

Renata Wojciehowska

Warsaw School of Economics
e-mail: rwojcie@sgh.waw.pl

**PSYCHOLOGICAL DETERMINANTS OF ECONOMICS.
CRITICAL ANALYSIS OF COMMON AREAS
OF RESEARCH IN ECONOMICS AND PSYCHOLOGY**

**PSYCHOLOGICZNE UWARUNKOWANIA EKONOMII.
ANALIZA KRYTYCZNA WSPÓLNYCH OBSZARÓW
BADAWCZYCH EKONOMII I PSYCHOLOGII**

DOI: 10.15611/pn.2018.529.34

JEL Classification: A12

Summary: Economics needs psychology. It is impossible to explain social and economic phenomena on the basis of typical economic models. Economics has opened to social sciences and thus modified its own test methods and language, and extended the research area. As a result of the cooperation between economics and psychology, numerous scientific subdisciplines were formed, and economic models and theories developed new meanings and applications. Yet, not every interdisciplinary research is cognitively fertile for economics. What economics risks is losing its own scientific identity and sight of its subject of research. The purpose of the paper is to analyse the opportunities and threats that appear in the scope of research done and actions taken in economics and psychology.

Keywords: economic psychology, experimental economics, behavioural economics, test method, psychology, economics.

Streszczenie: Ekonomia potrzebuje psychologii. Wyjaśnianie zjawisk społeczno-gospodarczych nie jest możliwe w oparciu o typowe modele ekonomiczne. Ekonomia otworzyła się na nauki społeczne, modyfikując tym samym metodę badawczą, język i rozszerzając obszar badawczy. W wyniku kooperacji ekonomii i psychologii powstały liczne dyscypliny naukowe „z pogranicza” (subdyscypliny), a modele i teorie ekonomiczne zyskały nowe znaczenie i zastosowanie. Jednak nie każde badanie interdyscyplinarne jest dla ekonomii płodne poznawczo. Ekonomia może stracić swoją tożsamość naukową i zgubić przedmiot badań. Celem artykułu była analiza szans i zagrożeń, które pojawiają się w obszarze badań i podejmowanych działań przez ekonomię i psychologię.

Słowa kluczowe: psychologia ekonomiczna, ekonomia eksperymentalna, ekonomia behawioralna, metoda badawcza, psychologia, ekonomia.

1. Introduction

In the opinion of P. Costa and R. McCrae, well-known psychologists, it is possible to describe someone's personality with the Big Five, in other words a collection of such personality traits as: neuroticism, openness to experience, extraversion, agreeableness and conscientiousness. These features define human behaviour and shape personal intelligence¹, which is an integral part of emotional intelligence. Apart from the awareness of own possibilities, there is also the aspect of "self-control and care of own body", in other words the issue of health intelligence². But for those important characteristics, what is also important is the cooperation in a group, or the cooperation with others, which social intelligence takes part in³. All those concepts let us understand people and their actions better, and therefore, are an attractive research area, constantly developed not only by psychologists, but also neurologists and economists.

First and foremost economics is interested in everything that explains human actions and choices made by people, and thus looks for certain schemas and model behaviours. Contemporarily, an economic man is not only a rationally operating entity that is mainly driven by egoism and aspiration to make profit. What appears more and more often in the economic definition is the issue of irrational behaviours, altruism and empathy. That is the reason why the *homo oeconomicus* model has been modified so many times, inter alia as: "*homo reciprocans, homo politicus, homo hobbesianus and homo darwinianus, homo orthodox, neo-homo economicus and paleo-homo economicus, homo erroneous and homo gustibus, homo sovieticus, homo religiosus, homo corporativus, homo sociologicus, homo humanistic economicus, homo institutional economicus, homo social economicus, homo socio-economicus*" [Wojcieszka (access: 5.11.2017)].

