said so, then your belief that your interlocutor told the truth cannot become justified simply by your inferring (3) from (1) and (2).  If what justifies your belief, in Gibonacci Case, that the sum of the first 10 elements of the Fibonacci sequence whose first 2 elements are x and y is 55x + 88y, is simply that the Gibonacci procedure gives that result, then your belief that the Gibonacci procedure gives a correct result cannot become justified simply by your inferring (3’) from (1’) and (2’).  And so on for the third and fourth cases. In each case, even if the inference leads you to acquire belief in the conclusion for the first time, and even if your belief in the conclusion happens to be somehow or other justified, still, your inference cannot be what makes your belief in the conclusion justified – at least not in those cases in which you have no justification for believing the second premise that does not depend upon your justification for believing the first premise. The problem that we confront here is the problem of explaining why this is so.

Should we solve the problem common to these four cases by simply denying its presupposition, viz., that doxastic justification is closed under undefeated competent deduction? Indeed, doesn’t the lottery paradox give us reason for denying such closure? No. What the lottery paradox shows, at best, is that justification is not closed under conjunction when the conjuncts are negatively epistemically relevant to each other (accepting either conjunct makes it rational to be less confident of the truth of the other conjunct). But the premises of the inferences are not negatively epistemically relevant to each other – on the contrary, they are positively epistemically relevant to each other. So the inferences above cannot be assimilated to lottery inferences in which closure has been thought to fail. Do considerations of risk aggregation (as in the preface paradox) give us reason to deny closure, even in cases in which the premises are not negatively epistemically relevant to each other? Perhaps they do, but this is irrelevant: let the premises be as risk-free as you please -- indeed, let them be nearly certain -- and the deductive inferences above still cannot serve to justify their conclusions. So what's going on in the four cases above?  I'll critically assess one proposal built around Jonathan Weisberg’s No Feedback principle, another proposal built around Michael Titelbaum’s argument against “No Lose” investigations, a third proposal from Chris Tucker’s account of transmission failure, and then finally endorse and defend a fourth proposal.

**Section 2**.  Weisberg clearly addresses cases like the Testimony Case above.  He begins by postulating a defeater for inductive reasoning.

**"**No Feedback.  If (i) L1 - Ln are inferred from P1 - Pm, and (ii) C is inferred from L1 - Ln (and possibly some of P1 - Pm) by an argument whose justificatory power depends on making C at least x probable, and (iii) P1 - Pm do not make C at least x probable without the help of L1 - Ln, then the argument for C is defeated."[[2]](#footnote-2)

The basic idea of No Feedback is simply (albeit crudely) stated as follows:  If a conclusion C isn't rendered sufficiently probable by some premise set, then inferring C from lemmas which are in turn inferred from the premise set can't make C any more probable.

No Feedback is supposed to govern inductive reasoning.  But what about the kind of deductive reasoning that we find in Testimony Case?  How does it apply there?  According to Weisberg, the basic point still holds for such cases:

If I believe that Market Street is 3 blocks north of here, and my reason for believing that is *merely* my interlocutor's testimony that Market Street is 3 blocks north of here, then we can justifiably infer that my interlocutor told me the truth only if the proposition that my interlocutor told me the truth is rendered sufficiently probable by my interlocutor's testimony that Market Street is 3 blocks north of here.  Since the proposition that my interlocutor told me the truth is not (let us suppose) rendered sufficiently probable by my interlocutor's testimony that Market Street is 3 blocks north of here, we cannot justifiably infer this conclusion in the way done in Testimony Case.

Now, you might have a worry about this treatment of Testimony Case.  The worry is this:  Given that the prior probability of one's normal-seeming interlocutor telling one the truth is (presumably) very high, and given that conditionalizing on the receipt of any antecedently plausible testimony from the interlocutor would raise this probability at least slightly higher (since the testimony itself is antecedently plausible, and so helps at least slightly to confirm my initial suspicion of my interlocutor’s truthfulness), why should we suppose that the proposition that my interlocutor told me the truth is not rendered sufficiently probable by my interlocutor's testimony that Market Street is 3 blocks north of here?  The only way that I can see for Weisberg to address this concern (in fact, the way he does address this concern towards the end of his paper) is by claiming that, in order justifiably to infer a conclusion from a premise, the conditional probability of the conclusion on the premise must be *significantly* higher than the prior probability of the conclusion.  Only so can the premise itself serve to justify the conclusion (as opposed to the conclusion's simply being justified independently of the premise).

