

The philosophy of rationality in economics



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- Nikita Kohli

The ways of being human are bound but infinite.

-Larry Niven

An Introduction

There exists no single definition of Rationality, yet it forms the cornerstone of basal assumptions of standard models of economics.

A sweeping glance of the concept however, elucidates one fact. Rationality deals in human behaviour, it aims to understand its motivations and predict future outcomes based on choices. Rife with contradictions and limitations analogous to the innate complexity of human nature, this theory has been repeated altered and manifests itself in different ways with the progression of time.

Objectives: The primary objective of this paper is to qualitatively analyze economic literature and draw conclusions pertaining to the concept of rationality and its relevance in the world today.

Literature Review

This paper, as the title suggests, aims to examine the concept of rationality, its use both philosophically in the study of broad humanity as well as in its more specific application to economics and standard models of human behaviour.

In order to gain an understanding of early texts exploring concepts of rationality, such as the works of Aristotle and, the author relied on interpretative papers such as those of Fred Miller (1984).

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Various original works of authors have been studied chronologically to enable a historic overview of the concept, eventually yielding to contemporary work, implications and applications to various phenomena. Notable repositories of information such as the Palgrave Dictionary of Economics and critical essays on the subject of Rationality (a collection edited by Bill Gerrard) have been accessed.

The papers with their extensive reference lists gave the author insight into the vast literature focused on this specific subject.

Reviews and critiques, and studies in retrospect of concepts have been perused to help put an idea from another time into contemporary perspective.

PART – 1

Rationality: A historical Analysis

If one devalues rationality, the world tends to fall apart – Lars Von Trier

The first mention of the concept of Rationality is seen in the work of Aristotle; who states that the human being has a rational principle and the ability to carry out rationally formulated projects. (Miller, 1984).

‘ Homo Economicus’ or the ‘ Economic Man’ was a term that first appeared in the work of J. S Mill who described man as ‘ solely as a being who desires to possess wealth, and who is capable of judging the comparative efficacy of means for obtaining that end’. (Mill, 1844). This is the base of the most widespread assumption in economics – that man strives to only maximize his

utility and satisfaction, and this trait, intrinsic to all men, is termed ‘rationality’.

Jevons, the forbearer of mathematical economics propounded a quantitative measure of the utility function. In stressing on the concept of marginal utility, he put forth some basic tenets of the utility consumption theory, namely that economic agents derive utility by consumption of goods, and that they are rational, calculating maximisers. In attempting to ‘treat the economy as a calculus of pleasure and pain’, Jevons (1871) set the foundations for a paradigm of Economics, which was deeply rooted in individualistic theories of motivation and decisions.

Von Mises (1949), in his seminal work on human nature and decision making, asserted that human action is ‘necessarily always rational’. His understanding of rationality, however, differed from that of his successors in the field of Economics. He believed that every human being acted in a way that furthered their self-interest and was to achieve some end goal. When viewed in pure subjectivity, no action can be termed irrational as every human being acts out of some motivation, thus making the action ‘rational’.

Concepts of Rationality: A contemporary analysis

All human behavior is scheduled and programmed through rationality. –

Michael Foucault

In the early 1960s, mathematical economist John Muth (considered the Father of the Rational Expectations Revolution in Economics) put forth a body of work that would leave an indelible mark on the rationality discourse. For the first time, a significant difference in economic analysis was made,

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that between 'adaptive' and 'rational' expectations. Muth's work and the theory of Rational Expectations was considered iconoclastic at the time as it proposed a shift in knowledge processing, analysis and decision making.

Neo-classical economics, as propounded by Friedman, Keynes and others dealt with systems and analysis using historical data. This was termed 'adaptive'. Adaptive neo-classical theory forms the basis for many policy decisions, be in pump-priming investment or monetary contraction. Policy is created in keeping with past results and some common assumptions in economics – people will demand more when the government invests in the economy etc.

In contrast, Rational Expectations take into view the whole economy, in its real-time functionality, and uses imbibes current information in its analysis. It propounds that 'rational agents' continuously update their information and take into account the whole system. As Muth (1961) asserts, 'the economy does not waste information, and that expectations depend specifically on the structure of the entire system. In addition to this fundamental tenet, this school of thought also states that markets will always clear; prices will adjust to fluctuations in supply almost immediately.

