

# **PRINCIPLES OF BEHAVIORAL ECONOMICS**

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**Week 01**

**Lecture 02**

Welcome to lecture two of the course on Introduction to Behavioral Economics. We are basically introducing behavioral economics. So previously, I gave some broad ideas about how behavioral economics differs from mainstream economics and where it is trying to chip in. Now, we are going to talk about among other things, behavioral economics' relation to other sciences as well as its relation to economics.

Economic phenomena relate to any aspect of human behavior that involves the allocation of scarce resources. Thus, economics is very wide-ranging in its subject area. For example, all of the following can be described as economic phenomena, although they may also, of course, involve other disciplines of study. For example, searching for a future spouse on the internet, watching a documentary on television, making a charitable donation, deciding to take a nap rather than mow the lawn,

teaching one's child to play tennis, going to church, and so on. Broadly, if we think deeply, we realize that each and every decision in life could be driven by some concept of economics. Economics, like any other social science, is concerned with developing theories whose ultimate aim is to help us better understand the world we live in. Economic theories attempt to describe and explain relationships between economic phenomena.

In order to do this, they need to proceed on the basis of a number of assumptions and premises. So basically, I'm now trying to build a foundation for mainstream economics. Economic theories rely on explicit and implicit assumptions to generate predictions. While some assumptions are clearly stated, others remain hidden. Yet they are equally critical.

Identifying implicit assumptions matters because if a theory's predictions fail to match real-world observations, the problem will lie in its underlying assumptions. To diagnose the issue, we must verify the logical consistency between assumptions and predictions. This is why behavioral economics is relevant. As Camerer and Loewenstein succinctly put it, behavioral economics increases the explanatory power of economics

by providing it with more realistic psychological foundations. This was partly explained in the previous module itself. Hence, behavioral economics is not seeking to replace the standard framework of analysis. It seeks to add to this framework. It is important to emphasize that the behavioral economics approach extends rational choice and equilibrium models.

It does not advocate abandoning these models entirely. In order to understand these claims and also to understand various critics of behavioral economics, we must examine the major assumptions underlying the standard model alluded to in the quotation above and then consider various important and widespread phenomena where this model has run into some difficulty, often referred to as anomalies. But we will be talking about anomalies and the standard model in detail at a later stage.

But for the time being, we will just briefly talk about other perspectives on why behavioral economics needed to come into existence. We will also see that unrealistic assumptions may still yield useful empirical insights. It is difficult to conceive of economic theories that are not built on some kind of abstraction from the rich complexity of economic phenomena. This means that there will always be a trade-off between highly abstract but general behavioral assumptions such as those found in the standard model and empirically better grounded

yet often quite context-specific assumptions, as we find them in behavioral economics, an issue that was recognized as far back as 1991. It is in the nature of economic anomalies that they violate standard theory. The next question is what to do about it? In many cases, there is no obvious way to amend the theory to fit the facts.

Either because too little is known or because the changes would greatly increase the complexity of the theory and reduce its predictive yield. Standard Models and Economics The term 'standard model' has been used in the discussion to indicate a contrast between behavioral economics and what might be called 'mainstream' economics. So, the standard model is basically a part of mainstream economics. However, the distinction has been losing its validity over recent years.

To understand this dynamic, it is really necessary to consider 'standard models' in other areas of science. So, basically, before dealing with standard models in economics, let us check how it has proceeded in other subject areas or other fields of science. Talking about standard models in physics, perhaps the most fundamental, at least in a reductionist sense, is the standard model of particle physics,

which seeks to describe and explain the elementary particles and forces in the universe. This theory coalesced in the 1970s and has had great success in predicting the existence of new particles, notably the Higgs boson in 2012. However, it is acknowledged that the theory is incomplete since it does not account for gravity nor does it account for either dark matter or dark energy, which cosmologists estimate constitute about 96% of the mass-energy in the universe.

As a result, some might say this means that the standard theory is highly incomplete. Cosmologists further developed the model in the 1990s. Referring to a lambda CDM model, which does take into account dark matter and dark energy, but this is also incomplete and more speculative. Both of the above models have certain aspects in common with what has been called the standard economic model, but there are some differences also.

