Assumptions in Decision Science[1]

DAVID SCHMIDTZ

1. What Do We Want From Decision Science?

To Itzhak Gilboa (in this volume), the Bayesian approach holds that all uncertainty can and should be quantified by probabilities. As I understand decision science, Gilboa is correct. The Bayesian postulate's point is to render decision theory apt for cranking out theorems. Theoretical tractability comes at a cost, however, in terms of practical realism.

Assigning probabilities is plausible enough, Gilboa would agree, in games of chance where information on probabilities and monetarily quantified utilities is readily available. It is less plausible to treat unknowns as equiprobable, however, when we can only guess at possible outcomes, when we can only guess at probabilities of such outcomes as we have the imagination to anticipate, and when we have hardly any clue how to gauge their utilities. Indeed, normal people typically do not even dream of trying to make decisions by using a formula to calculate maximum expected utility. We don't do that because we are rational. We know better than to handle real life's sometimes radical uncertainty by plugging pure guesswork into a toy formula.

So, on one hand, I do not think being moral is closely connected to being a maximizer, at least as maximizing came to be construed in the twentieth century.[2] On the other hand, morality's departures from maximization do not cause any particular rift between morality and rationality because being *prudent* also generally has little to do with being a maximizer. The founding philosophical challenge (as old as Plato's *Republic*) of identifying genuine, substantive connections between being rational and being moral requires working with *humanly* rational choice and humanly moral agency as they are, not with mathematically tractable idealizations of them.

Here is a further and more positive thought on the prospects and practical limits of decision science. I never accepted the instrumentalist idea that the scope of rational choice is the selection of means to given ends, leaving us with nothing substantive to say about the rationality of ends themselves. Some ends obviously make for better lives. But common-sense aside, is there a non-question-begging *proof* that ends can be rationally chosen? Could instrumental rationality *all by itself* (conjoined to descriptive truisms about human psychology) underwrite the choice of some ends rather than others, or some ends rather than none? In my earlier work, I did not argue that ends as such were rational, because that was never the question. The question is about ends as *chosen*. The question is not whether final ends can be rational but whether they can be rationally *chosen*.

One exceedingly tricky aspect of the task of rationally choosing ends is that humanly rational choice is choice for beings whose preferences are a moving and evolving target. This is where the philosophical action is, but looking at rationality that way is not apt for cranking out theorems. As James March might have agreed (see his essay in this volume), we tend to grow into the choices we make. We are outcomes as well as makers of our choices. That means that *whatever we think is at stake when we make choices, there is more at stake than that.* We tend to become people for whom our major life choices make sense. Sometimes this is a good thing, but it behooves us to make major life choices with one eye on the question of whether we want to give ourselves reason to become *that* kind of person.[3]

2. From Theory of the Good to Theory of the Better

In moral philosophy, we do something called "theory of the good." Curiously, there is no such topic as "theory of the better." Yet, consider how abstract the concept of 'good' is. Consider that we

are not trained to notice how much more concrete the concept of 'better' is. 'Better' is *located*.

Our lack of a theory of the better has, I suspect, held back progress on what we call ideal theory. Prominent scholars such as A. John Simmons, not to mention Rawls, write as if, contra Amartya Sen, we obviously cannot understand *better* except by reference to *perfect*.[4] Not so! We rarely have any clue what to regard as perfect. By contrast, almost every decision we make is implicitly a response to our seeing what would count as better. 'Better' usually is identified by comparison to a starting point, not an endpoint. 'Better' may involve imagining where we *want* to end up, and that will be a future-oriented idea. Yet, even that future thought will not be a conception of perfection. It will be a conception of what would improve on where we currently are.

Perfection, conceived in any substantive way, is itself a moving target. Adult ideals evolve over the course of an examined life. Ideals can mature. So, although of course we have targets, our targets are not *fixed* in a permanent way. We do not *need* such fixed targets. Thinking we can treat ideals as fixed targets—and thinking that without fixed targets we would have no basis for making decisions—is a way of thinking about ideals that fails to track what we know from experience.

Decision science aims to crank out theorems. We have simple models of rational agency that are close enough to being recognizably human to have interesting implications. Simplification is one of the objectives of theorizing in general, including scientific theorizing. A theory that illuminates is one that sticks its neck out and tries to boil the complexity of the human condition down to something simple. However, simplifying—trying to understand the simple essence of things—will not illuminate unless we keep in mind that it exposes us to a certain contingency. Specifically, there is no simplification without risk of over-simplification. Details we set aside as peripheral can turn out to be central in a particular case. That's life.

When scholars spin off and begin to discuss messy complexity, it is not because they aren't clever enough to crank out theorems. It's because they are trying to transcend the game of clever technicality and say something about the human condition that actually resonates with experience.

