If a colleague has been speaking ill of you behind your back, you may resent them for so doing. Furthermore, such resentment may be appropriate, or called-for, or fitting, and certainly morally (and otherwise) permissible. But for such resentment to be fully appropriate, it is not sufficient that that friend has in fact been badmouthing you. It’s also necessary for you to have adequate evidence to that extent. Even if there is an objectivist sense in which it’s appropriate to resent them if and only if they have been badmouthing you, there are also more subjective notions that accommodate the intuition that if you resent them without sufficient evidence, you are being morally irresponsible, and this even if as things happen to turn out, they were badmouthing you. With such, more subjective forms of evaluation in mind, then, we can ask: What evidence suffices for justified resentment? We can ask, that is, questions in the evidence law of resentment (and of morality more generally).

We do not have an answer to this general question. But this shouldn’t prevent us from recognizing paradigmatic cases of sufficient evidence, and paradigmatic cases of insufficient evidence. That you’ve overheard something, that a reliable mutual colleague tells you what has been said behind your back, a confession – all of these, in the right circumstances, could constitute sufficient (if fallible) evidence to justify resentment. That an unreliable frenemy – whom you know is envious of your colleague for your relationship – says they’ve been badmouthing you is not sufficient evidence to justify resentment.

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Well, then, how about the following: In your social milieu, or in your workplace, almost everyone speaks ill of each other behind their back. The thought that you could resent someone for badmouthing you based merely on such statistical evidence – however strong – seems ridiculous. Even if you can resent on purely statistical evidence – even if you do – clearly, this is not the kind of evidence that can justify resentment (The Central Resentment Case\(^1\)). But why? What is it about statistical evidence of this kind – good, probative, sufficiently strong statistical evidence – that precludes it from being sufficient for resentment, even where fallible, probabilistically equivalent evidence is sufficient for justified resentment? This is the (largely neglected\(^2\)) problem of statistical resentment.

In section 1, we elaborate a bit about this problem, offering an initial comparison to structurally similar problems in epistemology and in legal theory (highlighting the challenge that statistical resentment poses for our account of statistical evidence in the law, in previous work\(^3\)). In section 2 we offer a host of other structurally similar examples, in the hope, first, that they are of independent interest, and second, that they help generate adequacy constraints for a solution to the problem of statistical resentment, thereby also giving reasons to reject alternative suggestions that can be extracted from the literature. In section 3 we discuss three attempts at deflationary accounts of the inappropriateness of statistical resentment – deflationary in the sense that they try to offer an explanation of the problem in terms of standard, not-too-controversial or topic-specific epistemic principles. In section 4 we discuss impurist epistemological treatments of statistical resentment, that is, epistemological stories that incorporate moral considerations. In section 5 we focus on knowledge. By the time we get to section 6 things look worrying – perhaps no account can satisfy the adequacy criteria set forth earlier. Somewhat reluctantly, then, we desert the hope of offering a unified account of all of

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\(^1\) Here and below we use small caps for names of cases.

\(^2\) It is not entirely neglected. See, for instance, Pundik (manuscript); Enoch, Spectre, and Fisher (2012, 222-3), Buchak (2014), Enoch (2018).

the related phenomena, and so settle for a messy and partial solution to the problem of statistical resentment.

1. **Morality, Epistemology, and the Law**

Unsurprisingly, the evidence law of the law has been more often discussed than that of morality. And structurally similar problems to that of statistical resentment come up there under the names of “naked statistical evidence” (or sometimes as a part of the “proof paradoxes”). Basing a conviction on purely statistical evidence – say, convicting you of crashing the stadium’s gates based on just the fact that many more people attended than bought tickets (GATECRASHERS)⁴ – seems just as unacceptable as statistical resentment is, and perhaps (a point we return to) for similar reasons. And it’s not just the criminal law either – issuing a finding in torts against the Blue Bus Company when we know a bus wrongfully caused harm, simply because the Blue Bus Company owns, say 70% of the buses in town seems unacceptable, even if the law has no problem assigning liability based on a 70%-reliable eye witness (BLUE BUS COMPANY)⁵.

In previous work we put forward an account of statistical evidence that in a way tied the legal phenomenon closely to a familiar epistemological one (but in another way divorced the two; more on this shortly). In (one version of) the lottery paradox (LOTTERY), we are reluctant to attribute knowledge (that the ticket you just bought won’t win), even when the relevant belief is supported by overwhelmingly strong statistical evidence (the lottery’s odds), and even when we would be happy to attribute knowledge based on not-merely-statistical, but probabilistically equivalent or weaker, evidence. The reluctance to attribute knowledge in the purely epistemical case seemed to us – and it still does – very close to the reluctance to convict or impose liability based on purely statistical evidence.

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⁴ Originally from Cohen (1977).
⁵ For this and related cases, see Enoch, Spectre, and Fisher (2012), and the references there.
Armed with this observation, we embarked on the diagnostic task of finding a unified explanation for both the legal and the epistemic case.

The explanation we put forward was in terms of **Sensitivity**: roughly, a subject S’s belief that p is sensitive iff had it not been the case that p, S wouldn’t have believed p. And intuitively, Sensitivity seems to capture something epistemically important – an insensitive belief fails to track the truth\(^6\), and is perhaps prevented from qualifying as knowledge\(^7\). This nicely diagnoses the problem in **LOTTERY** – where your belief that your ticket won’t win is based solely on the statistics, it is not sensitive: Even had your ticket miraculously been the winning one, you still would have believed that it wasn’t. Where your belief is based on probabilistically equivalent direct evidence, though, it may very well be sensitive. And – this was a major part of our point – when a court issues a finding based on naked statistical evidence, its finding is not sensitive: Even had you bought a ticket, the court would have still convicted you of gatecrashing, because the statistical evidence would still have been available. Even had the harmful bus been owned by the smaller company, the court would have still found against the Blue Bus Company, because the statistical evidence against it would still have been there.

But this story, we insisted, doesn’t work as a vindication of the law’s suspicion towards naked statistical evidence. The problem was that it’s not clear why Sensitivity (or for that matter any other epistemological attribute) should matter legally. In particular, it seems very weird to think that a legal system should be willing to pay a price in other values just in order to make sure its findings are sensitive (or indeed, sufficiently knowledge-like). Truth matters. Consequences matter. Administrative costs matter. Perhaps – who knows? – retribution matters. Fairness matters. But how much of these other things would you – should you – be willing to sacrifice in order to render your system’s finding a little

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\(^6\) Truth tracking in Nozick’s sense involves another substantive assumption – his fourth condition – but the details won’t matter here. See Nozick (1981) for his full account.

\(^7\) There are many, many qualifications and complications that are relevant here. For some of them, see our (2012, sections 3-4). We can safely ignore them here.
more epistemologically kosher? Ruling out statistical evidence – like ruling out any other kind of probative evidence – renders the system’s findings less accurate. A willingness to pay a price in accuracy just in order to secure Sensitivity or knowledge would amount, we suggested, to especially unattractive knowledge-fetishism. This is the way in which, so we’ve insisted, the legal case is not about epistemology at all.

Instead of an epistemological story, we suggested an incentive-based one. At least in many cases, admitting statistical evidence reduces the incentive-effect (for primary behavior) that the substantive law was after. In GATECRASHERS, for instance, if I’m standing there, deliberating whether to crash the gates or buy a ticket, the criminal law, so we hope, incentivizes me to buy a ticket. But however strong this incentive, it is rendered much weaker – perhaps non-existent – if I know that the law is happy to convict based on just statistical evidence. For when the possible evidence against me is not sensitive (!) to my behavior, the prohibition (on entering without a ticket) loses its incentivizing force.

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8 This may not hold in precisely this unqualified way for all possible cases. But it holds for the cases we’re interested in here, and anyway, the intuitive objection to statistical evidence is independent of its accuracy. For this reason, we have no problem accepting Di Bello’s 2018 recent applications of measures of probative strength to statistical evidence, while also insisting that they do not hold the key to an understanding of the problem of statistical evidence.

9 For a recent radical rejection of knowledge fetishism – too radical for us, actually – see Papineau (manuscript). Sarah Moss (2018, chapter 10) rejects the knowledge-fetishism claim. She insists – correctly – that general talk of accuracy fails to give sufficient weight to the important asymmetry between false convictions and false acquittals. She agrees with us that a legal system should not be willing to pay in false convictions for epistemic goods, but insists – again rightly – that it doesn’t follow from this observation that nor should it pay in false acquittals for them. Even though this doesn’t follow, however, it’s still true: presumably, it’s important not to have too many false acquittals (otherwise, why have a criminal system at all?). The thought that we should be willing to pay in whatever currency makes too many false acquittals a bad idea just in order to secure Sensitivity (or some such) for our findings remains every bit as objectionably fetishistic.

If you’re not convinced, consider the “counter gatecrasher case”. The defendant – a woman – admits that there is strong, completely kosher non-statistical evidence against her, but insists that this evidence is outweighed by the statistical evidence: such a very small minority of the women attending stadium events ever gatecrash. Relying on this statistical evidence is just as intuitively suspicious as doing so in the original GATECRASHERS case.

10 Much more can be said here. Incentive stories are by their nature contingent and context-dependent. For some discussion of specific doctrines, see Enoch and Fisher (2015). For complications and objections, see Gardiner (2018a, 186-7).

Critics have tended to focus on other parts of our story, for the most part not challenging this claim about incentives. An exception is Gardiner (ibid.), who claims that we overestimate the centrality of cases that exemplify
So our story of statistical evidence in the law is partly epistemological and partly instrumental. It’s epistemological in that the explanation of the intuitions against statistical evidence is the same in the law and in the purely epistemological case. But the epistemological story cannot justify the law’s attitude towards statistical evidence because of the knowledge fetishism point. What does that is the instrumental story, in terms of incentives. And while the two parts of the story are distinct, they are related, for sensitivity-style counterfactuals play a crucial role in both (as in “even if I buy a ticket, they will still convict me”, which is the ex ante, first person analogue of “even had he bought a ticket, we still would have convicted him”).

