What epistemologists of testimony should learn from philosophers of science

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ABSTRACT

The thesis of this paper is that, if it is construed individualistically, epistemic justification does not capture the conditions that philosophers of science would impose on justified belief in a scientific hypothesis. The difficulty arises from beliefs acquired through testimony. From this I derive a lesson that epistemologists generally, and epistemologists of testimony in particular, should learn from philosophers of science: we ought to repudiate epistemic individualism and move towards a more fully social epistemology.

**1. Introduction**

In this paper I will be arguing that we should repudiate individualistic approaches to the epistemology of testimony, in favor of more social approaches. The example that I will use as I make my argument involves scientific testimony. My choice of example is purposeful: reflecting on the features of scientific testimony in particular, and the role such testimony plays in our epistemic communities more generally, make clear the costs of insisting on individualism. After presenting my case for this, I will be arguing that the lessons for epistemology are perfectly general, holding of all testimony.

The core argument I will be making regarding scientific testimony, to be developed in sections 3-6, aims to establish a negative conclusion. The conclusion is that a certain individualist doctrine about the nature of testimonial justification, to the effect that

INDIVIDUALISM:

Whether subject S’s testimonial belief that p is justified never depends on facts regarding any subject *other than S herself* (the reasons and evidence in her possession, the reliability of her cognitive faculties, the cognitive competences she possesses, etc.)

fails to do justice to the role that scientific testimonies play in our epistemic communities. I will be bringing this out by arguing that if INDIVIDUALISM is true, then philosophers of science are wrong in a core view about what justifies belief in a scientific hypothesis. This is the view that

JUSTIFICATION OF BELIEF IN A SCIENTIFIC HYPOTHESIS (‘SCIENTIFIC-J’ for short):

Whether subject S’s belief in scientific hypothesis H is justified depends on the quality of the scientific evidence supporting H.

I will be drawing the *modus tollens* inference: since philosophers of science are not wrong about SCIENTIFIC-J, INDIVIDUALISM is false. After presenting this argument in Section 3-6, I move on, in Section 7, to reinforce the key assumptions of the argument; in so doing I will be identifying the more general lessons to be learned from the case of scientific testimony. Section 8 concludes.

**2. INDIVIDUALISM and the Core Argument**

Before proceeding to my argument itself, a word is in order regarding the doctrine of INDIVIDUALISM itself. While the status of this doctrine has received some attention in the epistemology of testimony literature,[[1]](#footnote-1) it has attracted much less systematic attention than the more familiar topic concerning whether testimony is a basic source of justification – the debate between so-called *reductionists* and *anti*-*reductionists*.[[2]](#footnote-2) Still, a review of the recent testimony literature makes clear that most mainstream views in epistemology of testimony simply take INDIVIDUALISM for granted. These include all internalist views in the epistemology of testimony,[[3]](#footnote-3) since INDIVIDUALISM is a trivial implication of epistemic internalism itself. These also include standard evidentialist approaches to the epistemology of testimony,[[4]](#footnote-4) coherentist approaches,[[5]](#footnote-5) Bayesian[[6]](#footnote-6) and other probabilistic[[7]](#footnote-7) approaches, and inference to the best explanation approaches.[[8]](#footnote-8) Interestingly, the relevant class of views also includes many externalist accounts of the epistemology of testimony. In this category I would highlight those process reliabilist accounts on which the only relevant reliability features are those of the cognitive processes of the recipient of the testimony.[[9]](#footnote-9) What all these views have in common is the assumption of INDIVIDUALISM itself: they all assume that the only epistemic good-making features that are relevant to whether (and to what degree) S’s testimonial belief is justified are those of S herself (the goodness of her reasons for accepting the testimony; the reliability of her cognitive process-types; the cognitive competences she brings to bear to the testimonial exchange).

This paper aims to put pressure on INDIVIDUALISM. My core argument can be represented as containing four premises and a conclusion, as follows:

P1 The justification of a scientific hypothesis H – *scientific justification* – is assessed with respect to a body of evidence E within *the entire community of scientists*.

P2 The conditions on justified belief in H – *doxastic justification* – ought to reflect the conditions on the scientific justification of H.

P3 If the conditions on justified belief in H ought to reflect the conditions on the (scientific) justification of H itself, then there are no situations in which a belief in H is (doxastically) justified, while H itself does not enjoy (scientific) justification.

P4 If INDIVIDUALISM is true, then there are situations in which a belief in H is (doxastically) justified, while H itself does not enjoy (scientific) justification. So

C INDIVIDUALISM is false.

I will defend this argument by defending each premise in turn, starting with P1.

**3. Scientific Justification and Total Evidence**

According to premise P1, the justification of a scientific hypothesis H – what I will call *scientific justification* – is assessed with respect to a body of evidence E within the entire community of scientists. This premise should not be particularly controversial. In effect it makes the point that the degree to which a scientific hypothesis H is acceptable is a function of the total evidence available to the community. This is a point that has been emphasized in different contexts by any number of authors, including Longino (1990, 2002), Solomon (2001), and Miller (2015).

Still, it is worth noting why we should think of this principle as a principle *of justification*, and in particular how it might bear on what epistemologists call ‘justification’ (whether propositional or doxastic).[[10]](#footnote-10)

To begin, when we speak of the degree to which a scientific hypothesis H is acceptable, ‘acceptability’ is a normative affair. What is more, the normativity in question is (at least in part) epistemic in nature, reflecting H’s distinctly epistemic credentials. I say ‘at least in part’ in order to fend off worries that might arise in the minds of those who deny that hypothesis acceptability in science is *exclusively* epistemic. Perhaps it also involves elements of risk assessment; or, alternatively, perhaps it involves an assessment of theoretical virtues (e.g. simplicity, symmetry, etc.) which, arguably, are aesthetic *rather than* epistemic. Happily, my argument need not deny either of these things. The crucial claim for my purposes is that the standing of a scientific hypothesis H is determined by reference to the evidence E available to the scientific community as a whole. This is compatible with the idea that acceptability is a function not only of E but also of other considerations as well. The point I will be making is that if INDIVIDUALISM is true, then there are scenarios in which the doxastic justification of scientific belief in H is determined in ways that *ignore E altogether*.