3. When More Is Better

I noted that 'better' is a concrete, located comparative idea. What about *more*? Should we assume "more is better?" In fact, "more is better" is a fruitful assumption notwithstanding the risk of it turning out to be an over-simplification in any given case. James March is right that assumptions such as this have put decision science and economics in a position to yield one insight after another into the human condition. Still, "more is better" is not fruitful by virtue of being necessarily true. It is not necessarily true. Neither is "more is better" fruitful because it defines away our need to worry about when it's time to stop. Instead, what makes "more is better" useful is that knowing the truism's limits can help us to see when to stop.

It is a personal ideal to stop, think, and genuinely decide. Taking personal responsibility for deciding when to stop wanting "more" generally will be an art that goes beyond the reach of decision science (including all the "nudging" in which people put such unwarranted faith nowadays). Computations may be part of a rational response to questions about when to stop, but another part of the response will be an existentialist responsibility to decide what to regard as worth wanting.

On one hand, there is a wide swath of human experience in which there is a grain of truth to the idea that more is better. On the other, suppose we test the assumption that more is better, and find cases that disconfirm. If we then take the hint that we need to reflect on what life is teaching us about when to stop, those are cases where we learn. Acknowledging grains of contingent truth and getting past tautologies frees us to draw contrasts. It sharpens our intuitive awareness of lines that

should not be crossed on pain of ruining ourselves by wanting too much.

Even more strikingly, Adam Smith in effect saw what a terrible thing it can be to want too little.[5] Smith understood that simply wanting "more" can diverge from wanting "better." That is to say, life is full of situations where unthinkingly wanting more could count as actually wanting too *little*. Smith saw workers laboring to bring services to market that were good for their customers, but he also saw that dark side of that otherwise excellent social dynamic: namely, workers working overtime for trinkets and thereby failing to properly respect the value of their time.[6]

Smith saw market society as creating a possibility of leisure. Where a Robinson Crusoe living a solitary life would not be able to make a pizza in ten thousand years, a city-dweller in favorable circumstances today can get a pizza for the price of a few minutes of labor. Smith was not, of course, saying citizens can now afford *pizza*; rather, they can now afford *leisure*. We can afford to stop and think. Of course, we can take what could have been leisure time and instead spend that time commuting from a distant neighborhood where we can afford a larger house. We can work overtime for trinkets. It is trite yet true to say wealth is our way of keeping score. Adam Smith could see that we do this, and he lamented that we don't spend our increasingly prodigious wealth stocking up on leisure. He would have agreed with the Society For Progress that the paradigms of business and management focus too much on performance and not enough on progress.

However, Smith might also have told us that the proper place of business per se is not to actively *settle* the value of leisure so much as simply to give us the luxury of time to stop and think. Commercial society has given us the time to constitute ourselves as a Society for Progress. Centuries ago, such a thing would hardly have been conceivable outside of a monastery. As Alan Krueger and colleagues recently said, money may be the currency of the economy, but time is the currency of life.[7] Commercial society has given us unprecedented latitude for choosing destinations of our own. It is a feature, not a bug, that commercial society cannot choose our destination for us. The mutual expectations that make us a society manage traffic. They help us to navigate. They help us to be advantageously predictable to each other; we learn how to stay out of each other's way. Above all, mutual expectations help us to cooperate, putting would-be cooperators in a position of knowing more or less who they can trust. Yet our ultimate destination—how we will use such opportunities and potentials as are available (whether natural or socially constructed)—remains up to us.

4. Rationality and Bias

People can have different beliefs even when they have access to the same information. There are forms of confirmation bias that limit how good we can be as philosophers. The order in which we process bits of information affects our readiness to take the next bit at face value. Therefore, you could take two identical clones and give them identical sets of information but feed them the identical bits of information in a different order. By the lights of decision science, that should make no difference. However, the first bit that comes in, if plausible, is provisionally accepted, and becomes a benchmark with which the next bit has to cohere. If it does not cohere with the next bit, and if the next bit is equally plausible, but not so plausible that it over-rules the first bit, then the second bit is rejected while the first belief, the incumbent belief, is retained. But if a second clone instead gets the second bit first, then the second clone instead retains that bit, and the two clones end up with different beliefs precisely because they each processed the identical information (but differently ordered) in real time. The fact that we process information one bit at a time would lead two clones of us to have different beliefs even though they are processing the same information.

A person is a process, unfolding in real time. Every judgment is temporally located, and our history of accumulated judgment provides our path-dependent framework for further judgment. We do not have the option of "all-things-considered" judgment. The simple fact that information processing is a *process* limits how good we can be at science or philosophy. We don't have to be biased to end up being skewed. All it takes is needing to process incoming streams of information in a temporal sequence. We can't do much about that.