We still like this story\(^{11}\). But the problem of statistical resentment poses a serious threat to it. Intuitively, statistical resentment is every bit as suspicious – in the same way, it seems, and for the same reasons – as relying on statistical evidence in law. If so, a good vindicating theory of statistical evidence in law should also apply to the resentment case. Now, the epistemological story – in terms of Sensitivity, or some related epistemic condition – does apply to the moral case as well. Resentment that’s based on statistical evidence is not sensitive, and perhaps the belief that underlies it (that your friend has been badmouthing you) doesn’t amount to knowledge. But recall that on our theory, what justifies the exclusion of statistical evidence is not the epistemological story, but the incentive-based story. And that story does not apply to the resentment case. Whether resentment is called for, or is fitting, or is justified, has nothing to do with the consequences of resenting, in terms of incentives or in other terms. If the fact that you resent (on good evidence) the colleague that’s been badmouthing you interferes with your career, I may advise you to forgive and forget, or to fake it, but this won’t render the resentment unjustified. If you show me that – because of incentives created by resentment, together

\(^{11}\) Not everyone does. For critical discussions of this story, see Blome-Tillmann (2015), Pardo (2018), Smith (2017), Gardiner (2018a) and Littlejohn (2017). We hope to discuss these criticisms elsewhere.
with the common desire not to be resented – statistical resentment creates poor incentives (or eliminates good ones), this will be interesting, sure, but it won’t vindicate the reluctance to resent on statistical grounds. (It may even go some way towards debunking the relevant intuitions: this line of thought shows why it wouldn’t be surprising to see us having the intuition that statistical resentment is inappropriate, even if this intuition is false). What renders resentment appropriate in the relevant sense\footnote{This relevant sense is the one discussed in the literature on the right and wrong kind of reasons. See, for instance, Jacobson (2011, section 3.2), and the references there.} - perhaps unlike punishment or social shunning – has nothing to do with instrumental considerations\footnote{Notice that the same line of thought applies also to other institutional stories about statistical evidence – for instance, the one offered by Di Bello and O’Neill (forthcoming) – because resentment is not institutional. Perhaps it may be claimed that while the instrumental considerations in our examples don’t render resentment appropriate, some others do, perhaps more global ones, having to do with the kind of agency certain blame practices make possible. This is one way of understanding Vargas’s (2013) “Agency Cultivation Model”. We do not find this line of thought promising, but cannot, of course, do justice to it here. Of course, if we’re wrong about this – if, that is, incentives may be relevant to the appropriateness of resentment – this is good news for the applicability of our account of statistical evidence.}. For this reason, the problem of statistical resentment is not just interesting in its own right. It also poses a serious challenge for our understanding of statistical evidence in law. (But see section 5 on knowledge.)

The challenge, then, is to explain the inappropriateness of statistical resentment in a way that preserves its close relations to the legal cases (such as GATECRASHERS)\footnote{It’s not even clear that all the legal cases can (or should) receive a unified treatment here. Gardiner (manuscript a) argues that they should not. We get back to doubts about the availability of a unified account in our final section.}, and pure epistemic cases (such as LOTTERY), without giving an implausibly significant role to incentives (which are irrelevant to THE CENTRAL RESENTMENT CASE resentment and to LOTTERY) or to knowledge (which seems fetishistic at least in the legal cases). It would be especially good to have a unified explanation of the different cases (including the ones we are about to get to in the next section), and if not quite a unified one, at least a continuous one, one that does not treat cases that seem similar as if they are instances of entirely
distinct phenomena. Perhaps we can’t get all of this (to anticipate, we will end up with a position somewhat along these lines). But we know that this is what we want.

2. **More Examples**

We already have several cases in front of us: **THE CENTRAL RESENTMENT CASE** (where there’s no practical response in question, it’s just about the appropriateness of resentment), several legal cases (the criminal **GATECRASHERS case**, the torts **BLUE BUS COMPANY**), and the cleanly epistemic one (**LOTTERY**), where it’s just about which probabilistically equivalent beliefs count (or don’t count) as knowledge. But now we need more. And for any one of the following examples, we should ask not just what the intuitive verdict on them is, but also whether the way in which they are suspicious is intuitively similar to some of the others. These similarity judgments are going to allow us to extract (to an extent) adequacy constraints on more general theories of the problems with statistical evidence.

Some practical cases seem very different from the moral and legal cases, in that relying on statistical evidence in them seems entirely unproblematic (indeed, required). A physician attempting to diagnose a patient, for instance, should rely on statistical evidence (**PHYSICIAN**). Of course, she should use other evidence as well, when such evidence is available. And she should keep an open eye to the possibility that the patient in front of her is an atypical member of the relevant reference class (a point we return to below). But still, the physician should rely on statistical evidence, and if that’s all she’s got, on naked statistical evidence as well. She would be negligent not to. So the problem with statistical evidence does not extend throughout the practical domain in a similar way. **PHYSICIAN** also shows that in

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15 This is a common example. See, for instance, Pundik (2008, 303), Buchak (2014, 305).
some context it’s perfectly ok to treat people (at least also) as things, to use empirical methods to study them and to decide how to treat them, and so on\textsuperscript{16}.

So you may think the problem is uniquely moral (with the legal somehow riding piggyback on its close cousin, the moral). Indeed, you may think the problem is essentially related to the fact that in statistically resenting someone we would be \textit{wronging them}\textsuperscript{17}. But this would be too quick, and not just because of cleanly epistemic cases, such as \textsc{lottery}, where no one is being wronged, and yet the reliance on statistical evidence is still problematic in the same kind of way.

Consider, for instance, the following \textsc{teenage romance} case. When you – no longer a teenager – see a teenage couple very much in love, seemingly confident that everything will go their way, and that they will – \textit{of course} – stay together and in love forever and ever, you may form the belief that they won’t, and you may form that belief on the basis of (overwhelmingly strong) naked statistical evidence. Such a belief may suffer from epistemic flaws in a way precisely similar to that of the statistically based belief that your lottery ticket won’t win, i.e., that it fails to amount to knowledge. But the point we want to emphasize now is that this case seems problematic in an even closer way to the resentment and legal cases: At least a part of the problem seems to be that you fail to take these two young people seriously\textsuperscript{18} as individual human beings, rather than as mere statistics. This is not, of course, a problem in \textsc{lottery}. (Lottery tickets are not entitled to be treated as individuals.) And yet, the problem in \textsc{teenage romance} doesn’t seem to be that you’re wronging the young couple, or violating their rights, in forming the belief that their future is not as rosy as they think. (\textit{Saying} something along these lines may amount to

\textsuperscript{16} We think that this suffices to reject Basu’s (2019a) use of Sherlock Holmes as an example of someone who mistreats people merely by studying them scientifically. It’s possible, of course, that she does not go for the most general version of this claim, in which case the point in the text is one she can accept.

\textsuperscript{17} For an emphasis on the need to accommodate the directionality of the relevant wronging – that it’s wronging \textit{the relevant person} – and for the (plausible) claim that the theory we put forward in our (2012) fails to satisfy this desideratum, see di Bello and O’Neill (forthcoming).

\textsuperscript{18} Schroeder’s (2018a) talk of (false) \textit{diminishment} seems to capture something important here, though of course this term itself is in need of much clarification and elaboration.
wronging them. But merely believing? So the problem we’re out to diagnose and delineate is not cleanly about wronging the relevant person.

Still, it may be close. Even if the teenage couple is not exactly wronged by your forming the belief that they won’t stay together, you may think something very similar is going on, perhaps along the lines of your having failed to respect their individuality, or something of this kind. To see that this too would be too simple, think of positive moral cases. So suppose that among analytic philosophers it’s very common for people to show the kind of courage needed in order to speak truth to power (TRUTH TO POWER). Can you then praise us for our willingness to speak truth to power based on solely this statistical evidence? This seems ridiculous, just as in the negative case. More generally, statistical praise and pride seem just as problematic as statistical blame and resentment, and intuitively problematic in the same way, for the same reasons. Still, it would be a huge stretch to say that in praises us (based on naked statistical evidence) you are wronging us. So the problem with statistical resentment is not (just) about wronging the resented.

You may think the problem is about agency. True, the physician’s diagnosis relies on statistical evidence about people, but not in their capacity as agents. What’s common to the resentment case, the legal cases, and the positive moral cases as well, is that the statistical evidence is brought to bear on exercises of agency. Perhaps this is where the problem is located. But this would be too narrow.

Suppose that statistical evidence shows that children of Asian descent are better at mathematics

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19 But see the discussion of impurism in section 4.
20 Though we don’t want to suggest that the positive and negative cases are exactly symmetrical here. If you have a professor who is a black woman, and you come to believe – presumably, based on just statistical evidence – that she has faced more difficulties than your other professors, this may not be problematic. It’s certainly not problematic to believe that she probably did. (We thank Brendan Cline for this example.) Still, admiring her for coping with those difficulties – when all you have by way of evidence is the statistical evidence – seems at the very least problematic, and for similar reasons to those that render statistical resentment problematic. We return to the relations to beliefs later on.
21 As with many of our examples, more can be said here. Perhaps you are wronging us by treating as, as it were, as a mere statistic, but not by admiring us. This line of thought resembles on of the deflationary explanations we suggest for the problem with statistical resentment below, in section 3.3.
(MATH). Being better at mathematics is not an exercise of agency (it may be related to exercises of agency, but this is different). Still, believing of a specific child that she’s good at math based on merely this statistical evidence seems problematic, in the standard statistical-resentment kind of way. So the problem is not about agency. It may be about the failure to take seriously – in some sense – a person’s individuality, but not their agency

The distinction between people and (other) things seems relevant here (and we get back to it in discussing impurism, below). Compare believing of a specific child (of Asian descent) that she’s good at math based on the statistical generalization that children of Asian descent are good at math, to believing of a specific Asian car that it is fuel-efficient based just on the statistical evidence that Asian cars tend to be fuel-efficient (CAR). We take it to be intuitively clear that there’s a difference between the two cases, though epistemically they seem to be on a par – in both cases, the relevant belief is like the belief that your lottery ticket won’t win (though perhaps not as usually as probable), when it is based on the statistics alone. Still, we take there to be no problem at all in buying the Asian car (because of its fuel-efficiency, based on statistical evidence alone), where presumably there would be a problem in basing action on the analogous evidence (or belief) about the math skills of a fellow student (say, choosing others for a joint assignment) based on the statistical evidence. So there may be a temptation to think that the distinction between people and things is only relevant here vis-à-vis actions (rather than beliefs). But this is not so: THE CENTRAL RESSENTMENT CASE – resentment alone, which may or may not be

\[22\] Which means – pace Pundik (2008) – it can’t be about autonomy and certainly not about freedom of will.

\[23\] There may be differences between them of the kind we discuss in section 3, below. For an emphasis on such stories, see Gardiner (2018b, 184-186).

\[24\] Notice that relying on probabilistic beliefs – that this case is probably fuel efficient, that this kid is probably good at math – doesn’t eliminate the difference between the two cases. We return to probabilistic beliefs – and to credences – below.
appropriate even independently of any actions to which it may lead – was designed precisely to rule out this hypothesis.