So what are they? Both have coalesced into a generally accepted standard model much more recently, and for that reason, can be claimed to have fewer anomalies. As a consequence, scientists expect further observations to result in minor modifications of the models rather than a drastic overhaul. However, caution is needed here since physics had the same attitude at the end of the 19th century,

believing classical physics was more or less complete, and then came the revolution of quantum mechanics and general relativity, which dramatically altered the previous 'standard model'. Now, talking about standard models in biology, perhaps the standard model closest to economics is in evolutionary biology with the newer Darwinian synthesis. As in economics, the main foundation was laid in the 19th century,

But fundamental modifications to the model were made in the 20th century to account for discoveries in genetics and then molecular biology. It wasn't until the discovery of DNA in 1953 that this model moved closer to being regarded as complete. Nevertheless, alternative models, most recently emerging from the so-called Evo-Devo literature in evolutionary biology, for example, out of attempts to better account for the morphogenetic development of organisms, proceed from different assumptions, and the underlying debates are far from resolved.

So where does this leave us as far as any standard model in economics is concerned? As we will see, the standard model in economics has its intellectual origin in the neoclassical tradition of economic thought and is, therefore, more appropriately referred to as the neoclassical model. By the end of the 1970s, it was clear that there were numerous

fundamental anomalies in this model, and these accounted for the emergence of behavioral economics.

For some decades, there was an uneasy tension in the economics discipline, with behavioral economics being regarded as an unruly offshoot from the mainstream, consisting of a number of often conflicting and ad hoc hypotheses with no coherent body of theory. This situation has gradually changed since the millennium, with more behavioral aspects becoming incorporated into the mainstream of the discipline. This may ultimately lead to the death of behavioral economics in terms of its current status as a collection of separate approaches.

Basically, this may get merged into the mainstream. Alternatively, if its main precepts all become absorbed into a revised standard model that is commonly accepted, then the distinction will cease to be meaningful. For this reason, we now regard it preferable to benchmark behavioral economics against a static neoclassical model rather than against a dynamic, constantly changing standard model.

In many ways, debates on economics about the strengths and weaknesses of a standard model are debates on useful and less useful ways of arriving at economic concepts and theories through abstraction from concrete phenomena. Methodological considerations are thus at the heart of many debates in behavioral economics. The best starting point for understanding these debates is to look at some of the methodological foundations of economic rationality and how it has been captured within the neoclassical model.

The standard model of rationality in the neoclassical tradition of economics is essentially a decision-making model which claims to be both descriptive and normative. Now, descriptive statements, as you understand, are something which basically describe a situation. If I say today the weather is very hot, then this is a description of the current situation. If I say I am not feeling well, that is again a

description of the current situation and normative, basically it comes from norms that is what it should be. Norms are slight different from rules only in the sense that rules are something which is stated and followed. Violations of rules may lead to some penalty but norms are generally followed by a particular society. So normative generally implies that what it should be. So for example if I say that students must study more or must study at least eight hours a day then that is a normative statement where I am talking about what should it be, how should it be.

This means that the model is supposed to both accurately describe, that is the standard model is supposed to both accurately describe how people behave. So basically it is a descriptive model and to prescribe how they should behave which is basically the normative part to achieve a certain given objective. Unfortunately, the term normative is used in two different senses by economists, causing certain confusion. Besides that, Kahneman and Tversky, the major contributors to the field of behavioral economics, they found it somewhat uncomfortable or at odd that a model cannot simultaneously be normative as well as descriptive

because we must not be behaving the way we are supposed to behave all the time. As a result of which, it should either be normative or should be descriptive. It cannot claim to be both simultaneously. Now talking about the confusion that currently the term normative is creating. Sometimes it is used in the sense of being opposite to positive.

Positive statements are descriptive statements again. Positive statements relate to descriptions involving factual information. Such statements can be judged to be correct or incorrect, often with a margin of error, based on empirical observation. Normative statements in this context relate to value judgments, which are necessarily subjective. They cannot be judged to be correct or incorrect empirically.

As a result, there is this conflict: descriptive or positive statements need not always be normative. An example is Statement 1, which says that it is not fair that Firm A pays its workers such a low wage. Such statements often include the words 'ought' or 'should'. For example, we might modify the above statement by saying, 'Firm A ought to pay its workers a higher wage.' So, in a way, this is a normative statement.

