This article was downloaded by: [University of Guelph Library]

On: 30 August 2015, At: 09:04

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered

office: 5 Howick Place, London, SW1P 1WG



# Social Epistemology: A Journal of Knowledge, Culture and Policy

Publication details, including instructions for authors and subscription information:

http://www.tandfonline.com/loi/tsep20

# Testimony and Epistemic Risk: The Dependence Account

Karyn L. Freedman

Published online: 03 Mar 2014.



To cite this article: Karyn L. Freedman (2015) Testimony and Epistemic Risk: The Dependence Account, Social Epistemology: A Journal of Knowledge, Culture and Policy, 29:3, 251-269, DOI: 10.1080/02691728.2014.884183

To link to this article: <a href="http://dx.doi.org/10.1080/02691728.2014.884183">http://dx.doi.org/10.1080/02691728.2014.884183</a>

#### PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms &

Conditions of access and use can be found at <a href="http://www.tandfonline.com/page/terms-and-conditions">http://www.tandfonline.com/page/terms-and-conditions</a>



# Testimony and Epistemic Risk: The Dependence Account

Karyn L. Freedman

In this paper, I give an answer to the central epistemic question regarding the normative requirements for beliefs based on testimony. My suggestion here is that our best strategy for coming up with the conditions for justification is to look at cases where the adoption of the belief matters to the person considering it. This leads me to develop, in Part One of the paper, an interest-relative theory of justification, according to which our justification for a proposition p depends on our evidence in favour of p in proportion to our interest in p, as signalled by the epistemic risk we take in believing that p is true. In Part Two, I argue that this theory shows that the reductivist view offers a better normative account for the epistemic status of beliefs based on testimony than the credulist one, but it is inaptly named; the view I develop here is better conceived of as The Dependence Account.

Keywords: Testimony; Epistemic Risk; Dependence Account

#### 1. Introduction

I was born in Winnipeg, Manitoba, in the summer of 1968. I am the middle child of Roxy Freedman (nee Berinstein) and Martin Freedman. My older sister Jacqueline was born in 1966, and my younger sister Lisa was born in 1970. My dad's father arrived in Winnipeg in 1911, at the age of 3. His family came to Canada from Russia where, as Jews, they faced persecution. They arrived on a ship called the S.S. Canada, part of the White Star Line. When my grandfather landed here his name was Schmilz Chazyn; sometime over the next few weeks his name was changed to Samuel Freedman. My dad's mother, Brownie Freedman (nee Udow), was born in Winnipeg, her family having arrived in Canada from Russia in 1882. My mom's parents, Evelyn Berinstein (nee Travis) and Max Berinstein, were also

Karyn L. Freedman is an associate professor in the Department of Philosophy at the University of Guelph. Correspondence to: Karyn L. Freedman, Department of Philosophy, University of Guelph, 50 Stone Road East, Guelph, Ontario, N1G2W1 Canada. Email: karynf@uoguelph.ca

both born in Winnipeg their parents having arrived in Canada in the early 1900s, again from Russia.

I may be slightly off on some of the dates but the basic outline of my family tree is correct, if I am to believe what I have been told. My knowledge of these biographical facts and the other historical ones mentioned above is based entirely on the say-so of others; I am personally a witness to none of them. Our reliance on testimony is far-reaching. Indeed, learning from being told is arguably our most common source of belief. However, if, as Plato (1992) suggested, we cannot gain knowledge through testimony, then we do not know much of what we think we know (Theaetetus 201, 1992). If the extreme individualism associated with the Platonic view is right, then I do not know where I was born, or when, or to whom. Knowledge, on this sort of account, is restricted to the outcome of an individual's reasoning from first principles or to what is deduced from first-person observation. The strict limits on what we can know which is the consequence of this view provides, for many, a sufficient reason to reject it; for surely I do know when I was born, and where, and to whom. Learning from being told is central to our cognitive activities, which makes our epistemic dependence on testimony just about indisputable; recent discussion in epistemology seems to have agreed on at least this much.<sup>2</sup> But while it is often granted that we can know from being told, the question of how beliefs based on testimony are justified remains a matter of some debate. The central epistemological question is whether the hearer has an epistemic right to believe what she is told in the absence of any positive evidence about the reliability of the speaker. The credulist argues that so long as there are no defeaters present, beliefs based on testimony are prima facie justified.<sup>3</sup> The reductivist, on the other hand, argues that beliefs based on testimony are justified only on the basis of non-testimonial beliefs. On this view, our epistemic right to believe what we are told needs to be grounded in something which is taken to be more fundamental, for instance an individual's own observations and inferences.<sup>4</sup> The epistemic status of a belief based on testimony is thus reduced to the epistemic status of other sources of belief.

There are reasonable arguments for each view and both sides garner a good deal of intuitive support. Credulists tend to rely on Davidsonian-type arguments that invoke the principle of charity with respect to our human propensity for truth-telling and thus offer a presumptive right to believe, unreflectively but not necessarily uncritically. <sup>5</sup> Thomas Reid, the earliest advocate of this view, argued that this presumptive right is entailed by what he called the "principle of veracity", which suggests that the tendency to speak the truth is powerful even among liars, who (like the rest of us) tell the truth most of the time (1764/1970, s. 24). More recent views, like Coady's (1992), offer a nuanced version of the principle of charity which is grounded in common linguistic practices, or more specifically, in the incoherence of the possibility there is no correlation between the assertions of a community of speakers and the truth of their assertions. <sup>6</sup> And Burge (1993) argues that we have an a priori entitlement to accept the word of others in virtue of the fact that the telling comes from a rational source. <sup>7</sup> Reductivists, on the other

hand, point out that being justified means having reasons to believe, and since testimony is conspicuously fallible—people lie, speak carelessly and are often mistaken—the mere fact that a speaker tells us something is not, in itself, reason enough to believe the proposition in question.