How might the sense of ‘justification’ at play in speaking of the justification of a scientific hypothesis – scientific justification – be related to the sense of ‘justification’ at play in epistemology settings – as when we speak of a belief as (doxastically) justified? Well, ‘justification’ in science speaks to an hypothesis’s meeting the standards of acceptability, where this involves (perhaps among other things) the *epistemic credentials* of the hypothesis. So it seems patent that ‘justification’ in science reflects the sort of goods that are of interest to the epistemologist when she speaks of *a belief* as justified. It is true that scientific justification pertains to *hypotheses*, whereas doxastic justification pertains to beliefs and other doxastic states. But this difference would not appear to be as significant as one might imagine. After all, epistemologists also speak of propositional (or *ex ante*) justification, and this is a property of *propositions* rather than beliefs. (A proposition, P, is *ex ante* justified for a subject S just in case S’s total evidence provides adequate support to P.) It would seem, then, that the scientific justification of an hypothesis bears an intimate relationship with something close to what the epistemologist calls *ex ante* justification. In fact, we might think of the notion of scientific justification as (something close to) the version of *ex ante* justification that arises when we extend the relevant evidence to include the evidence of the scientific community as a whole. Again, I describe this as ‘something close’ since we might want to allow for non-epistemic factors to play a role in scientific justification. But even if we do, we can still frame the epistemologist’s notion of *ex ante* justification for a scientific hypothesis H, treating the relevant evidence as that of the whole community. While such a notion may not be identical to the notion of scientific justification, it would appear to significantly constrain the notion of scientific justification: it is hard to imagine cases in which a scientific hypothesis is acceptable, and so scientifically justified, even though it is *not* *ex ante* justified on total evidence E. In this way we might see scientific justification, construed as (something close to) *ex ante* justification on the total scientific evidence, as a key ingredient in the epistemic justification of scientific belief. But to make out the case for such a claim I turn to premise 2 of my core argument.

**4. Scientific Justification and Doxastic Justification**

Premise 2 of my core argument, P2, asserts that the conditions on the justification of scientific belief – doxastic justification – ought to reflect the conditions on the scientific justification of the relevant hypothesis. To make the case for this premise, we must connect a claim about scientific justification, to the effect that

SJ The scientific justification of an hypothesis reflects its epistemic credentials.

to a claim about doxastic justification, to the effect that

DJ The doxastic justification of a belief is a matter of its having been formed and sustained in such a way that it satisfies a threshold of epistemic goodness.

The burden is to argue that the conditions in SJ ought to be reflected in those in DJ.

Why should we accept this normative claim? We can begin by noting that if S’s belief in scientific hypothesis H has an improper (or no) relationship with the evidence E that renders H scientifically justified, S’s belief in H has an improper (or no) relationship to the materials that make H likely to be true. Insofar as doxastic justification is a matter of having been formed and sustained in a way that satisfies the threshold of epistemic goodness, the theory of doxastic justification should take a dim view of any belief that is formed and sustained in a way that leaves one with an improper (or no) relationship to the materials that make one’s belief likely to be true. And this is just to say, with P2, that the conditions on the doxastic justification of scientific belief *ought* to reflect the conditions on the justification of scientific hypotheses.

Still, one might have a concern about this defense of P2.[[11]](#footnote-11) My defense is based on the idea that in order for a belief in a scientific hypothesis to pass *epistemic* muster, it must pass *scientific* muster. This might lead us to expect that the justification of beliefs in other domains follows a similar pattern, whereby the conditions on epistemic justification also reflect the epistemic standards of those domains. But there are domains in which this is not so. Consider, for example, the legal domain: a lay person might well come to the justified belief that a defendant is guilty, even as the evidence presented at trial did not pass the demanding “reasonable doubt” standard. This suggests that more specific epistemic standards, such as those in a court of law, can sometimes be *too epistemically demanding for lay subjects*. In such domains, a layperson’s belief might pass epistemic muster even as it fails to pass muster within the more local standards of the domain itself. Our case for P2 is compromised unless we can see a reason why science differs from the law in this respect.

In response, there would appear to be something special about domains, such as science, which are structured around epistemic ends. Consider: as an activity, scientific inquiry aims to arrive at empirically well-supported models, hypotheses, and theories. In fact, when it comes to matters of science, the scientific evidence itself – the evidence collected by the community of scientists – is the most reliable route to truth we have. (In most cases, it is the *only* route to truth.) Contrast the law. To be sure, the law most certainly does care about rendering verdicts that are epistemically justified. But what we might call *legal* justification – justification within the standards of the law – reflects concerns that go beyond the epistemic. Most obviously, they include concerns with justice. This latter concern rightly affects the standards on legal justification: the risk of the awful injustice of punishing an innocent person is addressed by enhancing the legal standards for criminal conviction. Consequently, there can be cases in which a layperson’s belief in the defendant’s guilt can be epistemically justified even as the standards of legal justification are not met: the conditions on doxastically justified belief e.g. on matters of a defendant’s guilt need not reflect the standards of legal justification.

Seen in this light, P2 can be defended by appeal to a general principle about epistemic justification, as applied to the case of scientific belief. The general principle is this: considerations that make for the (doxastic) justification of a belief are considerations that speak in favor of the likely truth of the belief. And when a belief concerns a scientific hypothesis, the considerations that speak in favor of its likely truth boil down to the scientific evidence that supports the hypothesis. Hence the conditions on justified scientific belief ought to reflect the conditions on the scientific justification of the relevant hypothesis.