Therefore, economics looks for common grounds for research with psychology. The popularity of such studies is confirmed among others by the Noble prize-winners in Economics who applied psychological knowledge to economic theories, among others: H. Simon (research on psychological grounds for economics, 1978), G. Akerlof (mainly research in the field of behavioural macroeconomics, 2001), D. Kahneman (research in the field of economic psychology, 2002), V. Smith (research in the field of experimental economics, 2002), and R. Thaler (a representative of behavioural economics, 2017).

Except for the obvious advantages, the cooperation between economics and psychology poses a number of threats as well. Not only do they result from the specificity of the relation between the two disciplines, but also the interdisciplinarity of economics. The science, which exhibited imperialistic behaviour towards social sciences, now cooperates with economic and social sciences alike. The collaboration

¹ A concept developed by J. Mayer.

² A concept developed by J. Vetulani, and H. Mruk.

³ A concept developed by M. Kotański.

has strongly modified its research area, language and test methods. Therefore, it is worth thinking about the advantages and disadvantages of opening economics to other sciences⁴.

The purpose of the paper is to analyse the relationship between psychology and economics in terms of pros and cons, opportunities for development and potential restrictions.

The text has been divided into two main parts. The first one characterises the similarities and common research areas in two fields. The second focuses on depicting differences between economics and psychology. The discrepancies result from the peculiarity of each of the sciences, and hence they are hard to modify. Besides this, if it takes place, any such a change in fact influences the cognition process in economics.

Therefore, it seems to be just to look for answers to the following research problem: “Why does economics need psychology?”. Questions that complement the main research concept are as follows:

1. What advantages appear as a consequence of the cooperation between economics and psychology?

2. What threats result from the cooperation between economics and psychology?

Naturally, a profound analysis is necessary to answer the questions above. The paper only signals such a need. The literary criticism has let me propose three research hypotheses:

1. The cooperation between economics and psychology is cognitively creative. It is impossible to explain human actions on the basis of the classical economic theory or the prescriptive economic model based on the rules of rational operation.

2. The issue of methodological differences between economics and psychology, in other words the question of different test methods and the peculiarity of the languages, poses a grave danger to economics.

The problem of common research area of economics and psychology is very interesting. However, there is not enough of joint actions both in the scientific and educational scope in Poland. Hence it is justified to disseminate the results of studies in that field [Brzeziński et al. (access 10.11.2016) p. 202; Klimczak, 2013; Tyszka (ed.) 2004; Wojtyna 2011, p. 178]. The analysis of the intersubjectivity of economics is deeply ingrained in the scope of metascientific economics and psychology as well as the methodology of sciences.

2. Cooperation between economics and psychology

Economics is a science that had imperialist attitude especially towards social sciences. Crises, frequent anomalies and descriptive, explanatory and predictive limitations influenced the fact that economics opened to other sciences. Strongly

⁴ Research in the field of the relations between economics and psychology are described at length in [Wojciechowska et al. 2017].

anchored in formal sciences, economics started seeking support in social sciences, such as psychology, sociology and management sciences. Thanks to that its research has expanded, and its language, methods and the manner of interpreting social and economic phenomena have changed. Nonetheless, apart from the obvious pros, economics has lost its identity, its own DNA. The relation with psychology is a good example of the merits and limitations deriving from the cooperation between various sciences.

Economics has been developing its relations with psychology for many years. The process has been characterised by high variability and dynamics. Both sciences share the metaphysical roots and had the same precursors. Both study human behaviour. It is deemed that it was A. Smith who formed the frames of economics when he published *An Inquiry into the Nature and Causes of the Wealth of Nations* in 1776 [Smith 2007]. Apart from that, he also wrote *The Theory of Moral Sentiments* (1759) [Smith 1989] where he described the issue of empathy, the effect of sympathy, and social behaviours, all of which determine human actions. Therefore, he combined the economic and psychological aspects, which scholars call a contradiction, or “the Adam Smith problem” [Szulczewski 2015].

