# What is conditional probability – and what is it not? A review of classical paradoxes

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If we know something about the outcome of an experiment, is it necessarily conditional probability? More precisely: if we know that event $B$ has occurred, then from now on will the probability of an event be $P(A|B)$? Even more precisely: if someone tells us something about the outcome of an experiment, say that event $B$ has occurred, then will the probability of event $A$ be $P(A|B)$? Our answer is no. But the context in which it is told also matters! I will illustrate this phenomenon with the help of two well-known paradoxes, and then I will introduce a simple model for handling such situations, which I call an announcement protocol. Based on the announcement protocol, we can state conditions under which we will get the conditional probability $P(A|B)$ given that event $B$ has occurred.