You may think that people (unlike other things) are entitled to be treated as individuals, or some such. There’s something to this thought, we’re sure, but still, it’s not sufficiently determinate to be helpful. What does this requirement come to? Surely, not the requirement to ignore all statistical evidence when it comes to treating persons: Such a requirement fails to accommodate the many ways in which statistical evidence can be unproblematic when interacting with other kinds of evidence (that is, when not naked). It also fails to respect the robust intuition that in PHYSICIAN there’s nothing wrong in relying on even naked statistical evidence. Perhaps more importantly, it’s not clear in what sense we are not treating someone as an individual when we’re relying on statistical evidence – after all, we must rely on some evidence. If you resent me for badmouthing you based on the testimony of reliable others, you don’t conflate the evidence (their testimony) with what you’re resenting me for (badmouthing you); you’re just relying on the evidence available to you. Why is the case of statistical evidence different, then? We seem to be back at square one: The intuition that people are entitled to be treated as individuals seems – without further details, at least – not to explain what’s wrong with statistical resentment, but rather to repeat the intuition that something is.

Interestingly, there are cases of highly individual evidence that seem problematic in ways that are similar to those in which statistical resentment is problematic. Think in this context of PRE-RESENTMENT (or pre-pride), that is, resenting someone (or being proud of them) for something they haven’t yet done, but will. The evidence you have that I will badmouth you need not be statistical in the sense we started with (say, something about our social milieu). It can be very specific things you know about me and my dispositions. Still, pre-resentment seems suspicious, and furthermore (we’re pretty

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25 And arguably, there are problems even with statistically based beliefs (not just other attitudes, like resentment) when it comes to people. We return to this below, in section 4, and then again, in terms of knowledge, in section 5.

26 These are paraphrases on the pre-punishment literature. See, for instance, Smilansky (1994).
sure) in a similar way to statistical resentment. If so, the problem with statistical resentment is not primarily about individuals’ right to be treated as individuals.\(^\text{27}\)

In order to have a fuller picture of the status of statistical evidence, it is important to have in mind also a fairly wide variety of possible responses. So far, we’ve been focusing on mostly three: Belief, action, and a specific kind of attitude, resentment (and also its positive counterparts). And there will be more below about the relations between them. But there are many other attitudes and emotions: We can ask about statistical admiration, statistical liking and disliking, statistical envy, statistical respect, and so on. All of these seem suspicious in ways very close to that of statistical resentment. This confirms the point above that what’s problematic about statistical resentment is not morality-specific\(^\text{28}\). It also pushes in the direction of a different hypothesis – perhaps what’s wrong with statistical resentment is not so much something that’s common to that case and the legal cases of relying on statistical evidence, but rather something that’s common to all attitudes and emotions, or to a very wide subset of them. Perhaps, for instance, while statistical evidence can support de dicto attitudes (say, preferring to hire those – whoever they are – who satisfy the description “did volunteer work in college”, because of correlations between doing such work and success in a certain kind of work), it cannot support de re ones (like respecting her, or admiring him, or resenting you)\(^\text{29}\).

On the epistemic side too there are more possible responses than just beliefs. For one thing, there are credences, of which there will be much more later on. Also, think of being surprised (SURPRISE). While the statistically-based belief that your lottery ticket won’t win doesn’t amount to knowledge and to some theorist seems problematic, still, if your ticket does win, it seems entirely appropriate to be

\(^{27}\) Notice that cases like PRE-RESENTMENT work better with causal accounts (see Thomson (1986)) according to which a necessary condition for E being evidence for H is that H plays a role in causing E. But such causal accounts have other problems facing them.

\(^{28}\) Notice that some of these attitudes may be held vis-à-vis non-person things. So the problem doesn’t seem to be person-specific either.

\(^{29}\) Here too a causal theory may do well. So will a Sensitivity view, though perhaps not quite as well.
surprised. And while the relations between believing that $p$ (or believing that probably $p$, or having a high credence in $p$) and being surprised that not-$p$ are not trivial, still the appropriateness of being surprised upon finding out that your ticket has won – when the only evidence you had that it wouldn’t was statistical – shows something about how such statistical evidence, even if not enough to support knowledge, can still rationally shape your expectations. Some of the other cases – perhaps especially those involving people – seem different, though: Being surprised to find out, about your Asian-descent friend, that he’s not good at math, seems at least shaky, as does being surprised to find out, years later, that that teenage couple are still together. And being surprised that your friend did not in fact badmouth you – when the only evidence suggesting otherwise was statistical – seems clearly problematic in the statistical resentment kind of way. (At the very least: Being surprised in these cases is not just as unproblematic as it is if your lottery ticket wins.) Perhaps thinking of the appropriateness of being surprised, then, strengthens the thought that the problem with statistical evidence cannot be merely epistemic.

Another way in which different epistemic responses may behave differently concerns the content of the belief (when it is a belief). For we can ask not just about whether statistical evidence supports a judgment about a specific member of the relevant reference class, but judgments about the reference class as a whole. And here, in many cases there is no problem. Perhaps you can’t know, on statistical evidence alone, that your lottery ticket won’t win. But you can very well know on just that statistical evidence\(^{30}\) that your ticket is highly unlikely to win, or that the vast majority of tickets won’t win. We think that the same is true across the board, but we want to register a doubt about this. One of the problems with many cases of objectionable racial (and other) profiling is the move from statistics to

\(^{30}\) Or on the basis of the statistics. Perhaps the very same statistics amounts to statistical evidence for the proposition that the ticket is a losing one, and a different kind of evidence for the proposition that the ticket is highly unlikely to win. (We thank Dan Baras for this point). This difference doesn’t make a difference for our point in the text, though.
a specific person, beliefs (or credences) about them, and ways of treating them. But one may think that in some such cases the statistical evidence can’t even support a belief in the statistical generalization: Isn’t there something suspicious about the belief that, among Israeli Jews, Ashkenazi Jews are worse tippers, even if based on otherwise sufficient statistical evidence? And – perhaps in some sense an intermediate stage between the statistical generalization and the proposition about a specific person – probabilistic beliefs about specific people (that this Ashkenazi or even this Ashkenazi table is highly unlikely to tip well) do seem problematic in a way that the analogous belief about the lottery ticket is not.

Finally, let us mention another family of cases, those where the relevant statistical evidence is DNA evidence (DNA). It’s important to emphasize that DNA evidence – even “cold-hit” DNA evidence, that is, a DNA match that is achieved without any other basis for suspicion, that is, the DNA version of naked statistical evidence – is often treated by the law as less suspicious than statistical evidence of the kind present in GATECRASHERS and BLUE BUS COMPANY. More importantly, it seems to be intuitively different as well, though it’s proved remarkably hard to show why. How does DNA evidence interact with thoughts about resentment? Some cases of DNA-based resentment are every bit as suspicious as other cases of statistical resentment. If scientists find the badmouthing-gene, and if 99% of people with that gene badmouth (all) their friends, still it’s inappropriate for you to resent me for badmouthing you based just on me having this gene. Still other cases of DNA-based resentment may be less problematic. If a DNA sample was obtained at a scene of a crime, and if you’re a match, then even if there’s no other

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31 The example is loosely based on related rumors among those whose income depends on such things. For a similar example in the American context, see Basu (2019b), though she never explicitly distinguishes between the problem with the generalization and the problem with the belief about a specific person. In the background are also partly linguistic issues that we can’t address here: How are generics (“Dogs bark.”; “Sharks are dangerous.”; “Ashkenazis are worse tippers.”) best understood? What evidence is appropriate for accepting them, or for rejecting them? But matters here are more complicated than merely the understanding of generics. Presumably, there’s nothing suspicious about the generalization that non-drinkers are worse tippers, or even about the belief about a specific person who didn’t order alcohol that he’s unlikely to tip well. Different generics behave differently here.
reason to suspect you, it doesn’t seem ludicrous to say that it would be acceptable to resent you for committing the relevant crime (and maybe to punish you as well). It’s not clear to us what to say of such a case: Most epistemological stories have a hard time explaining this data. The incentive story actually does a remarkably good job here regarding the legal cases\textsuperscript{32}, but is again incapable of explaining the resentment case.\textsuperscript{33} Ideally, a theory of statistical resentment would supply the resources to better understand the intuitive responses regarding DNA cases as well.

3. Not Fully Satisfying Deflationary Explanations

In this and the next sections we focus on the belief that in some sense underlies resentment (the belief that your colleague badmouthed you, or perhaps that they unjustifiably badmouthed you, or some such). The hope here is that the oddity of statistical resentment can be fully accounted for by the epistemic shortcomings of its underlying, statistically based, belief. The appeal of offering an entirely epistemic solution to the problem of statistical resentment should be clear: If successful, such a solution promises maximal generality. Arguably, beliefs play a somewhat similar underlying role in all the relevant cases (\textsc{The Central Resentment Case}, statistical evidence in law\textsuperscript{34}, \textsc{Truth to Power}, \textsc{Teenage Romance}, \textsc{Pre-resentment}, etc.). So if the problem can be traced back to the underlying belief, we get a unified explanation of all the relevant phenomena\textsuperscript{35}. Of course, a promise for full generality carries with it also the threat of over-generality. And everything here will depend on the details.