Notice that this maneuver seems also to help explain what's wrong with the argument in Gibonacci Case, for the conclusion of that argument has a probability of 1.  The conclusion of that argument, viz. that the Gibonacci procedure gave a correct result in a particular case, is a priori certain and necessary (however surprising it may seem).  Its prior probability is 1, and its conditional probability on anything else (with a non-zero probability) is 1.  So if Weisberg attempts to diagnose the problem with the argument in Testimony Case by saying that my interlocutor's testimony does not have enough of an upward impact on the probability of the conclusion, then he will be able to extend that diagnosis easily to explain what's wrong with the argument in Gibonacci Case.

But now there is a problem, for notice that the reason that the conclusion of the argument in Gibonacci case has a probability of 1 is that *any* purely mathematical truth will have a probability of 1.  (Of course this is not to say that any purely mathematical truth will be maximally justified: of course that is not true. But there is no way to assign probabilities to propositions without assigning probability 1 to propositions that are necessary. So, although mathematical truths can be justified to different degrees, these differing degrees of justification cannot be probabilities, i.e., cannot comply with the Kolmogorov axioms.) If the problem with the argument in Gibonacci Case is supposed to be that the premises do not raise the probability of its conclusion, then that will be a problem with any other purely mathematical argument as well.  In fact, it will be a problem that the argument in Gibonacci Case will share with the following perfectly fine argument:

(1') According to the Gibonacci procedure, the sum of the first 10 elements of the Fibonacci sequence whose first 2 elements are x and y is 55x + 88y.
(3') The Gibonacci procedure gives the right result.

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(2') The sum of the first 10 elements of the Fibonacci sequence whose first 2 elements are x and y is 55x + 88y.

But clearly, this prediction is false:  there is nothing wrong with the argument just stated, and your belief in (2’) can easily by justified by competently deducing (2’) from (1’) and (3’), supposing your beliefs in those premises are justified.  So the problem with the argument given in Gibonacci Case is, in fact, not a problem shared by the argument just stated.  More generally, it is obvious that not all mathematical arguments suffer from the defect of the argument given in Gibonacci Case.  So there must be something wrong with the proposed diagnosis of the argument in Gibonacci Case:  the problem with that argument cannot be simply that the premises do not significantly raise the probability of the conclusion.  But then what is wrong with the argument given in Gibonacci Case?

Weisberg does not give us any guidance here.  Of course this is no surprise: probabilistic constraints on good reasoning generally do not offer a lot of help in understanding the epistemology of the *a priori*. And this is not a problem for Weisberg’s No Feedback principle: notice that the principle is expressly stated to apply to arguments whose justificatory power depends upon making their conclusions sufficiently probable. But purely mathematical arguments are not like that; their justificatory power does not depend upon making their conclusions sufficiently probable, but rather upon making their conclusions sufficiently justified, in some non-probabilistic way. None of this tells against the No Feedback principle, but it does indicate that, if we want a unified explanation for what goes wrong in all of the four inferences given above (including the one in Gibonacci Case), we will need to look at other, non-probabilistic constraints on good reasoning. Even if his No Feedback principle is true (and I do not, for present purposes, dispute its truth), it cannot be used to provide such a unified explanation.  Let's see if we can do any better by drawing on Titlelbaum’s discussion of “no lose” investigations.

**Section 3**.  Titelbaum argues that no epistemological theory should license what he calls a "no lose" investigation.  What is that?  Here's his initial characterization of such investigations:

"Suppose an agent knows at t1 that between that time and some specific future time t2 she will investigate a particular proposition (which we'll call p). Her investigation counts as a no-lose investigation just in case the following three conditions are met:

(1) p is not justified for the agent at t1.
(2) At t1 the agent knows that -p will not be justified for her at t2.
(3) At t1 the agent knows that if p is true, p will be justified for her at t2."[[3]](#footnote-3)

An investigation that fits this profile could appear to have an incoherent combination of features:  if the agent knows that the investigation will justify p if p is true, then the agent can deduce from this knowledge that, if the investigation fails to justify p, then p is false.  And so long as the agent retains knowledge of this conditional, then, if the agent comes to know that the investigation fails to justify p, the agent can deduce, and so come to know, that p is false. But the agent can know all of this at t1, and so the agent can know at t1 that, if the investigation fails to justify p at t2, then (contra supposition 2) it will have justified –p for her at t2. This means that the agent can know at t1 that the investigation cannot fail to justify p at t2. In short, the agent knows that the investigation is guaranteed to justify p. But any “investigation” that is guaranteed to justify p is not really an *investigation* at all: it is impossible for any such investigation to exist.