However, care must be exercised here because statements including these words are not always normative in the sense of involving a value judgment. For example, 'Firm A ought to pay its workers a higher wage if it wants to maximize profit.' You can see that this is now contextualized. Statement 3 does not involve a value judgment and can be evaluated empirically. Of course, one can question the social value of profit, but that is a separate issue altogether.

So now when I add this context, then it need not always be a normative statement. Confusion can arise because the last type of statement is also often referred to as normative, but it is actually not. In this context, the term normative is interpreted as a statement that refers to behavior as it should be if it were to accomplish goals in an optimal way, in

contrast to a descriptive statement that describes behavior as it actually is. It is perhaps preferable to label it as prescriptive instead of normative, as opposed to descriptive.

Prescriptive statements can be considered as policy implications for individuals, firms, or governments in terms of being guides to behavior, assuming a particular objective or set of values. Thus, such statements, or normative theories as they are often referred to, tend to involve some kind of optimization. A fundamental example is the theory of expected utility maximization. Prescriptive statements in the above sense always follow logically from descriptive statements.

For example, Statement 3 can be restated as follows: In Firm A's situation, a higher wage will maximize profit. A more precise prescription would determine the specific level of wage that would maximize profit. Thus, such prescriptive statements can always be evaluated empirically. Normative, in the sense of prescriptive statements, has various sources of appeal to social scientists.

Throughout evolutionary history, animal behavior has been shaped and constrained by its influence on fitness. So, a reasonable starting point for theory or model development is to view a particular behavior as an optimal or near-optimal adaptation to some set of problems. Second, discrepancies between observed behavior and the predictions of normative models are often illuminating. They can shed light on the neural and informational constraints under which animals make decisions, relating to Simon's concept of bounded rationality leading to heuristics and biases.

Alternatively, they may suggest that animals are, in fact, optimizing something other than what the model assumed. Treating behavior as optimal allows for the generation of computationally explicit hypotheses that are directly testable. So, this is the third-dimensional perspective. A simple example is the marginal cost equals marginal revenue rule for profit maximization. So, what role do value judgments play in normative statements?

When referring to normative statements as value judgments, it should be noted that sciences in general, including social sciences like economics, are not in any privileged position in terms of making such statements. The privilege which scientists enjoy is that they are better able to understand the factual implications of value judgments. Thus, while economists may not have any superior moral authority in judging whether Firm A is acting fairly, they may be able to point out that its existing low-wage strategy is likely to cause more labor unrest, higher labor turnover, and higher recruiting and training costs.

And as a result, this probably is not a desirable thing. That could only be the normative part or value judgment part of the entire statement. Further, talking about value judgment, our interest is not the validity of normative statements as value judgments, but the question of why people make certain value judgments; this is a psychological issue that has important policy implications in the prescriptive sense.

No theory of choice can be both normatively adequate and descriptively accurate, which, as I previously mentioned, drew the attention of Kahneman and Tversky. For example, in tic-tac-toe, rational strategies ensure a draw, but most economic situations are more complex, and purely rational models fail to explain actual behavior. Instead, understanding choices requires examining actual response strategies, which often deviate from the best response path, making individuals appear irrational.

The terms rationality and irrationality are central to economics, particularly behavioral economics, which explores why people act irrationally. In tic-tac-toe, for example, knowingly deviating from the best response strategy is irrational, but this view limits understanding by treating such behavior as an aberration rather than a valid phenomenon. So, rationality is used differently across disciplines; in everyday terms, it means using reason, but economists define it more narrowly within a means-end framework of instrumental rationality.

We will define rationality later with different assumptions, the way it is formulated in mainstream economics later. For the time being, this framework assumes individuals have complete and transitive preferences, enabling them to choose their most preferred outcome. Again, what do complete and transitive preferences mean unless it's already known to you, it will also be described later. Additional economic assumptions like monotonicity and convexity are also often added. However, this model applies only to decisions under certainty.

