

ATYPICAL SCENARIOS AND THE PAIRWISE METHODOLOGY

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Suppose you have n events and all are considered equally likely. The pairwise methodology then results in all events having probability $1/n$ as required by the probability axioms.

Alternatively, suppose you have n events with one of them almost certain to occur in the decision-maker's (DM) opinion. Let us say x times "more likely" for the "almost certain" event over any of the other events. The methodology delivers a probability for this event of $x/(x + n - 1)$ or greater. If we assume 4 events and 50 times "more likely" this would be at least 94% for the "almost certain" event leaving 6% for the remaining 3 events collectively, say 2% each. The allocation over these 3 remaining events would be at the DM's discretion as no formal analysis seems called for. A minimum of 1% for an event seems reasonable to take account of the extremely unlikely happening. Of course the "more likely" approach can still be utilized and a 1, 1.5, 2, 50 times "more likely" sequence results in a 1%, 1%, 2%, 96% distribution over the four events. The 50 times assessment is admittedly arbitrary but achieves a 90% plus probability for the "almost certain" event. Also, as noted, probabilities in the 0 – 1% range are recorded as 1% with the 1/100 chance sufficing to highlight the improbability.

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