I think that the intuitive plausibility of each position can help us to understand something important about the current debate, which is that in some important sense the two sides are talking past each other. Earlier I referred to what I called the "central epistemic question about testimony", which is a question about justification, namely, whether the hearer has an epistemic right to believe what she is told in the absence of any positive evidence about the reliability of the speaker. But this question tends to be conflated with a closely related question about the epistemic status of testimony, that is, whether it is a fundamental source of knowledge, on par with perception. The credulist, by way of answering the latter question, offers up a prima facie justification or entitlement of beliefs based on testimony, thereby rendering testimony a source of knowledge sui generis. The reductivist is interested in the question about justification, and as such thinks this prima facie justification or entitlement—even if we grant it—is normatively idle, since in everyday testimonial exchanges it is swamped (to borrow an expression from Fricker (2002)) by empirical evidence that we have in favour of (or against) the reliability of a speaker.

Because the reductivist and credulist are interested in different (if related) questions, the examples culled by each side pull our intuitions in different directions. If, for instance, I am told that p where the truth of p is inconsequential to me, then the credulist principle of a presumptive right to believe (in the absence of defeaters) seems reasonable. In this case, the epistemic risk, by which I mean the risk an individual takes in accepting a proposition p as true, is low.8 If, on the other hand, the risk I take in accepting p is high, such as in the case where the teller looks shifty, or where I presently believe not-p, or where, as a matter of course, I am invested in the truth of p, then it seems like someone telling me p is not reason enough to believe that p—it is no wonder the reductivist thinks the credulist position results in gullibility (Fricker 1994).

The question about whether testimony is a fundamental source of knowledge and the question about the justification of beliefs based on testimony are connected, of course, but they are not identical, and an answer to the latter is only also an answer to the former if we make an unnecessary assumption about the nature of reduction—namely, that the epistemic legitimacy of testimony as a primary source of knowledge disappears if we reject credulism. In fact, I think that one can consistently maintain that testimony is a fundamental source of knowledge even if one embraces a version of reductivism about justification, as I do here. I will return to this matter briefly in my concluding comments but my main focus in this paper is on the question of justification, that is, about what conditions must be met for a belief based on testimony to be justified. My position here is that we can find an answer to this question by looking at cases where the epistemic risk is high, that is, where the adoption of the belief matters to the person considering it.

As we shall see, a belief might matter to us due to the presence of defeaters, either normative or doxastic, but my main focus here will be on cases where we care about the truth of p as a matter of practical or emotional investment. The conclusion I draw from these cases is that justification is an interest-relative relation, which makes the justification for our beliefs based on testimony, and the evidence we require in support of them, depend on the level of epistemic risk we take in adopting them.

I will argue for this position primarily by offering probative examples that support it. These examples show that in cases where the epistemic risk that p is false is high, where the adoption of the belief (in James's terms) is *momentous* for the individual considering it (1896/1979, s. I), the evidential burden required for justification goes up. What this illustrates is that the reductivist view offers a better normative account for the epistemic status of beliefs based on testimony than the credulist one, but it is inaptly named; for a number of reasons articulated below the view I develop here is better conceived of as The Dependence Account.

#### 2. Part One: Justification

#### 2.1. Coming to Believe

The manner of coming to believe what we are told is psychologically complex, but a rough understanding of this process can help us to understand the normative constraints on testimonially based beliefs. This is certainly true with other sources of belief, in particular perception. We take seriously the sceptical problem of illusion, for instance, because we have each had the experience of seeing a bent stick in water. In the case of perception, the process of coming to believe is typically non-inferential. We form beliefs quickly and directly based on our visual experiences, but this procedure is not as naïve as "seeing is believing" would suggest. As Sellars (1956) argues, our perceptions are given within a conceptual framework and these preconceived notions shape the expectations we bring to our visual experiences. Accordingly, our readiness to accept what we perceive is underwritten by a subconscious monitoring for plausibility, what Elizabeth Fricker has called a "default-trigger", which she defines as a cognitive response to the believability of what we are currently witnessing which is conditioned by our past experiences (1995, pp. 404-05).9 When it goes off we withhold belief, at least temporarily, such as in the case of our first experience of seeing a bent stick in water. Since our previous doxastic commitments are in conflict with sticks bending in this way, we red flag our current perceptual experience and refrain from full doxastic assent (although this process is far less deliberate that this description suggests). Perceptual tricks like this one are unusual, or so we think, and this descriptive fact bears on our normative account, such that the justification that we demand for perceptual beliefs is minimal: seeing is just about enough for justified believing.

In the typical case of testimony, the phenomenology of coming to believe is also non-inferential—direct and quick—but an individual's default-trigger is apt to go off more frequently than in the perceptual case. Triggers can be set off by the presence of doxastic defeaters, as in the case where I hear that p but I currently believe that not-p; or by normative defeaters, as in the case where I am told that p but something about the speaker looks off, giving me reason to doubt the veracity of her testimony; or even in the case where there are no defeaters present but I hesitate to accept p because, for one reason or another, the truth of p matters to me. Even if in the typical case I believe non-inferentially, these other sorts of cases occur too regularly to be considered unusual, for unlike perception in the case of testimony, we are often in a position of hearing things that set off our default-trigger. In part, this is due to sheer numbers; the amount of facts, or at least the kinds of facts<sup>10</sup> that we have the opportunity to learn from first-person observation is limited in comparison to the number and variation of what we can learn from being told. This is, after all, what accounts for the appeal of testimony as a source of knowledge. Couple this with the fact that testimony is a distinctively social source of knowledge, which allows for false reports through both incompetence and prevarication on the part of the speaker. Now, just because there are more potential sources of error in the case of testimony than in the case of perception does not imply that there is in fact more error in the case of testimony, but it seems reasonable of us to assume that this is so.<sup>11</sup>

In any given day, the number of testimonial reports we hear is high. I wake up and listen to the local news on the radio; while I have my morning coffee I email a friend to ask what time our dinner plans are for that night, and while I am online I do some research about an upcoming trip I am taking to Mexico; I then sit down to breakfast with the newspaper and read a feature article about Canadian soldiers in Afghanistan, but I am interrupted midway by a call from my mom telling me that she has just heard that an old friend of mine from high school has breast cancer. Before I have even left the house I have heard or read dozens of testimonial reports. Many of these will be of no consequence to me, but it is easy to imagine at least a handful of them setting off my default-trigger. I will want to know more details about the news of my old friend, including verification on where the stories are coming from. If I hear on the radio that, to my surprise and disappointment, Evander Kane has been traded from the Winnipeg Jets, I will quickly go to my computer and double check the news. My research for my upcoming trip might turn up a report about a blue-algae problem at various vacation resorts in Mexico, mine included, in which case I will also double check (and triple check) the news. Or perhaps I read that the weather in Afghanistan in the summer, which I had thought to be extremely hot and humid, is instead dry and cold. In each of the first three cases the importance to me of the propositions in question is obvious, and while the truth of this last proposition might be relatively inconsequential to me, as we shall see the presence of doxastic defeaters raises the epistemic risk, that is, the risk I take in accepting the proposition p as true. I will return to this concept of epistemic risk shortly.

