Mizrahi and Seidel: Experts in Confusion

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Abstract: In his (2013) paper Moti Mizrahi denies the reliability of expert opinion and thus claims that arguments which appeal to expert opinion are weak. Marcus Seidel (2014) responds by rejecting the relevance of Mizrahi's evidence, and his understanding of the terms 'expert' and 'opinion'. This paper examines the confusion which results as Seidel continues to argue at cross-purposes with Mizrahi's claims, and seeks to learn from it to highlight the areas of ambiguity in the debate which would need to be clarified in a better assessment of the argumentative weight of appeals to expertise.

Resumé: Dans son article de 2013 Moti Mizrahi nie la fiabilité des opinions des experts et fait ainsi valoir que les arguments qui font appel à leurs opinions sont faibles. Marcus Seidel (2014) rejette la pertinence de la preuve de Mizrahi ainsi que son interprétation des termes «expert» et «opinion». J'examine la confusion qui résulte des arguments de Seidel avancés à contre-courant avec les déclarations de Mizrahi, et je cherche à en tirer des lecons pour mettre en évidence les ambiguïtés dans le débat qui aurait besoin d'être clarifié par une meilleure évaluation de l'importance argumentative des appels à l'expertise.

Keywords: Ad verecundiam, appeal to expert opinion, fallacies, ambiguity, expertise

1. Introduction

The exchange of papers in this journal between Mizrahi (2013) and Seidel (2014), involves, on the surface, differences over the strength of arguments based upon reference to expert opinion. In fact, their disagreement is an object lesson in the need for precision in argument, and the very real danger of falling into the trap of talking at cross-purposes when that need is not sufficiently well met. Seidel is right to suggest that there are a number of reasons to doubt Mizrahi's conclusions, but he does not always select the correct targets and creates confusion of his own along the way. This paper is an attempt to illustrate where the two authors go wrong and how they end up discussing quite different matters while appearing to argue over the same issue.

The key areas in which confusion arises are in the characterisation of an expert and what is meant by an opinion. An initial lack of clarity on this basic issue, and an apparent feeling that precision here is not of particular importance, is later exacerbated by a degree of inconsistency in the way the terms are employed. This leads Seidel to argue against claims Mizrahi has not made and Mizrahi to reach conclusions for which he has not argued. All page references to Seidel and Mizrahi in this work refer to the papers mentioned above.

Moti Mizrahi's article sets out to show that 'arguments from expert opinion are weak arguments' (61). In order to do this, he first defines what sort of arguments he is dealing with (a crucial point to which I shall return) and then provides plenty of empirical evidence suggesting that such opinions "are only slightly more accurate than chance" (64). This being the case, he argues, any argument put forward on the basis of expert opinion is, at very best, one that provides only weak support for the conclusion. Marcus Seidel responds in defence of argument from expert opinion by raising five points on which he believes Mizrahi is mistaken. In the course of these criticisms, Seidel raises a number of reasons for serious doubts about Mizrahi's reasoning, but also frequently misses the point and, at times, contradicts himself. The errors in both papers, and the disagreement between their authors, can, I believe, be largely explained by certain ambiguities and confusion over the terms of the debate, and this article, rather than showing either to be wrong in his reasoning, aims to resolve the conflict through exposing that ambiguity.

Rather than giving a full description of Mizrahi's work, which the reader may peruse for himself, I shall proceed by taking Seidel's counter-arguments in turn and discussing how effective they are against the claim that arguments from expert opinion are weak. There are, however, a couple of points about what Mizrahi has to say that should be highlighted first. The ambiguity in his claims is a direct result of his own inconsistency in what he means by expert opinion. His definition, or lack of one, of what an expert is, is dealt with in Seidel's first argument below, but the ambiguity over the word 'opinion' is not captured there directly. In his introduction, Mizrahi cites a number of authors on argumentation, and what they have written on experts, and claims that he will show them to be in error. For example: "Baronett (2008: 304) says that 'The appeal to expert testimony strengthens the probability that the conclusion is correct, as long as the opinion falls within the