\textsuperscript{32} Enoch and Fisher (2015, 585–592).
\textsuperscript{33} Notice, though, the Sensitivity-based explanation, which we’ve argued (in section 1) can explain not just the epistemic and the legal cases though to an extent also the similarity between them arguably does well it at least some of these cases. For at least in some of them, relying on the badmouthing gene results in insensitive resentment.
\textsuperscript{34} Perhaps with lingering worries about knowledge fetishism.
\textsuperscript{35} Bolinger (forthcoming) discusses, in a similar context, \textit{acceptance}, an attitude that combines epistemic and pragmatic features. In the text we assume that resentment, and perhaps related phenomena as well, go with belief rather than with acceptance (to the extent that the two are distinct). One reason Bolinger’s acceptance won’t do here is that resentment cases need not have any further practical implications.
In the next section we’re going to be discussing impurist epistemological solutions to the problem of statistical resentment, that is, epistemological solutions that make room, within epistemology, for moral considerations to play a role. In the following section, we’ll focus on knowledge. Before doing that, though, in this section we pursue a more conservative route. For perhaps there’s a way of accommodating the relevant intuitions about the specific cases – or anyway, most of them – without accepting too radical revisions of orthodox epistemology? We discuss three attempts in this spirit to make progress on the problem of statistical resentment: one in terms of the phenomenon of screening off, one in terms of worries about representativeness and randomness, and one in terms of concerns about how it is that one got to have all and only the evidence one has. Our bottom line is going to be that such deflationary explanations go some way towards solving the problem of statistical resentment, at least with regard to many of the relevant cases, but the solution they offer leaves some things to be desired. (A conclusion we revisit in the final section.)

3.1 Screening Off

Clean cases are easier to stipulate than to find in the real world. For the resentment case to be sufficiently clean, we stipulated that in it resentment is based on statistical evidence alone. But this is not how the world works. Usually – perhaps even always – you have so much more information about the relevant colleague. So even purely epistemically – before doing ethics – it’s unacceptable for you to ignore all this other evidence. And this other evidence may change things significantly here, with regard to the appropriateness of resentment.

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36 Much of the discussion in this section is in the general spirit of Gardiner’s (2018b, mostly in section 6) attempt to show that moral encroachment is not needed, for orthodox epistemology (together with careful considerations of probabilistic considerations, of social circumstances, and so on) suffice in order to accommodate whatever needs accommodating. But at the end of the day, Gardiner seems less qualified about the success of this project than we are.
True, but not enough. The intuition against statistical evidence seems to be stronger than that. It’s not just that there’s something suspicious about resentment entirely based on statistical evidence. Rather, it’s that this kind of statistical evidence shouldn’t play any part in supporting resentment, at least in many cases. Suppose you have a joint appointment, in a law school and a philosophy department, and suppose that badmouthing colleagues is very common in the law school, but not in the philosophy department. Suppose further you have two colleagues, one from the law school and one from the philosophy department, and that the relevant individual, non-statistical evidence about them is similar (JOINT APPOINTMENT). The thought that you could resent your law school colleague but not your philosophy department colleague because of the difference the statistical evidence makes – while taking into account all the other evidence as well – seems just as problematic as the case of resentment based on naked statistical evidence. In order to accommodate this intuition we need to do more, then, than merely insist on taking into account all relevant evidence.

A natural thought to have here is to think about the interaction between the statistical and the non-statistical evidence. For in typical resentment cases, the non-statistical evidence is ever so much thicker, so much richer in information, compared to the rather shallow statistical evidence. It is very plausible to think that any information included in the statistical evidence is already included in the much richer non-statistical evidence. If so, the non-statistical evidence you have about the person you may resent screens off the statistical evidence, and so the statistical evidence should be ignored, once the non-statistical evidence is taken into account.

Intuitively, one piece of evidence (fully) screens-off another when the former already includes any information (or at least the evidential impact) that’s a part of the latter. More precisely, if we’re considering theory T, and if both E1 and E2 are pieces of evidence that by themselves confirm T (that is, 37 For an argument that explanatoriness are “screened off” by observations (i.e. evidence) see Roche and Sober (2013). McCain and Poston (2014) agree that in the case the former present (smoking and lung cancer) the evidence screens off the explanation, but argue that in other cases there may be an evidential impact.
P(T|E1)>P(T), and P(T|E2)>P(T)) then E1 screens off E2 only if P(T|E1&E2)=P(T|E1). In such cases, having factored in the screening off evidence E1, it would be a mistake to then change credence in T based on the screened-off E2. Whatever information (say, in corroborating T) E2 conveys was already taken into account in factoring in E1. Now taking E2 as a reason to further increase credence in T will amount to double counting.

Returning to resentment, then. It seems plausible that at least in the majority of resentment cases, the more personal, non-statistical evidence you have about the relevant person doesn’t just add to the statistical evidence. Rather, being so much richer in information and sensitivity to specific details, it screens off the statistical evidence. Given everything you know about your law school colleague, you shouldn’t now factor in the statistical evidence as well. Whatever information the statistical evidence may be thought to disclose, it’s now been fully incorporated in the non-statistical evidence. So having taken into account all other evidence, you should now ignore the statistical evidence entirely, with regard to both your law school colleague and your philosophy department colleague. And this, recall, was the desired result.

It is hard to deny that screening off is a major part of the picture here. Resentment is often personal, and the other attitudes and emotions that are not comfortably based on statistical evidence are equally personal, it seems, at least in paradigmatic cases. And because they are personal they occur in an information-rich environment. The richer the environment in details about the relevant individual, the more likely it is that the statistical evidence is screened off in this way, and so should be ignored. The screening-off point also succeeds in accommodating some of the distinctions in our examples. For instance, if you’ve been in the same math class with me for a while, you have a lot of information about my math skills, and then the fact that I’m of Asian descent doesn’t give you any information not already

38 This observation coheres nicely also with the suggestion that the fact that these attitudes are usually de re makes a difference here.
included in the evidence you’ve considered, and should therefore be ignored. But you are unlikely to have such screening-off information about an Asian car you’re considering buying. In a similar vein, the statistical evidence is not screened off by any more specific evidence in the typical case of a physician diagnosing you (and when it is, then of course the physician should ignore it!). Furthermore, this way of explaining what’s problematic with statistical resentment is refreshingly simple – it doesn’t employ problematic moral theses, it doesn’t rely on intricate relations between the practical and the theoretical, it doesn’t even rely on any too-fancy or controversial epistemological suggestion. It’s all about taking into account, in a probabilistically respectable way, all and only relevant evidence.

Still, tempting though this line of thought is, it doesn’t give us the full account of the problem with statistical resentment. We offer three (related) reasons for rejecting it as an attempt at such a full account.

First, resentment is not always or necessarily personal in the sense of presupposing some fairly thick, information-rich relationship. If a complete stranger cuts me in line (STRANGER) it seems that some mild resentment may be appropriate. Nothing more is needed – no shared history, or intimacy of any kind. Still, it would have been inappropriate for me to resent him or her on purely statistical evidence, evidence that is not (as we’ve just stipulated the case) screened off by any other evidence. Similarly, the case of TEENAGERS IN LOVE gave rise to suspicions about the adequacy of the belief (that not all will be rosy in their future) even if you know nothing about them, and the only relevant evidence – except for the way they look at each other, say – is the statistical evidence. So thoughts about screening off do not have the needed scope – they don’t explain what’s problematic with statistical evidence across all the relevant cases.

Second, while what’s been said about the real world and how in it statistical evidence will often be screened off is true, we can still insist on the relevance of hypothetical cases. There’s no incoherence

39 Gardiner (2018b, 185-6) emphasizes a similar point.
in thought experiments about cases with no such screening-off effects, and if the only explanation we have of what’s wrong with statistical resentment is grounded in the phenomenon of screening off, then about such cases we’ll have to conclude that statistical resentment in them is entirely appropriate. This is an unwelcome result.

Which brings us to the third point: it just doesn’t seem plausible that this is what’s problematic about statistical resentment. Intuitively it’s not the (very common, and important) probabilistic errors that explain the problem with statistical resentment. This deep problem – that this is not the kind of thing in virtue of which statistical resentment is inappropriate – gives rise to the symptoms discussed in the previous two paragraphs.

3.2 Randomness

From the facts that, say, 90% of your colleagues speak ill of each other behind their back, together with the fact that this person is a colleague of yours, it doesn’t follow – in any sense of probability – that there’s a probability of 90% that this person has badmouthed you (or others). For that to follow we need another premise, namely, that she or he are a typical member of the relevant set. And with some of the cases we’ve been discussing, this may not be the case. With yet others, it may not be known whether or not this is the case.

Perhaps in some cases, one is entitled to take the absence of evidence of a-typicality as sufficient here. Perhaps, for instance, if one is considering buying a specific Asian car, and there’s no evidence that it’s in any way an atypical Asian car, one is entitled to apply the statistics to it, and to believe that it’s (likely to be) energy-efficient. But first, even this is contestable. Perhaps what’s always needed for the inference to be justified is some positive evidence that the specific case was picked

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40 Or perhaps, if we’re working with some subjective or epistemic notion of probability, what’s needed is that you know or reasonably believe that he is typical.
randomly from the relevant reference class. If the specific car was picked randomly from the set of Asian cars (or from all cars) then such inference may be licensed. If, however, the car was non-randomly chosen for display by the car dealership, this may change things radically here (perhaps the dealership wants to sell the less sought-after cars first). And if one doesn’t know whether the car was chosen randomly from the relevant reference class – well, then things become really unclear. All of these complications arise for the case of statistical resentment as well. But what if, say, the relevant colleague was “chosen” for statistical resentment precisely because in his case there’s no non-statistical evidence available, one way or another? This may change the relevant probabilities significantly. And what if you don’t know whether the colleague was picked randomly? Then all the complications just mentioned apply, and it’s very hard to know how to proceed.

Second, even if randomness has a kind of default-status in some cases, it’s not clear it has this status in the cases of interest to us. Recall the ways in which persons seem special here. While you may not know that your lottery ticket is not a winning one, you can unproblematically justifiably believe and also know that it’s highly unlikely to win. But in many of the person-involving cases, things are different. There’s something suspicious about believing that the teenage couple is likely to break up, or that the child of Asian descent is probably good at math, and there’s certainly something suspicious about similar beliefs (even with the “probably” qualifier) that apply a negative but statistically grounded stereotype to an individual (about a specific Ashkenazi Jew, for instance, that he’s a bad tipper). And this seems to indicate that even if there’s no problem in assuming (because we know that the mechanism for picking a winner is random) that a specific lottery ticket has a very low probability of winning, there

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41 See Karlander and Spectre (2010), especially the appendix.
42 See here Posner’s (1999, 1509) similar suggestion about the legal treatment of statistical evidence, See also Fisher and Enoch (2015, 566).
43 Or, if Moss (2018b) is right, in believing about someone about whose sexuality you know nothing in particular, that he is probably straight.
very well may be a problem in assuming that a specific person is a typical member of the relevant reference class (or that your access to them is sufficiently random-like).

