Untitled

Table 1: Hello Sunshine

Col1	Col2	Col3
1	2	3
4	5	654
7	8	9

Ten Features of a Good Decision Theory

Textbook versions of game theory embed a distinctive approach to decision theory. That theory isn't always made explicit, and it isn't always clear how it handles some cases. But we can extract an interesting and plausible theory, which I'll call Gamified Decision Theory (GDT), from these textbooks. There are ten characteristics of GDT (as I'll understand it) that I will focus on. I'll quickly list them here, then the bulk of the book will consist of a chapter describing and motivating each of the ten characteristics.

1. **Idealised**; GDT is a theory of what ideal deciders do.
2. **Expectationist**; the ideal decider prefers getting more expected value to getting less.
3. **Causal**; GDT is a variety of Causal Decision Theory (CDT).
4. **Allows Mixtures**; the ideal decider can perform a probabilistic mixture of any acts they can perform.
5. **Ratificationist**; the ideal decider endorses the decisions they make.
6. **Indecisive**; GDT sometimes says that multiple options are permissible, and they are not equally good.
7. **Dual Mandate**; in a dynamic choice, the ideal decider will follow a plan that's permissible, and take choices at every stage that are permissible.
8. **Selection**: The aim of decision theory is to generate a function from possible choices to choice-worthy options, not to generate a preference ordering over the options.
9. **Substantive Probability**; the ideal decider has rational credences.

10. **Weak Dominance, Once**; the ideal decider will not choose weakly dominated options, but they may choose options that would not survive iterated deletion of weakly dominated strategies.

This is not going to be a work of exegesis, poring over game theory texts to show that they really do endorse all ten of these. In fact it wouldn't take much work to show that they endorse 1-5, so the work wouldn't be worth doing. And while some textbooks endorse 9 and 10, it would take a lot more investigative work than I'm going to do here to show that anything like a majority of them do. It would be interesting, but not obviously a philosophical question, to see what proportion endorse 6 to 8. But I'm going to set that aside.

What I do want to argue is that you can find some support for all of these in some game theory textbooks, and that combined they produce a plausible decision theory. While the textbooks don't all agree, for simplicity I'm going to focus on one book: Giacomo Bonanno's *Game Theory* [@Bonanno2018]. This book has two important virtues: it is philosophically deep, and it is available for free. It isn't hard to find a game theory text with one or other of these virtues, but few have both. So it will be our primary guide in what follows, along with some primary sources (most of which are referenced in that book).

Demons

A lot of contemporary philosophical decision theory revolves around what to do if there is a certain kind of demon around. Following @Nozick1969, such a demon is typically taken to be arbitrarily good at predicting what a human deliberater will do. I'll call our arbitrary deliberater Chooser, and whenever X is a choice Chooser can make, I'll use PX to mean that the demon predicts Chooser makes that choice. It's not so common to have problems where there are two such demons around, but I'll make heavy use of them, and in such cases I'll be clear about whether PX means that the first or the second demon predicted that Chooser will do X. These are predictions, and we assume that causation runs from past to future, so what Chooser does has no causal impact on what Demon predicts.

A cross-ref. Newcomb's Problem 1