### 2.2. Justification, Internalism and Evidence

This description of the process of coming to believe that p when told that p captures the phenomenology of learning from being told, which seems as good a starting point as any to figure out an answer to the epistemic question regarding the conditions according to which, when satisfied, beliefs based on testimony are justified. A theory of justification, as distinct from a theory of knowledge, sets out the standards for evaluating whether we have been suitably careful in forming our beliefs insofar as our overall aim is to have a true and consistent set of beliefs. Although there are externalist theories of justification, I think this is a conceptual mistake.<sup>12</sup> In my view, externalism is better understood as a theory of knowledge, specifically as articulating a standard a true belief must meet in order to be considered knowledge (for which justification is not necessary, even if there are cases in which it is sufficient). 13 Fundamentally, justification involves having reasons and having reasons that one has access to. The cognitive accessibility constraint on justification entails that a justified belief is one that can stand up to critical scrutiny (self-imposed or otherwise), or at least would, were we to reflect upon it. This internalist understanding of justification provides a distinctly deontological conception of the notion, whereby an individual who has justified beliefs is an epistemically blameless individual (regardless if her justified beliefs are in fact true). 14 Given this conception of justification, if an individual has some reason to doubt the truth of p then, insofar as we have any doxastic control, the responsible doxastic attitude for that individual to take is to refrain from endorsing p. 15

To illustrate this view, imagine a demon world in which two individuals have the identical mental content—the same beliefs, memories and experiences—but one of them is being tricked by an evil demon such that all her beliefs happen to be false. This hypothesis has been used to illustrate the internalist intuition that if two individuals have the same subjective experiences then to the extent that one of them is justified in her beliefs, so is the other (Foley 1985). If this is right, then both individuals are justified even in the case where one individual's beliefs are all false. After all, the story here goes, being tricked by a demon does not make a person less rational; it just makes her *unlucky*. From a first-person perspective each individual is doing the best that she can do, qua epistemic agent; each has equally good reasons for her beliefs and thus, so long as one has justified beliefs, so does the other.

The notion of justification at work here is connected to the concept of evidence. What precisely "evidence" consists in is an important question, but generally speaking our epistemological notion of evidence is of the kind of thing which can make a difference to what one is justified in believing. As such it is a normative concept; one proposition is evidence for another just in case the first tends to boost the justification of the second. The principle of evidence suggests that when one is entertaining a proposition that brings with it a measure of doubt there is an increased demand for evidence to support that proposition; as Hume said, "A wise man, therefore, proportions his belief to the evidence" (1748/1977, s. 10). This principle

is apparent in our everyday epistemic interactions and it is also manifest in more formal settings, such as a court of law, where it is traditionally held that the evidence must equal the crime. This notion of evidence also captures the normative force behind the notion of epistemic responsibility articulated above. On this view, gathering evidence is a kind of epistemic labour, an indication of the cognitive efforts undertaken by epistemic agents.

There is more to be said about the connection between justification and evidence, but first I want to note that the relationship of evidence to epistemic responsibility does not preclude those cases where, for practical purposes, the rational or responsible thing to do is to ignore the evidence. Situations like these come up all the time, as in the case where all the evidence points to some imminent catastrophe yet one's survival depends on one not giving up hope, and hence one reasonably chooses to ignore the evidence. What this suggests is that prudential and moral reasons can trump epistemic ones in cases where one's goal is something other than true belief. But note, in these cases we qualify what we mean by "rational" or "responsible" in order to capture a secondary meaning of the terms, which is something like "for practical purposes"; implicitly we are acknowledging that insofar as our goal as epistemic agents is to have a true and consistent set of beliefs about the world, ignoring evidence is cognitively irresponsible. 17

## 2.3. Interest-Relativity: Justification and Epistemic Risk

This discussion helps to illustrate the subjectivity of the traditional internalist conception of justification. I think one good way to capture this subjectivity is to characterize justification as an interest-relative relation. Let me elaborate why. With internalism, as we have just seen, what matters for justification is that we have sufficient evidence for our beliefs *from our point of view*. But our point of view is deeply influenced by a variety of factors, including our interests, that is, what we care about. And because individuals have varying interests about any given subject matter, what may look like a good reason for belief for one individual may not look that way to another. An interest-relative theory of justification has the resources to help us explain how it is that evidence, or reasons for belief, functions differently for different people.

On this interest-relative theory of justification, a subject S is justified in believing that *p* at time t if and only if S's evidence at time t supports P in proportion to S's interest in P. Justification, on this view, depends in part on one's evidence and in part on one's interests, that is, what one cares about. Other interest-relative accounts in the current literature, both those of justification (e.g. Fantl and McGrath 2002) and those of knowledge (e.g. Stanley 2005, 2007), restrict the notion of interests to pragmatic interests, but that conception is narrower that I would like.<sup>18</sup> The notion of interests that I favour includes both those factors that influence our actions as well as those that influence our general well-being, for in addition to having a practical stake in the truth of a proposition I might care about the truth

purely as a matter of emotional investment. The truth of a proposition might matter to me because it has some influence on a course of action that I might undertake, in other words, but it also might matter to me because it bears on my happiness or my general well being.

Imagine, for instance, that when I was a graduate student George Santayana was a philosophical hero of mine, but that I am no longer very interested in his work and have no on-going research relating to his philosophy. Still, suppose that I hold him in high esteem, until, that is, I hear that he was anti-Semitic. Suppose further that this little known fact about Santayana bears on my opinion of him, such that I sincerely hope that it is false. In this case, while I have no practical stake in the claim that Santayana is anti-Semitic I care about its truth and, again, really hope that it is false.

