

LIMITS OF NEOCLASSICAL UTILITY THEORY AND SOME POSSIBLE WAYS HOW TO OVERCOME THEM

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Abstract

The article discusses some limits of the neoclassical utility theory and it offers certain possible ways of overcoming them. Our aim is not to create an absolutely new utility theory but to show possible extensions of the existing ones and to highlight productive aspects of consumption. In an attempt to overcome the limits of the neoclassical utility theory, we briefly review the previous attempts and subsequently we emphasize the fact that experience is created based on previous perception and that the synthesis of previous perception, beliefs and attitudes fulfils a double role: on one hand, it substantially increases the motivation to own goods or to perform certain activities as intermediary factors, and, on the other hand, it disconnects current activities of a human being from their original targets. We also discuss how human experience accumulates over time and how it affects both total and marginal utility.

Key words: utility, consumption, investment, imagination capital, utility maximization

1. INTRODUCTION

One of the basics of the neoclassic approaches, which is also shared by the microeconomic mainstream, is perception of a man (consumer) as a person who maximises his or her utility (profit) in accordance with his or her preferences depending on a rational choice. It is a model which proves to be successful at solving of many theoretical problems and at applying the theory into practice, but which also has many limitations as well. Criticising weaknesses of this model is usually easier than to surpass a particular model by a better one. One of the attempts at such criticism is made by the book *Economy of Good and Evil* (Sedláček 2009); however, it failed to persuade the professional public of bringing something new. In our article, being in direct connection to classical writings, we will try to define topics or areas in our contribution which necessarily require a surpassing of the neoclassical model of a human being and we will formulate some of the basic elements of an advanced model. Based on that, we will try to create a concept of dynamic perception of the utility as a time function and an algebraic concept of interaction and combination of different kinds of perception which gives us the possibility of better understanding an existential dimension of human life, or experience-based present existence, and better comprehension of expressing what can be regarded as 'profit maximisation' significantly more accurately than it can be done through the neoclassic system.

2. METHODS AND LITERATURE OVERVIEW

The neoclassical perception of the utility as subjective enjoyment assumes a strict separation of consumption and investment activities. Investment activities generate a future revenue, but no current utility, whereas consumption activities generate a current utility, but no future revenue. Separation of consumption and investment activities is the basis of the neoclassical model of consumer's intertemporal choice, explanation of interest, etc. In reality, however, investment and consumption activities overlap and cannot be separated. When purchasing and consuming most of consumer goods, we expect a future revenue and at the same time, the purchase and consumption of the goods generate enjoyment to us (the utility in the sense of enjoying or experiencing).

This problem was overcome relatively simply by M. Friedman in his classical book *Theory of the Consumption Function* (1957). According to him, consumption is of a productive character in the sense that people (households) behave in accordance with a long-term strategy which we can also describe, among other ways, as maximisation of the present value of their future income from

acquisition and operation of assets consisting of both human and non-human capital. Human capacity to value something as experiences or utilities has only an on-line decision-making function, aiming to follow up a long-term strategy (Friedman 1957, pp. 16, 17).

An attempt to describe in more detail how human psyche works at the on-line decision-making from the perspective of the above-mentioned Friedman's concept of household consumption was made by G. Becker (1997) who, thinking purely economically, partially revealed activities going on deep in our mind, see e.g.: *"The weight a person places on future utilities in determining present decisions is affected by how well she can imagine what future utilities will look like. The capacity to anticipate future utilities is not rigidly fixed, although it probably has a biological component (see the interesting analysis by Rogers, 1994). People change the weight they attach to future utilities by spending more time, effort, and goods in creating personal capital that helps them to better imagine the future. – It has been claimed for hundreds of years by philosophers, economists and many others that most people undervalue future utilities because they have difficulty in imagining the future. That may well be true, but people train themselves to reduce and sometimes more than fully overcome any tendency toward undervaluation. The analysis in this book allows people to maximize the discounted value of present and future utilities partly by spending time and other resources to produce "imagination" capital that helps them better appreciate future utilities (see Becker and Mulligan, 1994)." (p. 24) "Imagination capital not only affects the discount on future utility, but it also alters preferences over goods by affecting present and future choices. Someone who places greater weight on the future consequences of current choices is more likely to engage in activities that raise future utilities, perhaps partly at the expense of current utility."* (p. 25) From this point of view, the current experience of our relation to reality is, on the one hand, relation to the future and, on the other hand, retrieval of the past, using the imagination capital.

