

Rational choice theory

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INTRODUCTION:

Social work theories help social workers analyze cases, understand clients, create interventions, predict intervention results and evaluate outcomes. While the theories are constantly evolving as new evidence is produced, referencing social work theories that have been used over time enables social workers to explore causes of behavior. They can then help their clients find the best solutions.

Learning about various social work theories helps remind social workers that their personal assumptions and beliefs should be suspended during social work practice. Social workers should use evidence-based theories to investigate issues and drive their practice, instead of applying their own attitudes, reactions and moods to client work. This theories helping people to help themselves. What do we mean by helping people to help themselves?

1. Increased understanding of oneself or a situation.
2. Being able to make a decision
3. Being able to confirm a decision.
4. Being able to get a support for a decision.
5. Being able to change a situation
6. Adjusting to a situation that is not going to change
7. Being able to examine options and choosing one
8. Being able to discharge feelings [1]

So, we have 6 the most important social theories: Social Learning theory, System Theory, Psychosocial Theory, Psychodynamic Theory, Social Exchange Theory, Rational Choise Theory.

Now, we came to our research theme – Rational Choice Theory. What is Rational Choice Theory? Rational choice theory can apply to a variety of areas, including economics, psychology and philosophy. This theory states that individuals use their self-interests to make choices that will provide them with the greatest benefit. People weigh their options and make the choice they think will serve them best.

How individuals decide what will serve them best is dependent on personal preferences. For example, one individual may decide that abstaining from smoking is best for them because they want to protect their health. Another individual will decide they want to smoke because it relieves their stress. Although the choices are opposite, both individuals make these choices to get the best result for themselves.

Rational choice theory conflicts with some other theories in social work. For example, psychodynamic theory states that humans seek gratification due to unconscious processes. Conversely, rational choice theory states that there is always a rational justification for behaviors. Individuals try to maximize their rewards because they're worth the cost.

Rational choice theory origins date back centuries. Philosopher Adam Smith is considered the originator of rational choice theory. His essay "An Inquiry into the Nature and Causes of the Wealth of Nations," [2] from 1776, proposed human nature's tendency toward self-interest resulted in prosperity. Smith's term "the invisible hand" referred to unseen forces driving the free market.

RELEVANCE – Those who are studying for a social work degree will learn a variety of evidence-based theories to help them inform their work. Learning and understanding the meaning behind rational choice theory and seeing rational choice theory examples help future social workers characterize, explain and anticipate social outcomes. That can improve the treatment and services they provide their clients.

Rational choice theory can be helpful in understanding individual and collective behaviors. It helps to pinpoint why people, groups and society as a whole move toward certain choices, based on specific costs and rewards.

Rational choice theory also helps to explain seemingly “irrational” behavior. Because rational choice theory states that all behavior is rational, any type of action can be examined for underlying rational motivations. Rational choice theory can promote inquiry and understanding, helping differing parties, like a client and a therapist, to recognize the other’s rationale.

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A limitation of rational choice theory is that it focuses on individual action. While one could say that individual action drives large social structures, some rational choice theory critics argue the theory is too limited in its explanation.

Another weakness of rational choice theory is that it doesn’t account for intuitive reasoning or instinct. For decisions that must be made in an instant, such as decisions that influence survival, there may not be time to weigh the costs and benefits

Formulation of the research problem

Optimization of behavior strategy in the situation. The issue of "Prisoner's Dilemma". of James Coleman rational choice ("Foundations of Social Theory" (1990)). Rational choice is different as positive attitudes about people and how optimize behavior strategy in the situation?

COCLUSION OF THE 1st PART

Human behavior is a complex and multi-dimensional subject that has been studied by psychologists, anthropologists, sociologists, and other social scientists for many years. Research into human behavior seeks to understand the factors that influence how people think, feel, and act in different situations. Some of the key areas of research into human behavior include:

Social Psychology: This branch of psychology focuses on how people interact with one another and how they are influenced by social norms, group dynamics, and other social factors.

Cognitive Psychology: This area of research explores how people process information, make decisions, and solve problems. It also investigates the role of memory, attention, and perception in human behavior.

Developmental Psychology: This field examines how people change and develop throughout their lives, from infancy through old age. It seeks to understand the factors that influence growth and development at different stages of life.