On the interest-relative theory of justification, that fact that a proposition p matters to an individual, that she is invested in its truth, raises the epistemic risk she takes in believing that p is true because of the possibility of wrongly believing that p. On this view, the epistemic risk one takes in believing that p is raised when the subjective value of the outcome of believing that p where p is false is negative. And when the epistemic risk one takes in believing that p is raised, so too is the evidential burden for justified belief. What this means is that two individuals with the same evidence regarding a proposition p are not necessarily in normatively symmetrical positions with respect to p. If, as a point of fact, p matters to me and not to you, then you and I have different evidential burdens to meet in order to have a justified belief that p.

As I am using them, the notions of "mattering" and "caring" are interchangeable with the notion of "interests". To say that the truth of a proposition matters to us, or that we care about it, is, in other words, just to say that we have an interest in it. And again, the truth of a proposition can matter to us because it bears on an action that we undertake or because it impacts our general well-being or our happiness—for emotional reasons, that is. Thus, emotional interests are one kind, or subset, of interests, the other kind, or subset, being of the practical sort. As I said earlier, the notion of interests that we find in the current literature is restricted to the practical sort, linking interests directly with action, such that our interest in a proposition is raised when the truth of the proposition influences some action which we undertake. However, as the Santayana example illustrates, the epistemic risk we take in believing a proposition can be raised because the truth of the proposition affects our happiness or general well-being.

Thus, to say that the truth of p matters to me is just to say that I have an interest in the truth of p, and that is so whether the truth of p matters to me for emotional reasons or practical ones. And when I have an interest in the truth p then the epistemic risk that I take in believing that p is raised because of the possibility of believing that p where p is false insofar as the subjective value of that outcome is negative.

Let's return to the case of George Santayana to make some further clarifications. Suppose that you and I are together when we hear the news about Santayana's anti-Semitism, and let's say also that you and I are equally knowledgeable about the Pragmatists, but that I happen to care about Santayana's purported anti-Semitism whereas you do not. What this means is that the epistemic risk that I take in believing that p is greater than the epistemic risk that you take in believing that p, and that means that I have a greater evidential burden than you do to satisfy the normative requirements for justified belief. What this means, more generally, is that the same proposition told to two different hearers might well require varying degrees of evidence to ensure, in each case, a justified belief.

This refinement to the Santayana case helps to illustrate further the relationship between epistemic risk and interests by bringing in the notion of "experts." Being an expert on a subject typically means that one has a good deal of knowledge on the subject, such as in the case of two individuals who are both experts on the Pragmatists. But not everyone who is an expert on the Pragmatists cares about Santayana's personal life, that he held anti-Semitic views, for instance, or that he never got married, or that he retained his Spanish citizenship throughout his life. <sup>20</sup> In other words, despite the fact that you and I are equally expert on various matters that are connected to p, i.e. that Santayana was anti-Semitic, you could care less about the truth of p whereas I care a good deal, and thus the epistemic risk we each take in believing that p, since it is apportioned accordingly, is asymmetrical.

This normative asymmetry maps onto some commonly shared intuitions about the way evidence functions in our epistemic lives, insofar as we think that an individual's responsiveness to evidence hinges—or at least ought to—on how important a matter is to her.<sup>21</sup> The interest-relative theory of justification thus does some important explanatory work, but it also gives a strict evidential theory of justification a much-needed framework. After all, evidence, on its own, can never tell us how much evidence is needed to support a given proposition. No amount of evidence can decide for us how much evidence is needed, in any case, or whether a matter is worth enquiring over. Another way to put this point is to say that evidence is never neutrally received; individuals must judge the value of the evidence before them, and without some pragmatic or emotional constraint or consideration, evidence has no probative force. 22 Evidence on its own is unable to guide us, strictly speaking, and so we need some way of determining, in any given case, how much evidence is the right amount of evidence for justified belief. The interest-relative theory of justification provides just that, insofar as it tells us that evidence ought to be proportionate to one's interests, and thus to the epistemic risk one takes in believing a proposition p to be true.

It is important to distinguish this notion of epistemic risk from Riggs's (2008) recent articulation of the concept. On Riggs's view, epistemic risk is a subjective notion, which is determined by how risk averse (or not) an individual may be. Riggs makes the Jamesian point that some people care a good deal about avoiding falsehoods, whereas others are oriented to risk falsehood in order to gain more truth. Riggs's point is that neither attitude is necessarily more rational than the other one, and that therefore two individuals with the same evidence may, if they

are differently risk-averse, end up in normatively asymmetrical positions (2008, p. 4). This is the same conclusion as mine, but Riggs and I get there in importantly different ways.

On my view, epistemic risk is determined by how much a proposition *p* matters to an individual, regardless how risk-averse (or not) she may be. So, for instance, suppose that you and I both hear the same news about Santayana, and suppose in this case that you and I are equally interested in this information. In this case, on the interest-relative theory of justification articulated here, you and I are in normatively symmetrical positions, and this is so regardless of how risk-averse either one of us is. Relatedly, it is possible that interests are also subject to valuation—maybe I care more about a proposition than I ought to, for instance—but the view presented here does not take a stand on that. Rather, an individual's interest in proposition is taken as fixed, and then used as a basis for raising or lowering the normative requirements for justified belief. Riggs and I agree, therefore, that two individuals with the same evidence regarding a proposition *p* are not necessarily in the same normative position with respect to *p*, but again, we get to this conclusion on the basis of different sorts of reasons.

#### 2.4. Interest-Relativity: Defeaters and Further Clarifications

I want to illustrate the interest-relative theory of justification by looking at another example, this time with a focus on practical interests. Suppose that you and I hear the same news report about a pilots' strike at British Airways (BA), and suppose further that while this news has no bearing on your life, I have tickets booked on BA to take me to my best friend's wedding in London the following weekend, an event which I have been looking forward to for months. Thus, while we both have the same evidence about p, i.e. that there is a pilots' strike at BA, we are not in normatively symmetrical positions with respect to our doxastic attitudes towards p. Because you have nothing invested in the matter, a modest amount of positive epistemic support in favour of p would be enough to justify your belief that p. But because the epistemic risk that I take in believing that p is higher than the risk that you take in believing that p, so is the corresponding normative requirement. Were I to believe that p on this modest amount of evidence, in other words, we would rightly regard my belief that p unjustified. A more appropriate doxastic attitude for me, though not for you, would be suspension of judgement.