In a way, we’ve come close to square one: Asking why it is that there’s something suspicious about even the probabilistic belief in some cases but not others seems very close to asking why it is that statistical evidence is problematic (in the cases in which it is).

Regardless, the points from the previous subsection apply, and we can afford to be quick on them now: Even if thoughts about typicality and randomness can explain some of the cases, they can’t explain all, certainly not cleaned-up hypothetical cases, and most importantly – the fairly robust intuitions we started with are not just that statistical resentment is problematic, but also that it’s not for such reasons that it’s problematic.

3.3 Why Do You Even Have the Evidence that You Have?

If I believe that I’m THE SMARTEST PERSON IN THE ROOM, this makes me liable to criticism, at least usually, and even assuming that this belief is true and well-supported by the available evidence. You may think that the problem with my belief is moral rather than epistemic – the problem is that my belief is arrogant. But it’s not clear how this can be made to work, not just because of worries about the epistemic relevance of moral standards (which we discuss in the next section), but also because there are other cases of equally arrogant beliefs that are not equally problematic: In some rooms, believing that one has the most Google-Scholar-citations in the room is just as self-aggrandizing as believing that one is the smartest person in the room (CITATIONS), and yet, if this is what Google-Scholar says, this is the

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44 This example is based on one in Enoch (2016).
thing to believe, and that’s it\textsuperscript{45}. Why is it, then, problematic (at least on most occasions) to believe one is the smartest person in the room?

A natural hypothesis is that the problem lies not directly in the content of the belief, and not directly in the evidence available for it, but in \textit{how it is} that the person ended up with that belief, and with that evidence. We are inclined to ask such questions as: Why is it that you keep asking yourself such comparative questions at talks (am I the smartest person in the room?), rather than, say, focus on \textit{the talk}? How did you come to have the evidence that you have for your being the smartest person in the room? (Are you seriously keeping track of how good your comments are, compared to others’?) Did you take into account the fact that we all tend to be over-optimistic in assessing such evidence, and have you accordingly discounted your impression that you’re the smartest person in the room? Why did you stop gathering evidence when you did? The answers that will often be true to these questions will not tend to reflect well (not even just epistemically) on the person believing he or she are the smartest in the room\textsuperscript{46}.

Perhaps, then, if you resent a colleague believing that they badmouthed you, based on purely statistical evidence, we may wonder about how it is that you’ve ended up here, in this evidential state. How is it that you’ve come to have the statistical evidence for that belief? Why have you even wondered, of a specific co-worker (and perhaps not of others?) whether they badmouthed you? After all, getting the statistical evidence may not be easy. Why did you even seek it? And even if you stumbled across it, and even if this kind of statistical evidence justifies the suspicion, directed at a specific

\textsuperscript{45} Notice the analogy between CITATIONS and cases – from the previous subsection – where we are assured of randomness, and the analogy between THE SMARTEST PERSON IN THE ROOM and cases where randomness is seriously doubted.

\textsuperscript{46} Perhaps in some cases – when the evidence is entirely clear and not open to competing interpretations and to the effect of biases – the self-aggrandizing belief will nevertheless be alright. Perhaps this is what is going on in CITATIONS. Although in this case too, it matters whether, say, you’re obsessively checking everyone’s data, or whether the evidence is unintentionally forced upon you, and so on.
colleague, that they badmouthed you, why did you stop there? After all, often it won’t be that hard to obtain further evidence (say, for starters, to ask them). The combination – perhaps especially in the case of people you know – of obtaining the statistical evidence about them, and not making further inquiries seeking non-statistical evidence (or even further statistics) – this combination is at the very least suspicious. Perhaps this is what explains, then, the problem with statistical resentment.

Clearly, this kind of story has an explanatory role to play in accounting for the oddity of statistical resentment. At least in some cases, resenting based purely on statistical evidence will be problematic at least partly due to reasons having to do with worries about how it is that you came to have all and only the evidence you do in fact have. And this kind of story may explain some of the other cases we’ve been discussing: Perhaps, for instance, there is something problematic if one stops inquiry and settles on the belief that a specific child of Asian descent is good at math based on just the statistical evidence (and how did we get that statistical evidence in the first place?), but perhaps there’s nothing problematic in settling for the statistical evidence in support of the claim that Asian cars are fuel-efficient. If so, this may nicely explain why there’s nothing problematic with the latter belief, but there is with the former. Still, it’s also clear that this can’t be the full story of statistical resentment.

There are cases – there are certainly hypothetical cases, and this is good enough – where we can stipulate that there are no problems in how you got to have the evidence you have, and in those cases

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47 Actually, this is not clear. There does seem to be something objectionable even just about statistical suspicion – think, for instance, about suspicion based on racial profiling. Perhaps what explains this is that while suspecting-that-p-based-on-evidence-E doesn’t require believing-that-p, it does require taking E to be evidence for p (and in many cases also increasing one’s credence in p, given E). We discuss the relation between beliefs and credences in the next section.

48 What if the statistics are very strong? Wouldn’t that make it rational not to further investigate the issue? Actually, in many cases strong statistical evidence is unstable, in the sense that it’s fairly easy to come by evidence that will outweigh it, and then, stopping inquiry may not be justified. For instance, the very strong statistical evidence you have that your lottery ticket won’t win is easily outweighed by the phone call from the lottery company saying that you did win. (The denominator of the Bayes factor is very small because a mistaken call to you is extremely unlikely forcing the posterior probability way up.) Certainly, you shouldn’t stop inquiry and refuse to take their call.

For discussions of stability and revisability in our context, see Schroeder (2018b), and Gardiner (2018b, 189).

49 Or the explanatory order may proceed in the opposite direction. We’re genuinely not sure.
too statistical resentment still seems problematic. And arguably – but not uncontroversially\(^{50}\) – there are non-resentment cases, perhaps some lottery cases for instance, that seem to exhibit the same kind of oddity, where a similar explanation does not seem plausible\(^{51}\). And even in the cases where there are such problems, they don’t seem to exhaust the problem with the relevant statistical resentment. We want to concede, then, some role for this deflationary explanation too, but we do not want to pretend it neatly solves the problem of statistical resentment.

4. **Impurism**

The case of statistical resentment lies at the intersection of moral and epistemic considerations. So it is natural to wonder whether thoughts about the impure nature of epistemology\(^{52}\) – about the relevance of pragmatic and moral considerations in evaluating beliefs – can help with diagnosing the problem with statistical resentment. We discuss this line of thought by first briefly introducing impurism (4.1), then showing how it may be relevant for statistical resentment (4.2). Then, in section 4.3, we argue that such impurist strategies will not work – we voice some general suspicions about impurism, but we focus on ways in which even if some impurist line can be made to work, still, it is unlikely to help much with the problem of statistical resentment.

4.1 **Introducing Impurism**

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\(^{50}\) One of us is more convinced about this than the other.

\(^{51}\) Although it may perhaps be argued that what’s problematic in the lottery case is not stopping inquiry with the evidence that one has, but – given that evidence – settling on a belief (rather than suspending judgment for now, until the winning ticket is drawn and announced).

\(^{52}\) Other names in the literature for impurist views include *Subject Sensitive Invariantism, pragmatic encroachment*, and *Interest-Relative Invariantism*. 
In epistemology, you’re an impurist if, roughly, you think that non-evidential considerations – practical ones of sorts – constitutively affect the epistemic status of beliefs and the like. The idea first became popular through thoughts of how pragmatic stakes affect, for instance, our willingness to endorse certain knowledge attributions, so that the same level of evidential support suffices for knowledge when the stakes are low, but not when the stakes become significantly higher. If this is so, then epistemic status does not supervene on evidence, and the pragmatic (here, in terms of stakes) have encroaches on the epistemic.

If thought about high and low stakes motivated pragmatic, it seems to equally motivate moral encroachment. Perhaps, for instance, in some contexts some body of evidence (say, memory of where you placed which sandwich) suffices for knowledge or for justified belief that the one on the left doesn’t contain peanut butter, but if your guest is dangerously allergic to peanuts, perhaps the same body of evidence no longer suffices. The high moral stakes involved seem to affect what’s needed for the desired epistemic status (justified belief, or knowledge) to be satisfied. If so, the moral too encroaches on the epistemic.

Similar things apply to other ways of motivating pragmatic encroachment. They too seem to equally apply to the moral domain. For instance, many think there is a close connection between knowledge and action. Perhaps roughly, the thought is that one is entitled to treat as a premise in one’s practical reasoning all and only those propositions one knows to hold. If this knowledge-action link (or some other close one) holds, then all the pragmatic considerations that are relevant to one’s practical reasoning are potentially relevant to whether or not one knows. But moral considerations too are

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53 See, for instance, DeRose’s (1992) discussion of what have come to be called bank cases in support of epistemological contextualism. Perhaps the first to introduce the impurism (though not by this term) is Lewis (1996), whose Belief Rule is stakes dependent.
54 See, for instance, Fritz (2017).
55 The example is from Ross and Schroeder (2014).
relevant, of course, to one’s practical reasoning, and so a strong knowledge-action link, if it is plausible, and if it supports pragmatic encroachment, also supports moral encroachment.

Or consider the thought that whether or not a belief amounts to knowledge depends on whether the believer is in a position to rule out all salient alternatives based on her evidence. If pragmatic or moral considerations affect which alternatives are salient, this entails that the pragmatic – and the moral – encroach on the epistemic⁵⁷.

There are also ways of motivating moral encroachment that are not parasitic in any way on the motivations for pragmatic encroachment. Marušić (2015), for instance, thinks we should believe that we will fulfill our promises and act on our intentions or resolutions, independently of the evidence available to us. And Stroud (2006) thinks – or is at least willing to entertain the thought – that the moral significance of friendship places constraints on the appropriate response to evidence (that one’s friend has behaved shamefully).

Lastly, consider that some beliefs (and perhaps other doxastic attitudes) may themselves be morally wrong⁵⁸. Indeed, perhaps, if you know that I’m an Ashkenazi Jew, and you proceed to believe that I’m a poor tipper, this belief already wrongs me, it already has a moral status. If so, moral considerations apply directly to beliefs. This isn’t impurism just yet, but impurism is now very close: If you want to defend a view according to which epistemology does not require wrongdoing (or wrongbelieving), you must allow the moral considerations to affect epistemic status as well. You must, that is, accept moral encroachment⁵⁹.