It is worth noting, however, that so defended, P2 amounts to a relatively weak claim: the scientific evidence supporting an hypothesis H must *somehow* be reflected in the conditions on justified belief in H. P2 itself does not make explicit *how* this requirement should be fulfilled, and so P2 (so motivated) allows for a range of possible cases. These range from cases in which S arrives at her belief in H (1) through competent inference from E itself, or (2) as part of a collection of scientists that competently infers H from E, or (3) through competent acceptance of testimony regarding H from someone who *herself* was (part of a communication chain that was) suitably related to E. Indeed, when it comes to testimony-based beliefs in H, it might even be that the testifier herself need not have been competent in inferring H from E, nor need she have been part of a communication chain that can be traced back to those who were so placed; perhaps it suffices (for S’s belief in H to be justified through testimony) that the testifier merely *seemed* to satisfy condition (3). From what P2 explicitly says, none of these scenarios are ruled out.

**5. No dissociation of DJ from SJ**

If P2 by itself is relatively weak, when combined with P3 it enables us to reach the argument’s key contention. P3 asserts that if P2 holds – that is, if the conditions on the (doxastic) justification of scientific belief ought to reflect the conditions on the (scientific) justification of the relevant hypothesis – then there can be no cases in which (i) a scientific belief in a given hypothesis H is (doxastically) justified, while (ii) H itself does not enjoy (scientific) justification. Since I have already defended P2 in the previous section (and will have more to say in section 7), here I will be defending (not P3 itself but rather) P3’s consequent. My argument on this score involves reflection on the two routes to scientific belief: non-testimonial and testimonial. I argue that in neither of them does a subject S acquire (doxastic) justification for her belief in H in cases in which H lacks the relevant scientific credentials.

Consider first the non-testimonial case. How might a subject S acquire a justified belief in H without depending on another’s testimony that H?[[12]](#footnote-12) Insofar as H is a scientific hypothesis, it would seem that there is only one route to (non-testimonially) justified belief in H: S herself is a scientist who is among those who arrives at a justified belief in H. Here it seems clear that however this comes to pass, the story will depend centrally on H’s epistemic credentials, and in particular will depend on H’s being scientifically justified. Arguably, this is part of the very point of having a notion of scientific justification: to pick out those hypotheses whose epistemic credentials render them worthy of endorsement. Note that our point is only strengthened if we insist that scientists themselves do not believe but rather only accept their hypotheses. This is because the epistemic requirements on outright belief will be *at least as demanding* as those on (scientific) acceptance. So if scientific acceptance of an hypothesis H is justified only if H enjoys scientific justification, then it follows that *belief* in H will be doxastically justified only if H enjoys scientific justification. In sum, there can be no (non-testimonial) justified belief in H in the absence of H’s being scientifically justified.[[13]](#footnote-13)

But what of the testimonial case? Here it would seem easy to imagine a case in which a subject S acquires a testimonially-based justification for her belief in H, despite the fact that H is *not* scientifically justified. The following might be thought to illustrate this (alleged) possibility:

INADEQUATE SCIENTIFIC TESTIMONY

S accepts the testimony of a scientist, where the scientist is attesting to the scientific hypothesis H. S regards the scientist as an authority, has excellent reasons for doing so, and possesses no reasons for doubt. But unbeknownst to S (and to the scientist as well), the scientist’s reasoning and evidence were not up to scientific standards, and H itself is not scientifically justified.[[14]](#footnote-14) S’s ignorance of this fact is not irresponsible.

It can seem patent that in this case S’s belief in H is justified despite H’s inadequate credentials. If this verdict is correct, P3’s consequent is false. But if P3’s consequent is true, this verdict cannot be correct. Which is it?

I want to make two points in defense of P3’s consequent. Both of these points bear against the following possibility claim:

POSS Cases are possible in which a non-scientist, S, comes to acquire a justified scientific belief through testimony, where the hypothesis in question is not scientifically justified.

I submit that POSS is false.

First, endorsing POSS comes at the cost of undermining the normative import of the notion of ‘scientific justification.’ As I noted above, ‘justification’ in both the philosophy of science and in epistemology captures a positive normative status attaching to a proposition or hypothesis.[[15]](#footnote-15) (In epistemology, we speak of propositional or *ex ante* justification.) But we would hope that the normative status that science confers on an hypothesis H when H is said to be ‘scientifically justified’ *constrains* the normative status of a subject’s belief in H when that belief is said to be ‘doxastically justified’. After all, this is in part what motivates our interest in the notion of scientific justification in the first place. In framing such a notion our question is: how must an hypothesis relate to the evidence (and perhaps to other hypotheses) if it is to count as being normatively sanctioned by the methods of science? In addressing this question we are in effect addressing when, according to scientific standards, an hypothesis is worthy of endorsement. One would hope that the conditions on an hypothesis H’s being scientifically worthy of endorsement constrain the conditions on H’s being epistemically worthy of being *believed*. The hope here is that we can see a person’s belief in a scientific hypothesis as passing *epistemic* muster, and so as sanctioned by the standards of epistemology, only if it also passes *scientific* muster, and so only after it is normatively sanctioned by the standards of science. This hope is repudiated by anyone who embraces POSS.

Second, embracing POSS will result in a distorted picture of the nature of the epistemic dependence that is exhibited in testimony cases. More specifically, POSS implies that, while (i) the subject S was relying on the authority of the scientist’s say-so on the question of whether H, and (ii) the scientist say-so was informed by inferior science (in the sense that H is not scientifically justified), *even so* S’s belief regarding H is doxastically justified. To say this, I submit, is to distort the nature of epistemic dependence in testimony cases. While I will be developing and defending this contention at length in section 7, here I can say a few words in its defense.