We influence reality in order to satisfy our needs. To achieve the influence, we:

- Use certain tools and techniques
- Do certain activities
- Get into certain situations

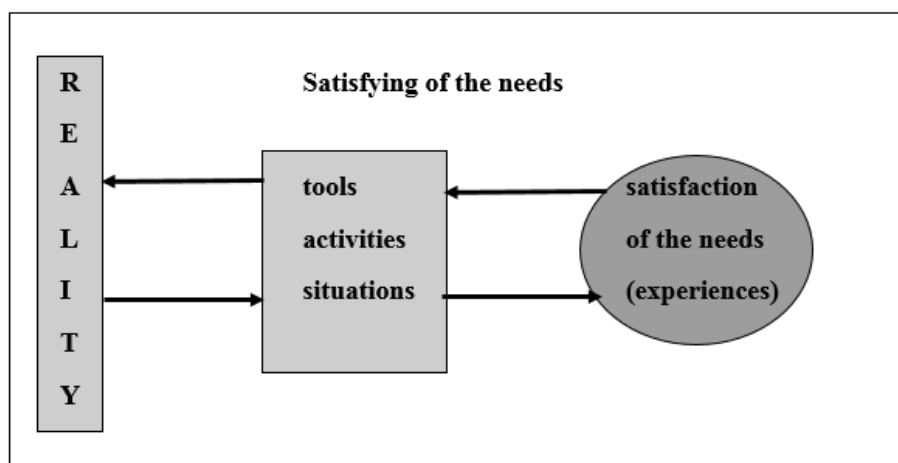
By satisfying needs, we achieve certain enjoyment or specific experience (this satisfaction is connected with an emotion).

Through enjoyments we evaluate (live out):

- Achieving or gaining of resources that we use to do things
- Actual doing of activities
- Situations we are in, that we try to avoid or to which we get in

From original experiences directly connected with satisfaction of the needs new ones emerge.

Fig 1. Satisfying of the needs

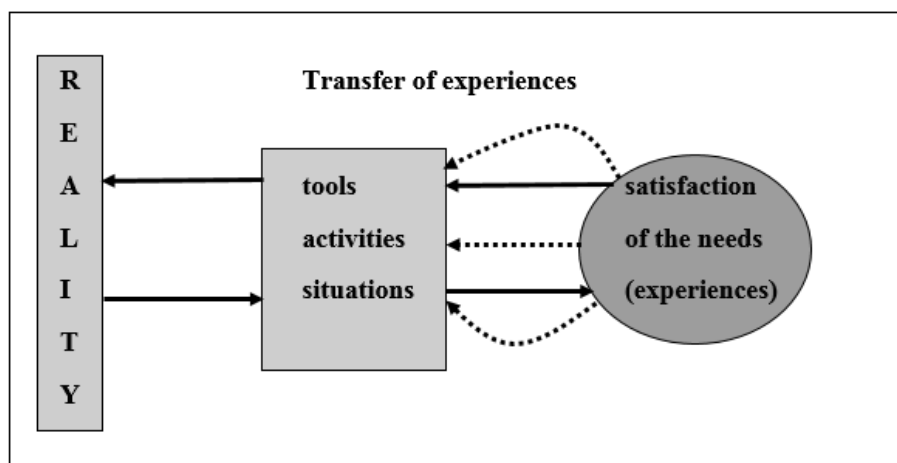


Source: own contribution

Through those new experiences (emotions) new needs are fixed, where the needs become:

- Ownership or gaining something
- Actual performance of certain activity.
- Being in a certain situation

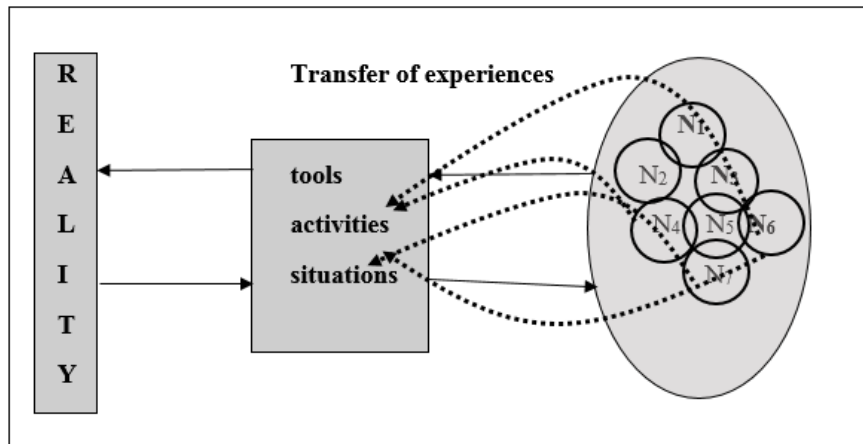
Fig 2. Transfer of experiences



Source: own contribution

New experiences are created in the form of synthesis of transferred experiences and enjoyments coming from the satisfaction of current needs.