⁵⁷ Moss (2018b).
⁵⁸ The relation between doxastic wrongdoing and impurism takes central stage for Basu (2019a, 2019b). See also Schroeder (2018) and Basu and Schroeder (2019). On some ways of understanding the way that beliefs can (purportedly) wrong, the case of resentment is an especially interesting one. One may think, for instance – as do Marušić and White (2018) and Schroeder (forthcoming) – that a central way in which beliefs may wrong someone is by occupying a Strawsonian objective stance towards them, by treating them as mere things when they should be treated as persons. The case of resentment, it may be thought, is especially fitting for such an analysis, seeing that resentment is a paradigmatic reactive attitude, one that is arguably inconsistent with a Strawsonian objective stance toward the resented.
⁵⁹ Fritz (manuscript) highlights this motivation.
For these reasons, then, and possibly for others as well, it’s not surprising to see the rise in the attention moral encroachment – perhaps alongside other forms of impurism – has been getting recently\(^{60}\).

### 4.2 Impurism and Statistical Resentment

Impurism – in particular, moral encroachment – is not usually motivated by thoughts of statistical resentment. Still, once the view is out there, as it were, applying it to our case seems straightforward (and not all that different from some of the discussions in the literature):

Resenting someone for purportedly doing something they did not in fact do is serious moral business. The stakes, then, are not low. So what is needed for knowing that the relevant colleague badmouthed you is especially strong evidence, and perhaps the statistical evidence is just not good enough. Or perhaps the stakes dictate that the needed evidence has to be of a certain kind\(^{61}\).

Similarly, perhaps there’s sufficient practical reason not to treat your colleague in ways that would have been justified had (you had good evidence that) they been badmouthing you, like not inviting them to the bar next time people are going. If so, and if there’s a fairly strong link between what one is entitled to treat as a premise in one’s practical reasoning and what one knows, perhaps this explains why you can’t know, on the basis of the statistical evidence, that they badmouthed you.

If moral considerations partly determine which alternatives are salient, so that ruling them out is necessary for knowledge or epistemic justification, then perhaps because of such moral reasons, the possibility that your colleague is not a typical member of the relevant reference class is rendered salient

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\(^{60}\) See Pace (2011), Enoch (2016; 2017), Moss (2018a; 2018b). See also Gardiner (2018b), and the references there (mostly in the first three sections).

The precise nature of the relation between pragmatic and moral encroachment depends on the relation between the pragmatic and the moral, but these details need not concern us here.

\(^{61}\) In the pragmatic encroachment literature, usually the issue is the *strength* of the evidence, not its kind. But perhaps this is just an oversight. For a similar suggestion (in the political context), see Enoch (2017, 152).
because of the wrongness of false resentment (or some such). Perhaps this is why you don’t know, or
don’t justifiably believe, based only on the statistical evidence, that they badmouthed you, and perhaps
this in turn explain why statistical resentment is unacceptable.

And perhaps, if beliefs themselves sometimes morally wrong, you are morally wronging your
colleague, perhaps because you’re failing to treat him as an individual in some sense, by resenting him
based on just the statistical evidence. And if such moral status can affect epistemic status, perhaps this
is also why you don’t know, and are not even justified in believing, that he has been badmouthing you.

4.3 Why Impurism is not the Way to Go (Here)

Still, going impurist is not the way to solve the problem of statistical resentment. One way to show this
would be to reject impurism in its entirety. Now, we do think that impurism – especially in its more
radical forms\textsuperscript{62} – faces serious, possibly devastating, challenges and difficulties\textsuperscript{63}, and some of these will
emerge below. But we cannot here engage a full evaluation of impurism. Instead, we focus on the
special ways in which impurism is unpromising as a strategy of coping with the problem of statistical
resentment.

One problem is that it’s not clear why, assuming impurism, statistically-based beliefs are special.
Assume that the stakes really are high, for instance, and so that only especially good evidence can
suffice for a justified belief of a specific colleague that they badmouthed you. Why think, though, that
statistical evidence – at least if the statistics are sufficiently robust – may not be good enough even for
this higher bar? We’re not saying that this question cannot be answered; we’re just emphasizing that
this question should sound familiar to you. Wondering why it is that vis-à-vis resentment statistical

\textsuperscript{62} For one distinction between radical and moderate impurism, see Fritz (manuscript).
\textsuperscript{63} For a critical discussion of moral encroachment, which we are largely sympathetic with, see Gardiner (2018b,
section 5). See also the references there. For some examples of critical evaluation of pragmatic encroachment, see
Reed (2010), Brown (2013), and more recently Anderson & Hawthorne (2018; forthcoming).
evidence is more morally problematic than some other kinds of evidence is, after all, very close to the question why it is that statistical resentment is problematic, which was the question we started from. So it’s hard to see how progress has been made\(^\text{64}\).

Similarly, while there may be a sense in which you’re wronging your colleague if you believe on insufficient evidence that he has been badmouthing you, we need an answer to the question what it is that makes the statistical evidence worse, in our context, than others, and this means we’re not sufficiently far from where we started.

Another problem is one of generality. Even if impurism helps with some cases of statistical resentment, it is not promising at all with regard to some of the other cases that exemplify similar phenomenology. It’s not at all clear, for instance, what is at stake, pragmatically or morally, in believing of the young couple in TEENAGE ROMANCE that their future is not entirely rosy. And while the stakes in TRUTH TO POWER may not be entirely low, they are certainly not as high as they are in statistical resentment cases, and yet statistical admiration doesn’t seem more easily justifiable than statistical resentment. Even LOTTERY – if you agree that it exhibits a similar phenomenology to that of statistical resentment cases – counts against an impurist explanation, for it’s not clear there are pragmatic stakes involved in a relevant way (although everything here is contested\(^\text{65}\)). Furthermore, some of the underlying motivations for impurism don’t even apply to THE CENTRAL RESENTMENT CASE. Basu and Schroeder (2019), for instance, emphasize the ways in which our evidence, in many cases having to do with race, is likely to be tainted by past injustices, as a way of motivating moral encroachment. But the

\(^{\text{64}}\) A similar point applies to Moss’s (2018b) insisting on the need to be able to rule out the possibility that the relevant person is an atypical member of the relevant group as a necessary condition for knowledge, while resisting a similar condition in non-person cases. Why is it, we can ask, that a-typicality is a relevant possibility in the former case but not in the latter? And we seem to be back at square one.

\(^{\text{65}}\) Refs... Hawthorne? ...
problem of statistical evidence – as exemplified in The Central Resentment Case, need not be about race or any other category to which this line of reasoning applies\textsuperscript{66}.

The two objections just discussed take the impurist apparatus on board pretty much as is, and raise problems for applying it in order to solve the problem of statistical resentment. We now want to show how the details of that apparatus may be important here, and may raise even more problems. For this, we need to be explicit about \textit{what epistemic status precisely} it is that is taken to be impure. All impurists, we take it, accept \textit{knowledge-impurism}, that is, the claim that pragmatic and moral considerations – and not just evidence – may be relevant to whether or not someone knows something. \textit{Justification-impurism} is the claim that whether or not one’s belief is (epistemically) justified may depend also on pragmatic or moral considerations. Given the uncontroversially strong relations between knowledge and epistemic justification\textsuperscript{67}, it’s very hard to see how someone could accept knowledge-impurism and reject justification-impurism. For our purposes the crucial distinction is between both knowledge- and justification-impurism on one side, and \textit{credence-impurism} on the other: Credence-impurists, if there are any\textsuperscript{68}, think that even the justified credence in a proposition may depend on non-evidential, pragmatic or moral, features. Credence-impurism is a \textit{much} more radical view, and is arguably not supported by the motivations that underlie knowledge- and justification-impurism.

Indeed, one natural way of understanding knowledge- and justification-impurism is as rejecting

\textsuperscript{66} If Gardiner (2018b, 177-8) is right that many morally problematic beliefs that are based on non-statistical evidence (say, weak testimony) are less intuitively problematic than those based on statistical evidence, this is further evidence that impurism, whatever its merits in general, is not the answer to questions about statistical resentment. Similarly, if and Marušić and White (2018) are right to restrict the scope of moral considerations affecting the epistemic status of beliefs to just what’s within the range that is independently of moral considerations epistemically permissible, it’s just not clear that they can still explain a sufficiently wide range of cases.

\textsuperscript{67} It is, of course, controversial what these relations precisely are. But it’s not as controversial that knowledge entails justified belief.

\textsuperscript{68} The closest we know of in the literature is Gao (2019). But even Gao, for the most part, endorses only what she calls “creedal pragmatism” as a \textit{descriptive} thesis (about how people’s credences in fact change in the face of a change in the stakes). For reasons we cannot get into here, we find her initial normative discussion (section 3) unpromising.
credence-impurism, but insisting that the bar for the credence needed (for knowledge or justification) varies with stakes. Perhaps unsurprisingly, then, the literature, for the most part rejects credence-impurism, sometimes even explicitly\(^6^9\).

Armed with this distinction, we now want to argue that credence-impurism is implausible; that rejecting credence-impurism destabilizes justification- and knowledge-impurism; and that the resulting impurism is especially implausible as a solution to the problem of statistical resentment.

First, then, the implausibility of credence-impurism. Suppose you know – you have conclusive evidence – that 20 of the 100 balls in an urn are red. You draw a ball at random. How high should your credence be (before looking) that the ball is red? The answer, clearly, is 0.2. It matters not what – pragmatically or morally – hangs on having selected a red ball\(^7^0\). Given the assumption of randomness, any other credence will clearly be irrational.\(^7^1\) This is strong intuitive evidence against credence-impurism. And this applies to our resentment case as well, of course: Given conclusive evidence about the high percentage of colleagues badmouthing their colleagues in your work environment, it seems clear that your credence that a specific (randomly selected!) colleague has badmouthed you should be equally high, independently of pragmatic or moral stakes. Now, perhaps a supporter of credence-impurism may insist that there is something special about the urn case, that perhaps, even if in this case

\(^6^9\) For explicit rejections, see Buchak (2014, 303-4) and Ross and Schroeder (2014, 260). For an implicit one, see Brown (2014). For some discussion, see Gau (2019), Fritz (manuscript), and Fritz and Jackson (manuscript). Moss’s (2018b) view is special, in that she thinks that credences too are encroached on – but only in the sense that pragmatic considerations affect whether or not a given credence amounts to knowledge (as she insists some credences do). Moss too, however, stops short of accepting credence-impurism.