Personality Psychology: This branch of psychology studies the enduring patterns of thoughts, feelings, and behaviors that make up a person's unique personality. It seeks to understand the factors that shape personality and how it influences behavior.

Behavioral Neuroscience: This area of research focuses on how the brain and nervous system influence behavior. It seeks to understand the neural processes that underlie human behavior and how they are affected by different factors.

Some recent research topics in human behavior include the impact of social media on mental health, the psychology of decision-making in business, the influence of culture on behavior, and the effects of stress on physical and mental health. Overall, research into human behavior is a vital area of study that helps us to better understand ourselves and others, and to develop more effective interventions to promote health, well-being, and social harmony.

Coleman's Foundations of Social Theory (1990), based on economic models, **suggests that the individual makes rational choices in all phases of social life.**

The prisoner's dilemma is a paradox in decision analysis in which two individuals acting in their own self-interests do not produce the optimal outcome.

METHODOLOGY

Rational choice theory is a social scientific paradigm that assumes that individuals make decisions that are rational and self-interested. The theory has been applied in various fields, including economics, political science, sociology, and psychology. The prisoner's dilemma is a classic example used to illustrate the application of rational choice theory in social situations. While the theory has its limitations, it provides a useful framework for understanding how individuals make decisions in social situations where their choices affect other individuals' outcomes.

A prime example of game theory, the prisoner's dilemma was developed in 1950 by RAND Corporation mathematicians Merrill Flood and Melvin Dresher during the Cold War (but later given its name by the game theorist Alvin Tucker). Some have speculated that the prisoner's dilemma was crafted to simulate strategic thinking between the U.S.A. and U.S.S.R. during the Cold War.

Today, the prisoner's dilemma is a paradigmatic example of how strategic thinking between individuals can lead to suboptimal outcomes for both players.

Understanding the Prisoner's Dilemma

The typical prisoner's dilemma is set up in such a way that both parties choose to protect themselves at the expense of the other participant. As a result, both participants find themselves in a worse state than if they had cooperated with each other in the decision-making process. The prisoner's dilemma is one of the most well-known concepts in modern game theory.

The prisoner's dilemma presents a situation where two parties, separated and unable to communicate, must each choose between cooperating with the other or not. The highest reward for each party occurs when both parties choose to co-operate.

The classic prisoner's dilemma goes like this:

Two bank robbers, Elizabeth and Henry, have been arrested and are being interrogated in separate rooms. The authorities have no other witnesses, and can only prove the case against them if they can convince at least one of the robbers to betray their accomplice and testify to the crime. Each bank robber is faced with the choice to cooperate with their accomplice and remain silent or to defect from the gang and testify for the prosecution. If they both co-operate and remain silent, then the authorities will only be able to convict them on a lesser charge resulting in one year in jail for each (1 year for Elizabeth + 1 year for Henry = 2 years total jail time). If one testifies and the other does not, then the one who testifies will go free and the other will get five years (0 years for the one who defects + 5 for the one convicted = 5 years total).

However, if both testify against the other, each will get three years in jail for being partly responsible for the robbery (3 years for Elizabeth + 3 years for Henry = 6 years total jail time).

What Is the Likely Outcome of a Prisoner's Dilemma?

The likely outcome for a prisoner's dilemma is that both players defect (i.e., behave selfishly), leading to suboptimal outcomes for both. This is also the Nash Equilibrium, a decision-making theorem within game theory that states a player can achieve the desired outcome by not deviating from their initial strategy. The Nash equilibrium in this example is for both players to betray one other, even though mutual cooperation leads to a better outcome for both players; however, if one prisoner chooses mutual cooperation and the other does not, one prisoner's outcome is worse.

What Are Some Ways to Combat the Prisoner's Dilemma?

Solutions to prisoner's dilemmas focus on overcoming individual incentives in favor of the common good. In the real world, most economic and other human interactions are repeated more than once. This allows parties to choose strategies that reward cooperation or punish defection over time.

Another solution relies on developing formal institutional strategies to alter the incentives that individual decision-makers face. Finally, behavioral biases will likely develop over time that undermine "rational" individual choice in prisoner's dilemmas and lead groups of individuals to "irrationally" choose outcomes that are actually the most beneficial to all of them together.

Can the Prisoner's Dilemma Be Useful to Society?