The end of the 20th century was the time of joint actions, interdisciplinary and multidisciplinary alike. Economists more and more often “reached for psychological knowledge” that “makes a much more detailed understanding and explanation of economic decisions possible” [Zaleśkiewicz 2011, p. 20]. A good examples here are the following models: reason-base model, mental accounting, positive affect hypothesis, and the somatic market hypothesis.

Created by E. Shafir, I. Simonson and A. Tverski in 1993, the first model shows that possible alternatives and the situation context significantly influence consumer decisions [Zaleśkiewicz 2011, p. 20]. The results of their research revealed that consumers made their choices depending on the availability of other goods, their characteristics and competitiveness, and the knowledge the consumer had when buying products.

The second model, which describes the importance of the source of funding and the purpose the money is spent for even more clearly, illustrates the limitations on economic reasoning [Zaleśkiewicz 2011, p. 26]. According to the studies carried out by R. Thaler in 1990 and 1999, consumers differently use financial resources that they have earned by “working hard” than those that they have won in a lottery (house money effect). Moreover, money that has been “booked” to a specific account, for a specific purpose (mental accounting), such as for teaching children or for medical treatment, is used differently. Consumers who need cash, for instance to go for a holiday, frequently prefer to borrow money and thus incur additional costs related to such a step rather than dispose of the “booked” means. From the economic point of view, both the source of finance and the purpose on which the money is spent should not matter. Yet, it turns out that both are important factors in the decision-making process.

According to the positive affect hypothesis formulated by A. Isen in 2005, all moods, emotions and life attitudes influence financial decisions and one's inclination to risk. It means that "a person in a good mood avoids actions the consequences of which might negatively affect that frame of mind" [Zaleśkiewicz 2011, p. 115], e.g. "s/he avoids taking a risk that is burdened with a possibility of suffering a loss" [Zaleśkiewicz 2011, p. 117].

On the other hand, the research done by A. Bechar and A. Damasio (1999 and 2010) proves that economic decisions are not only conditioned by the profits and losses, but also emotions, especially the negative and unconscious ones. Therefore, if a consumer has experienced negative emotions when incurring a loss, then s/he will try to avoid a similar situation. It is because the body sends somatic signals, so-called markers, still before the decision is made. The inclination to take risk and the actions in fact taken change then together with the emotional experience.

The aforementioned examples demonstrate that economic theories are not sufficient to explain social and economic phenomena. Hence, it is necessary for further development of economics to open to the psychological expertise.

Thanks to the cooperation between economics and psychology a number of subdisciplines have been formed, such as economic psychology, behavioural economics, and experimental economics. Each of the subdisciplines studies human actions, but in a different manner, with the use of different methods. Economic psychology "is formed by psychologists interested in economics" [Zaleśkiewicz 2011, p. 33], and behavioural economics – "by economists interested in psychology" [Zaleśkiewicz 2011, p. 33]. On the other hand, experimental economics is established by economists who are not satisfied with test methods used in economics [Zaleśkiewicz 2011, p. 35].

The first of the subfields focuses on psychological processes that determine the behaviour of economic entities; the second looks for explanations of the motives behind the human decision-making process and its consequences. The last of the three investigates the behaviour of entities by applying laboratory and natural experiments, by making "market simulations" [Zaleśkiewicz 2011, p. 36].

The cooperation between economics and psychology has facilitated the cognition process, opened descriptive possibilities and helped to understand social and economic phenomena. Thus economic and psychological expertise is complementary not substitutive.

Apart from the different perspective on the studied problems, economists have also developed a new method called an economic experiment. The method is fundamentally different from the typical model description of economic reality. In an economic experiment everything is planned, described and analysed. What is controlled is the conditions, assumptions and variables. The method compares the experimental group with the control group and in the course the following principles are applied: the rules of monotonicity, significance, domination, random allocation

to groups, and the rule of clarity and simplicity [Krawczyk (ed.) 2012, pp. 21-32]. That provides a possibility to test, verify and control the reliability of research results.