I start with a point for which I argued above: for a scientist to have a justified belief in a scientific hypothesis *on which she herself is doing the relevant scientific work*, there must be good scientific evidence supporting the hypothesis. By stipulation, the scientist in INADEQUATE SCIENTIFIC TESTIMONY lacks such evidence. In light of this, it would be curious indeed if non-scientist S herself were to be regarded as *having* adequate evidence – that is, evidence sufficient to justify her belief in the scientific hypothesis H. For surely S is in a *worse* epistemic position with respect to H than the scientist is. (After all, the scientist is the one who is supposed to be the authority here.) If this is right, then it is hard to see how to motivate the idea that S has what the scientist herself lacks, namely, evidence sufficient to underwrite the justification of a belief in H.

Nor should we be tempted by the thought that the scientist’s testimony *gives* S better evidence than the scientist herself has. To be sure, S has the scientist’s testimony; but this does not show that S has better evidence than the scientist herself had. After all, one gets testimony from a source precisely because the source is in a better epistemic position than one oneself is in – has better evidence than one oneself has – on the matter at hand. It would be a curious epistemology indeed to think that one can rely on a source for epistemic goodies and succeed at coming to acquire the relevant goodies – *even when the source herself lacks them*. This curiosity is embraced by anyone who endorses POSS. This distorts our understanding of the sort of epistemic dependence that is involved in testimony cases.

I realize that this issue requires more discussion than I have just given it; I will do so at length in section 7.1, below. In advance of that, I conclude, tentatively, that we have reason to reject POSS, and so have reason to reject the case against P3’s consequent from INADEQUATE SCIENTIFIC TESTIMONY. Insofar as P3 itself is motivated by the normativity of ‘justification’ as used by both philosophers of science and epistemologists, we can tentatively conclude, further, that P3 is plausible.

**6. INDIVIDUALISM and the possibility of doxastic justification without scientific justification**

The fourth premise, P4, is a conditional claim: if INDIVIDUALISM is true, then there can be cases in which a scientific belief in a given hypothesis H is (doxastically) justified, while H itself does not enjoy (scientific) justification. Happily, this is illustrated by the case presented in INADEQUATE SCIENTIFIC TESTIMONY itself. The case was described in such a way that if we restrict our attention to S – to the reasons she has, to her general testimonial competence, and so forth – matters are unexceptional. Any view of testimony on which INDIVIDUALISM is true will treat S’s testimonial belief in INADEQUATE SCIENTIFIC TESTIMONY as doxastically justified.

I should note too that the case for P4 does not depend on taking any sides on the reductionism/anti-reductionism debate.[[16]](#footnote-16) Suppose we assume, with reductionism, that testimonial justification requires adequate positive reasons for acceptance. Even so, in INADEQUATE SCIENTIFIC TESTIMONY S has plenty of good reasons to accept the testimony she observed, she has no reasons for doubt, and the latter claim does not reflect any culpable ignorance on her part. Hers is what any proponent of INDIVIDUALISM would regard as a paradigm of a (reductionistically-sanctioned) justified testimonial belief. Matters are even more straightforward if we assume, with anti-reductionism, that rational acceptance does not require adequate positive reasons – that it suffices that the audience lacks reasons for doubt. For in INADEQUATE SCIENTIFIC TESTIMONY, S does lack reasons for doubt, and her doing so is not a matter of any ignorance for which she is culpable. So, given INDIVIDUALISM, the verdict that S’s belief is doxastically justified should seem unexceptional to anti-reductionists as well.

Seen from one vantage point, our result might seem strange. After all, in P1-P3 I have been busy arguing that there can be no justified scientific belief in an hypothesis H which itself is not scientifically justified. But in P4 I have argued that, given INDIVIDUALISM, this is a possibility which *both theories in the epistemology of testimony sanction*. A person unsympathetic to my argument so far might think that at best this result is paradoxical. But the sense of paradox only arises on the assumption of INDIVIDUALISM: if we reject INDIVIDUALISM, we are free to insist that there can be no justified scientific belief in an hypothesis H in the absence of scientific justification for H. Thus the culprit is INDIVIDUALISM itself: this is the assumption that ought to be repudiated. Epistemologists of testimony who do so would then remain free to debate whether the rational acceptance of testimony requires adequate positive reasons.[[17]](#footnote-17)

**7. Reinforcing the core argument: some subsidiary lessons**

I have been using the role of scientific testimony in our epistemic communities to argue against INDIVIDUALISM in the epistemology of testimony. This conclusion will seem obvious to philosophers of science – so obvious, in fact, that it might strike them as perverse that I spend the time arguing for it. Despite this, I think the argument *is* worth making, as this conclusionwill strike most *mainstream epistemologists* ashighly controversial(and probablyasfalse). As I noted above, the repudiation of INDIVIDUALISM goes against most mainstream views in epistemology generally, and in the epistemology of testimony more specifically.[[18]](#footnote-18) It is to such epistemologists that I direct the argument above; they are both its target and its intended audience.

I am under no illusion that the foregoing argument will move such epistemologists. In this section I want to reinforce this argument by presenting what I see as the two main lessons to be learned from the case I’ve presented. I regard both of these as deepening the case for the repudiation of INDIVIDUALISM, as they make clear to those epistemologists who would resist this conclusion what costs they will have to pay to do so. The first lesson pertains to scientific testimony in particular; the second pertains to the epistemology of testimony more generally (whether in scientific or non-scientific contexts).

**7.1 A (first) lesson: scientific testimony and the epistemology of scientific belief**

The first lesson I want to highlight is specific to the domain of scientific testimony. The lesson is this: when it comes to such testimony, the cost of endorsing INDIVIDUALISM is that of framing a notion of epistemic justification that is of no use to philosophers of science who are interested in the epistemology of scientific belief.