realm of the expert's field.' In what follows, I will challenge these claims about arguments from authority" (58). However, he then goes on to state that "I am not interested in appeals to authority in which the expert in question is simply reporting what the majority of experts about subject matter S accept" (61). even though those he is criticising certainly were interested in such appeals. In his work, therefore, "argument from expert opinion is an argument one makes when the truth value of p is unknown and the only reason to accept p is the fact that an expert says so" (61). This formulation is troublesome due to the unknown truth value condition. One might ask, unknown to whom? If p were not unknown to me, I wouldn't be asking an expert: if p is unknown to anyone, then, even an expert in the field can only guess at its truth: at best, make a prediction. This is what the examples used by Mizrahi bear out: that, although he doesn't state it explicitly, he is only discussing expert predictions. And even then, not predictions which are a generally accepted result of established theory, such as when a solar eclipse will occur or what compound will be formed by the reaction of two chemicals, but only predictions of states which are, by definition, somewhat unpredictable, and, therefore, predictions which are risky.

Seidel is well aware of this. "Mizrahi's restriction to arguments where the truth value of p is unknown is really intended by him to reserve the term "arguments from expert opinion" only for those arguments in which p is a prediction or a proposition hitherto unknown to the expert [...], I think, this restriction misinterprets the statements of the authors he opposes" (203). His second argument, discussed below, is based on the fact that experts do and say different things, some more risky than others. Yet he still often argues with Mizrahi on the basis of a more wide-ranging understanding of expert opinion, and concludes that Mizrahi is wrong to use evidence about predictions as an argument against opinions, even though it has been clearly stated that Mizrahi is only using it as evidence against arguments from predictions. The blame for this confusion lies mainly with Mizrahi for initially conflating the two, but having noted that Mizrahi's use of the term 'opinion' is idiosyncratic, Seidel should not then assess his claims based on a more conventional understanding of the term.

A second preliminary point concerns what can only be described as Mizrahi's casual attitude to the formulation of the strand of argument from authority that can be named argument from expert opinion. He sets it out (61) thus:

- (1) Expert E says that p.
- (2) Therefore, *p*.

As Seidel notes (195), this layout confuses the premisses and the conclusion with the reasoning, since "therefore" is not part of a premiss or a conclusion and also gives the argument the look of a deduction rather than an inference, with an obvious missing premiss that what experts say is true. And yet, it is the exact nature of that missing step that is at issue. We know that experts are not always right so we cannot deductively conclude "p" from "E says p", but what is being discussed is the *likelihood* of p being true given that E has said it and the reasonableness of accepting it to be so. If the missing premiss is "most things experts say are true" we can conclude, "probably p"; if it is "nearly everything experts say is true", we can conclude "very likely, p". In his formulation, Douglas Walton has a warrant premiss stating that what an expert claims may "plausibly be taken to be true" (Walton 2006: 750) so the conclusion would be "p can plausibly be taken to be true", certainly not just "p"! The strength of wording of this premiss is the matter under investigation. The simplistic formulation by Mizrahi, therefore, offers nothing to his argument and serves only to obscure the point at issue.

The following sections examine Seidel's arguments individually in the order he makes them. As well as assessing the extent to which they serve to refute Mizrahi's claims, their broader validity to discussion of arguments from expert opinion is also considered.

2. Seidel's arguments

Argument 1: The property of being an expert should not be confused with the property of being taken to be an expert (Seidel 2014: 196).

The essence of this argument is that if someone is so often wrong as to be an unreliable source, then that person is not an expert, regardless of appearances, qualifications and reputation, and his unreliability is not relevant to questions over the reliability of real experts. A number of Mizrahi's examples show how someone who was thought to be an expert, in fact, was not, and these examples, therefore, are irrelevant.

The issue here, clearly, is the very awkward question of what an expert actually is. Both authors give some space to discussing their conceptions, but neither does so satisfactorily

and both are, to a degree, self-contradictory. Seidel takes a definition from Alvin Goldman (2001), where expertise is based upon possession of true beliefs. Someone who has many false beliefs is not, therefore, an expert. However, Seidel quotes selectively. Goldman goes on to note that expertise "includes a capacity or disposition to deploy or exploit this fund of information to form beliefs in true answers to new questions that may be posed in the domain" (Goldman 2001: 91). The first part of his definition, then, is clearly meant to apply to just the kinds of expert opinions that Mizrahi has stated he is not interested in; the second part deals with a different set of skills, which are required to understand and make predictions about unknown states. It seems perfectly reasonable, then, to claim that those who are acknowledged as experts by virtue of having true beliefs within the domain may still be unreliable when it comes to predictions if they do not possess the relevant skill-set.