Fig 3. Synthesis of experiences



Source: own contribution

From the mechanism of experiences' transfer to mediated activities, means we use to do activities, and situation we are in, we deduct the creation of new experiences. Creation of new experiences makes more effective decision-making possible.

3. RESULTS: EFFECTIVENESS OF DECISION MAKING

At this chapter, we present our view how consumers maximize their utility. We bear upon reality to satisfy our requirements (needs). For bearing upon reality, we use certain means, perform certain activities, and arrive in certain situations. By satisfying a requirement, we achieve certain enjoyment or experience (i.e. this satisfaction is connected with a certain emotion). Through experience, we value (i.e. we experience) obtaining or acquiring (possession) of the means which we use for performing activities, performance of the activity itself, situations in which we arrive, which we avoid or to which we get. The original experience directly related to satisfaction of a requirement results in new ones. New experience originates from the synthesis of transferred experience coming from satisfaction of the existing requirements, when one and the same means of activity, one and the same activity, one and the same situation simultaneously condition satisfaction of many requirements. The experience of satisfaction of requirements is not only transferred for intermediation, but different kinds of experience are synthesised and new ones appear. This is the key to understand how our emotions are raised.

The mechanism of transfer, synthesis and fixing of experience over means, activities and situations conditioning achievement of future experience (these intermediations can be ownership of certain goods or performance of certain activities) fulfils a double role:

- On the one hand, it substantially increases motivation to own intermediating goods or to perform certain activities. As these intermediating goods or activities often enable a more productive achievement of the original targets than the situation when the original target was achieved without their existence, and consequently, it also enhances efficiency of the decision-making in terms of achievement of the original targets.
- On the other hand, it disconnects the current activities of a human being from the original targets (the respective intermediations themselves become the aims of the person's activity).

Much of what has been beneficial for us gradually becomes agreeable too (from the perspective of both historical and personal development). No matter whether it is an activity which we perform to achieve a certain, beneficial target, or goods the use of which is required for achievement of the target. Our experience does not remain unchanged. It tends to transfer from the target to the means necessary to achieve the target.

T. Harford - The Logic of Life (2010) says: "... I do not deny that we have the consciously calculating mind of a Mr. Spock. Indeed, we make complex calculations of costs and benefits when we act rationally, but we often do it unconsciously, just as when someone throws us a baseball to catch - we aren't conscious of our brain solving complex differential equations to work out where it's going to land. Most of us couldn't work out the calculations behind catching a baseball if we were given a pen and paper, yet the brain carries them out unconsciously. It's often the same for the calculations behind a rational analysis of costs and benefits." (Harford p. 23)

In his book, T. Harford points to a large number of generally popular errors, whilst he himself is almost never wrong. The passage quoted above is an exception. It contains a significant inaccuracy. Although the baseball that we are to catch is subject to certain physical laws, from which one can derive differential equations describing its flight, we do not calculate these equations. We go about it differently. Like when we need to find the logarithm of any number or the sine or cosine. We do not perform a complex calculation, but simply look through the tables and find the required value. When catching a ball, we proceed in a similar way - figuratively speaking - we look through the tables compiled by our experience and use our imagination.

We have stored and well categorized in our memory a situation similar to the one in which we find ourselves in should we need to catch a flying ball. And we also behave depending on how we categorise the respective situation. Therefore it is training, and not knowledge of differential equations, that helps a baseball player to catch a ball. Training, during which he stores a variety of situations into his mind, categorises them and links them with his motor control capabilities, to be able to respond quickly and accurately on the basis of his recognition of the situation. A graphical representation of the ballistic curve, or the effect of the ball's rotation on a modification in the ballistic path, as the case may be, will substantially assist the player in having various types of baseball trajectories well organised in his mind. Artillery fire is another example of not performing a calculation, but simply looking up tables so that we succeed in real-life situations. Here we truly make use of tables that contain the relationship between several variables. They are compiled using a calculation, but also employ experience, respectively the measurements gained from such experience.