This lesson can be brought out by way of a dilemma facing any epistemologist who hopes to make sense of scientific testimony while preserving INDIVIDUALISM. The dilemma turns on an auxiliary assumption that most philosophers of science, I suspect, will find unremarkable: the evidence that justifies belief in a scientific hypothesis is *the scientific evidence itself*.[[19]](#footnote-19) The INDIVIDUALISM-preserving epistemologist faces a dilemma, turning on whether she accepts or rejects this “unremarkable” assumption. Insofar as the assumption is unremarkable, to reject it is to deny a truism – or at least what most philosophers of science will regard as a truism. But if the INDIVIDUALISM-preserving epistemologist embraces the assumption (in an effort to avoid this first horn), the INDIVIDUALISM-preserving epistemologist will be committed to an absurdity. I take these up in reverse order.

Suppose our INDIVIDUALISM-preserving epistemologist accepts the assumption: the evidence that justifies belief in a scientific hypothesis is *the scientific evidence itself*. This will lead to a very unhappy result. To see this, consider that in INADEQUATE SCIENTIFIC TESTIMONY, the evidence possessed by (non-scientist) S is her excellent (and undefeated) evidence of the source scientist’s credibility. And the story is told in such a way that, by the lights of any plausible individualistic view in the epistemology of testimony, this evidence justifies S’s testimonial belief in H, the hypothesis to whose truth the source scientist attested. And yet the source scientist’s evidence for H – the scientific evidence itself – is not scientifically adequate. Thus S has a justified belief in a scientific hypothesis H under conditions in which the scientific evidence for H is not adequate. So given our initial assumption – the evidence that justifies belief in a scientific hypothesis is *the scientific evidence itself* – we are forced to deny the claim that only *good* scientific evidence justifies belief in a scientific hypothesis. This is a most unhappy result.

I assume that the epistemologist who embraces INDIVIDUALISM will not be worried by this result, since her embrace of INDIVIDUALISM would most certainly lead her to *predict* the falsity of the claim that onlygoodscientific evidence justifies belief in a scientific hypothesis. The real threat of the dilemma, rather, comes from its second horn, on which the INDIVIDUALIST-preserving epistemologist *rejects* the auxiliary assumption that the evidence that justifies belief in a scientific hypothesis is the scientific evidence itself. Let us turn to this option then.

Suppose that our INDIVIDUALIST-preserving epistemologist rejects the auxiliary assumption. Here the cost of preserving INDIVIDUALISM is that of having to embrace an absurdity, to the effect that *a non-scientist can have better (more probative) evidence for a scientific hypothesis than the source scientist on whose testimony she (the non-scientist) is relying*. This is easy to appreciate in INADEQUATE SCIENTIFIC TESTIMONY. Compare the evidence possessed by the non-scientist S with that of the source scientist on whom she is relying. The evidence S has is testimonial evidence; by hypothesis, this evidence is sufficient to render her belief in hypothesis H doxastically justified. The evidence had by the source scientist herself, by contrast, is the scientific evidence; by hypothesis this evidence is not scientifically adequate, and so is not sufficient to render *her* belief in H doxastically justified. But if evidence E is sufficient to justify the belief that p whereas evidence E\* is not, then E is more probative with respect to the truth of p than is E\*. And so in this sense the non-scientist S has better evidence for a scientific hypothesis than the source scientist on whose testimony she is relying. This is curious (to put it mildly).

In response, a proponent of INDIVIDUALISM might embrace this result but explain away the appearance of absurdity by treating the scientist’s testimony as an ordinary case of *misleading evidence*. The explanation might proceed as follows. The scientist’s testimony provides S with misleading evidence, and it is this evidence that provides the doxastic justification of S’s testimony-based belief. But (the explanation continues) *any* case of misleading evidence will provide epistemic support to beliefs based on that evidence even as it is misleading, and so even as it points its possessor away from the truth. So it is hardly surprising that non-scientist S would have “better” evidence than the source scientist on whom she is relying, even though her source has the scientific evidence itself.

But this “explanation” only serves to deepen the implausible implications of INDIVIDUALISM.

For one thing, it makes clear that INDIVIDUALISM distorts our understanding of the role that scientific evidence plays both in in the scientific community itself and in our community more generally. According to the INDIVIDUALISM-inspired “explanation” just offered, the role scientific evidence plays in *any* community is severely restricted: it bears on the epistemology of a subject’s scientific beliefs only to the extent that the subject herself *possesses* such evidence, where possession is a matter of having the knowledge or belief which captures the evidence in question. This fails to appreciate the role of such evidence both within science itself[[20]](#footnote-20) and in our communities more generally. Within science itself, scientists are “answerable to” the scientific evidence bearing on their subfields *whether or not they are aware of this evidence*.[[21]](#footnote-21) And this point would also appear to indicate a flaw in the INDIVIDUALIST-inspired view of the role of scientific evidence in our communities more generally. For it would seem that this very fact – that (in the theories and models they develop in the course of inquiry) scientists are answerable to the total relevant scientific evidence – is precisely what rationalizes the reliance by non-scientists on the scientists themselves. Let it be granted to the proponent of INDIVIDUALISM that scientists, *qua* scientists, are (typically) much more reliable than laypeople on matters falling within their scientific expertise. Let it be granted as well that this sort of track record can be assembled by the non-expert, and so can inform the non-expert’s reliance on testimony by scientists. Even so, it would seem that within well-organized communities nonexpert reliance on scientists’ testimonies can be rational even among those nonexperts whose awareness of the track record itself is spotty or otherwise incomplete.[[22]](#footnote-22) It is a failure of INDIVIDUALISM if it cannot accommodate this (let alone make sense of it).