If it is right that investigations having the three properties above are impossible, then this could help to explain what is wrong with the deductive inference in Testimony Case.  Suppose that I want to investigate whether my interlocutor told me the truth, and I do so simply by hearing what my interlocutor says and then reasoning in the way described in Testimony Case.  Suppose furthermore that I know that, in the course of doing this, I will not gain or lose any information that is evidentially relevant to the question whether my interlocutor told me the truth, and that does not come from the inference itself. In that case, I can know in advance (just given how the inference works) that this procedure cannot end up justifying me in believing that my interlocutor did not tell me the truth.  In other words, my procedure has the second mentioned feature of a no-lose investigation.  Furthermore, I know in advance (by closure) that, since this inference is valid, the conclusion will be justified if the premises are.  Furthermore, I know that my premises are justified.  And so (again by closure) I know in advance that the conclusion of the inference will be justified.  It follows that I know in advance that if the conclusion of the inference is true then it will end up being justified. In other words, my procedure has the third feature of a no-lose investigation. But, if no-lose investigations are impossible, then it follows that my procedure cannot have the first feature of a no-lose investigation: in other words, it cannot be the case that the conclusion is not justified before I make the inference. And so the conclusion is justified before I make the inference to that conclusion. But if the conclusion is justified before I draw it, then the inference is not what makes the conclusion justified: in short, the conclusion cannot be justified after the inference if it was not already justified before. Thus, if no-lose investigations are impossible, and if justification is closed under obvious entailment, then there must be something very wrong with the inference given in Testimony Case:  namely, the inference must be incapable of making the conclusion justified, since the conclusion must be justified before I ever make the inference. And this seems like just the right thing to say about the deductive inference in Testimony Case.

Unfortunately, Titelbaum's account of what is wrong with the inference in Testimony Case cannot appeal to a principle that is quite as simple as what I’ve just offered, for, as he recognizes, *not all* possible investigations with properties (1) - (3) above are incoherent.  Titelbaum asks us to consider "the proposition p 'There are memory-erasers who want belief in their existence to be justified.'  Suppose that at t1 I have evidence for p but also have a defeater for that evidence (so that I meet the first condition for a no-lose investigation).  Suppose further that I know of some specific future time t2 that I'm not going to get any evidence against p between now and then (so that the second condition is met).  Finally, suppose that if p is true the memory-erasers will remove the defeater from my memory so that I have justification to believe in them at t2 (thereby meeting the third condition).  Under our definition, this example involves a no-lose investigation, yet such arrangements will be possible on any epistemological theory that allows for defeated justification."

To accommodate a variety of such cases, Titelbaum slightly refines his characterization of no-lose investigations so that they require that "p and all the agent's relevant evidence concerning p are context-insensitive, and... the agent knows at t1 that every proposition relevant to p that is justified for her at t1 will also be justified for her at t2."

As Titelbaum recognizes, this refinement is needed in order to characterize a kind of investigation that should not be licensed by any epistemological theory. But once we refine our characterization of no-lose investigations in this way, the claim that no-lose investigations are impossible can no longer explain what's wrong with the argument given in Leaky memory Case.  In that case, you do not know, when you begin your inference, that every proposition relevant to (3’’) that is justified for you at that time will also be justified for you when you complete your inference, and this is true for the simple reason that memory is leaky: at least some of the currently recalled episodes that now serve to justify your belief in (1’’) will “leak” out of your recall between the time that you begin your inference and the time that you complete it, especially if performing the inference takes some significant amount of time. At the very least, you cannot be confident that this leakage does not happen, and so you cannot be confident that the inference in Leaky Memory Case satisfies the profile of a no-lose investigation, as Titelbaum defines it. (Note that what prevents the inference in Leaky Memory Case from being a clear case of a no-lose investigation is not merely the fact that our memory leaks information, but more specifically the fact that our memory leaks information *that is evidentially relevant to the justification of the conclusion of that inference*.) So, even if Titelbaum is right to claim that no-lose investigations are incoherent, this claim cannot help us to understand what's wrong with the inference in Leaky Memory Case. We’ll need to find another explanation of what goes wrong with the four deductive inferences with which we began.

**Section 4**.  It is extremely plausible to claim that the deductive inferences in the four cases described above all suffer from something like what Crispin Wright has called “transmission failure”.[[4]](#footnote-4) But what is the phenomenon of transmission failure? Chris Tucker gives an account of those inferences that he takes to involve such failure.[[5]](#footnote-5) According to Tucker, transmission failure is a phenomenon that concerns the spread of doxastic justification from the premises to the conclusion of an inference, and the principle that governs such failure is the following:

“TFP4: Necessarily, S’s competent deduction *P therefore Q* fails to transmit (doxastic) justification if and only if S’s belief in P is justified (at least partly) in virtue of being based on *either* S’s justified belief in Q *or* a chain of reasoning that employs S’s justified belief in Q as (part of) a link in that chain.”[[6]](#footnote-6)

Tucker makes clear elsewhere that he understands a belief being “based on” another belief to involve the agent inferring the latter from a premise set that includes the former: in short, TFP4 identifies transmission failure with premise circularity. If Tucker’s principle TFP4 were true, it could give us a nice explanation of what’s wrong with the deductive inference in Testimony Case: When you form your belief in (2) on the basis of your belief in (1), what you are really doing is forming your belief in (2) on the basis of your belief in both (1) and (3). And so the inference you are making is really of the form (1) and (3), therefore (2), therefore (3). This inference fails to transmit doxastic justification from belief in its second step to believe in its third step for the very simple reason that it is *premise circular*, and a premise circular inference can never enhance your justification for believing their conclusions.