Prisoners' dilemma problems can sometimes actually make society better off as a whole. A prime example is the behavior of an oil cartel. All cartel members can collectively enrich themselves by restricting output to keep the price of oil at a level where each maximizes revenue received from consumers, but each cartel member individually has an incentive to cheat on the cartel and increase output to also capture revenue away from the other cartel members. The end result is not the optimal outcome that the cartel desires but, rather, an outcome that benefits the consumer in terms of lower oil prices.

What Is the Tragedy of the Commons?

The tragedy of the commons is a theoretical problem in economics that proposes every individual has an incentive to consume a resource, but at the expense of every other individual—with no way to exclude anyone from consuming. Generally, the resource of interest is easily available to all individuals without barriers (i.e. the "commons"). This hypothetically leads to over-consumption and ultimately depletion of the common resource, to everybody's detriment. Basically, it highlights the concept of individuals neglecting the well-being of society in the pursuit of personal gain. Its accuracy and application are debated. [3]

Real life examples

Some game shows use a similar principle to determine the winners of either the round or the final. An example of the dilemma was shown in 2012 on the British game show *The Bank Job* at the final of each season: the two players who made it to the final had to decide how to dispose of the winnings. Half of the total jackpot played was in suitcases marked CASH, the other two were newspaper clippings marked TRASH (the player has one suitcase of each type). Each player had to take one of their suitcases and give it to the other. If both players received suitcases of CASH, then they divided the winnings in half. If one gave the suitcase to TRASH, then he took the entire bank of the game. If both gave TRASH, both were left without money, and the winnings went to the players who dropped out at the previous stages of the final.

The examples of prisoners, the card game, and the exchange of closed bags may seem far-fetched, but in fact there are many examples of human-animal interactions that have the same payoff matrix. Therefore, the prisoner's dilemma is of interest to social sciences such as economics, political science, and sociology, as well as branches of biology, such as ethology and evolutionary biology. Many natural processes have been generalized into models in which living beings participate in endless prisoner's dilemma-type games. This broad applicability of the dilemma makes this game of considerable importance.

In political realism, for example, the dilemma scenario is often used to illustrate the problem of two states involved in an arms race. Both states will declare that they have two options: either increase military spending or reduce armaments. In this case, the postulates of the prisoner's dilemma ($D > C > d > c$)[3] are obviously fulfilled:

D - "we are armed, but the enemy is not" - the best outcome, the greatest security;

C - "no one armed" - the next preferred outcome;

d - "both armed" - bad, but not catastrophic;

c - "we did not arm ourselves, but the enemy armed himself" - a catastrophic outcome.

From the point of view of side A, if side B does not arm, then for A the choice is between D and C - it is better to arm. If B is arming, then for A the choice is between d and c - again, it is more profitable to arm. Thus, for any choice of B, it is more profitable for side A to arm. The situation for side B is exactly the same, and both sides will eventually seek military expansion.

William Poundstone, in his book on the prisoner's dilemma, describes a situation in New Zealand where newspaper boxes are left open. It is possible to take a newspaper without paying for it, but few people do this, because most people are aware of the harm that would be if everyone stole newspapers. Since the prisoner's dilemma is, in its purest form, simultaneous for all players (no one can influence the decisions of others), this common line of reasoning is called "magical thinking". As an explanation for the absence of petty theft, magical thinking explains voluntary voting in elections (where the non-voter is considered a hare). Alternatively, this behavior can be explained by the expectation of future actions (and does not require connection with "magical thinking"). Modeling future actions requires adding a time dimension, which is done in a recurring dilemma.

The theoretical conclusion of the dilemma is one of the reasons why plea bargaining is prohibited in many countries. Often the scenario of the dilemma is repeated very precisely: it is in the interest of both suspects to confess and testify against the other suspect, even if both are innocent. Perhaps the worst case is when only one is guilty, in which case the innocent is unlikely to confess to anything, and the guilty will go for it and testify against the innocent. [Source not specified 2041 days]

Many real life dilemmas involve multiple players. Though metaphorical, Hardin's "tragedy of the commons" can be seen as a generalization of the dilemma for multiple players. Each resident of the community chooses whether to graze cattle on a common pasture and benefit by depleting their resources, or to limit their income. The collective result of the general (or frequent) maximum use of the pasture is low income (leading to the destruction of the community). However, such a game is not formal, as it can be broken down into a sequence of classic 2-player games. [4]

Dmitry Balanov in his study considered the impact of socialization on increasing the predictability of actions - both for an individual and a group of people in a situation of solving a social dilemma. At the same time, the scientist used the capabilities of neural networks as a means of categorizing the results in terms of the strategy used by the player, as well as the influence of social factors.