For uncertain outcomes, frameworks like expected utility maximization, pioneered by von Neumann and Morgenstern, and Bayesian probability estimations are most often used. Behavioral uncertainty arising from strategic interactions introduces further complexity, requiring assumptions like common knowledge. Some economists, like Vernon Smith, judge rationality by systemic outcomes, equating it with market efficiency. Others, like Kahneman and Tversky, use the standard model as a benchmark, finding frequent irrationality,

but argue that systematic errors and biases do not necessarily constitute irrational behavior. This highlights a shift from the standard model to alternative concepts of rationality that better explain observed behavior. Psychologists approach rationality differently. Baumeister defines a rational being as one who pursues 'enlightened self-interest', emphasizing three key concepts. First is 'pursue', second is 'enlightened', and the third one is 'self-interest'.

However, these require further examination. 'Enlightened' implies perfect knowledge, which is somewhat unrealistic. How many of us are actually enlightened? Terms like 'long-run self-interest' or 'perceived self-interest' are more useful as they account for conflict between short-run and long-run considerations and cognitive limitations.

Misjudging self-interest is not necessarily irrational or a failure of "bounded rationality", which refers to decision-making under constraints like incomplete knowledge or time pressure. Bounded rationality focuses on "satisficing" rather than optimizing. So, here, basically the term was popularized by or possibly coined by Herbert Simon. He talked about bounded rationality, which implies that our rationality has certain limitations.

Our ability to assess things and make good decisions has certain limitations. That's all about bounded rationality. What he says is that we are most often driven by "satisficing", meaning we have a target level of satisfaction. The moment we reach it, we stop there. So it's not about reaching the best possible outcome.

Because we are not "enlightened", because we are not perfectly calculating and enlightened individuals, so it's not possible that we would always be at the optimum possible outcome. We just have a target. If we are able to reach it, then that is good enough for us. That is the idea behind this.

The second concept is whether "pursuing" self-interest equates to maximizing. The normative model equates pursuing self-interest with maximizing expected utility, but bounded rationality often leads to heuristic decision-making using simple rules of thumb under uncertainty and time constraints. So heuristics are basically simple rules of thumb that are used for decision-making. So this can result in suboptimal outcomes, but it's not irrational.

Most often, we are not behaving rationally. So we end up having some optimal outcomes, but we cannot call ourselves completely irrational individuals. Misjudgments of self-interest, such as self-serving biases, may be considered irrational by some economists and

psychologists. So what is this "above-average" effect? Well, over half of survey respondents typically rate themselves in the top 50% of drivers, ethics, managerial prowess, productivity, and health.

Even when surveys are conducted among university faculty members, 50% of them consider themselves to be more than above average, or 90% of them rather consider themselves to be above average. So if, on average, 90% of them are above average, then basically the average is violated. That does not make any sense. But this is how we behave. This also comes from overconfidence or optimism. The third concept, "self-interest", is often measured in terms of utility, reflecting subjective value.

It does not exclude considering interests, as cooperation in social environments often furthers one's own interests. Behavioral economics distinguishes between "self-regarding" and "other-regarding" preferences, both of which can be combined in a utility function. Actions without deliberation, such as instinctive or subconscious behavior, are neither rational nor irrational, but they are called arational. This suggests that brain activity precedes conscious decisions, implying that many actions may be arational

with conscious deliberation merely accompanying rather than causing them. This raises the question of whether rationality pertains only to decision-making and actions or also to attitudes and beliefs. Economists focus on decision-making, while psychologists note that belief formation may be beyond conscious control. If decisions are also outside conscious control, attitudes and beliefs may similarly be arational. Economists generally try to eliminate the many ambiguities surrounding the notion of pursuing enlightened self-interest

By using the more precise and formal model of rational behavior described in the neoclassical model. So basically, as you understand, there is a lot of ambiguity surrounding the notion of pursuing enlightened self-interest. 'Enlightened' is actually quite a problematic term, and as a result, the mainstream actually tries to avoid all these things. By using some formal model of rational behavior that is described in the neoclassical model. Of course, it does not assume enlightenment, but it has several other assumptions that put a lot of restrictions on an individual's behavior.

And to a large extent, all these restrictive assumptions make the approach of economics quite far from the reality that is actually observed in the behavior of individuals. With this, I come to the conclusion of Lecture 2. These are the references I have followed for this lecture. Thank you.