When Minimax would fail: A minimax agent is only rational against an adversarial agent. When the game is controlled also by chance, minimax agent may fail.

When Minimax would fail: A human playing the Pacman game under this situation will most likely choose running away from the closest ghost which may yield a better outcome, given that he knows that the ghosts can be random. A minimax agent, however, will commit suicide (when the number of moves is also to be minimized).

Expectimax: Expectimax is essentially replacing min with expectation.

Expectimax Solution: Computing the expectimax solution however is expensive due to the exponential growth as a result of the branching factor (due to uncertain outcomes), which makes an already difficult problem more difficult.

Expectimax pruning?: What makes expectimax even more difficult is the fact that you can no longer prune, since the value of each node can be arbitrarily small or large.

Expectimax vs minimax: you must understand the domain to choose your agent to be minimax or expectimax.

Probabilities in expectimax: Are you essentially assuming that our opponent is rolling a dice? Why is this reasonable? Yes and no, since the model can also be used to model adversarial agent, just that they must be occasionally random. And you can model them up to any depth. And you can model the adversaries modeling of you in the same way! Be careful, however, you could be overthinking!

A lot of times, rational agents make different moves to see how their adversaries respond, and use this information to estimate how they really are thinking! Even though this could lead to a disaster when the adversaries are rational!

General games: utilities become utility tuples. Cooperation and competition arise from the dependencies between the utilities.

Maximum expected utilities: So far, we look at maximizing the expected utilities in games. But does it make sense for a rational agent? Where do they come from? Does summation make sense?

There exist other ways of looking at agent’s behaviors!
Human rationality: humans are not really rational! So it looks like soliciting utilities from humans even under the MEU theory is not going to work!