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## Comment

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### 1. COMMENTS ON SHAFER'S PAPER

One of the things that makes Shafer's theory interesting is that it can be seen as an alternative to the traditional probability theory. Is this really so, however? Firstly, note that one of the strengths of subjective probability theory is the clear cut nature of the axiomatic support for the theory. Indeed, as Lindley's contribution shows, it is possible to claim that probability theory is the only theory one could possibly use to represent uncertainty. Shafer's theory does not as yet have such a clear cut support. For example, although Shafer recognizes the importance of canonical examples, as yet belief function theory is not provided

with as strong an axiomatic support as that which is available for probability theory.

It can be claimed, however, that belief functions are indeed rooted in probability theory. It is just that the probability is associated with a power set rather than a simple set. If this interpretation of belief function theory is accepted, then indeed there is no problem, since the philosophical support for probability theory clearly also will support belief function theory. However, Shafer seems in some of his writings not to be very happy with this interpretation of his theory. And if he rejects this interpretation then the problem of a philosophical foundation for belief function theory remains.

The second point I make here concerns concepts of independence. Shafer touches on this point in his paper, but it is worth saying again that concepts of independence in belief function theory are not yet clear. In the application of Dempster's rule to determine the support for a hypothesis on the basis of two pieces of evidence, there is a rather vague notion that the two pieces of evidence should be independent in

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