I. The Tacking Objection Contradicts the LP2 for Some Mutually Exclusive Hypotheses

Dan Steel, in his paper "Must A Bayesian Accept the Likelihood Principle?" distinguishes two nonequivalent versions of the likelihood principle. The first, LP1, says that if the likelihood functions L(*H*, E) and L(*H*, E*) are proportional, then for all *H* in H, c(*H*, E) = c(*H*, E*). **H** is a set of mutually exclusive and exhaustive hypotheses; *H* is a variable that ranges over the members of **H**. c(H, E) is the degree to which E confirms H.

The second, LP2, says that when the likelihoods of two different hypothesis on some piece of evidence E are the same, then E confirms each hypothesis to the same degree. That is, if P(E|H) = P(E|H*), then c(H, E) = c(H*, E). Steel argues that a Bayesian should accept the LP1 unconditionally. However, the LP2, he claims, is reasonable only in certain cases. In particular, Steel holds that the LP2 is reasonable when the two hypotheses, H and H*, are mutually exclusive.

This is because he claims that the two main counterexamples to the LP2 can't arise when the hypotheses are mutually exclusive. The first is an objection that Branden Fitelson has made to the ratio measure of confirmation, based on his principle (*). The second is the tacking objection. According to the defenders of the tacking objection, c(H, E) > c(H&S, E), where S is some proposition that is irrelevant to both H and E. I will call this principle (T). Clearly, (T) conflicts with the LP2 in some cases; for example, when P(E|H) = 1, P(E|H) = P(E|H&S), and so, according to the LP2, c(H, E) = c(H&S, E).

Steel claims that the tacking objection can arise only when H and H* are compatible. After all, H and H&S must be compatible, for any irrelevant proposition S; otherwise, S would not be irrelevant to H. So, he argues, even those who accept (T) can accept the LP2 when the hypotheses are mutually exclusive.

I argue that this is incorrect. That is, there are cases in which H and H* are mutually exclusive, but the defenders of (T) cannot accept what the LP2 has to say about them. Suppose one has an urn containing three balls. Two are red; one is white. The two red balls are labeled 1 and 2, respectively. A ball is drawn from this urn at random. Our evidence, E, is that the ball that was drawn is red. Let R1 be the hypothesis that the ball that was drawn is the red ball labeled 1; let R2 be the hypothesis that the ball that was drawn is the red ball labeled 2. Since P(E|R1) = P(E|R2), the LP2 says that c(R1, E) = c(R2, E). This is a highly intuitive result. Moreover, it follows from each of the confirmation measures. So I think the defender of (T) would also hold that c(R1, E) = c(R2, E).

Now let's compare c(R2, E) and c(R2&S, E), for some irrelevant proposition S. It's clear that the defender of (T) must say that c(R2, E) > c(R2&S, E). But it follows from that and c(R1, E) = c(R2, E) that c(R1, E) > c(R2&S, E). This contradicts the LP2: since P(E|R1) = P(E|R2&S) =1, the LP2 says that c(R1, E) = c(R2&S, E). Moreover, this is a case in which the two hypotheses conflict: R1 and R2&S are mutually exclusive. So Steel is wrong to say that those who accept (T) can also accept the LP2 whenever the two hypotheses under consideration are mutually exclusive.

II. The Importance of Confirmation Measures

Some authors have questioned the utility of the debate over confirmation measures. Why is it important for Bayesian confirmation theory that we debate the relative merits of different measures of confirmation? Steel considers the following as one possible answer to that question. One of the main purposes of Bayesian confirmation theory is to evaluate purported rules of scientific method; for example, rules like the claim that varied evidence confirms a hypothesis better than narrow evidence. But in order to evaluate such rules, we need to determine which measure of confirmation is the correct one(s), since the rule may be true according to some measures and false according to others. This, according to the argument, shows one way in which claims about confirmation measures are needed to resolve other important controversies.

Steel claims that this argument for the importance of confirmation measures fails. After all, he points out, one could approach the evaluation of rules of scientific method in other ways. For example, if one could show that varied evidence is required for convergence of opinion, while narrow evidence is not, that would suffice to vindicate the proposed methodological rule. Claims about confirmation measures are not necessary.

Steel then goes on to give an argument that, he claims, does show the importance of confirmation measures. Every scientist must make decisions about the level of detail with which to record experimental outcomes. Let E be a description of the data, and let E* be another description that includes all the information in E, but additional details as well. The additional details in E* should be recorded if they are relevant to the hypothesis the experiment aims to test. Steel claims that the extra details are irrelevant to the hypothesis just in case E and E* confirm it to the same degree. But in order to determine that, we need to restrict the class of acceptable confirmation measures. So, Steel concludes, confirmation measures are needed to determine which details to record.

It seems to me that a similar objection to the one Steel raised against the first argument could be made against this one as well. Surely there are ways to approach the question of when to record extra details that don't require one to make claims about confirmation measures. For example, a principle that I find just as plausible as Steel's is the following: the extra details in E* are irrelevant just in case $P(H|E) = P(H|E^*)$. But no claims about confirmation measures are necessary to compute and compare posterior probabilities. So it seems to me that these two arguments are on a par: both show one way in which confirmation measures could be relevant to another debate in Bayesian confirmation theory, but in neither case is this the only way to approach these debates.

However, I don't think this shows that the debate about confirmation measures is unimportant, or a waste of time. Different confirmation measures provide alternative explications of the core notion of degree of evidential support. This notion is ubiquitous in science and everyday life, and is an important part of our conceptual scheme. The fact that confirmation measures are involved in natural approaches to other issues in confirmation theory is itself testament to this. Debating the relative merits of alternative explications of important commonsense notions is one of the central tasks of philosophy.