To be clear, I am not claiming that it is a prudential or moral failing to not investigate the matter further, though that may be the case. I am also not claiming that we are under any epistemic obligation to gather any more evidence regarding p. I think that Feldman is probably right that from an epistemic perspective our only duty, strictly speaking, is to believe according to the evidence that we currently possess (2002, pp. 370–72). My point here, rather, is that should I choose not to gather more evidence regarding p, then my belief that p, and not yours, would be unjustified. In the BA case, just like the Santayana case, we have two

individuals with the same evidence yet different levels of evidential burdens, and this teaches us something important about the normative requirements for justified belief. It shows us that the evidence that a subject S has for a proposition p at time t is only part of what is needed to determine whether she is justified in believing that p at time t. As we have seen, justification also depends on one's interests.

Importantly, this claim that justification depends in part on interests does *not* mean that our interest in a proposition p gives us more (or less) reason for believing that p is true. Our interest in a proposition has no bearing on whether that proposition is true; that way of thinking falls squarely into the category of wishful thinking, which is what happens when our stake in some matter decides the matter for us. On the interest-relative theory of justification, our interest in a matter never decides it for us, but it does decide how much evidence we need for justified belief in any give case. Our interest in a matter increases (or decreases) the demand for reasons for justifiably believing that p is true.

In both the Santayana and BA examples accepting the proposition in question raises the epistemic risk I take in believing p because, for either emotional or practical reasons, I am invested in the truth of p. A fairly reliable way to measure the variability of epistemic risk in agents is to monitor their default-triggers. So, for example, suppose that I am an expert when it comes to p and you are not. In this case, a testimonial report claiming not-p might set off my default-trigger and not yours. Or imagine, like the Santayana example that you and I are equally schooled about matters relating to p but, for whatever reason, I sincerely hope that p is true whereas you are indifferent to the truth of p; then a report claiming not-p might again set off my default-trigger and not yours.

Defeaters can also raise the epistemic risk an individual takes in believing a proposition, though in an important respect these fall into a different category than interests. In the typical case, defeaters, whether they are normative or doxastic, are evidential, whereas interests are not. A doxastic defeater for p, for instance, is when my belief that q or r conflicts with p, or, more directly, when my belief that not-p contradicts p. The presence of conflicting or contradicting beliefs offer evidence, or reasons to think that p might not be true, which is why they raise the epistemic risk that I take in believing that p is true insofar as the subjective value of believing that p, given that I have a reason to suspect that p is false, is negative. The same goes for a normative defeater of p, which is when there is something questionable about the conditions in which I learn that p, for instance, when I am told that p by someone who appears suspicious. Again, in this case, even if I have no practical or emotional stake in the truth of p, the fact that there is some evidence to suggest that p might not be true—e.g. the shiftiness of the teller—raises the epistemic risk I take in believing that p is true.

So, for example, suppose that you and I are spending a leisurely Sunday afternoon browsing magazines at a newsstand when a third party approaches the vendor, asks for the time, and is told that it is 5 pm. Suppose further that neither you nor I have any place to be at 5 pm, but as it happens I have just glanced at my watch and noted to myself that it is 4 pm. In this case, while I do not care

much what time it is, my default-trigger is activated by the presence of a doxastic defeater and as such I require more convincing than you do to justifiably believe that it is 5 pm. Again, this is because defeaters like this one give us reason to doubt the truth of p. This would also be the case if I did not have any defeating beliefs for the claim but, rather, noticed that the vendor failed to look at his watch before answering the query. In this case my default-trigger would be activated by the presence of normative defeaters, i.e. there was something obviously shifty about the testimonial report. The fact that I noticed that the vendor failed to check his watch before offering the time gives me, and not you, a reason to doubt his response.

### 3. Part Two: Testimony

#### 3.1. Testimony, Interests and Epistemic Risk

The interest-relative theory of justification advanced here highlights the relationship between justification, evidence and epistemic risk, and in so doing paves the way for a relatively straightforward answer to the question regarding the conditions under which beliefs based on testimony are justified. Justification is a matter of having reasons to believe, reasons that one has cognitive access to. How robust those reasons need to be, indeed, what, in the first place, counts as a good reason for belief, is contingent not strictly on the evidence that one has but also on one's interest in a proposition. This is true for any subject and any proposition, but it is most obvious in cases where the proposition a subject is considering is of some consequence to her.

Being told that *p* may be a reason to believe that *p*, for either Burge or Coadytype reasons, or maybe because a person's assertion that *p* should count as evidence in favour of *p*, a point I will return to shortly.<sup>23</sup> But just like in the perceptual case, where seeing that *p* counts as evidence in favour of *p*, if I have a lot at stake in *p*, a justified belief that *p* may require more than just a one-off perception that *p*. So, for instance, say that I glance through the window of my local coffee shop as I am walking by and I think I see my neighbour inside having a coffee. While normally that wouldn't be surprising, I doubt the veracity of my initial perception in this case because I had thought that she was out of town, and so I decide to go inside for a better look. And because I have reason to doubt what I am seeing, due to the presence of a doxastic defeater, I have a greater evidential burden than in the usual perceptual case for justified belief.

The same holds for the testimonial case. In cases where the epistemic risk I take in believing that p is high because the truth of p matters to me, justification for p requires more than being told that p. If catching a flight to London next weekend is important to me, then hearing one news report that p, i.e. there is a pilots' strike at BA, is insufficient to ground my belief that p. Again, I do not think that there is any *epistemic* obligation on me to investigate the matter further, but

rather that without further investigation, my belief that p is unjustified; a more appropriate doxastic attitude for me, in this case, is suspension of judgement.

What this shows is that the normative requirements for justified belief fluctuate according to the epistemic risk one takes in believing. What the Santayana, BA and newsstand examples illustrate is that when the epistemic risk is high our standards for justification rise. I think that we can make this case with respect to perception as well, as the example above illustrates. But it is especially flagrant in the case of testimony since, as we noted earlier, the distinctly social nature of testimony means that there are more than the usual factors that can raise the level of epistemic risk one takes in believing.