Nor is this the only problem with the “explanation” that appeals to misleading evidence to explain away the apparent absurdity associated with the second horn of the dilemma.[[23]](#footnote-23) Another is that the proposed “explanation” brings to the fore the idea that one might be in a better epistemic position with respect to some proposition p than the very person on whose testimony that p one is relying. Since the point here pertains to the epistemic dynamics of testimonial exchanges generally – not just those on scientific topics – this topic is worth exploring on its own. It is to this topic that I now turn.

**7.2 A (second) lesson: the *de re* nature of reliance on another’s testimony**

I turn now to one other lesson deriving from my core argument, pertaining to the epistemology of testimony generally (rather than to scientific testimony in particular). The lesson is that INDIVIDUALISM misconceives the nature of the sort of reliance that is involved when one relies (in belief-formation) on another’s testimony. I gestured at this point in connection with premise P3, when I discussed the sort of epistemic dependence involved in testimony cases. Here I will reinforce this point; I do so in terms of the notion of *de re* reliance.[[24]](#footnote-24)

The notion of *de re* reliance itself is best introduced by way of an example. Suppose you are the town’s only watchmaker, and I need my watch fixed quickly. I might then pay you to fix my watch. In so doing I am relying on you to do so – which is to say that I am willing to act on the supposition that you will do so.[[25]](#footnote-25) My reliance is vindicated just to the degree to which you succeed in doing a good job fixing my watch. Such vindication does not depend on how well *others* around here do in fixing watches, nor on the *reasons* I have for relying on you to fix my watch.[[26]](#footnote-26) It depends only on how well *you* *in fact do* in fixing my watch. When subject S’s reliance on another person T (or on T’s performance) is vindicated by the particular good-making features of T (or on T’s performance itself), I will speak of S as relying *de re* on T/T’s performance.

I submit – as the second, more generic lesson of my core argument – that testimonial exchanges are characterized by *de re* reliance. I offer several considerations in defense of this contention.

I begin by conceding that, when it comes to our knowledge of the world, we might well not care who gives us information, so long as the information we receive is (well-grounded and) true. This would seem to be the attitude of the subject who merely wants to be kept informed, but who does not care who it is that keeps her informed. The attitude of such a subject is indeed generic; she does not (yet) manifest a form of *de re* reliance. Nevertheless, on each occasion on which she accepts another’s testimony she *is* exhibiting *de re* reliance on the testifier on that occasion: she is depending on *that person* to have testified properly.

If this much is correct, it presents problems for the INDIVIDUALISM-preserving epistemologist: she cannot properly acknowledge the *de re* nature of testimonial reliance. According to individualistic accounts of the epistemology of testimony, what justifies a testimonial belief *has nothing to do with the de facto epistemic goodness of the testimony itself*. Rather, it has to do with the goodness of features of *the audience S’s reception* of the testimony – that is, the goodness of the S’s reasons for regarding the testimony as credible, or the reliability of the process-type by which S apprehends testimony, and so forth. Such features do not appear to render S’s reliance on the speaker *de re*. To illustrate, suppose that S’s reason for thinking T’s testimony on occasion O is credible is that T seemed sincere and competent in testifying as she did on O. Well, whether this is a good reason – one which would be suitable for justifying S’s testimonial belief – depends on whether what S takes to be signs of sincerity and competence are in fact signs of sincerity and competence. But whether what S takes to be signs of sincerity and competence are in fact signs of sincerity and competence *isn’t determined by the epistemic quality of T’s testimony* *on O*. On the contrary, it has to do with whether the features S takes to be signs of sincerity and competence are of a type that correlates with cases in which the observed testimonies are sincere and competent. This is what makes her reasons for accepting T’s testimony good reasons. But this suggests that S is not relying *de re* on T (or T’s testimony) so much as she is relying on her own competence at spotting signs of sincerity and competence in others.

The present point – that INDIVIDUALISM-preserving epistemology of testimony cannot acknowledge the *de re* nature of testimonial reliance – does not depend on assuming a reasons-based epistemology of testimony. On the contrary, any individualistic account will face the same difficulty. To illustrate, suppose that we are operating within a process reliabilist epistemic framework on which whether S’s testimonial belief is justified depends on the reliability of the process by which S comprehends testimonies and monitors them for credibility. Once again, it would seem that S is not relying *de re* on T (or T’s testimony) so much as she is relying on the reliability of her own cognitive processes – those implicated in the comprehension and monitoring of testimony. Precisely the same difficulty is in place.

In response, the INDIVIDUALISM-preserving epistemologist might object to my claim that the reliance in testimonial belief-formation *is* *de re* reliance. She might do so by pointing out that it would be *irrational* for S to rely on another’s testimony if she accepted it without being entitled to do so, and that it is precisely to avoid this sort of irrationality that S is required to have the good reasons (or to have employed the reliable process-types; I will ignore the reliabilist versions going forward). According to such a view, S’s having good reasons for relying on T’s testimony is precisely what rationalizes this reliance.

Unfortunately, the foregoing response does not save INDIVIDUALISM from worries about *de re* reliance. To see this, let it be granted that an audience’s acceptance of testimony must be rational if her resulting testimonial belief is to be justified. And let us make no assumptions about what is necessary and sufficient for rational acceptance. (This is the heart of the debate between the reductionists and the anti-reductionists.) Even so, it is a further matter to characterize the totality of the set of facts on which the epistemic goodness – the justification – of a testimonial belief supervenes. It is here that I speak of *de re* reliance. Even if an audience has reasons that rationalize her acceptance of a piece of testimony, there is a world of difference between a case in which the testimony she accepted was competent and a case in which (unbeknownst to her) the testimony was just a guess. And this difference makes an *epistemic* difference: in the former case the audience’s testimonial belief is better-off epistemically than it is in the latter case. *This* is the *de re* nature of testimonial reliance.