Along with this selective reading of Goldman, Seidel also displays inconsistency over the nature of expertise when, later in his paper, he defends Aristotle as an expert in Biology. Suggesting that it is unfair to compare an ancient Greek's knowledge with that of modern science, he believes we should "evaluate expertise by epistemically assessing the beliefs of somebody held at time t in relation to the beliefs of others held at time t" (210). This would mean that an expert is someone who knows the learning of his day, even if it is later discovered to have been in error: but what then of true beliefs? If an expert has true beliefs in his field, and Aristotle was wrong on many things, then Aristotle wasn't an expert. Undoubtedly, today's greatest scientists will be found to have been wrong on a great many things too, several thousand years from now, so they are also not experts. This seems absurd, and since Aristotle knew a lot more than most Greeks, we want to call him an expert: the true belief theory of expertise, then is on very shaky ground, even without the added difficulties associated with the notions of truth and knowledge.

Most crucially of all, Seidel's view on experts leads to circularity. He is essentially saying that an expert simply is someone who gets things right, most of the time anyway, so "unreliable expert" is an oxymoron. The argument becomes: it is reasonable to believe the statements of an expert because an expert is someone whose statements it is reasonable to believe. If two experts offer contradictory opinions, then at least one is not really an expert, but we may very well have no way of knowing which it is, certainly at the time the opinion is given.

The root cause of this confusion lies in the semantics of

the word. In everyday use 'expert' refers both to someone who actually knows the answers and someone who is taken to know them. We can say: "Most of the experts were wrong about this year's UK General Election result". There is no contradiction in terms, and the statement is generally considered to be true. Experts are those paid for their expertise, those who offer apparently expert opinion, those who *ought* to be experts given their previous experience. Seidel wants to understand 'expert' only in one sense, which may be good philosophical practice, but it is not the same sense in which Mizrahi understands the term. His evidence is taken from those who appear to be or ought to be experts, and their actually being expert in Seidel's sense is the question under investigation.

To a large degree, Mizrahi takes the nature of experts to be self-evident. He does, however, make it clear that: "I will not be concerned with administrative authority (i.e., the authority that puts forward imperatives), but rather with cognitive authority (i.e., the authority that puts forward statements)"(59). He quotes Walton (1992) on this division, but ignores the warning in the quotation that the distinction may not always be clear cut, and both types may be present in the same individual. Walton actually uses the example of physicians as professionals who may exercise both cognitive and administrative authority, but Mizrahi has apparently forgotten this when he cites examples of empirical work where experts (physicians), were wrong, from medical fields.

A similar doubt can be raised about his FBI example, which Seidel is far from impressed with. An FBI report into the costs of crime was found to have no sound methodological basis. Seidel sees this as a case of an expert stepping outside his own field (crime detection and investigation) and pretending to expertise in another (effects of crime on business activity). That may be correct, but how are experts in one field so convincingly able to claim expertise in others? I would suggest that they rely on their administrative authority. It may be a Professor's title, or an institutional brand, but there is little doubt that the FBI has tremendous administrative authority on all things crimeconnected in the United States, whether or not it has cognitive expertise is another question. The fact that there was no proper methodology in place suggests that the FBI itself, or, more precisely, whoever authorised the report, believed its name alone would make the report authoritative, mistaking its own administrative authority for a licence to make statements. properly reserved for cognitive authorities. For his theory to hold, Mizrahi needs examples of cognitive authorities being

unreliable, so Seidel is right to reject the FBI case as irrelevant, but perhaps not for the reasons he gives.