Looking at cases where the epistemic risk for the hearer is high shows us what is wrong with the credulist position as an answer to the central epistemic question regarding the conditions of justification for beliefs based on testimony because it highlights the fact that to be justified is to have sufficient reasons for belief, at least from one's own point of view. And these cases can help us to understand what is required for justification in all cases, including those ones where the epistemic risk one takes in believing is low. The credulist position is most intuitive here because what it looks like is that if there are no defeaters present and I happen to not care about p, then your assertion that p is sufficient to justify my belief that p. But how are we to best understand what is going on in these cases? One way to interpret this sort of testimonial exchange is to suppose that no evidence is required for justification, so long as the level of epistemic risk does not bring with it the presence of defeaters. But the discussion here shows why this interpretation is problematic. According to the interest-relative theory of justification, in the case where the epistemic risk the hearer takes in believing is close to nil, it is not that no evidence is required for justification, but rather that the evidence requirement is correspondingly low. And in such cases, as I suggested above, someone's telling that p can be sufficient evidence in favour of p.

In this kind of case, p is justified for the hearer not as a result of an a priori entitlement to believe, as the credulist would have it, but rather in virtue of the fact that the teller commits herself to the truth of p through assertion. Someone's asserting that p can be sufficient evidence for my belief that p insofar as it counts as a reason in favour of p. It may be a weak reason (and hence easily defeasible), but in testimonial exchanges where the epistemic risk the hearer takes in believing is low, a modest amount of positive epistemic support is all the evidence that is required for justified belief.

## 3.2. The Dependence Account

The answer that I have given to the question regarding the epistemic status of beliefs based on testimony is straightforward. Justification is best conceived of as an interest-relative relation, and this means that our justification for a proposition p depends on one's evidence in favour of p in proportion to one's interest in p. This position is explanatory with respect to the ways our intuitions about

testimony are pulled in different directions, first to credulism and then to reductivism, depending on the kinds of examples in question. But the analysis provided here shows that even when the credulist position is intuitively plausible, that is, even in cases where being told that p seems sufficient to justify one's belief that p, the credulist account fails to properly capture the normative requirements for justified belief. The reductivist view offers a better normative account for the epistemic status of beliefs based on testimony than the credulist one, but it is inaptly named; for a number of reasons articulated below the view developed here is better conceived of as The Dependence Account.

According to as The Dependence Account, justification depends on evidence, and how much evidence a hearer needs with respect to any given proposition depends on the hearer's interest in the proposition in question. This answer provides the rationale for understanding the justification of testimonial beliefs as one of dependence. The question now arises as to what counts as good evidence for a belief based on testimony. The reductivist's answer to this question often lands her on one or the other horn of what's been called "Hume"s dilemma' (1748/1977, s. 10).<sup>24</sup> According to the reductivist, the epistemic status of a belief based on testimony is reduced to the epistemic status of another source of belief, for example, perception and inference. The idea here is that if I am told that p, then I must have reasons independent of the particular telling for my belief that p to be justified. These other reasons usually amount to my having previously experienced the teller as reliable, or my having observed something resembling p in the past. In either case, these observations and the inferences that I draw from them are what render p justified, which leads the dilemma. On the first horn, if the observations are one's own, then learning from being told drops out of the picture completely (and with it the large number of facts we can justifiably believe); for that reason alone this horn is obviously problematic. If the observations are not one's own, on the other hand, then it seems that we are dependent on testimony to learn them, and a regress is upon us. Some reductivists have attempted to maintain this position while constructing ways to block the regress, 25 but I think the worry about a regress is, in the first place, overstated.

On the account of justification advanced here, a justified belief is one that depends on evidence for support. This is true with respect to all of our beliefs, not just those based on testimony. Take perception. As discussed earlier, when it comes to perception seeing is often enough for justified believing. In part that is due to the limited number of facts, or at least *kinds* of facts, that we have the opportunity to learn via perception and (more to the point) the corresponding relative infrequency of our default-trigger being activated. If I see a cat on the mat, for instance, then in the usual case my belief that there is a cat on the mat will be justified based on the evidence provided by my observation that this is so. Likewise, if I am told that there is a cat on the mat, then in the typical case my belief that there is cat on the mat will be justified based on the evidence provided by the assertion.

In each case, the minimal evidence required for justification corresponds to the fact that the proposition "there is a cat on the mat" typically brings with it a low

level of epistemic risk to the observer or hearer. If, however, I am told that there is cat flying on a mat, then my default-trigger will likely be activated, as the epistemic risk I take in accepting the proposition goes up. In this case, someone asserting that p is insufficient to justify my belief that p. But this is equally true in the case of perception. If I see—or think I see—a cat flying on a mat, the appropriate doxastic response for me is to hesitate from endorsing p. My single, isolated observation is insufficient evidence for p, given the presence of doxastic defeaters, namely my previously held beliefs about cats and flying and mats. That said, often all that is needed to pass the evidential burden of justification is that I double-check, thus providing myself with a further supporting observation. Maybe I wipe my eyes and look again or maybe I approach the cat and the mat, for closer inspection.

This gathering of further evidence seems to supply what is needed to justify my perceptual belief that a cat is flying on a mat, yet the evidence just cited amounts simply to further observations by me. In the perceptual case, the dependence of one person's observation on the reliability of her other observations does not set off a vicious regress (nor does it throw into jeopardy the status of perception as a primary source of knowledge—more on this later). It might not fend off deep sceptical challenges, but that's a separate worry.

In the case of testimony, moreso than perception, we may find that someone's telling a subject S that p is insufficient evidence for S to have a justified belief that p, for reasons discussed already. But the worry that this gathering of further evidence calls into question the legitimacy of testimony as a source of knowledge not only holds testimony to a different standard than perception, but it also fails to recognize that, in most cases, the sort of evidence we seek out to justify beliefs based on testimony is not merely one single, isolated telling, but rather a vast informational resource, as Adler has argued (1994, p. 267), thick with sources that are both perceptually and testimonially-laden. As Coady and others have argued, our perceptual knowledge is saturated with testimony. 26 Our perceptions are laden with what we know from being told, in other words, and the same holds for tellings, which are thick with perceptual information. It is virtually impossible to isolate our beliefs as being generated strictly by testimony or strictly by perception, which further assuages any worries about a vicious regress. The justification for my belief, in the perceptual case, depends on evidence, but is not thereby reduced to the inferences that it depends on. The same is true in the case of testimony, it is just that here our dependence is more conspicuous because our default-trigger is activated more frequently.