Then it gets worse. A recent study of people's ability to process information about changing trends in global temperatures shows our processing ability being deranged by the most subtle evidence of an ideological orientation. A grayed out stylized cartoon of an elephant or a donkey in the background of the graph of changing temperature threw subjects off, regardless of which party they identified with. To some, a background image says relax, give this information the benefit of the doubt; the same image leads others to tense up, assume bad motives, and seek reasons to discount the information.[8]

We process information as if information processing were a team sport. That is a problem. We do well to be careful about classifying people, especially ourselves. Decisions we make about how to pigeonhole people compromise us as we go, undermining our ability to listen and learn. We imagine we are being responsible when we treat certain sources with skepticism, but often we are kidding ourselves. The uncomfortable truth is that people who see things differently are the ones from whom we have the most to learn.

4. Rationality as a Process

We all spend our lives writing a novel, a work of more or less historical fiction. We are characters in that novel. More than anything else, we want our story to be a story about it mattering that we were here. Look at any Facebook page. The iphone camera is a stunning commercial success. Why? Partly because it enables us to tell our life story in selfies.[9]

We might be heroes; that's up to us. There is an existentialist perspective, not easily ignored or discounted, from which it looks like nothing really matters at the end of the day. Yet, if anything matters to us personally, it is being able to be at peace with people coming after us, reading that novel, hearing our story, and knowing who we were.

Summarizing, and repeating: rationality and morality are not the same. No one should want to spend their lives proving that rationality and morality are tautologously co-extensive, rendered compatible by definition. In fact, bringing the two together is an achievement, not a given. The compatibility, indeed the synergy, between rationality and morality is a hard-won contingency, not a clever philosophical trick. For all that, however, the achievement is there for the taking. It is a robust and frequently realized possibility: an examined life can turn out to be a life worth living.

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[1] I thank the following for great conversations (at the Society for Progress and at the PPE Society) that have influenced me here: Elizabeth Anderson, Ken Arrow, Jay Barney, Josh Cohen, Robert Frank, Michael Fuerstein, Itzhak Gilboa, Charles Holt, Cathleen Johnson, Jim March, Ramon Mendiola, John Meyer, Susan Neiman, Subi Rangan, Al Roth, Amartya Sen, Vernon Smith, and Jean Tirole.

[2] Consider that *local* maximizing involves climbing toward the highest point in the vicinity of one's starting point, whereas *global* maximizing involves being willing to take costly steps back so as to get onto a different path from which higher points are accessible. For example, if you are a teen-ager, do you take the highest hourly wage you can get right now or do you go to college? My point is not that this refutes act-utilitarianism but that there can be a

downside to local maximizing. Thus, for the sake of global maximizing, morality may *require* people to stay in their lanes and be predictable to each other, thus enabling them to make plans and anticipate how to be of service to each other. For the sake of global optimizing, morality may *forbid* people to be unpredictably and sometimes dangerously free-wheeling maximizers—perpetually ready to save five by killing one.

[3] My first published thoughts on the arts of, respectively, choosing strategies and choosing ends are in David Schmidtz "Rationality within Reason," *Journal of Philosophy* 89 (1992): 445–66, and David Schmidtz, "Choosing Ends," *Ethics* 104 (1994): 226–51.

[4] Against Sen, Simmons says that, "We can hardly claim to know whether we are on the path to the ideal of justice until we can specify in what that ideal consists." Sen notes that we do not need to know that we are climbing the highest peak to know that we are climbing. Turning Sen's peak metaphor against him, Simmons concludes that, "which of the two smaller peaks of justice is the higher (or more just) is a judgment that matters conclusively only if they are both on equally feasible paths to the highest peak of perfect justice." See A. John Simmons, "Ideal and Nonideal Theory," *Philosophy and Public Affairs* 38 (2010): 5-36, at pp. 34,35. See also Amartya Sen, *The Idea of Justice,* Cambridge: Harvard University Press, 2009. My reflections on this debate can be found in David Schmidtz, "Nonideal Theory: What It Is and What It Needs To Be," *Ethics* 121 (2011) 772-96.

[5] David Schmidtz, "The Meanings of Life," *If I Should Die*, ed. Leroy Rouner (Notre Dame: University of Notre Dame Press, 2001): 170-88.

[6] My earlier note on local optimizing applies here. "More" can refer to more of the same, but life sometimes offers more than merely more of the same. It gives us an opportunity to rethink what we want from the time we have left.

[7] Alan B. Krueger, Daniel Kahneman, David Schkade, Norbert Schwarz, and Arthur A. Stone, "National Time Accounting: The Currency of Life," *Measuring the Subjective Well-Being of Nations: National Accounts of Time Use and Well-Being*, ed. Alan B. Krueger (Washington: National Bureau of Economic Research, 2009) 9-86.

[8] Douglas Guilbeault, Joshua Becker, and Damon Centola, "Social learning and partisan bias in the interpretation of climate trends," *Proceedings of the National Academy of Sciences* 115 (2018) 9714-19.

[9] I owe the example to Liz Anderson, in conversation, spring 2019.