Despite a lot of limitations such as the control of results, small range and inductive reasoning, the economic experiment method is winning more and more popularity. The number of laboratories where entities' behaviours are examined with the method is increasing. At present there are more than 150 laboratories all over the world, the majority of which were established in the past 10 years [Krawczyk (ed.) 2012, pp. 21-32]. In addition, research and papers in the field are becoming more and more frequent. High prestige of "Experience Economics", which used to be a niche journal and now it is among the journals with the highest *Impact Factor* in economic sciences, is doubtless a proof of that [Zaleśkiewicz 2011, p. 10].

3. Differences between economics and psychology

As the analysis above shows, economics and psychology are sciences that should cooperate; "economics should stay close to psychology" [Zaleśkiewicz, 2011, p. 20]. However, for years the two sciences were far apart. Economics negated the sense and usefulness of psychological research, mainly because psychology as a science was of low "scientific consciousness". Moreover, it developed in two directions: "applied" and "original". In the first case it was treated as an element of other scientific disciplines, and in the second – as a philosophy-rooted analysis of the motives behind human actions and the role of senses, feelings and mind in the decision-making process.

Therefore, when at the end of the 19th century economics was subject to the positivist movement, the scientific achievements of psychology were questioned. Psychology was accused of metaphysical origins, a lack of cognitive values resulting from the scarcity of basic research, improper methods and low reliability of empirical data.

Psychological knowledge was "immersed" in philosophy, medicine, sociology, biology, physiology, education and linguistics. Psychology developed mainly as a cognitive tool, not as an independent scientific discipline. Not earlier than in 1879 were the psychological discussions separated from the philosophical ones owing to W. Wundt. Later, the research area and scientific methods in psychology were changed thanks to J. Watson, O. Kulp, M. Wertheimer, W. Kohler, K. Koffka and K. Lewin (after the 1920s). From then on, not only were internal experiences and feelings investigated, but also behaviours and mental processes. What was also modified was that the method of introspection was replaced by an experiment.

Since the 1970s psychology has been subject to extended development. That has given grounds for the formation of its own language and test methods. However, the expansion has not been unidirectional. Therefore, what should be now discussed is psychology as a set of psychological sciences, not as a single consistent and coherent science. The differences are evident when one compares: classical psychology,

gestalt psychology, psychoanalysis, behavioural psychology, humanistic psychology and cognitive psychology. Moreover, a strong diversification is also characteristic of the attitude to psychological methods: directive and non-directive, neuroscientific, genetic, social, cultural and cognitive.

Despite being very simplified, the presented characteristics of psychology justify the stand that economics took until the end of the 20th century. Additionally, economics was not prepared for the modifications and cooperation with other social sciences. On the other hand, psychology as if naturally has pulled itself together in new research areas. The crisis in economics as a science that followed and the attractiveness of the new perspective on human actions triggered off a change in the situation.

Yet, it should be remembered that economics and psychology are much different from each other, not only in terms of the approach to the subject of research.

Economics often shows data from empirical, quantitative (mainly statistical) and qualitative studies as well as the theoretical and model research. It often happens that the research process is not described much, which makes it impossible to apply intersubjective verifiability of research findings. In the case of modelling, analyses are frequently simplified by the introduction of various, often unrealistic assumptions. An example here can be the capital market pricing model (CAMP) where it is assumed that entities behave rationally, there are not taxes and the market is perfect.

On the other hand, in psychology the research process is described in detail: there is a report on scientific inquiry made and observations are repeated several times. In that context psychology shows much more diligence and “scientific awareness”.