Neither author appears to have investigated the literature the understanding of the term 'expert' particularly on thoroughly. In Wagemans 2011 paper on arguments from expert opinion, he begins his discussion with a section asking "What is argumentation from expert opinion?" (Wagemans 2011: 330) and includes a detailed examination of the notion of an expert. Hueneman (2004: 250) thinks an expert is someone who is "epistemically responsible" for his field, suggesting that he should not be relying on the knowledge of others and shifting the responsible on to them, but should know things for himself, however that can be understood. Such a definition makes it easier to include the likes of Aristotle, as he was epistemically responsible for his field during his lifetime. A definition that is of great practical use is offered by Kutrovatz. He suggests that experts are "people who have, or who are attributed by others. an outstanding knowledge and understanding of a certain subject or field" (Kutrovatz 2011: 2). This is clearly the meaning that Mizrahi is employing, although he doesn't make it explicit. For Seidel the attribution of knowledge by others is irrelevant, for Mizrahi it is crucial and this is where their fundamental disagreement stems from.

Wagemans reaches two important conclusions in this section of his paper: firstly an expert is someone "whom the arguer believes the addressee to put a certain intellectual trust in", and, secondly, that arguments from expert opinion are "argumentation that renders an opinion (more) acceptable by claiming that the opinion is asserted by an expert" (Wagemans 2011: 331). The former, which matches the reality of real world argumentation, makes it clear that experts can be wrong, not just sometimes but very often, and still remain experts if they still retain trust, which is clearly what Mizrahi wants to claim. The latter, that in informal logic an argument is valid if it is acceptable, and the more acceptable it is, the stronger it is. The conflict between Mizrahi and Seidel is, at root, over the degree of this acceptability, but they do not make always make this clear.

Argument 2: Experts say many things—some more risky, some quite safe (Seidel 2013: 200).

This argument revolves around Mizrahi's idiosyncratic understanding of the word "opinion" and can be dealt with quickly. Seidel points out that risky predictions are only one type of statement experts may make, and objects to evidence

from failed predictions being used to undermine faith in experts per se. It might well be argued that a great many experts, perhaps a majority, never make predictions at all. This is no real obstacle to Mizrahi's argument, since he doesn't want to undermine experts in general: the trouble is that he keeps appearing to want to do so. His conclusions make no reference whatsoever to the very restricted meaning he gives to the term 'expert opinion' stating: "research on expertise shows that expert opinions are only slightly more accurate than chance [...] it follows that arguments from expert opinion are weak (i.e., fallacious) arguments" (76-77); only a disclaimer in the opening section acknowledges that he doesn't really mean 'opinion' at all, but, in fact, 'prediction'. Since Seidel is aware of this ambiguity his use of it to attack Mizrahi's criticism of expert predictions is perhaps unnecessary, but, given Mizrahi's unwillingness to consistently acknowledge the limitations of his argument, not surprising.

Argument 3: An account of expertise should take into account the specific nature of the field of expertise (Seidel 2014: 205).

Seidel claims: "There is one remarkable feature of nearly all studies cited by Mizrahi in order to sustain his thesis: they concern expert-judgment in fields that probably are special with respect to the reliability of their results and predictions" (205). Since we don't have any definition of 'special' here it's hard to know how much force this argument carries. For Seidel, the fields Mizrahi discusses are special, for Mizrahi, presumably, there's nothing special about them; they happen to be the ones in the studies he cites. As it stands, I think Seidel's argument is weak. Simply stating that the evidence applies only to certain "special" domains and not others is not enough. He does go on to discuss economics as a particularly difficult field for prediction (see Armstrong 1980 for an account of just how unreliable economic forecasters are), but, since Mizrahi is focusing on predictions which are not part of established and agreed scientific knowledge, such as eclipses, it seems reasonable that the studies he cites deal with fields where such predictions are regularly made.

