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Behavioral Economics

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Bounded Rationality

PART A

Originally economics started with “*homo economicus*” which portrays an ideal person who makes decisions by **maximizing expected utility** perfectly and rationally. As stated by the model, people have to have stable **preferences and utilities**, cognitive ability, and full access to relevant information. They use belief from The Bayes’ Rule and act out of their own self interest, not by their emotions or social context. However, behavioral economics questions the framework by putting forward a more specific and accurate model of human decision-making, with **bounded rationality**.

Bounded rationality, a term made by Herbert Simon, is the idea that humans are not fully rational because our cognitive resources, attention, and information-processing are limited. This is different from the original notion of utility maximization and shows how people make decisions under uncertainty and time pressure. Instead of analyzing every single option, we often “satisfy” by selecting a choice that seems good enough under certain specific circumstances. For example, a person may choose a nearby restaurant not because it is the best possible choice, but because it is easy, convenient and satisfies their needs. Other examples may include clothing stores, gas stations, and convenience stores.

Behavioral economics revises the assumption of consistent, self-interested **preferences and utilities**. Many individuals do not act strictly out of self-interested as previously mentioned.

In real life, people's preferences are usually made in the moment and are influenced by the current moment. Instead, they are usually guided by **social preferences** including **fairness**, **reciprocity**, and **inequality aversion**. For example, people often deny unfair offers in the ultimatum game, even with a personal cost, because they see inequality as wrong and want to punish the unfair behavior. Those behaviors are not consistent with the *homo economicus* model but make sense with social context and fairness norms being considered that are bounded in reality.

Prospect Theory, made by Daniel Kahneman and Amos Tversky, shows another important insight into real-world decision making. Instead of making choices based on outcomes, people assess potential gains and losses in relation to a reference point. The **value function** in prospect theory is convex for losses and concave for gains, and gets steeper for losses rather than gains, showing **loss aversion**, where losses are larger than equal gains. For example, the pain in losing \$50 gives a worse feeling than the happiness gained from winning \$50. This leads to cautious behavior with people and avoiding investments or sticking to underperforming lower risk stocks.

Probability weighting also challenges the rational model. People tend to **overweight small probabilities** (e.g., lottery tickets) and **underweight moderate to high probabilities**, resulting in distorted risk perception. Furthermore, other cognitive distortions like **status quo bias** and **endowment bias** reinforce irrational behavior. **Status quo bias** reflects the tendency to prefer current conditions over change, even if change offers better outcomes. Similarly, **endowment bias** means we value things more simply because we own them, making it difficult to trade or let go of possessions. **Endowment bias** creates strong emotions tied to owned objects

that give meaning to the owner. Together, these biases disrupt optimal decision-making and show how inconsistent real preferences can be.

Behavioral economics portrays the strong influence of **cognitive biases**, which are systematic errors in thinking that affect judgement and decision making decisions. For example, **confirmation bias** convinces people to seek information that validates their existing beliefs and opinions, instead of looking at the evidence objectively. **Authority bias** causes people to overvalue opinions from people with authority, however, they still tend to overvalue even if their opinions and beliefs are wrong. Another part of irrationality is **collective illusion**, in which people tend to conform to social norms that they actually disagree with themselves. **Bandwagon effect** is about how people start believing certain things or copying behaviors only because other people are doing it, instead of reasoning out their beliefs themselves. All of these biases shed light on how people are not just robots and do not act exactly how they are perceived to act and may differ and change their opinions and think irrationally.

Not understanding how **probabilities** work also impacts decision making. Many people act on the **representative heuristic**, by thinking the likelihood of an event is based on how similar it is to a prototype or stereotype. Kind of like how if someone is dressed up in a suit and dressed up they must be a lawyer, even though there are many jobs where one might need to be dressed up. This thought process leads to **misconceptions about probabilities**, particularly in situations with randomness.

Behavioral economics touches up on the traditional model of decision making by highlighting how people treat future rewards. These people have a **time discount rate** that means they value future rewards lower. People want rewards now, that's why technology like smartphones and video games give instant gratification. This leads to **hyperbolic discounting**,

which is where they favor immediate rewards over future/later rewards, even when the reward in the future is bigger. This also leads to **procrastination** where people wait to start important not so fun tasks like studying for a test, or writing an essay, even though they should do them as soon as possible. People's preference for instant gratification gets in the way and hijacks future plans and goals for rewards in the present moment.

Lastly, behavioral economics works as a way to treat people with a more nuanced approach instead of treating all people as one unit that are most likely to behave in a certain way. By these new ideas, we have a new insight of how people truly make difficult and easy decisions based on their own opinions and beliefs or what might be most convenient to them and many other examples. Depicting people as individuals who have choice, and may choose options that are not always logical behavioral economists can create a stronger model.

PART B

Hyperbolic discounting in simple terms is where people value immediate rewards over future rewards even if the immediate rewards are smaller. This problem is shown in many areas such as schooling, financial and medical issues, etc. Hyperbolic discounting is not planned and calculated and is usually made in a quick last minute decision without the thought of our future selves.

One of the main ways hyperbolic discounting has affected me is academic procrastination. While I may have an assignment that may be easy and quick to complete I tend to delay starting it until the last day so I can get instant gratification now, while not thinking about my future self and the stresses it may put on me. At the beginning of semesters I tend to give myself goals and ambitions and slowly as the semester goes on I become lazy and tend to procrastinate. I've never been a person that often forgets to turn in assignments either, I know

when these assignments are due and I still delay completing them further and further. While finishing an assignment early and having more time in the future may seem nice, present tense tends to overvalue my present moment by watching youtube, playing video games, and hanging out with friends. This leads to late nights staying up rushing through an assignment, stressed and tired, realizing I should have completed this in all the free time I had earlier in the week. Video games and social media may always be there and I could do it once I complete my assignments, I still tend to value it in the present moment by getting in a few scrolls, or playing a few rounds of my favorite game.

Another way this has impacted my life is in exercising, I tend to be quite consistent with exercising for about a few months and eventually I start telling myself “one day off wont be so bad” which leads to 3-4 days to even weeks without exercising. Leading to short term pleasure and avoiding short term pain to get long term results (health) later down the road. I even tend to tell myself, “Oh I have so much homework I can't go to the gym” when in reality if I was more disciplined on not procrastinating and getting my work done early I'd have more time to be in the gym.

When it comes to policy suggestions and academic work procrastination, I believe teachers can start implementing in class interactive assignments with the teacher instead of solely lecturing and giving homework to do at home. I often find that talking with my peers and having the teacher in the classroom where I can easily ask questions without having to email and wait for responses is a much better learning environment than sitting in my room for hours doing homework on something I may have been lectured about earlier in the week in one of my 5-6 classes.

Exercise is something that would be difficult to implement policies for but I believe rewarding people for staying in shape in some way would leave to saving a lot of money down the road in health insurance and other ways. In the most simple way I believe promoting health applications to people that give push notifications and reminders to people to regularly exercise could be an easy way to prevent obesity and overall unhealthy activities.

Hyperbolic discounting is something that affects everyone in some way or another, as we are not perfect, things may slip through the cracks or we may value the present moment too much and avoid the feeling of punishing our future selves.

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