When this concept is extrapolated to encompass the macro economy, it is often stated that no government policy or exogenous shock can shake up the system. This is because of the existence of rational agents, who, using their knowledge of existing phenomenon, expect certain outcomes and adjust their course of action accordingly. For instance, in a recessionary period, sellers will not let their prices fall. They behave in this manner

because they are aware of the current scenario and preempt government investment intervention to attenuate falling demand. Thus they expect their demand to rise in the near future.

As Greg Egan would put it, ' *It all adds up to normality* ' .

While implicit in the Rational Expectations theory is the existence of perfect knowledge, transmuted into rational decisions, there emerged a field of study which emphasized the shortcomings of knowledge and information acquisition.

The term ' Bounded Rationality ' was introduced by Herbert Simon in his book *Models of Man* (1957). While in spirit adhering to the belief that human beings are rational, Simon's theory observed a critical failing; that of the assumption of complete information. In this structure, human behaviour is viewed not in terms of rational, utility maximizing behaviour. Instead, it is seen as a series of actions, often not compatible with each other, decisions taken in situations of partial information and based on limited reflection. This accounts for the limitations to both knowledge and cognitive capacity.

Taking this idea further, simmering in the field of human behaviour vis a vis economic processes, is the belief that human beings can sometimes be ' Irrational ' . Carrying out specific studies in this area, economist Dan Ariely finds surprising results. In a given situation, a person may make a choice which will not benefit them in the future, may not help them immediately, and the decision is made in the light of these two eventualities. Ariely explains that this is because human behaviour is not always controlled by rational motives, it is highly impulse driven and impacted heavily by

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exogenous factors. In the early 1960s, Gary Becker put forth the same idea; only that he believed even irrational agents can work ‘smoothly as a single unit’. Human irrationality, he states, was in fact rational.

PART 2 – NUANCES OF RATIONALITY

Amartya Sen anchors a clear distinction in the approaches to Rationality in literature. He divides them into two broad categories –Instrumental RationalityandSubstantive Rationality. Substantive rationality is when one acts out of objectively, independently defined self interest. This lends itself to the General Equilibrium theory, the starting point of individual behaviour is a predefined utility function, and choice arises from this within the constraints imposed. Instrumental rationality dons a more humane approach wherein it allows for objectives that are not restricted to solely self-interest. This methodology acknowledges the influence of other factors on rationality. Sociologist Max Weber states a similar idea; that of *Wertrational* or value/belief-oriented rationality, wherein the motives for action are often driven by reasons intrinsic to a particular actor, such as specific emotions, societal or spiritual aspects.

Daniel Kahneman and Amos Tversky have made important contributions to the understanding of rationality and reactions to choice. The Prospect theory attempts to describe decisions under uncertainty. It empirically proves that a decision making process is often not rational; people are risk-averse when they stand to incur losses and risk-taking when they stand to gain. Another obstacle to ‘rational’ thinking is the problems posed by ‘heuristics’ (Kahneman & Tversky, 1974). Heuristics are mental short-cuts, which usually involve focusing on one part of a complex problem and often ignoring the

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larger, more complete set of information. This limited perception of the issue at hand is used to make a decision.

In any sphere of study, the influence of external social factors cannot be denied, on a superficial level, this impact could manifest itself in the way of the ' Demonstration' or ' Bandwagon' effect. On deeper examination, we see that these exogenous factors often define an individual's sense of Rationality, which leads us to realize that Rationality can never be completely objective or homogenously innate to all.

Adopting a pragmatic approach to the limitations posed by imperfect knowledge, Herbert Simon proposes the term ' satisficing'. He pointed out that human beings lack the cognitive resources to optimize: the relevant probabilities of outcomes are usually, thus the evaluation of all outcomes with sufficient precision is rare, if not impossible. A more realistic approach to rationality takes into account these limitations.