Dmitry Balanev explained:

“In the course of the study, we analyzed the behavior of strangers - before the “socialization” training and after its impact. Then, with the help of neural networks, the patterns of change in the player's strategy were determined. As a result, questions were considered about how inclined real players are to use strategies in their pure form and whether they are inclined to use the same strategy before and after the experiment.

The experiment consisted of three stages. First, the study participants had to complete the iterative prisoner's dilemma task with a random partner. At the second stage, participants in groups performed a number of tasks to be included in social interactions. The purpose of the third stage is to measure the effect of socialization. Each period, the participants were randomly divided into pairs, while they were informed that they were definitely playing with someone from their subgroup.

Thus, we can say that the experimental influence leads to a significant increase in the predictability of the players' actions, and socialization can become a mechanism for increasing the degree of certainty in the choice of strategy when solving the social "prisoner's dilemma". However, the problem of identifying those strategies that turned out to be unidentified remains relevant. [5]

DATA ANALYSIS

Applications of Rational Choice Theory:

Rational choice theory has been applied in various fields, including economics, political science, sociology, and psychology. In economics, the theory has been used to explain how individuals make decisions in markets, where they must weigh the costs and benefits of various options available to them. In political science, the theory has been used to explain how voters make decisions in elections, where they must weigh the costs and benefits of various political platforms. In sociology, the theory has been used to explain how individuals make decisions in social situations, where their choices affect other individuals' outcomes. In psychology, the theory has been used to explain how individuals make decisions in interpersonal relationships, where they must weigh the costs and benefits of various actions.

Rational consumer behavior

Having studied the literature on the topic, I learned that the topic of rational consumer behavior is a component of microeconomics. It is assumed that the behavior of the individual is rational, that is, maximum satisfaction is achieved with a limited budget. The most important is the principle of maximizing utility. It is considered basic in human behavior and in determining his choice.

Utility is the ability of a good to satisfy specific needs. Quality plays the most important role. In addition to it, durability, appearance, ease of use, comfort, luxury, and the like have a significant impact. Another important principle that influences rational consumer behavior is human sovereignty. That is, as far as it is not subject to external influence. So, every person should eat well to be healthy and active. Let's say that a touchscreen phone has appeared on the market, which many consider to be a status phone. And a person has a choice: to buy an expensive and not very necessary thing and then eat modestly for six months, or to do without such a little thing and spend money on food and other useful things. If he chooses the first option, then there is no need to talk about the rational behavior of the consumer. There are numerous examples of such a relationship.

We are interested in rational consumer behavior. The action plan of each individual person provides for activity within the framework of his system of preferences. But it is extremely difficult to take into account specific values here due to consumer interaction effects. Let's look at what their types exist: The snob effect. In this case, it implies the creation of a situation where the purchase is made solely in order to emphasize

one's social position. Veblen effect. By this is meant a situation where purchases are made defiantly and emphatically, which make it possible to highlight the position of a person. Typically, this refers to the purchase of goods that are extremely expensive and not available to most people. The perceived quality effect. This is a situation where goods with the same characteristics are sold at different prices in different stores. The effect of joining the majority. It is an expression of the desire not to yield to other people who are more "successful" in anything. Irrational demand. A purchase is made only because it was made by some other person who has a significant influence on the buyer. So, the consumer chooses the most preferable set of goods from the sets (which is determined by the income of the consumer of the entire set of available goods and the prices of goods).

Results of a sociological survey:

I conducted a survey among consumers aged 16 to 25 years. For the following questions:

Do you consider yourself a smart buyer? 41% says yes

What do you base your choice on when shopping: believe advertising, on the advice of friends, low prices, other

When will you buy winter shoes? (summer or winter) – 59 % says summer

Where will you buy groceries:

A) close to home, regardless of the price 43%

B) look for stores with low prices 21%

C) supermarkets. Why? 36% most common answer is wide choose

The answers was pretty simple, nobody care a lot but we can notice Rational Choice.