#### 4. Conclusion

I like to call the view that I have defended here regarding the epistemic status of beliefs based on testimony The Dependence Account. The dependence is a double entendre. Justification depends on evidence and how much evidence is needed, in each case, depends on the interests of the hearer. Sometimes being told that p is reason enough to believe that p, since someone's asserting that p is evidence in

favour of the truth of *p*. Normative or doxastic defeaters are counter-evidence that raise the epistemic risk I take in accepting a proposition as true, and as such call for further evidence to defeat the defeaters. Moreover, as the interest-relative theory of justification advanced here suggests, the epistemic risk the hearer takes in believing is also raised in a case where the hearer has an emotional or practical interest in *p*. Credulist accounts are thus an inadequate answer to the central epistemic question regarding the normative requirements for beliefs based on testimony, because they overlook the evidence condition that is a basic requirement to justification.<sup>27</sup> And while at first glance, the phenomenology of our more mundane testimonial exchanges makes it seem like in some cases no evidence is required for justification, a more nuanced interpretation correlates the evidence requirement to the epistemic risk taken by the hearer. This becomes clear when we turn our attention to beliefs that matter to the individuals considering them.

Reductivist accounts are right that beliefs based on testimony require supporting evidence, but the worry that this move motivates a vicious regress is overstated. Whatever the source of our beliefs, beliefs depend on evidence and the amount of evidence that is required to meet the burden of justification is proportionate to our interest in a matter. We do not fret about the character of our evidence or supporting inferences when it comes to perception, and we should be equally unperturbed in the case of testimony.

The epistemology of testimony that I have developed here treats as separate two questions. One is regarding the epistemic status of a belief based on testimony, specifically, what is required for that belief to be justified. This is the question that I have focused on in this paper, and the answer that I have given to it is, again, straightforward: justification depends on evidence and how much evidence is needed depends on the hearer and the epistemic risk she takes in believing that *p* is true. Moreover, the conception of justification articulated here spans all our sources of beliefs and places the same cognitive demands on epistemic agents, regardless of the source of the belief in question. In all cases, a subject's justification for her belief that *p* depends on her evidence in favour of *p*—evidence that, from her point of view, correlates to the epistemic risk that she takes in believing that *p*, as determined by both her normative and doxastic defeaters and her interests, and as signalled by her default-trigger.

The second question in the epistemology of testimony is whether testimony is a fundamental source of knowledge, on par with perception. I treat these two questions as separate since an answer to the former is only an answer to the latter if we make an unnecessary assumption about the nature of reduction, specifically that the epistemic significance of testimony vanishes if we adopt a version of reductivism. As we have seen, however, the dependence on evidence for justification does not diminish the epistemic value of a particular telling, which suggests, at the very least, that testimony is no less a fundamental source of knowledge than any other.

### Acknowledgements

I want to thank the referees *Social Epistemology* for their careful reading and insightful comments on an earlier version of this paper, which is vastly improved thanks to their generous input.

#### **Notes**

- [1] For alternative definitions of testimony see Coady (1992), Graham (1997), E. Fricker (1987, 2002), and Pritchard (2004).
- [2] Testimony has been a hot topic in epistemology for the last couple of decades, with the renewed interest sparked in part by the publication of Coady's important *Testimony* (1992).
- [3] Defenders of some version of credulism include Burge (1993), Coady (1992), Hardwig (1985, 1991), McDowell (1994), and Strawson (1994).
- [4] This view, credited to Hume (1748/1977, s. 10), finds its best contemporary articulation in E. Fricker's work (1987, 1995, 2002). Adler (1994, 1996) and Lipton (1998) also support versions of reductivism.
- [5] Coady's (1992) way of talking about testimony suggests that hearing is a skill of some sort, which can be done well or not, allowing for critical but immediate acceptance. M. Fricker's virtue account of testimony (2003, 2007) develops this idea explicitly, providing a non-inferentialist account that allows for the critical reception of the word of others.
- [6] Coady develops this argument in Chapter 4 of his (1992), which also contains his main argument against the Humean reductivist.
- [7] Burge's default epistemic entitlement is captured in what he calls the "Acceptance Principle", which states "a person is entitled to accept as true something that is presented as true and that is intelligible to him, unless there are stronger reasons not to do so" (1993, p. 467).
- [8] The notion of epistemic risk that I use here is different from the one employed by advocates of Bayesian models of epistemic utilities, e.g. Levi (1962) and Fallis (2007), but it is a cousin to these models and, as we will see, has something in common with Riggs's recent articulation of the concept (2008).
- [9] E. Fricker's discussion of the default trigger is in the context of testimony, but the concept applies just as well to other modes of belief formation.
- [10] I owe this helpful clarification to a referee, who rightly pointed out that while we may be limited in discovering certain kinds of facts through perception, we are nevertheless constantly receiving sensory input.
- [11] Another helpful clarification by one of the referees of this paper.
- [12] Bergmann's (2006) recent defence of externalism about justification provides a credible counter-example to this claim.
- [13] Elsewhere, I have argued that construing externalism as a theory of justification exposes a failing in the traditional analysis of knowledge, but one that can be fixed by reconceptualizing knowledge as requiring only that an individual's true beliefs about the world be non-accidentally true for her. Externalist theories like reliabilism thus offer one way of meeting this condition, while internalist accounts provide another way; neither is necessary for knowledge but each is sufficient, when combined with true belief (Freedman 2010). Foley (1993) has articulated a similar view, much more elegantly than I have.
- [14] Deontological considerations are standardly viewed as the main motivation for internalist theories of justification, by both critics and supporters of the view; see, for instance,