Seidel does offer an example of a field where expert prediction is common and, he believes, those predictions are reliable: association football, or soccer. Unfortunately, he begins, "I have not conducted an empirical study concerning the reliability of football experts, I think it is highly plausible that football experts are much more often right in predicting the

outcome of football matches than laypersons relying on coin flips" (206). There are two major problems with this suggestion: firstly, if he had conducted a study he would probably have changed his opinion, more of which below. Secondly, the mention of coin-flips confuses the issue, although, again, this is to a large extent Mizrahi's fault. Closer inspection of the literature Mizrahi cites reveals that the comparisons of experts with chance should be treated carefully. Tetlock (2005) it is claimed "found that the experts were only slightly more accurate than chance" (Mizrahi 2013: 64) but another review of his work notes that "experts barely if at all outperformed informed non-experts" (Tschoegl & Armstrong 2007: 339) and this is hugely important. What is of interest is whether or not an expert has a better record of prediction than a layman with an interest in the subject. If we take economic prediction and ask 100 economists what the economic growth rate of the UK will be next year, their answers will, I suggest, vary by no more than 2 percentage points, probably much less. This is clearly not "a chimp with a dart board" (Tetlock's analogy). The point at issue is whether a professor of economics is more reliable in his estimation than a layman who reads the financial press.

It might be argued here that an expert is someone who needs to be right often enough to make it reasonable to accept his statements as true, and the relative performance of interested laymen is neither here nor there to that requirement. There are, however, two good reasons not to take this line. Firstly, it is a serious dilution of the special role of experts if they are not expected to have any more authority than those with a part-time interest in the subject; and, secondly, in real-world situations, expert opinion is often sought by those with an interest who are well aware of the limits of their knowledge. In Walton's example of Bob who consults a financial advisor, he notes that "as an investor, Bob will need not only to understand what the expert is saying, but to probe into it somewhat critically" (Walton 2006: 747) making it clear that Bob has some understanding of the subject and is not expecting his chosen advisor to be better than chance at making investments but significantly better than he is himself.

To return to Seidel's example then, we should not compare the soccer experts' predictions with the toss of a coin: of course, he will be more successful simply by knowing the current league positions of the teams and it's hard to see how a 50-50 chance mechanism could be used to predict scores, rather, we should compare the professional expert with the part-time fan. This can be done by looking at the resident score predictor on the BBC Sport website, Mark Lawrenson, a man who would certainly be considered an expert in the conventional sense of someone with extensive knowledge in the field.

Each week, Lawrenson competes with a celebrity in making predictions for the upcoming set of matches. The celebrities are sometimes from the world of football, but usually not, often being from other sports, television or music. One point is awarded for the right result (win, lose or draw) and three points for a perfect score. For the 2014/2015 season the final statistics for Lawrenson's duals were: Played 38, Won 17, Drawn 4, Lost 17. His scores ranged from 1 point to 17 points, his guests from 2 to 17 (BBC Sport Football 2015). In short, the expert does no better than the fan: hardly surprising because if experts really could predict scores they would make fortunes at the bookmakers, just as stock-picking columnists would not be working for newspapers if they could really select shares about to increase in value.

Although this brief analysis of one expert is obviously not authoritative, it is worth dwelling on because it shows how Seidel didn't feel it necessary to conduct a study on soccer experts because he instinctively trusted in their expertise, not because they do, in fact, regularly predict the correct results. This trust is based on their position, their experience, which means they *ought* to be reliable, not on any real cognitive authority, and it is precisely that kind of trust that Mizrahi's paper warns against. Seidel has, therefore, unwittingly gone some way to proving the falsity of his own claim by choosing as an example a very unreliable field of prediction.

Argument 4: Being an expert is a relational property (Seidel 2014: 208).

In this section, Seidel is not really arguing against Mizrahi. Instead, he explains that being an expert is relative: for example, some people might consider me an expert on football, until my brother walked into the room, at which point I would lose all authority. However, he rejects the idea that this means the cleverest child in class can be called an expert on the basis of knowing more than the other children, and that certainly fits with intuitions about the word: to be a real expert one may not simply know a lot, more than all the others present, but one must have a depth of knowledge such as one individual can possess on only a few subjects at most. As he puts it:

- a) Somebody is an expert only *in relation* to a person or group of people.
- b) Somebody is an expert only if she *exceeds a minimum* of epistemic desiderata. (Seidel 2014: 208-209)

However, Seidel's argument becomes rather confused at this point. Having set a minimum amount of knowledge for experts to have, he then claims that this minimum is relative to the group mentioned in the first condition. In that case, it is hard to see what exactly the second condition adds. This move is necessary for Seidel to protect the expert status of scientists of the past, as discussed above in relation to Aristotle, since they would be required to know a lot, relative to people of that time, in order to be experts relative to people of that time. This sits uneasily with the definition of expert Seidel supported earlier in his paper. It is clear that experts of Aristotle's era must have made a good many poor predictions based on their imperfect scientific knowledge, which makes them both experts and nonexperts on Seidel's reasoning.