An important application of the rationality principle in neo-classical economic theory is in the analyses of perfect competition. Competitive equilibrium is said to have been reached when each person maximizes their utility, given a certain set of assumptions (no externalities). This state of equilibrium will tend towards Pareto Optimality as it is assumed that the Pareto Optimal state is one where there is perfectly competitive equilibrium at a given set of prices and some initial distribution of resources. Every rational utility maximizer is in equilibrium, wherein no one can be made better off without hurting another's well-being and current status. This basal assumption of

rational behaviour establishes the relationship between the aforementioned concepts.

PART 3: CONCLUSION

In everything, one thing is impossible: rationality – Nietshchze

This paper has attempted to shed light upon the various dimensions of rationality, as depicted in economic phenomenon. Problems arise however, with the implicit assumption of rationality in models involving human behaviour in varied situations.

Rationality implies comprehensive knowledge of the current economic system, which is then factored into the decision making process. In keeping with the 'Efficient Market Hypothesis', markets will always correct themselves and clear as people are able to adapt and adjust to fluctuations almost immediately, due to their information. It has also been argued that natural processes of elimination ensure that rationality perpetuates itself, where those who act 'rationally' work optimally. This can be seen in nature, in the principle of 'survival of the fittest'. Milton Friedman also draws this parallel to markets, where non-profit maximizing firms are driven to a wall so that only the 'rational', profit maximizing firms may survive. (Friedman, 1953).

These applications and assumptions are rife with shortfalls. The first limitation is that of 'knowledge'. Acquisition of this perfect knowledge to facilitate rationality is expensive, consumes resources, and in many cases proves impossible to obtain. To assume that perfect knowledge is a prerequisite for rational behaviour limits its scope.

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While looking at markets and macro-structures, one can see rational expectations as the underlying force in stock markets. These markets are extremely sensitive to minor fluctuations and react almost instantaneously to restore equilibrium. The same cannot be said of the economy. It is impossible to expect policy to change, or its impact to be as versatile as is seen in the stock markets. The case of the rupee depreciation illustrates this point, wherein the stock markets adjust to the disturbance, but the economy is left flagging.

Chamberlin points out, that for Perfectly Competitive equilibrium to exist, there at first must exist a certain measure of disequilibrium. He states that not merely pure, but perfect competition is requisite for the rationality hypotheses can have their full power. The existence of the initial disequilibrium, in conditions of complete rationality, proves to be contradictory.

Another limitation of the rationality assumption is that it makes for models that are normative, rather positive. Formally and explicitly, these provide frameworks to understand how agents *should* act in order to maximize their self interest. This fails in its predictive capacity, to see how one *will* behave in the future.

We're all mad here - Cheshire Cat, Alice in Wonderland

Rationality is assumed to be highly centered on the individual. But as Kenneth Arrow (1986) points out, rationality gathers not only its force, but very meaning from the social context in which it is embedded. It holds only under ideal conditions, the nature of which is not seen in the world today.

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Adam Smith in the *Theory of Moral Sentiments* attributes actions to not only self-interest, but more humane factors like love, benevolence and community feeling.

A science taking into account human behaviour must closely study its major drivers. Exposure to various social factors and upbringing influences the way people think. Defining rationality becomes problematic, what is rational to one may be deemed irrational to another. For instance, faith, religious belief, personal opinions and ideology are not universal in their impact and acceptance.

Rationality then becomes extremely contextual; one person's rationality is bound to not hold in another person's situation. Rationality can also be temporal, due to the lack of accurate information about the future; what holds true today or in the immediate foreseeable future, may not hold in the long-run.

The limits and bounds to rational thinking are not clear and universal, they're morphed and moulded and coloured by personal experiences and biases.

A crucial distinction needs to be made about what kind of behaviour is rational and what is not, and what models of behaviour may be useful in predicting actual behaviour. Taking into account various individualities poses a great challenge, but to attribute motivation and action to perfect rationality, especially in the context of subjective human behaviour, is problematic. Anomalies will be patent to the process of fitting human nature and motives into an objective framework.

The author concludes that an assumption about human beings, especially one as pervasive as assumed rationality, is dangerous. At the same time, accounting for individual drivers is nearly impossible. Policy, and core economic theory must be able to account for, at the very least acknowledge, these discrepancies. This is the only way to create frameworks which may work with greater precision.

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