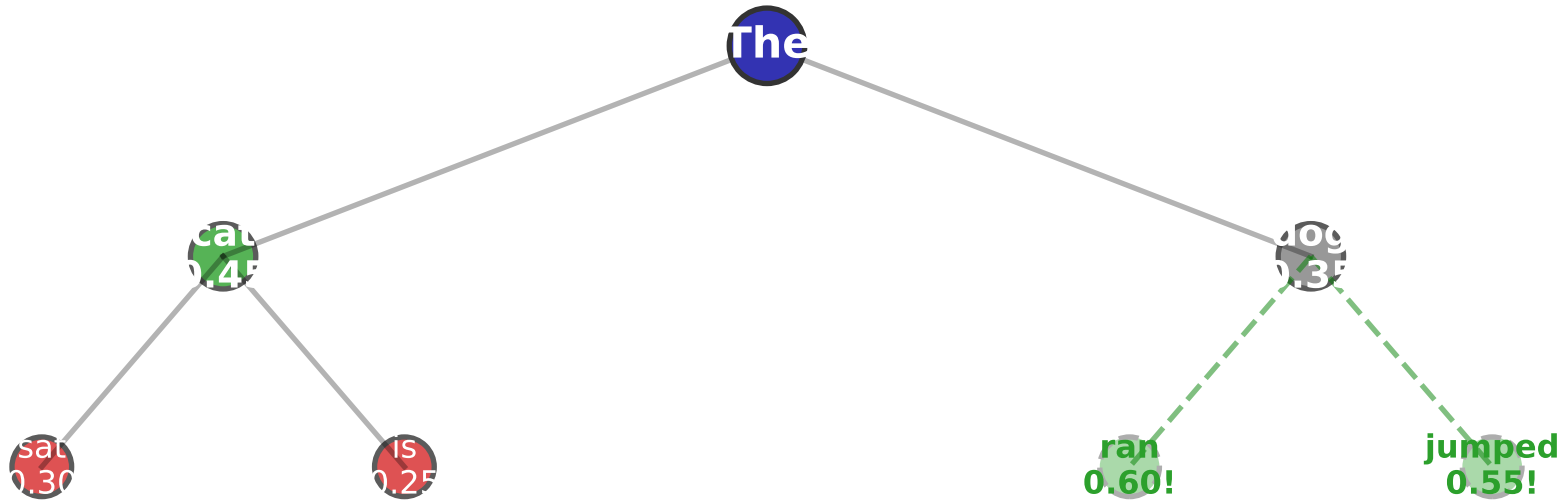Greedy Misses Better Continuations