\(^7^0\) Marušić (2015) resists talk of stakes; his impurism is motivated, as noted above, by thoughts of what we can legitimately expect of each other (in the epistemic realm as well). So it’s important to note that although we put things in the text in terms of stakes, the objection applies to his view as well, once suitably modified. The thought that given the same body of evidence different credences are called for (because of the considerations Marušić highlights) is just as implausible.

\(^7^1\) Bolinger (forthcoming) discusses the credence case, and mentions many real-life considerations – of the kind we discuss in the previous section – that complicate matters. But she seems to agree that when no such complicating considerations apply, credences should just follow probabilities. We can also rely on Lewis’s Principal Principle that the conditional credence of event A given the objective chance that A is x, is x: \(\text{cr}(A|\text{ch}(A)=x)=x\) (assuming \(\text{ch}(A)=x>0\) and that the background evidence is all about events before A takes place).
credence is immune to encroachment, in other cases it may not be. It’s not an impossible line to take – but it’s not easy either, and it’s going to be especially hard to make a convincing case that such a restriction of credence-impurism is not objectionably ad-hoc.

So credence-impurism is highly implausible. But if this is so, this places serious pressure on knowledge- and justification-impurism as well. One way of developing this point – one that is too general for our purposes here (though we revisit it in the next section) – proceeds via some theoretically motivated relations between justified credences and justified beliefs. Here is another way, centered on statistical evidence cases. Impurist views all rely on a close connection between beliefs and action. This is clearest for those utilizing a knowledge-action link, which we’ll focus on for the rest of this paragraph. On such views, recall, one is only entitled to act, roughly, on propositions one knows. So think again about LOTTERY: Perhaps one is not entitled to act on the proposition that one’s ticket won’t win, and perhaps this shows that one doesn’t know that the ticket won’t win. Still, given the rejection of credence-impurism, one is justified in having a very high credence in that proposition, and also – it seems – in believing that the ticket is highly unlikely to win. Indeed, one may know that (why wouldn’t one?). And this means that one can be justified in acting on this proposition – not that the ticket won’t win, but that it’s extremely likely that it won’t. And then, any (or at the very least almost any) action one would have been justified in performing based on practically reasoning from the proposition that the ticket won’t win, one will be justified in performing based on practically reasoning from the proposition

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72 Perhaps it may be argued that while there’s only one credence that is epistemically permissible given the evidence, it is not required. Perhaps, that is, sometimes what is required, or at least permitted, is suspension of credence. So perhaps in a morally loaded analogue of the urn case (where only 20% of your colleagues are honest) it’s true that if you’re going to have any credence regarding the honesty of a randomly selected colleague, it can only be .2, but perhaps you’re entitled, perhaps even required, not to have a credence at all in such cases. But it resembles Schroeder’s (2018b) view according to which moral considerations are never reasons for belief, only for withholding judgment. Indeed, the suggestion in this footnote is just the credence analogue of this point from Schroeder. For some related discussion, see McGrath (manuscript): McGrath thinks that credences (his preferred terminology here is levels of confidence) can be suspended or refrained from – attitudes he doesn’t see as fully epistemic. But the more clearly epistemic notion that applies to beliefs – that of agnosticism – cannot be coherently applied to credences.
that the ticket won’t in all likelihood win\textsuperscript{73}. But then, what are the distinct data points impurist views are supposed to utilize, or explain better than purist views? What this means is that given the rejection of credence-impurism, other impurist views seem under-motivated, at least when it comes to statistical evidence cases. (It’s harder – not impossible, we think, but harder – to run this line on non-statistical cases.)

This was about impurist views utilizing the knowledge-action link. But the point generalizes. Given the practical relevance of probabilistic beliefs, and given the rejection of credence-impurism, it becomes very hard to see how other kinds of impurism may be helpful in our context at all.

Or think about the view according to which moral standards apply directly to beliefs, so that some beliefs may wrong others, and this may explain their epistemic irrationality or unjustifiability as well. Suppose, then, that believing that the elderly Ashkenazy man at the next table is a poor tipper – based on just the statistical evidence – morally wrongs him. Can this explain the problem with statistical resentment? It’s hard to see how, given the falsity of credence-impurism. After all, raising one’s credence in him being a poor tipper (upon finding out he’s of Ashkenazi descent), or indeed coming to believe that he’s \emph{probably} a bad tipper, seems intuitively just as offensive as forming the belief that he is\textsuperscript{74}. And this shows yet again that the prospects of an impurist view – \emph{any} impurist view – about justification and knowledge to explain the oddness of statistical resentment is undermined by the unacceptability of credence-impurism.

5. \textbf{Knowledge}

\textsuperscript{73} Notice that this seems true of \emph{actions}. We don’t think this is true of \emph{attitudes} in general. It is hard to think, for instance, of resentment that is based on high credence (that your colleague badmouthed you) in the absence of belief.

\textsuperscript{74} For a related discussion – also re Basu and Schroeder – see Gardiner (2018b, 179, fn 28).
But now it’s time to address what may have been on your mind all along. Perhaps it’s all just about knowledge\textsuperscript{75}. Perhaps the rule for resentment, and admiration, and pride, is that one can only rely on what one knows. The problem with statistical resentment, on this suggestion, is that the statistical evidence does not ground knowledge (that the specific colleague you’re thinking of has badmouthed you), and that without such knowledge, resentment is inappropriate. This line of thought, then, takes very seriously indeed the relation between THE CENTRAL RESENTMENT CASE and LOTTERY, and offers a similar diagnosis for both: lack of knowledge. In this section we focus on a purist version of a knowledge based account of statistical resentment (for we’ve already argued against the impurist suggestions) can nonetheless not succeed. We first show how a knowledge-based account of resentment is actually quite friendly to much of what we’ve been saying. We then highlight some disadvantages of such an account, and discuss a way in which a knowledge-based advocate may try to compensate for these disadvantages by endorsing, perhaps roughly, a knowledge norm for belief.\textsuperscript{76}

Suppose, then, that resentment is only in place when based on knowledge (of guilt, say, or of the relevant wrong, or in our case, of the fact that the relevant colleague badmouthed you). This may come as good news for a Sensitivity-based account (and may help to deflect the problem that statistical resentment poses for such an account). After all, even if you don’t think that Sensitivity is a necessary condition for knowledge, surely you agree that often enough, and not by mere coincidence, Sensitivity is epistemically relevant, and that in most cases an insensitive belief does not constitute knowledge. If knowledge is needed for resentment, then, and if insensitive belief is (hardly ever) knowledge, then given that beliefs based on statistical evidence are insensitive, it follows that statistical resentment is

\textsuperscript{75} For some discussions along these lines, see Blome-Tillman (2017), LittleJohn (2017), see Gardiner (forthcoming).

\textsuperscript{76} There’s a way of invoking a knowledge requirement that we will not address here, except in this footnote: namely, as an explicit aim of the relevant agent. This would be the case if an agent – in making up one’s mind whether or not to resent – were to trade off other desiderata with the aim of securing a respectable epistemic status for her belief or resentment. We don’t think this is a plausible way of invoking knowledge here – it seems like our knowledge-fetishism accusation would apply with a vengeance.
never appropriate. And a Sensitivity-based account has the resources not just to assert that the relevant beliefs don’t amount to knowledge, but also to offer a plausible explanation why this is so.

Now, a knowledge-based account, if offered as the full story here, suffers from problems, some of which a Sensitivity-based account can perhaps help with, problems that have already been mentioned77. First, when it comes to legal cases of statistical evidence, a knowledge-based account – at least left to its own devices – leads to objectionable knowledge-fetishism, of the kind discussed above, in section 1. A Sensitivity-based account, however, has the resources to connect an epistemic story to an incentive-based story which avoids such fetishism. Second, and relatedly, it’s entirely unclear what a knowledge-based account has to say about DNA cases, but a Sensitivity-based account does – again, through the relation to incentives – much better here.

Perhaps a way out for a knowledge-based account is to dig in deeper epistemically. Suppose, then, that knowledge is the norm for belief – so that a belief is only appropriate or even justified when it amounts to knowledge78. If this is so, then the (purported) relation between resentment and belief, together with the knowledge norm for belief can motivate a knowledge-based account of resentment. Furthermore, we then get a very (if not fully) general account: Belief, you may recall, seems to play a central role in pretty much all of our cases. In response, we want to briefly argue – utilizing some of the discussion of credences above – that a knowledge norm for belief is implausible, that it’s not clear it is relevant, and that it after all doesn’t generate the desired generality.

77 A natural worry to have here is that a knowledge-based account is too objective, or too externalist, because knowledge is factive. And recall that what distinguishes between resentment based on statistical evidence and resentment based on, say, the testimony of a reliable colleague, cannot be a factive criterion. We do think that this is a problem with knowledge-based account. But we suspect that this will just rehears issues that are often discussed in “knowledge-first” circles (such as externalism more generally, or the claim that one’s evidence just is what one knows). We don’t find such claims plausible either, but we don’t think it will be useful to rehearse that discussion here.

78 Refs ...
Recall the lesson about credences from the previous section. It’s very hard to deny that statistical evidence affects at least justified credences, both in purely epistemic cases (as in LOTTERY), and in practically relevant ones. One family of problems for knowledge-based accounts starts with this observation, and then notes how difficult it is to make plausible the needed claims about beliefs and knowledge, given what we already know about credences. There seems to be strong linguistic evidence that belief-attributions behave much more like attributions of fairly low (though above .5) confidence levels or credences than they do like attributions of certainty, or something more resembling the epistemologist’s, highly theory-laden, “all-out belief”. There is, for instance, something at the very least awkward – perhaps Moore-paradoxical – in saying something like “John thinks that it is probably raining, but it’s not that he thinks that it is.”79 A natural explanation of the oddity is that thinking-p-probable is not that different from thinking-that-p, or indeed, believing-that-p80. If beliefs are similar – perhaps identical – to thinking-sufficiently-likely, and if thinking-sufficiently-likely can unproblematically be justified based on statistical evidence (because credences certainly can, and because of the close relation between credences and thinking-likely), then beliefs too can be justified based on statistical evidence. Needless to say, such linguistic evidence may be doubted81, but it seems at least to shift the burden onto those introducing a very sharp divide between credences and beliefs, as all supporters of a

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79 Applied to the cases that interest us here we have sentences such as “John is confident that Mary is badmouthing him, but it’s not that he believes that she is.” This is, we think, Moore paradoxical. Also, “confident that” doesn’t neg-raise: From “I’m not confident that p” it doesn’t follow that “I’m confident that not-p”. A central claim in Hawthorne, Rothschild, and Spectre (2016) is that “believe that” does neg-raise, and that neg-raising is an indication of relatively weak epistemic standards. If so, “confident that” is evidently more demanding than “believe that”. And notice that there’s reason to believe that “think that” (as in the text) and “believes that” behave alike for current purposes.