5. What should be done in order not to spend money on unnecessary purchases and remember to make the right ones? No current answer

6. Buying motives:

1) Rational: the desire to save money; 31%

2) Emotional: a feeling of superiority or a desire to be better than others; 69%

Conclusion.

The choice of the consumer depends primarily on his needs and tastes, habits, traditions, i.e., on the preferences of the consumer, which are based on the recognition of the advantages of some goods over others. The choice of the consumer is determined not only by his preferences, but also by the price of the chosen products, as well as his limited income and opportunities. Therefore, an important factor is the price of the good.

The theory of consumer behavior recognizes as a rational consumer the person who really chose the best (from their subjective point of view) variant of consumer behavior. But, however, according to the results of the survey, one can judge that consumer behavior in the market is far from always rational: goods are bought in vain, and sometimes the consumer is disappointed in his purchase. All this is a waste of money. Therefore, everyone should better study the theory of rational consumption and remember the main rules of behavior of a rational consumer and apply them in practice. These tasks can be achieved through an in-depth study of the subject "Economics" at school, in particular the theory of rational consumption, in the future - the release of a leaflet with the rules of rational consumption, and courses on rational consumer behavior can be conducted for older people.

LITERATURE REVIEW

The main literature that was used in this research project Farmer M. Rational Choice: Theory and Practice, James Coleman rational choice ("Foundations of Social Theory" (1990) and Dispositional and situational prerequisites for making a decision under conditions of uncertainty (on the example of the "prisoner's dilemma" problem) Dispositional and situational premises of decision-making under uncertainty (the prisoner's dilemma task), Dmitry Balanevs research

CONCLUSION OF 2ND PART

Rational choice theory usually includes social choice theory (consideration of a set of preferences) and game theory (analysis of strategic interactions). Social choice theory has grown out of an analysis of problems in the economics of the welfare society: the "social welfare function" attributed to this society is in this case the judgment of a certain individual about the relationship between the welfare of individuals and the "welfare of society" as a whole (Bergson, 1938; 1954). K. Arrow gave this problem the status of a constitutional one, linking it to the totality of judgments of a certain number of individuals about the relative preference for an alternative state of affairs (Arrow, 1963; 1967). After that, he was able to prove his famous "impossible theorem" that there is no formula to guarantee that a set of internally consistent individual preferences will turn into a coherent "hierarchy of social preferences" relative to the existing order of things.

Does rational choice lead to herd instinct, deafening the senses? The main The cons of the rational model

The process is sometimes constrained by insufficient information, which creates problems if a manager has to consider, and then evaluate, any alternatives they need to reach a decision. Time limitations can also be an issue. Since there's a lot of information needed, the necessary time for observation, collection and analysis is also essential. In a fast-paced business environment where time is crucial, the rational model is somewhat limited. It's also an approach that tends to err on the side of caution. By limiting decision-making based on what's only available, you may not be able to take the risks that can be necessary for success.

BIBLIOGRAPHY

[1] S.Rengasamy – Theories of Social Work Madurai Institute of Social Work <https://www.slideshare.net/srengasamy/theories-of-social-work>

[2] Social Circumstances and Rationality: Some Lessons from Adam Smith Why We May Not All Be Equally Sovereign – <https://www.jstor.org/stable/3488050?seq=1>

[3] INVESTOPEDIA RESEARCH ABOUT PRISONERS DILEMMA – [Investopedia](https://investopedia.com)

[4] https://ru.wikipedia.org/wiki/%D0%94%D0%B8%D0%BB%D0%B5%D0%BC%D0%BC%D0%B0_%D0%B7%D0%B0%D0%BA%D0%BB%D1%8E%D1%87%D1%91%D0%BD%D0%BD%D0%BE%D0%B3%D0%BE#%D0%90%D0%BB%D1%8C%D1%82%D0%B5%D1%80%D0%BD%D0%B0%D1%82%D0%B8%D0%B2%D0%BD%D0%B0%D1%8F_%D1%84%D0%BE%D1%80%D0%BC%D1%83%D0%BB%D0%B8%D1%80%D0%BE%D0%B2%D0%BA%D0%B0

[5] Information taken from the Scientific Russia portal (<https://scientificrussia.ru/>)