This form of diagnosis seems to work just fine for the deductive inferences in Testimony Case, Gibonacci case, and inductive memory case. But what about the deductive inference in Proof Case? It seems implausible to suppose that the protagonist in Proof Case is really inferring the mathematical conclusion C from a premise set that includes the premise

(3’’’) If I made any mistake of addition or transcription in this proof, that mistake was compensated for by some other mistake.

Suppose that, for the sake of preserving Tucker’s otherwise very nice account of transmission failure, we say that the inference to C really does include the proposition (3’’’) as a premise. But then we can simply consider a case in which the protagonist, having reached conclusion C from a 201-step proof (a proof that includes (3’’’) as a premise), now reasons as follows:

(1’’’’) I have just done a 201-step proof that C.

(2’’’) C

(3’’’) If I made any mistake of addition or transcription in my 201-step proof, that mistake was compensated for by some other mistake.

This inference is no better than the others, and yet (3’’’’) cannot be a premise in the inference to C. Or, if it is – in other words, if the inference to C is really a 202-step proof – then we can simply imagine another case in which the protagonist reasons as follows:

(1’’’’’) I have just done a 202-step proof that C.

(2’’’) C

(3’’’’’) If I made any mistake of addition or transcription in my 202-step proof, that mistake was compensated for by some other mistake.

Unless we are prepared to say that every mathematical proof has infinitely many empirical premises concerning the proof itself, we will have to end this regress somewhere. And wherever it ends, we will then find it possible to construct an inference that clearly suffers from the same problem as the other deductive inferences that we considered in Testimony Case, Gibonacci Case, and Inductive Memory Case, and the fault with which cannot be a matter of premise circularity. In short, if there is a single problem with the various deductive inferences that are our targets here, that problem is not a matter of premise circularity, and it is not explained by Tucker’s TFP4.

**Section 5**. Neither Weisberg nor Titelbaum nor Tucker gives us the resources necessary to explain what the problem is with the deductive inferences given in the four cases with which we started.  But a number of philosophers, beginning with Crispin Wright, have suggested a principle governing the transmission of justification across inference.  I believe that a version of such a principle can be used to spell out what's wrong with all four of these inferences.  What I'd like to do now is to show how that works, and then I’ll rebut what I take to be the most widespread source of resistance to such a proposal -- namely, that it commits us to accepting some form of a priori justification for believing deeply contingent propositions.  What I intend to show is that Wright’s transmission failure proposal can be accepted by empiricists.  We empiricists can abjure all a priori justifications for deeply contingent propositions, and still accept a transmission-failure account of what goes wrong in each of our target inferences.

So, what's wrong with our four target inferences?  One plausible answer appeals to the following principle:

**Transmission Failure**: Necessarily, S’s competent deduction *P therefore Q* fails to transmit (doxastic) justification if either S is justified in believing that P, or S is justified in believing that P supports Q, at least partly in virtue of S’s justification for believing Q.

In other words, the circumstances under which competent deduction can not enhance your justification for a conclusion include those under which either the premise beliefs or the inference itself are not justified for you independently of the justification that you have for that very conclusion. One difference between this principle (TF) and Tucker’s principle TFP4 is that TF allows that an agent can enjoy justification for believing one proposition in virtue of enjoying justification for believing another proposition, even when the former proposition is not inferred from the latter as a premise, and thus not “based” on the latter in Tucker’s sense. The epistemic dependence of a conclusion upon its premises is not, I claim, the only kind of epistemic dependence there is.

