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Many Worlds, the Born Rule, and Self-Locating Uncertainty

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A longstanding issue in attempts to understand the Everett (Many-Worlds) approach to quantum mechanics is the origin of the Born Rule: why is the probability given by the square of the amplitude? Recently, Page has raised another puzzle: the Born Rule itself is insufficient in cases where the wave function includes multiple indistinguishable observers in the same branch. I will argue that both problems share a common solution, arising from a proper treatment of self-locating uncertainty (physical situations containing multiple copies of identical observers). This analysis gives a simple, physics-oriented derivation of the Born Rule, as well as a justification for the treatment of identical classical observers.