None of this has much impact on Mizrahi, who may accept condition (a) but claims that, in fact, in the field of predictions, very few people satisfy condition (b). The real disagreement between them might well hinge on what the epistemic desiderata are. Within the same section, though, Seidel also questions the evidence that Mizrahi provides about the unreliability of scientific research papers. Mizrahi (64) cites a study by Freedman (2010), which found that the majority of research published in medical and economics journals is later rejected, as evidence of the unreliability of academic experts. Seidel uses his "relativity theory" to defend the researchers, but a more compelling argument would rely on the nature of scientific publication itself. When publishing work, scientists and academics are trying to move their fields forward, not repeat established knowledge. Publication is neither simple statement nor simple prediction, it is a special form of communication in which hypotheses are made and partially tested in the expectation that others will test them further in order to improve upon them. It is perfectly possible to read a paper, disagree with every word of the conclusions and still regard the author as a leading expert in the field. An expert who knows the current state of his speciality extremely well and is competent to teach it at the highest level, will err when hypothesising and experimenting on new ground. This does not stop him being considered an expert, since only an expert would know how the field could be moved forward and be capable of taking an intelligent part in the debate. Mixing such work with

the diagnoses of physicians or the ability of accountants to fill in tax returns correctly, as Mizrahi does, is to misunderstand the nature of the very process he is engaged in.

Argument 5: Radically doubting expertise is selfundermining (Seidel 2014: 210).

The force of this point is summed up neatly in the quotation Seidel provides from Selinger and Crease: "The ability to doubt particular expert claims necessitates appealing to an alternative base of knowledge, much of which must also be imparted by experts" (2006: 2). That is to say, the only way to rebut the claims of experts is to check with other experts.

In many fields of expertise, this claim is patently false in the case of prediction. There is no need to check with an expert if the forecasts of a meteorologist, psephologist or sports pundit are correct. Seidel is once again forgetting that Mizrahi is dealing only with predictions, the accuracy of which is often revealed for all to see. Naturally, to check the claims of one apparent expert about the current state of knowledge in a field, one would have to ask another apparent expert, with no reason to believe the one any more than the other.

Mizrahi does, in fact, raise this point as a possible objection himself and makes a rather poor job of dismissing it. He claims that "empirical evidence shows that expert opinions are unreliable" (76) not more opinions, which is in accordance with what I have said above. When discussing the provenance of that evidence in the same paragraph, however, he is far less convincing: "Instead of appealing to expertise, I am appealing to the empirical evidence itself regardless of who conducted the experimental studies" (76). This statement cannot be true. No serious academic preparing a paper accepts evidence "regardless of who conducted the experimental studies". The studies are treated seriously because they come form people accredited as "experts". The special communicative act of citing experts by experts in academic papers has been carefully described by Carrascal (2014). He notes in his conclusion that the "context of which participants in the exchange are a part has to be taken into account to explain why and when it is reasonable to accept some beliefs on the word of others" (2014: 188). I would suggest that the context of empirical study and that of prediction are very different

What Mizrahi should have done, although his reluctance to make this distinction clear all through his work prevents him from doing so, is to point out that he is sceptical about expert predictions, not about the ability of experts to conduct empirical research into existing phenomena. There is no contradiction in saying that experts (people who know about a particular field and how to conduct studies within it) have shown that other experts (people who make predictions about the unknown) are often wrong.