How does TF serve to explain what's wrong with each of our four target inferences?  In each of those inferences, one's sole justification for the second premise is supplied partly by one's justification for the conclusion, and so, by TF, one cannot acquire a justified belief in the conclusion by inferring that conclusion from a premise set that includes the second premise. For instance, in Testimony Case, one has justification for believing premise (2) – that Market Street is 3 blocks north of here – in virtue of one’s having justification for believing (whether or not one believes it, and whether or not one bases his belief in premise (2) on it) that one’s interlocutor told one the truth. And so, by Transmission Failure, one’s belief that one’s interlocutor told one the truth cannot become more justified by inferring it from a premise set that includes premise (2). In Gibonacci Case, one has justification for believing premise (2’) – that the sum of the first 10 elements of the Fibonacci sequence whose first 2 elements are x and y is 55x + 88y – in virtue of having justification for believing that the Gibonacci procedure gives the right result. And so, by Transmission Failure, one’s belief that the Gibonacci procedure gives the right result cannot become more justified by inferring it from a premise set that includes premise (2’). In Leaky memory Case, one has justification for believing premise (2’’) – that I got a bowling ball as a present on my last birthday – in virtue of having justification for believing that one’s apparent recall is accurate on this occasion. And so, by Transmission Failure, one’s belief that one’s apparent recall is accurate on this occasion cannot become more justified by inferring it from a premise set that includes premise (2’’). And finally, in Proof Case, one has justification for believing premise (2’’’) – the mathematical proposition C – in virtue of having justification for believing that one either did not make a mistake in the proof, or else the mistake was compensated for by another mistake. And so, by Transmission Failure, one’s belief in that disjunction cannot become more justified by inferring it from a premise set that includes premise (2’’’).

Transmission Failure mentions the possibility that an inference itself – rather than any of its premises – might be justified only by virtue of one’s having justification for believing the conclusion. Here is an example to illustrate the possibility:

On previous days, the majority of my inferences from past to present had true conclusions.

Therefore, today, the majority of my inferences from past to present have true conclusions.

This inference fails to justify its conclusion, even if its premise is justified, and justified independently of its conclusion being justified. Transmission Failure explains why: even if we can justifiably believe the premise independently of any justification we might have for believing the conclusion, we cannot be justified in *drawing* the conclusion from the premise independently of any justification we antecedently have for believing the conclusion.

(Notice, by the way, that none of the proposals offered by Weisberg, Titelbaum, or Tucker can explain what’s wrong with the inference above.)

Transmission Failure explains what’s wrong with each of our four inferences. And if we imagine the cases differently, and in such a way that our justification for believing the second premise does not depend upon our justification for believing the conclusion, then the inferences no longer seem problematic at all.

One might worry that the sufficient condition that Transmission Failure states for the failure of transmission is too weak. Consider, for instance, the following example, changed slightly from Testimony Case:

(1) My interlocutor said that Market Street is 3 blocks north of here.

(2) Market Street is 3 blocks north of here.

(1) My interlocutor said that Market Street is 3 blocks north of here & (2) Market Street is 3 blocks north of here & (3) On this occasion, my interlocutor told the truth.

This last inference suffers from transmission failure as well, but does one have justification for believing (2) in virtue of having justification for believing the conjunction (1) & (2) & (3)? No. What is true, however, is that, under the conditions specified in Testimony Case, one has justification for believing (2) in virtue of having justification for believing (1) & (3). And it’s also true that (1) & (3) is logically equivalent to (1) & (2) & (3). So, to account for the transmission failure in this case, we need to revise our principle Transmission Failure slightly, as follows:

**Transmission Failure’**: Necessarily, S’s competent deduction *P therefore Q* fails to transmit (doxastic) justification if either S is justified in believing that P, or S is justified in believing that P supports Q, at least partly in virtue of something E, such that E is what makes S justified in believing Q.

Transmission Failure’ also explains what’s wrong with other variants of the inferences considered above, e.g.

(1) My interlocutor said that Market Street is 3 blocks north of here.

(2) Market Street is 3 blocks north of here.

(3x) My interlocutor told the truth, and 1 + 1 = 2.

Or this:

(1) My interlocutor said that Market Street is 3 blocks north of here.

(2) Market Street is 3 blocks north of here.

(3y) My interlocutor told the truth, and Market Street is 3 blocks north of here.

Each of the inferences above suffers from transmission failure, and the principle Transmission Failure' can explain why: in each case, I am justified in believing the second premise at least partly in virtue of whatever it is that justifies me in believing the conclusion.

I should note that Transmission Failure’ is a principle about deductive inference, not about inductive inference. So Transmission Failure’, by itself, cannot tell us what’s wrong with those self-supporting inferences that are inductive, rather than deductive. Sometimes, the problem of easy knowledge is thought to be a problem about self-supporting inferences of any kind. But, as I argue elsewhere[[7]](#footnote-7), we can tell a simple and elegant explanation of what’s epistemologically wrong with self-supporting inductive inferences if we start by giving the present story about what’s epistemologically wrong with self-supporting deductive inferences. That claim, however, is not one that I have the space to defend in this paper.

**Section 6**. Although the present account of what goes wrong in our target deductions seems to deal with the cases that we’ve considered, it is subject to a worry concerning epistemic circularity. The worry starts to come into focus if, in considering Testimony Case, we ask: how does one acquire justification for believing (3)?  One can perhaps justifiably infer (3) from one’s justified belief in:

(4) When a normal-seeming human adult A confidently reports that p, where p is some proposition that is easily checkable by her listeners, and about which there is no apparent motive to deceive, then, in normal circumstances, A's report is true.

