Evolutionary Cognition: Why Your Brain Plays Tricks

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Cognition refers to internal representations of the world and internal information processing. From an EP perspective, cognition is not "general purpose," but uses heuristics, or strategies, that generally increase the likelihood of solving problems our ancestors routinely faced. For example, humans are far more likely to solve logic problems that involve detecting cheating (a common problem given our social nature) than the same logic problem put in purely abstract terms. Since our ancestors did not encounter truly random events, we may be cognitively predisposed to incorrectly identify patterns in random sequences. "Gamblers' Fallacy" is one example of this. Gamblers may falsely believe that they have hit a "lucky streak" even when each outcome is actually random and independent of previous trials. Most people believe that if a fair coin has been flipped 9 times and Heads appears each time, that on the tenth flip, there is a greater than 50% chance of getting Tails. Humans find it far easier to make diagnoses or predictions using frequency data than when the same information is presented as probabilities or percentages, presumably because our ancestors lived in relatively small tribes (unusually with less that 150 people) where frequency information was more readily available.