80 For more systematic discussion, including many more examples, see Hawthorne, Rothschild, and Spectre (2016) and Rothschild (forthcoming). See also Williamson’s (forthcoming) response to the former. In Williamson (2017, n. 11, 160-170) he takes a more neutral attitude toward the idea that belief is weak and suggests that perhaps the necessary and sufficient condition for knowledge is rational sureness.

81 See Hawthorne, Rothschild, and Spectre (2016). Unsurprisingly, one of us is more committed to the claims in this paragraph than the other.
knowledge-based account must\textsuperscript{82}. In other words, knowledge does not seem to be the norm for credences, so if beliefs are very closely tied to credences, it’s very hard to accept knowledge as the norm for belief\textsuperscript{83}.

Furthermore, the suggestion that beliefs can never be epistemically justified based on statistical evidence (a suggestion that follows from a knowledge norm for belief, together with the claim that statistical evidence cannot ground knowledge) seems to run in the face of fairly clear counterexamples. Do you believe, for instance, that your close friends have the same credit card four-digit PIN code as you do? We’re pretty sure the answer is “no”, and not just in the sense that you don’t have that belief – you believe its negation\textsuperscript{84}. Furthermore, this belief of yours seems entirely justified (indeed, it may even, if true, amount to knowledge). But your only evidence for it is statistical, and (depending on how many friends we are talking about) not even that strong statistical evidence (it’s much weaker, for instance, than the statistical evidence you have in \textsc{lottery}). Indeed, it may be argued that sometimes – perhaps in order to combat cognitive biases – it’s a good idea to rely on statistical evidence and ignore non-statistical evidence\textsuperscript{85}.

For these reasons, then, the thought that beliefs cannot be justified based on just statistical evidence – central to accounts of resentment and related phenomena that endorse a knowledge norm for beliefs – is implausible\textsuperscript{86}. But, we now want to argue, even if knowledge-based accounts can somehow overcome this problem, they can still not offer a satisfactory solution to the problem of statistical resentment, for a reason that will – at this stage in the paper – sound familiar: They are not

\textsuperscript{82} And not only them. Martin Smith’s (2018) interesting discussion of \textit{normic support} also invokes a sharp divide between beliefs and credences, and so he too is vulnerable to the point in the text.

\textsuperscript{83} See, for instance, Kahneman and Tversky’s (1979) discussion of the planning fallacy.

\textsuperscript{84} Of course, it may be argued that while the examples show that \textit{in some cases} it’s justified to form beliefs on the basis of statistical evidence, \textit{in the cases relevant for statistical resentment} it isn’t. But then we’ll need an explanation of when this is justified and when it isn’t, and why. And this will take us back (almost) to square one.
sufficiently general. They miss some important cases, and not just the DNA or the legal cases already mentioned.

Recall PHYSICIAN, where acting on statistical evidence (in diagnosing a patient) seems not only unproblematic, but required. In the face of such cases it becomes very hard to maintain both the knowledge-action link, and the claim that statistical evidence cannot establish knowledge. Given that the physician ought to treat the patient based on the statistical evidence, we must either accept statistical evidence here as sufficient for knowledge (that the patient has condition so-and-so), or accept that action is justified without knowledge (that the patient has condition so-and-so), or both. And this means that we must reject as over-general the knowledge-based attempt to diagnose what’s wrong with statistical resentment. True, the physician may have other relevant knowledge, like the knowledge that the patient probably has condition so-and-so. But – regardless of the merits of such a move more generally – in our context this won’t help, because in many statistical resentment cases, the belief that the person probably wronged you is almost as bad as the belief that they did.

Also, within purism, it is very hard to distinguish between MATH and CAR87. And in not-exactly-statistical PRE-RESENTMENT and pre-pride cases it seems that knowledge is possible (unless, that is, you are willing to deny any knowledge of the future, which seems excessive), but the distinct oddness remains, so again it doesn’t seem like knowledge is what does the work here.

But we want to end this section with the especially powerful case of SURPRISE. As you may recall from section 2, the appropriateness of being surprised when you find out that your lottery ticket has after all won shows how statistical evidence, even if not sufficient for knowledge, suffices for shaping our expectations. Still, being surprised to find out, about a specific colleague, that they have not in fact been badmouthing you – when the opposite expectation had been shaped just by the statistical

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87 But let us again remind you that the deflationary stories from the previous section may be relevant in ways that (at least often) distinguish between the two.
evidence – remains problematic. Indeed, we think it is problematic in the same way statistical 
resentment in this case would be. But the surprise case cannot be justified by a knowledge-based 
account. So the knowledge-based account is not sufficiently general to explain everything that has to be 
explained here.

6. Partial Solution or an Impossibility Result: In Lieu of a Conclusion

The set of constraints on an adequate solution to the problem of statistical resentment seems 
unsatisfiable. We couldn’t come up with a plausible explanation that got all or even most of the cases 
right. It’s possible, of course, that the problem lies in our limited imagination, and perhaps some other 
solution can succeed. But some of the difficulties raised seem to go to the heart of things, in a more 
depressing way. In particular, the emphasis on the relevance of credences resulted in what may be 
thought of as almost an impossibility proof: Relative to the evidence, the credence value is fixed. So 
given some (incriminating) statistical evidence, we have to accept either the raising of credence in blame 
(which seems just as objectionable as statistical resentment in the case of beliefs), or an irrationally low 
credence. None of the solutions we proposed can handle what seems to be a complete impasse.

Before despairing, though, we want to note how one of the deflationary stories from section 3 
does a better job here than others, and then suggest a somewhat conciliatory way forward, one that 
starts with reducing expectations.

Recall the explanation from section 3.3, in terms of what explains how it is that the relevant 
agent has come to have all and only the evidence that they have. In terms of the impossibility proof 
above, this explanation stands out because it doesn’t criticize the credence level or the belief itself. 
Rather, it criticizes the believing agent, for violating norms of the ethics of evidence gathering\textsuperscript{88}. And

\textsuperscript{88} For a closely related point (in the context of criticizing Stroud’s discussion of epistemic partiality) see Enoch (2016, 31-3).
because these are practical norms, they are pragmatically sensitive to many of the points raised throughout (like the differential price of false beliefs, perhaps even considerations of incentives, and so on). So there’s something more promising about this deflationary story compared to pretty much all other suggestions discussed in this paper.

Finally, we think it’s important to discuss at this stage are three ways of reducing expectations: Relaxing the uniformity premise, being at least somewhat satisfied with the only partly satisfying deflationary explanations from section 3 above, and when all else fails, being willing to bite the occasional bullet.

First, then, uniformity. We stand by our starting point – that, say, there seems to be something very similar going on in LOTTERY, BLUE BUS COMPANY, THE CENTRAL RESENTMENT CASE, TRUTH TO POWER, TEENAGE ROMANCE, and a few other of our cases. In other words, other things being equal, a theory that offers a unified story about all of these is better for so doing than a theory that doesn’t. But other things – we’ve come to see – are not equal. If no unified account can plausibly work, we should take that as strong evidence that the landscape is not quite as unified as we may have thought. And so we should be willing to accept partial theories – theories that get some of the cases in ways that seem importantly right, but whose scope should be limited so as to allow other theories to shoulder their part of the burden in other cases. This doesn’t mean that nothing about uniformity will be at all important. We can still hold on to especially strong uniformity intuitions – perhaps, for instance, we should be more confident that the oddity of statistical resentment and statistical pride get a similar explanation than we should be that statistical resentment and legal cases regarding statistical evidence should be accounted for by a similar explanation. But this is the kind of discussion we should now be having, following the

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89 Notice that once the full generality and uniformity ambition is deserted, the story we initially told about the legal case of statistical resentment may be vindicated after all. And indeed, perhaps then incentive stories can do work elsewhere as well, not as a general explanation, but as a part of a messy one.
skeptical results so far. It’s the discussion about how much and what kind of uniformity we want to maintain, and how high an intuitive price we’re willing to pay for it in other desiderata.

Second, we should reemphasize, in this somewhat conciliatory spirit, the role of the deflationary explanations from section 3. These explanations – in terms of the screening-off statistical phenomenon, worries about randomness (and most often, lack thereof), and in terms of problematic explanations for why it is that the relevant person has all and only the evidence they have – went a long way towards explaining the problem with statistical resentment (and with many other of our cases), at least in most real-life cases. True, they did not do as well with regard to at least some hypothetical cases, and they left an annoying feeling that they cannot be the whole story of statistical evidence. But now that we’ve given up on the hope of offering a single, fully general, fully unified story, this should not deter us: The combined force of these deflationary explanations is surely a major part of the story of statistical resentment and why it is so often inappropriate.

Third, it’s not impossible that there will be some remaining cases of statistical resentment with no good explanation (unified or otherwise) of their inappropriateness. And for those, perhaps we should be willing to bite the bullet, and declare them (surprisingly) acceptable after all. Perhaps – we’re really not sure – some DNA cases are of this kind.

Such a complicated, not-fully-unified, somewhat messy story of the inappropriateness of statistical resentment may not be what we’ve hoped for when we embarked on the project. But it may be – and for now, we tentatively conclude that it is – the best that can here be achieved.

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90 Whether a similarly conciliatory spirit can save something from other explanations we rejected along the way – say, those in terms of moral encroachment, or in terms of the knowledge account – will depend on the fate of the more principled arguments we used against them. If, say, the relations between credences and beliefs undermine moral encroachment altogether, then obviously, that’s the end of the matter for them. If, however, the only problem for them is that they don’t succeed in offering a unified account of all relevant phenomena, then the kindness with which we treat in the text the deflationary explanations should also be extended to these other ones.
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