3. Conclusion

Mizrahi's argument, then, is successful in its own terms, but it needs to be re-worded to be clear. If it is properly rephrased to say what he actually argues for, as below, the evidence is certainly in his favour:

- 1. Arguments from *apparently* expert *predictions* are weak arguments unless the fact that *apparent* expert E *predicts* that *p* makes it significantly more likely that *p* is true.
- 2. Empirical evidence gathered from experimental studies on *apparent* expertise shows that the fact that *apparent* expert *E predicts* that *p* does not make it significantly more likely that *p* is true.
- 3. Therefore, the fact that *apparent* expert *E* predicts that p does not make it significantly more likely that p is true.
- 4. Therefore, arguments from *apparent* expert *predictions* are weak arguments.

Where italics denote my alterations.

Put in these terms, the claim becomes far less controversial, but also rather uninteresting. The only one of Seidel's arguments that would still need to be answered is the accusation that the empirical evidence is drawn from "special" fields, a point which was discussed above. It is important to reiterate here, however, what is meant by 'apparent expert'. If the term is taken to mean anyone who claims to know about a subject, then Mizrahi's argument, as restated, would be completely trivial. This is not the case: the evidence cited refers to respected, qualified, experienced practitioners who would generally be accepted as experts on the definition required to make someone a cognitive authority as far as knowledge of the field is concerned. That is to say, people who are trusted to give expert opinion by others. The point Mizrahi has made is that even those who possess excellent knowledge cannot necessarily be cited as reliable authorities in the case of predictions: that is, in cases where the knowledge does not currently exist within that field and extrapolation from what knowledge there is, is inherently risky. Since Seidel does not actually challenge the evidence Mizrahi puts forward, he has not mounted much of an assault on this position.

As the terms are generally understood in the literature, however, and as Seidel correctly points out, Mizrahi's claim to wider success in showing that arguments from expert opinion are weak arguments is odd, since he has not even begun to argue for it, and Seidel is perfectly justified in taking issue with that.

Although the exchange between these two authors has been shown to have been at cross purposes, a number of the issues raised are of value to all who would try to formulate a better understanding of arguments from expert opinion. It is not my intention to fully elaborate any such theory here; an undertaking requiring a full-length paper of its own, however, I do believe that by considering some of the points which have come out of this critique, much can be said concerning the direction of that further work.

Firstly, it is clear that any description of arguments from expertise had better be based on a clear and firm characterisation of who is an expert, and not a circular one similar to Seidel's nor an overly flexible one such as Mizrahi's. This will need to account for the relativity of expertise and provide a full account of why an expert is not simply the most knowledgeable person in the room, but also recognise that the opinion of the most knowledgeable person in the room may, in many situations, be well-worth appealing to.

Secondly, the greatest source of difference between the authors, brought out at length in this paper, is over the meaning of 'opinion'. A proper theory of experts needs to delineate between the functions of the various opinion statements given by those who are recognised as experts, and take into account the wide range of situations in which those statements are made. The fallacy of ad verecundiam is often defined as an appeal outside the authority's field of expertise, but it is questionable whether the events of the future can be considered to lie within anyone's field: indeed Mizrahi seems to be arguing for some kind of fallacy of prediction rather than expertise in general. This consideration would lead naturally to another: what is meant by an expert's field? The meaning of the term is apparently considered self-evident in the literature, and yet, if a matter's being in a particular person's field is of such crucial importance to the evaluation of that person's opinion on it, surely a proper and precise characterisation of the notion is needed. It is, I would argue, not possible to conclude that someone or other is an expert without the strictest delineation of that area in which his expertise is believed to lie.

I would suggest that these goals can best be achieved through a recognition of the fuzziness of some of the concepts involved. Expertise should be viewed as a sliding scale, not a binary quality, and the degree to which expert opinion should be regarded as convincing in arguments is the product of a dualaxis scale where the inherent riskiness of the statement type is the second factor. Part of the riskiness calculation would be an assessment of how central to the expert's field (assuming one has been clearly established) the issue under consideration actually is; statements on core topics being less risky than those on outlying ones. This is an awkward situation for theorists as it becomes impossible to say whether, in general, we should listen to expert opinion or not, since how can a satisfactory argumentation scheme be constructed? Ironically though, ordinary folk have no problem at all with weighing up these factors and giving their credence accordingly. I conclude that the over formalisation of informal logic is a danger to its ability to handle real-world argumentation practice and the uncertainty inherent within it

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