And

(5) I am now in normal circumstances.

But then what makes one’s belief in the generalization (4) justified?  Wright[[8]](#footnote-8), BonJour[[9]](#footnote-9), Burge[[10]](#footnote-10), Cohen[[11]](#footnote-11), White[[12]](#footnote-12), Wedgwood[[13]](#footnote-13), Zalabardo[[14]](#footnote-14), Silins[[15]](#footnote-15), and Hawthorne[[16]](#footnote-16) all say that one is a priori justified in believing (or at least accepting[[17]](#footnote-17)) some contingent generalizations concerning the reliability of at least some of one’s own cognitive sources: if they are right about this, then why not regard (4) as one such contingent generalization?

Let’s suppose, for the sake of argument, that they are right.  It is consistent with their view, and also quite obviously true, that we can also gain an empirical justification for (4) by, say, doing some sort of empirical testing:  perhaps this would involve scouring testimonial corpus data and checking the truth of a large, representative sample of the confident assertions that occur in that corpus, at least when they are on topics that are easily checkable by the conversational participants, and there is no apparent motive for the testifier to lie about them.  Suppose that, by performing this empirical procedure, we gain empirical justification for (4).  But, after we gain this empirical justification for (4), we then gain an undermining defeater for (what we have just, for the sake of argument, conceded to be) our a priori justification for (4).  Precisely what might constitute such a defeater is going to depend upon what sort of a priori justification we are alleged to have for (4).  For instance, if this a priori justification is supposed to be reflectively accessible, then an undermining defeater of this a priori justification might consist in some reason to believe that our powers of reflection are likely to mislead us with respect to what we are a priori justified in believing (but not with respect to what we are empirically justified in believing).  If, however, this a priori justification is supposed to be something that we gain simply, say, by virtue of the nature or reliability of a certain proper subset of our cognitive faculties, then an undermining defeater might consist in some reason to believe that those particular cognitive faculties do not have the sort of nature or reliability that would grant us these justifications.  But, whatever precisely our a priori justification for (4) is supposed to consist in, it is, I assume, something that is subject to undermining defeat, and the defeat of which is consistent with there being no defeater for the aforementioned empirical justification for (4).  So let's suppose that, after gaining empirical justification for (4), you then gain an undermining defeater for your putative a priori justification for (4).  This is all possible, and furthermore, it is compossible with your continuing to have empirical justification for (4), and thereby empirical justification for (3).

What this shows is that it is *possible* for us to have exclusively empirical justification for believing (4), and so (3).

So this leaves us with a question:  if it is possible to have exclusively empirical justification for believing (4), why should we grant, as all the aforementioned philosophers do, that our justification for believing (4) is *ever* a priori?

One reason we might have for thinking that our justification for believing (4) is at least sometimes a priori is that we didn't actually perform the empirical procedure described above.  Or… did we?  Don't we constantly receive testimony, and notice when it fails to cohere with other evidence we have? Of course, we don’t typically engage in a *deliberate* process of acquiring testimony and verifying it against information acquired through non-testimonial sources. But, even if we are not engaged in this deliberate process, we are still (for the most part, and without paying much attention) accumulating the kind of empirical evidence that we would end up acquiring in a more targeted way by going through this process: we hear what people say, and we tend to notice when it is corroborated or undermined by other sources of information (testimonial or non-testimonial).

But this raises a further question:  what gives justification to our beliefs in all of the empirical evidence propositions that constitute our empirical justification for believing (4)?  Aren’t some of those evidence beliefs (e.g., beliefs about what assertions have been made, or which of those assertions have been corroborated) themselves going to be justified at least partly on the basis of testimony? And, if they are, then won’t we need to justifiably believe (4) in order justifiably to believe those evidence propositions? So how can these evidence propositions help to constitute an empirical justification for believing (4), if our justified belief in (4) enables us justifiably to believe those evidence propositions?

Here we confront a problem of epistemic circularity. If we abjure a priori justification for deeply contingent generalizations like (4), then it seems that we inevitably run into this problem of epistemic circularity. If we presume to derive all testimonial justifications from perceptual justifications, then this only postpones the problem of epistemic circularity: now we face the question how we can be justified in believing that our perceptual faculties themselves are reliable (this is surely something that we are justified in believing, whether or not such meta-justification is necessary for our various first-order perceptual justifications), if not on the basis of a track record argument from instances, and such an argument would itself seem to suffer from Transmission Failure. How can we empiricists – who do abjure a priori justifications for deeply contingent generalizations like (4) – solve this problem?