So far as I can tell, the proponent of INDIVIDUALISM has only one way in which to try to acknowledge the *de re* nature of testimonial reliance. If the *de facto* epistemic goodness of a piece of testimony is not relevant to the *justification* of testimonial beliefs based on that testimony, as INDIVIDUALISM insists, then the *de re* nature of testimony reliance must concern (not the justifiedness but rather) the *knowledgeableness* of testimonial belief. If the proponent of INDIVIDUALISM accepts this way of accounting for the *de re* dimension of testimonial reliance, then in effect she will be committed to analyzing cases like INADEQUATE SCIENTIFIC TESTIMONY on the model of the standard treatment of the stopped clock case. Recall:

STOPPED CLOCK

You look at the clock on the wall which reads 2 o’clock, and so you come to believe that it is 2 o’clock. It is in fact 2 o’clock. However, unbeknownst to you the clock has been stopped at that time for days.

Such cases are typically analyzed as Gettier cases: your belief as to the time is both true and justified but not knowledgeable (because of its *de re* reliance on what in fact is a stopped clock). This is a way of seeing how the *de facto* reliability of a clock (on a given occasion on which it is relied upon) can be relevant to the epistemic standing of one’s belief as to the time, even after it is denied that the relevance of the former bears on the *justification* of the latter. The relevance consists in this: the *de facto* reliability of a clock is what distinguishes cases of knowledge from mere (true) justified belief.

I am suggesting that the INDIVIDUALISM-preserving epistemologist who hopes to accommodate the *de re* nature of testimonial reliance has no choice but to analyze cases like INADEQUATE SCIENTIFIC TESTIMONY in a parallel fashion. According to this analysis, when S relies on the testimony of a scientist for her belief in scientific hypothesis H, the *de facto* goodness of the scientist’s testimony can affect (not the degree to which S’s testimonial belief in H is *justified*, but rather) whether S’s testimonial belief in H is a candidate for *knowledge*.

In response I submit that this picture continues to distort the *de re* nature of testimonial reliance.[[27]](#footnote-27) In effect, we are told that, while the epistemic good-making features possessed by a speaker’s testimony do matter when it comes to the *knowledgeableness* of S’s testimonial belief, these features *fail to matter at all* when it comes to the justifiedness of S’s testimonial belief. This implies that in any case in which the knowledgeableness of a testimonial belief is not at issue, there can be no *de re* testimonial reliance to speak of. But this implication is false. We can see this in any domain in which it is common knowledge that the best any of us could hope for is reasonable belief (not knowledge). Imagine we are in such a domain. (Perhaps science itself is such a domain.) Imagine further that there is a group of testifiers each of whom has an opinion as to whether p, that you have an interest in arriving at a reasonable belief regarding whether p, and that you have the option of selecting from among these testifiers. As a potential consumer of testimony, you might still prefer to rely on *that testifier (whomever he or she is) whose belief is most reasonable*. After selecting one such piece of testimony, your reliance on that testimony would then be vindicated according to the epistemic goodness of *that* testimony. This is a clear case of *de re* testimonial reliance, in a domain in which the knowledgeableness of the testimonial belief is not in play.

This same point can be formulated more schematically as follows. Imagine a scenario involving two testifiers, T1 and T2, both of whom appear equally sincere and competent. Both testify that p. But whereas T1 has excellent reasons for this testimony (but turns out to have been gettiered, and so fails to know that p), T2 is a master bullshitter who, lacking any evidence for p (as well as any concern for whether p), merely happens to have gotten it right. It would seem that the difference in epistemic goodness between T1’s testimony and T2’s testimony is epistemically relevant to those who would rely on them. More specifically, it would seem that T1’s testimony vindicates – or at least comes close to vindicating – an audience’s testimonial reliance, whereas T1’s testimony is garbage, and so does not. Unfortunately, the INDIVIDUALIST-preserving epistemologist who accepts the picture of *de re* reliance described above cannot acknowledge this.[[28]](#footnote-28) Neither of these testimonies is knowledgeable, so knowledge is not at issue; both testimonies give the same appearance of sincerity and competence to an audience member; both testimonies attest to the same fact; and so, from the perspective of our INDIVIDUALIST-preserving epistemologist, whichever of these testimonies is relied upon, there can be no epistemic difference in the resulting testimonial belief. This is implausible .

I have been arguing against the proponent of INDIVIDUALISM who, in an effort to acknowledge the *de re* dimension of testimonial reliance, treats this dimension as manifest only in connection with the *knowledgeableness* of a testimonial belief. I am now in a position to diagnose the error made by those who embrace this picture. Their mistake is to assume that reliance on a testifier is essentially the same as reliance on the read-out of an instrument.[[29]](#footnote-29) When I rely on your word, I am not merely treating you as an ordinary part of the environment – a mere piece of the furniture of my world – whose antics and features I can use to draw inferences about the world itself. Rather, I am relying on you *as an epistemic subject in your own right*. And I am relying on you, *qua* epistemic subject, to have presented me with testimony that is backed by *your own competent epistemic agency*. In effect, I am relying on you to have testified out of epistemic competence, or on the basis of warranting reasons or evidence. My reliance on you is vindicated only to the extent that you have such reasons or evidence (or that you testified out of such competence). *This* is the way to understand the sort of reliance in INADEQUATE SCIENTIFIC TESTIMONY. Stronger, this is the way to understand testimonial reliance more generally.

In sum, unless we have good independent reason to think that epistemic reliance in testimony cases differs from other forms of reliance, we should recognize how counterintuitive it is to suppose that an audience might be in a better epistemic position with respect to some proposition p than the very person on whose testimony that p the audience is relying. The implausibility of such a claim is particularly stark in cases like INADEQUATE SCIENTIFIC TESTIMONY, since in that case it amounts to the claim that the non-scientist is doing better, epistemically speaking, than is the scientist on whom she is relying. But once we appreciate why such a claim is implausible – namely, because the sort of reliance in testimony cases is *de re* – we are in a position to see that this implausibility holds in any testimony case (whether scientific or not).