Because if we shoot from a very big and long artillery gun over a distance greater than ten kilometres, a very important role will be played, among other things, by the heating of the artillery gun's head after firing. And when engaged in an artillery duel waged between ships at a great distance we cannot wait for the barrel to cool. We have to incorporate the appropriate (and significant) adjustment to the setting of the parameters of that shot by which we want to hit our enemy. This is always modified by many other circumstances. Nevertheless, each of the models that we present provides very important support in the identification of the various cases of what can happen, the organisation of the various factors as well as their impacts. In so doing, we will proceed from simple "reading models" to more complex ones.

For rational decision-making (i.e. choice of the best alternative regarding preferences) a man (and to a certain degree also other beings) uses not only the reason but also other components of his consciousness, e.g.:

- **Memory** where he keeps his experience;
- **Imagination** through which he makes present that is kept by his memory from the past experience, this in the context of present situation;
- **Emotions**, resp. experience mechanism by which he performs "on-line" selection of the best variant in the conditions of real and acute influence of external impacts.
- **Conceptual knowledge** by which he tries to find the generally valid patterns and therefore more durable, more exact support for his decision-making (this is closest to the term reason as we understand it).
- **Dubitation** which enables overcoming of borders of what is understood as given and unchangeable for ever (within the meaning of existence of general patterns).

- **Intuition** through which what is suppressed by the reason and what is certain reflexion of the reason limits at times gets into decision-making.
- **Calculation or computation** including the use of models which enables, with the use of the reason, an unambiguous choice under the conditions exactly defined.
- **Moral or ethical assessment** which reflects certain taboos related to compliance with generally acceptable principles into the choice of variants.
- **Possibly other areas** (human psyche is too complicated to be simply put into simple categories which it includes and the functional links of what it includes).

The fact that we do not use only purely rational elements in decision-making (they would include, in narrow expression, only logical deduction and use of mathematical tools) but also what is behind (and such elements are used also by thinking using notions) does not mean that we do not make decision rationally (in broader sense of the word), i.e. that we do not search and are not able to choose the best option, resp. that we at least endeavour to do so. In other words – various elements of our consciousness create mutually linked functional structure which has been cultivated in development (already in animal kingdom) and subsequently in the history so that it allows the optimal choice related to specific preferences. (We will cover below what “optimal preferences” are.)

The fact that the whole complicated structure of our consciousness has been calibrated by the whole natural and historical development so that it is functional as much as possible and enables identification of the conditions in which we are (to answer the question what it is) and then to make the choice of the optimal strategy of behaviour does not mean that it is not developing any more and that it is perfect. There might be also partial or systemic failures when the results are much different from preferences to which the choice was linked.

Also what is the basis of setting preferences is subject to development, that is related both to values we appreciate, and to searching of the sense of our being and living, and to from where our experience or emotions come from. It means if we say e.g. that we behave to “maximize our benefit” (within the meaning of a subjective experience) this does not mean that our experience structure is unchangeable. It changes permanently under the influence of our environment, it includes a deeply rooted relation between an individual and the tribe inherited already from the period of animal development, it is related to finding and on the other hand losing of the meaning, but also to physiologic processes of maturing and aging in relation to satisfaction of needs an individual has and which play different roles in various stages of his life.

Assumption of bounded rationality therefore says, with certain simplification: We can take as the basis of the description, analysis and assessment of a person behaviour (regarding prediction how he will behave, and recommendation we can give for his behaviour) the model based on maximizing of his benefit in the form of rational choice of the optimal variant.

Rationality (within the meaning of the choice of the optimal variant) is always, more or less, bounded by:

- the information the person has available;
- the possibility to process information regarding its use for the choice;
- the relation to the specification of preferences, resp. their reflexion by the person itself.

(In short, if we make the choice “on-line“ we must acknowledge that we do not have all information, either we cannot assess it sufficiently, either we do not have the information related to assessment provided we want to make the choice perfectly. If we, however, are aware of the limitations then the model of rationally behaving individual who maximizes his benefit is a suitable approximation of reality, similarly like a “primary element“ is a good initial, not however sufficient, approximation of a real element.)

4. DISCUSSION

One of the problems that the utility theory faces is that it looks on the utility from too general view and does not distinguish that it can have many forms. First of all, it must be emphasized that utility understood as an experience remains in existence for a certain time. This duration usually consists of three, substantially different stages:

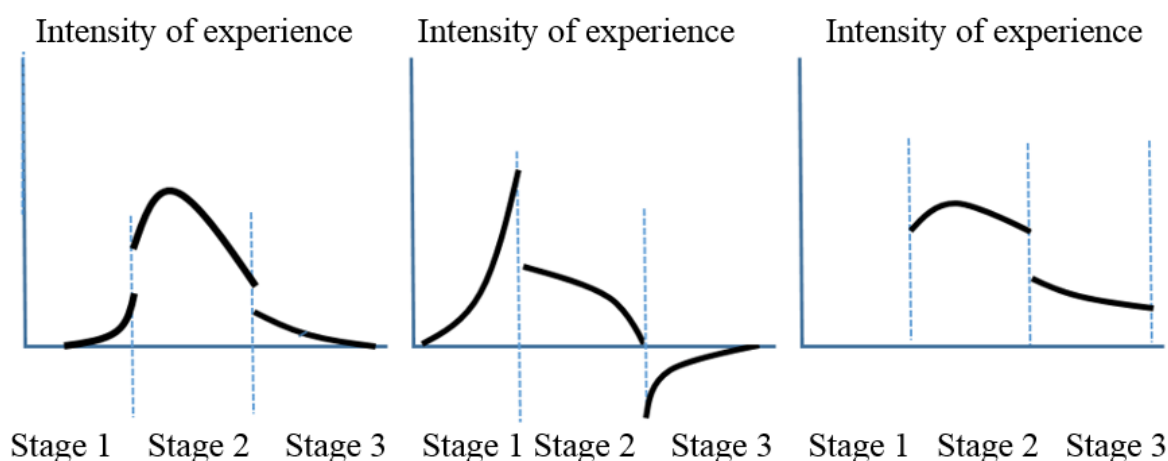
Stage 1: Anticipation of the future experience, looking forward to it (or, on the contrary, fears about it in case of anticipation of a negative experience), but also increasing the utility by relating current situations, activities and acquiring goods to the future.

Stage 2: Enjoyment of the utility in direct consumption of the respective goods or service.

Stage 3: Retrieval of the experienced utility.

Here, most varied situations can occur which can be illustrated in graphs and interpreted. Let us mention three examples mentioned at Figure 1:

Fig 4. Possible ways of intensity of experience



Source: own contribution

We experience the first example most frequently. At the first stage, we look forward to the future experience, which itself generates an experience. The closer to the experience we are, the stronger our enjoyment is. It is followed by experiencing what we have been looking forward to and the law of diminishing utility starts to show. The agreeable experience is still fading away even after direct experiencing of it ended.

Probably everybody personally experienced the second example as well. At the first stage, we have excessive expectations. At the second stage, the experience which arrives is substantially smaller than we anticipated. At the third stage, it is followed by a hangover, disappointment, an unpleasant feeling compared to what we have experienced.

The third example does not contain the stage of looking forward to or more precisely anticipating an experience. This arrives only as late as at the direct use, being, however, very strong. The experience leaves agreeable memories and is fading away for a long period of time.

The total utility can be understood as an integral value, i.e. – with the use of the above mentioned graphs – as an area under the respective curves. Using our preferences (preferring something), we estimate the size of the total utility. From this point of view, the concept which is based on maximization of increment in the utility is not quite exact. But in fact, our utilities in the form of experience is not mutually independent. Some can be mutually strengthening, some, by contract,

weakening or suppressing. At any case, it is true that at concurrence of two or more experiences, an experience appears which is not a simple sum of the original experiences. It concerns a situation when combination of two or more entities (experiences) results in another experience, i.e. an entity which ranks in the same set. If we use a certain mathematical concept as a support for expressing this situation, then it is an example similar to universal algebra, when the result of operation with objects (interaction among experiences in our case) is an object that ranks in the same set. In a certain sense, we can talk about algebra of our experiences.

5. CONCLUSION

For a range of reasons it can be assumed that the time for surpassing the neoclassical concept (a model of a human being maximising the utility, with mainstream application until now, has matured. Nevertheless, the point is not to merely criticise this concept, but to find a new area exceeding the model which would be theoretically more advanced and supportive at problem-solving or explaining real problems which go beyond the neoclassical approach.

A standard approach which comes into consideration when solving this problem consists in application of suitable concepts which somehow structure the respective new area exceeding the existing model. In a given case, the new area focuses on covering the dynamics of our experience of the world and interaction of experiences through which our preferences become operational and enable us an on-line decision-making.

To create an applicable system, first it will be necessary to create a suitable typology of functions describing dynamic characteristics of utility experiencing. Subsequently, it will be also necessary to create a typology of interaction among experiences and to define “algebra” of experiences. At the same time, it will be important to analyse some of the typical life situations and phenomena which we encounter at interactions of human beings and their environment. It can be expected that an extremely important role in solving the problem of utility maximisation in a system which exceeds the neoclassical concept will be played by the requirement to develop, maintain and employ abilities of human beings.

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