In order to develop my answer to this question, let me begin by making a point about empirical evidence. Whatever exactly our total empirical evidence consists in, it will be a conjunction of propositions, each of which is such that we are empirically justified in believing it.[[18]](#footnote-18) And there are going to be many particular propositions in our evidence set which are such that, in order to be justified in believing those particular propositions, we will also have to be justified in believing in the veracity of the source of that particular conjunct's justification. (Specifically, this will be true at least of those evidence propositions which, like the second premise in each of the four deductive inferences from our initial cases, we are justified in believing on account of the operation of cognitive sources that we can knowledgeably identify.) But how can we be justified in believing in the veracity of that source, without relying exclusively upon the pieces of evidence produced by that source? This can happen only if our total evidence contains pieces of evidence from a variety of different sources, where the deliverances of each corroborate the deliverances of the others. If you have evidence from any one cognitive source of which you are aware, then you also have evidence that does not derive from that same source.

So, with these pieces in place, I can finally state my solution to the problem of epistemic circularity as follows: In order to justifiably believe any deeply contingent proposition as a result of the operation of some cognitive source of which I am aware, I must be justified in believing some deeply contingent generalization about the veracity of that particular cognitive source. But in order to be justified in believing some deeply contingent generalization about the veracity of that particular cognitive sources, my total empirical evidence must make it highly probable that the source in question is veracious. In order for my total empirical evidence to make it highly probable that the source in question is veracious, my total empirical evidence must contain pieces of evidence that are not from the source in question, and those other pieces of evidence must corroborate the evidence I get from the source in question. But I am justified in believing each of the particular pieces of my total evidence (at least those particular pieces that I am justified in believing in virtue of the operation of some cognitive source of which I am aware) only in virtue of being justified in believing some deeply contingent generalization about the veracity of its source, which I am in turn justified in believing only in virtue of my total evidence. In short, I am justified in believing each proposition in my total evidence only by virtue of being justified in believing some conjunction of evidence propositions. To sum up the present view in a slightly misleading way: I am justified in believing each particular evidence proposition only because I am justified in believing all of them.

This last formulation is misleading in two ways. First, it misleadingly suggests that my justification for believing each particular evidence proposition is somehow inferential, as if I infer each evidence proposition from the conjunction of my total evidence. But this is clearly false. As I said above in my reply to Tucker, there is a difference between justifiably inferring p from q, on the one hand, and being justified in believing p partly in virtue of being justified in believing q, on the other. The former is a species of the latter, but the latter is a much broader category. For instance, I typically infer the conclusion of a mathematical proof simply from the mathematical premises of that very proof, and not from any non-mathematical propositions concerning the proof itself, and yet I am justified in believing the conclusion of the proof only in virtue of my being justified in believing some non-mathematical propositions concerning the proof itself (e.g., I was not careless when I did it). Similarly, I do not infer the particular propositions in my evidence set from their conjunction, but this does not mean that I am not justified in believing those evidence propositions in virtue of being justified in believing their some conjunction of them.

But I also do not want to suggest that there is some specific conjunction of propositions in my evidence set such that my justifiably believing any single proposition in my evidence set depends in any way (inferential or otherwise) upon my being justified in believing that specific conjunction. Rather, what my justifiably believing any single proposition in my evidence set depends upon *is there being some conjunction or other* of evidence propositions that includes the single proposition in question, such that I am justified in believing that conjunction.

So the overall picture is this. My evidence set consists of a conjunction of empirical propositions, each of which I am (non-inferentially) justified in believing, and each of which I am justified in believing partly in virtue of being justified in believing the others (or any others that could equally well constitute an evidence set that included that particular proposition). The justification of my belief in each evidence proposition thus depends on its coherence with the rest of the propositions in my evidence set. By adopting this position, we can solve the problem of easy knowledge by appeal to transmission failure, and we can do so without forsaking empiricism, and without running into any insurmountable problems of epistemic circularity.

But have we really avoided the problem of epistemic circularity altogether? I said that we can corroborate the evidence that we get from each source by appealing to other sources that provide some of our other evidence. But we cannot corroborate *the whole* of our empirical evidence. So what justifies me in believing that my total empirical evidence is not systematically misleading?

Answer: what justifies me in believing that my total empirical evidence is not systematically misleading is simply my total empirical evidence. My total empirical evidence justifies me in believing quite a few things about the world, including the following: What evidence someone has is a result of impacts upon their sensory systems. Such impacts are interrelated in such complicated ways that it would be very difficult to make them systematically misleading (i.e., misleading in a way that left no trace in one's evidence set itself). I have no evidence of the existence of anything that can perform such a difficult task, and a great deal of evidence that no such thing exists. Thus, my total evidence justifies me in believing that my total evidence is not systematically misleading. Perhaps it is misleading here and there, but it is not so misleading as to make it impossible for me to correct it by appeal to my total evidence.

