Assignment #11: The significance of the measurement problems. (due 5/11/05)

Part way through his article (pp. 8-9), Maudlin makes the following bold claims:

"A solution of this first measurement problem, then, must of necessity be either an additional variables theory, a non-linear theory, or a multiverse theory (or some combination of those). Each of these options carries with it an obligation, the discharging of which demands the postulation of *new physics*. The measurement problem is sometimes portrayed as merely philosophical, or of no interest to physics proper. This is quite untrue."

Briefly but *clearly* explain, in 1-2 paragraphs, Maudlin's case for these claims.

Then comes the hard part: Imagine that you are a sort of philosophical defense lawyer, and your clients are those who *do* think that the measurement problem (in both the "outcomes" and "statistics" versions) is "merely philosophical". *Whether or not you agree with them*, it is your job to come up with the most persuasive case you can for their position. But there are constraints: You have just three pages in which to do so (at approx. 300 words/page), so you had better be efficient; more importantly, since the judge and jury for this case are all highly trained analytical philosophers, only clear and cogent reasoning has a chance of success, and no rhetorical flights of fancy will be tolerated.

Some guidelines: It would be wise to be as clear as possible about what it takes, in your view, for a problem to be "merely philosophical". It would be wise to pay attention to the sections of Albert, ch. 5 in which he explains why it is for all practical purposes impossible to determine where and when "collapse" occurs. It would be wise to consider carefully how one should respond to rival scientific theories that are empirically indistinguishable. Finally, it would be wise *not* to think that there is some one "right answer" that we are looking for, and that success will consist in approximating it. (In other words, don't bother trying to guess what we think.)