**8. Conclusion**

In this paper I have offered a lesson – or rather a collection of related lessons – that epistemologists of testimony ought to learn from philosophers of science. The upshot of these lessons is that we ought to repudiate INDIVIDUALISM, and move towards a more fully social epistemology. While the example that drives this lesson involves scientific testimony, the subsidiary lessons to be gleaned from this pertain to testimony more generally.[[30]](#footnote-30)

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1. See Wellbourne (1986), Hardwig (1991), Faulkner (2000), Lackey (2006), Schmitt (2006), and Goldberg (2010). Interestingly, the topic has received a bit more sustained attention in the philosophy of science literature. See e.g. Solomon (2001), Longino (2002) and Miller (2015). [↑](#footnote-ref-1)
2. The literature here is vast. For seminal work see Fricker (1987, 1994), Coady (1992), Burge (1993), and Audi (1997). [↑](#footnote-ref-2)
3. See E. Fricker (1987; 1995; 2006a; 2006b); Fumerton (2006); Audi (1997); and many others. These views are critically discussed in Wright (2016); Madison (2016) replies to Wright. [↑](#footnote-ref-3)
4. See Goldman (2001) and Kenyon (2012). [↑](#footnote-ref-4)
5. See Lehrer (2006). [↑](#footnote-ref-5)
6. See Tucker (2016), Philips et al. (unpublished MS). [↑](#footnote-ref-6)
7. See Shogenji (2006). [↑](#footnote-ref-7)
8. See Lipton (2007). [↑](#footnote-ref-8)
9. See A. Goldman (1999) and many others. Of course, such reliabilist views hold that the reliability properties of the process-type by which an audience A apprehends and monitors testimony will be affected by the preponderance of true testimonies in A’s environment. Still, this is seen as an *environmental* condition (akin to the perceptual invariances in one’s perceptual environment), rather than as an admission that others’ epistemic perspective bears on the epistemic goodness of one’s own beliefs. [↑](#footnote-ref-9)
10. I thank an anonymous referee of this journal for indicating the need to address this. [↑](#footnote-ref-10)
11. I thank an anonymous referee for urging that I consider this concern; I am borrowing some of the language in which I am formulating the concern from the referee report itself. [↑](#footnote-ref-11)
12. I do not assume here that the non-testimonial case cannot involve any testimony; only that it does not involve a testimony *of H itself*. [↑](#footnote-ref-12)
13. See e.g. Longino (2002). [↑](#footnote-ref-13)
14. For a description of a real-life example of something in this vicinity, see Miller (2015). [↑](#footnote-ref-14)
15. As Branden Fitelson has emphasized (2008: 618-19), any attempt to connect ‘justification’ in the philosophy of science sense (or at least that which was in play in confirmation theory *a la* Carnap) with that in epistemology will require significant “bridging principles.” The point I will be making in what follows is consistent with Fitelson’s point. [↑](#footnote-ref-15)
16. I thank an anonymous referee for pointing out the need to make this point. [↑](#footnote-ref-16)
17. The claim that they are required is the reductionist position. My present point is simply that one can still wonder whether this is so even after INDIVIDUALISM is rejected. Of course, if INDIVIDUALISM is rejected, then to embrace reductionism is to hold that adequate positive reasons *rationalize* acceptance without ensuring that the resulting belief is justified. But such ‘hybrid’ views are familiar; see e.g. Faulkner (2000) and Lackey (2008). [↑](#footnote-ref-17)
18. See the references in footnotes 3-9. [↑](#footnote-ref-18)
19. By ‘the scientific evidence itself’ I have in mind the sort of evidence that is gathered in scientific inquiry. [↑](#footnote-ref-19)
20. The point here was first made by Hardwig (1991). Hardwig took the point to indicate the ineliminable role of trust in scientific communities. I take the point to indicate something slightly different (for which see below). [↑](#footnote-ref-20)
21. See Longino (2002), Meeker (2004), Wylie and Nelson (2007), Elgin (2017), and Anderson (2020, § 6). [↑](#footnote-ref-21)
22. This point was emphasized by Longino (2002) and is discussed at length in Kitcher (2011). [↑](#footnote-ref-22)
23. This was the absurdity of the idea that a non-scientist S can have better, more probative evidence for a scientific hypothesis than the source scientist on whose testimony S is relying. [↑](#footnote-ref-23)
24. See Goldberg (2014) for an articulation of this notion and a defense of its applicability to the case of testimony. [↑](#footnote-ref-24)
25. In presenting this notion of reliance, I am following Holton (1994). [↑](#footnote-ref-25)
26. Such reasons are relevant to the *rationality* of my reliance; but they don’t serve to vindicate that reliance. [↑](#footnote-ref-26)
27. I offered an extended defense of the argument to follow in Goldberg (2010). [↑](#footnote-ref-27)
28. This was the picture on which the *de re* nature of our reliance in testimony cases is only manifest when it comes to the knowledgeableness of a testimonial belief. [↑](#footnote-ref-28)
29. This is why they analyze INADEQUATE SCIENTIFIC TESTIMONY in a manner analogous to STOPPED CLOCK: a case in which the badness in the source affects knowledge but not justification. [↑](#footnote-ref-29)
30. I would like to express my gratitude to various people with whom I have discussed these topics over the past several years: Peter Graham, Kareem Khalifa, Chris Kelp, Tim Kenyon, Jennifer Lackey, Jack Lyons, Boaz Miller, Carry Osborne, Baron Reed, and Mona Simion. Thanks as well to three referees from this journal, for their very thoughtful comments on earlier versions. [↑](#footnote-ref-30)