**Conclusion**. So what’s wrong with the four competent deductive inferences in Testimony Case, Gibonacci Case, Leaky memory Case, and Proof Case? What’s wrong with them is that they fail to transmit justification: what makes your belief in the premises justified is (at least partly) your justified belief in the conclusion, and so, by Transmission Failure, you cannot become more justified in believing the conclusion by inferring it from those premises.

But if you must justifiably believe the conclusion already in each of these cases, how did you get that justified belief? Does it ultimately rest on some a priori justification for believing some contingent proposition about your own cognitive reliability? No: we needn’t suppose that you have any such a priori justified beliefs. All your justified beliefs about your own reliability can be justified empirically, on the basis of your total empirical evidence.

Doesn’t this picture generate a vicious epistemic circle? Not necessarily. Even the strictest foundationalist can accept this picture, so long as she posits a single foundationally justified belief, viz., belief in the conjunction of one’s total evidence. It is one’s justified belief in that conjunction that enables one to have other justified beliefs, including justified beliefs in particular conjuncts of that conjunction.[[19]](#footnote-19)

1. (3’) states a surprising necessary truth, as just a bit of calculation will show. [↑](#footnote-ref-1)
2. Jonathan Weisberg, “Bootstrapping in General”, *Philosophy and Phenomenological Research* (2011). [↑](#footnote-ref-2)
3. Michael Titelbaum, “Tell Me You Love Me: Bootstrapping, Externalism, and No-Lose Epistemology”, *Philosophical Studies* (2011). [↑](#footnote-ref-3)
4. See, e.g., Crispin Wright, “Cogency and Question-Begging: Some Reflections on McKinsey’s Paradox and Putnam’s Proof” in *Philosophical Issues* (2000). [↑](#footnote-ref-4)
5. Chris Tucker, “When Transmission Fails,” *Philosophical Review* (2010). [↑](#footnote-ref-5)
6. Tucker, 517. [↑](#footnote-ref-6)
7. See my forthcoming “Sosa on Epistemic Circularity”. [↑](#footnote-ref-7)
8. Crispin Wright, “Warrant for Nothing (and Foundations for Free)”, *Proceedings of the Aristotelian Society* (2004). [↑](#footnote-ref-8)
9. Laurence BonJour, *In Defense of Pure Reason,* Cambridge University Press, 1998. [↑](#footnote-ref-9)
10. Tyler Burge, “Perceptual Entitlement”, *Philosophy and Phenomenological Research* (2003). Burge speaks not of a priori justification but rather of a priori entitlement for belief in such generalizations as (4). But that is because Burge is concerned to distinguish between warrants that we can articulate and warrants that we cannot, and that is not a distinction that matters for my purposes here. [↑](#footnote-ref-10)
11. Stewart Cohen, “Bootstrapping, Defeasible Reasoning, and *A Priori* Justification, “ *Philosophical Perspectives* (2010). [↑](#footnote-ref-11)
12. Roger White, “Problems for Dogmatism”, *Philosophical Studies* (2006). [↑](#footnote-ref-12)
13. Ralph Wedgwood, “A Priori Bootstrapping”, http://users.ox.ac.uk/~mert1230/bootstrapping.htm [↑](#footnote-ref-13)
14. Jose Zalabardo, “Externalism, Skepticism, and the Problem of Easy Knowledge”, *Philosophical Review* (2005). Since Zalabardo is an externalist, he thinks of this a priori justification as an externalist warrant. [↑](#footnote-ref-14)
15. Nico Silins, “Basic Justification and the Moorean Response to the Skeptic”, *Oxford Studies in Epistemology* (2007). [↑](#footnote-ref-15)
16. John Hawthorne, “Deeply Contingent *A Priori* Knowledge”, *Philosophy and Phenomenological Research* (2002). [↑](#footnote-ref-16)
17. Of the authors mentioned, only Wright says that the a priori justification is not a justification for *belief*, but rather for a distinct attitude that he calls “acceptance”. I take it that Wright thinks that it is an insight of skepticism that our belief justifications bottom out in something that is not a belief justification at all. [↑](#footnote-ref-17)
18. I will not attempt to defend this propositional conception of evidence here; for a defense of it, see my “What Evidence Do You Have?”, *British Journal for the Philosophy of Science* (2008). [↑](#footnote-ref-18)
19. For helpful discussion, I am grateful to Yuval Avnur, Stewart Cohen, Juan Comesana, John Devlin, Daniel Fogal, Richard Fumerton, Anil Gupta, Alex Jackson, Matt Kotzen, Anna-Sara Malmgren, Matthew McGrath, Michael Titelbaum, Chris Tucker, and an anonymous referee for *Oxford Studies in Epistemology*. [↑](#footnote-ref-19)