268

- Goldman (1999) and Steup (1996), respectively. Not all internalists embrace this conception of justification, however; see esp. Conee and Feldman (2001, 2004).
- [15] The question of doxastic voluntarism is an important one, of course, but not one that I will address here.
- [16] This suggests that reasons can be delineated into types (e.g. prudential reasons, moral reasons, epistemic reasons, etc.), and that there is no one overriding kind of reason—no "plain reason," which is akin to Feldman's claim (2002, p. 370) that there is no one overriding kind of duty—no "plain ought".
- [17] I am not here endorsing the view that truth is a constitutive norm of belief (cf. Shah 2003).
- [18] Stanley's position is that whether a subject S knows that *p* at time t depends at least in part upon practical facts, e.g. "those facts that bear on the costs and benefits of the actions at that person's disposal" (2007, pp. 168–69). Fantl and McGrath argue for a "pragmatic necessary condition on epistemic justification: (PCA) S is justified in believing that p only if S is rational to act as if p" (2002, p. 77).
- [19] One might object to the distinction between emotional and practical interests on the pragmatic grounds that beliefs are themselves a type of action, which would mean that one's emotional investment in belief is just another kind of practical stake. The problem with this objection, however, is that it presupposes a substantive view over the theoretical nature of belief, and in doing so begs the very question over whether there is a genuine distinction between emotional and practical encroachment on beliefs.
- [20] That said, being an expert on a subject which is connected to *p* sometimes entails that one has beliefs on that subject which contradict or otherwise conflict with *p*, and in this case the epistemic risk one takes in believing that *p* is raised in virtue of these doxastic defeaters. I discuss this kind of case below.
- [21] This is the intuition that Fantl and McGrath exploit in their Cases 1 and 2 of the Train to Foxboro (2002).
- [22] As Owens (2000) puts it: "purely evidential considerations *underdetermine* what we ought to believe until they receive pragmatic supplementation" (2000, pp. 26–7).
- [23] Contra Moran (2005), who argues against the evidential conception of assertion.
- [24] See Coady (1992, Chap. 4) for a detailed analysis of this dilemma.
- [25] See in particular E. Fricker (1995).
- [26] See Coady (1992, Chaps. 1 and 9), and E. Fricker (1995, p. 402).
- [27] To the extent that the credulist is instead concerned with the question about whether testimony is a fundamental source of knowledge, on par with perception, she won't be moved much by the argument raised here.

#### References

Adler, J. E. 1994. Testimony, trust, knowing. The Journal of Philosophy 91 (5): 264-75.

——. 1996. Transmitting knowledge. Noûs 30 (1): 99–111.

Bergmann, M. 2006. Justification without awareness. Oxford: Clarendon Press.

Burge, T. 1993. Content preservation. The Philosophical Review 102 (4): 457-88.

Coady, C. A. J. 1992. Testimony: A philosophical study. Oxford: Oxford University Press.

Conee, E., and R. Feldman. 2001. Internalism defended. *American Philosophical Quarterly* 38: 1–18. ———. 2004. *Evidentialism*. Oxford: Oxford University Press.

Fallis, D. 2007. Attitudes toward epistemic risk and the value of experiments. *Studia Logica* 86: 215–46.

Fantl, J., and M. McGrath. 2002. Evidence, Pragmatics, and Justification. The Philosophical Review 111 (1): 67–94.

Feldman, R. 2002. Epistemological duties. In edited by Moser (2002), pp. 361-84.

- Foley, R. 1985. What's wrong with reliabilism? Monist 68: 188-202.
- ——. 1993. What am I to believe? In edited by Wagner and Warner (1993)
- Freedman, K. L. 2010. The Limits of Internalism: A Case Study. Dialogue 49: 73-89.
- Fricker, E. 1987. The epistemology of testimony. The Aristotelian Society Supplementary 61: 57-83.
  - ——. 1994. Against gullibility. In edited by Matilal and Chakrabarti (1994), pp. 125–61.
- ——. 1995. Critical notice. Mind 104: 393–411.
- 2002. Trusting others in the sciences: A priori or empirical warrant? Studies in History and Philosophy of Science Part A 33: 373–83.
- Fricker, M. 2003. Epistemic justice and a role for virtue in the politics of knowing. *Metaphiloso-phy* 34 (1–2): 154–73.
- ——. 2007. Epistemic injustice. Oxford: Oxford University Press.
- Goldman, Alvin. 1999. Internalism exposed. The Journal of Philosophy 96: 271-93.
- Graham, P. 1997. What is testimony? The Philosophical Quarterly 47 (187): 227-32.
- Hardwig, J. 1985. Epistemic dependence. The Journal of Philosophy 82 (7): 335-49.
  - . 1991. The role of trust in knowledge. The Journal of Philosophy 88 (12): 693–708.
- Hume, D. 1748/1977. In *An enquiry concerning human understanding*, section 10, edited by Eric Steinberg, Indianapolis, IN: Hackett Publishing Company.
- James, W. 1896/1979. The will to believe. Cambridge, MA: Harvard University Press.
- Levi, I. 1962. On the seriousness of mistakes. Philosophy of Science 29: 47-65.
- Lipton, P. 1998. The epistemology of testimony. Studies in History and Philosophy of Science Part A 29 (1): 1–31.
- Matilal, B. K. and A. Chakrabarti, eds. 1994. Knowing from words. Boston, MA: Kluwer.
- McDowell, J. 1994. Knowledge by hearsay. In edited by Matilal and Chakrabarti (1994), pp. 195–224.
- Moran, R. 2005. Getting told and being believed. Philosophers' Imprint 5 (5): 1-29.
- Moser, P., ed. 2002. The Oxford handbook of epistemology. Oxford: Oxford University Press.
- Owens, David. 2000. Reason without freedom. London: Routledge.
- Plato. 1992. *Theaetetus*. Translated by M. J. Levett, edited by B. Williams and revised by M. Burnyeat. Indianapolis, IN: Hackett Publishing Co.
- Pritchard, D. 2004. The epistemology of testimony. Philosophical Issues 14: 326-48.
- Reid, T. 1764/1970. In *Inquiry into the human mind*, section 24, edited by Timothy Duggan. Chicago University Press.
- Riggs, W. 2008. Epistemic risk and relativism. Acta Analytica 23: 1-8.
- Sellars, W. 1956. Empiricism and the philosophy of mind. In edited by Feigl and Scriven (1956), pp. 127–96.
- Shah, N. 2003. How truth governs belief. Philosophical Review 112: 447-82.
- Stanley, J. 2005. Knowledge and practical interests. Oxford: Oxford University Press.
- ———. 2007. Précis of knowledge and practical interests. Philosophy and Phenomenological Research 75: 168–72.
- Steup, M. 1996. An introduction to contemporary epistemology. Upper Saddle River, NJ: Prentice Hall.
- Strawson, P. F. 1994. Knowing from words. In edited by Matilal and Chakrabarti (1994), pp. 23–27.