A similar situation is observed when one compares the rationality of scientific actions taken in economics and psychology. A science is deemed to be rational when the scholar acts rationally⁵, in other words when s/he acquires information methodologically, systematically and on the basis of certain conventions and logical standards. A critical approach to the knowledge acquired shows that, on the basis of the assumptions made, “we propagate that the firmness measured with the risk level that we are ready to assume in the name of the theorems is proportional to the level to which we are able to justify them” [Ajdukiewicz 1965, p. 269]. Therefore, in that case it is essential to assume responsibility for the actions taken and social responsibility for the truth presented. A psychologist always bases his/her conclusions on the research results. In turn, an economist most frequently presents an opinion that is generally applicable. The responsibility limits are also differently defined. A psychologist describes e.g. the reasons for irrationality, the operation of human brain, and the changes in the presented content, all of which influence the choices made, shopping done and savings made. On the other hand, an economist describes the condition of the economy on the basis of economic indicators (e.g. GDP, inflation rate, unemployment rate) and proposes for instance to lower the interest rates or increase the money supply. The consequences of psychologist and economist’s actions

⁵ Opinion shared by i.a. J. Jarvie, K. Popper.

are also distinct in terms of the dimension and scope, although both are accused of “manipulation and swindles” [Akerlof, Shiller 2018].

Test methods pose a lot of problems to economics as well. In spite of the fact that economics is believed to be a comprehensive, inductive-deductive science, in their research practice economists do not apply the two methods. They do not falsify the research hypotheses either. If they verify hypotheses, they do it with simple verification.

Economics also suffers from problems with the language, which is characterised by ambiguity, full of borrowings from other sciences (e.g. happiness, work, *homo civilis*, creative human, motivation, hysteresis, acceleration principle) and abstract concepts (e.g. inflation, economic growth). Economics also uses concepts that come from everyday language (e.g. from scientific literature addressed to the general public), e.g. cryptocurrency, and (examples in Polish) *frankowicze* (people who have taken out Swiss franc loans), *polisolokata* (a policy combined with a deposit), and *biedaprzedsiebiorcy* (poor entrepreneurs). It also uses borrowings from other academic disciplines: philosophy (e.g. value, happiness, beauty, work), sociology (e.g. social embeddedness, *homo civilis*), management and marketing (e.g. creative human, price strategies, default and justified price, motivation), and physics (e.g. hysteresis, stochastic analysis, acceleration rule).

Nonetheless, psychology is an inductive science, the results of which are not certain but probable and also often subjective. In principle, hypotheses are tested with simple verification too. Empirical validation is typically done by an experiment, observation, interviews and asking for opinions with the use of questionnaires.

The language of psychology is exceptional: it is precise, full of terminology and has few borrowings. Psychologists often do not clearly express their ideas and thoughts, but instead they provide a complex name for them, a name of theoretical and cognitive value, e.g. the Stockholm syndrome, the floor effect and ceiling effect, the paling effect, all of which refer to a theory or studies.

Both economics and psychology have a problem with keeping the strong and weak principle of rationality, with referring to logical schemes and standards. They both preserve the proper quality of knowledge, and form its logical frames and self-control and self-criticism mechanisms. That improves their ability to explain and predict, and enhances their heuristic value.

4. Conclusions

Joint research of economics and psychology has extended the research area of the two disciplines. Thanks to that economics turned out to be not only a science full of theories, models, unrealistic assumptions and formalised language, but also a science that investigates such problems as: socialisation of children, crime, ageing and work atrophy. That is the reason why, along with classical economics, non-mainstream economics started developing as well, not only imperfect knowledge economics

[Frydman, Goldberg 2009], economics of the hidden level of consciousness [Smid 2018] or freaconomics [Levitt, Dubner 2008], but mainly narrow economic fields such as: economics at work, managerial economics, development economics, psychology of money, stock market psychology, neuroeconomics and neuromarketing.

The presented analysis showed that economics needs psychology. Joint actions have made it possible to dispute the opinion that economics and psychology study “two different species” [Kahneman 2012, p. 357]: humans and “econs” [Kahneman 2012, p. 357]⁶. In order to avoid excessive conceptual dilution and the consequences that it would bring, it is necessary to develop an adequate logical structure based on methodological foundations.

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⁶ It was called this way by R. Thaler.