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NORMATIVE ECOLOGICAL ECONOMICS AS A CONDITION FOR SUSTAINABLE DEVELOPMENT

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ABSTRACT: This paper aims to highlight the absolute competitiveness between positive and normative economics. The article presents this controversy as a pretext to analyse a specific field of operation of ecological economics. The normative approach in the ecological economics is needed in the complex age of increasing deficits and confronting threats to biological and social sustainability. Reliable data from biology, physics, chemistry and medicine inform us what is dangerous. They also suggest directions of changes and their necessary scale. The normative approach, based on the guidelines from the basic natural sciences, allows for the creation of economic theories and models and then derives specific, quantitative premises for actions taken in the economy. The thesis of this article boils down to the statement that the effective involvement of ecological economics in the theoretical and practical solving of sustainable development problems is possible only through the use of the normative approach.

KEYWORDS: normative economics, ecological economics, sustainable development

Introduction

Modern economics has moved to the position of descriptive science. This also applies to new and fashionable development directions of economics. Institutional economics, for instance, seems to grow in strength as unexpected and practical problems arise that cannot be confined to old theories or reduced to quantitative empirical research. More and more depends on specific institutional structures people are functioning in. On the other hand, behavioural economics brings back the human face of economics by asking questions about people's natural reactions and everyday behaviour. At the same time, however, these institutional or "laboratory-like" answers to research questions often have nothing to do with global problems. They do not intend to undermine the commonly dominant pattern of homo economicus.

Regardless of the competitiveness and disputes of fashionable schools dealing with economic theory, another methodological controversy continues almost silently. Reluctantly and not too openly in socio-economic practice, the debate continues whether the economics should deal only with the description of reality which leads to a positive economics or whether it should face challenges beyond dispassionate, dry, matter-of-fact, but not always an operationally efficient picture of reality. The many difficulties of the modern world call for a normative approach in which scientists are not afraid to give their value judgments clearly and openly. As they take up the challenge, they state ex-cathedra that some solutions are reprehensible and others recommended or even necessary. Therefore, they use pre-established values and norms that do not have to suit everyone and may be contested as too subjective.

This article aims to highlight the subcutaneous but actual conflict between positive economics and normative economics. However, presenting the controversy itself is only a pretext to indicate a specific and unique field of operation of ecological economics. The author does not intend to settle the advantages and weaknesses of both approaches in the mainstream of contemporary economics. The thesis of this article boils down to the statement that the effective involvement of ecological economics in the theoretical and practical solving of sustainable development problems is possible only through the use of the normative approach.

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The beginnings of economics

An essential part of Tomáš Sedláček's book, significantly titled "The Economics of Good and Bad", is devoted to prehistory and the beginnings of modern economics (Sedláček, 2011). The author wanted to make the reader aware that we are not dealing with a slow, gradual and slight evolutionary change in the case of economic thought. He formulates his assessment in a provocative and quite radical way. "There has been an unusual twist. Adam Smith, Thomas Malthus, John S. Mill, and John Locke – the fathers of classical liberal economics – all of them were first and foremost philosophers dealing with morality." He adds that a century has passed, and economics has become a formalised science, utterly devoid of ethical reflection and normative considerations about society and its development. In theoretical and practical terms, economics has changed radically from social science in the 18th century to the science that pays the most attention in the 21st century to the application of quantitative methods and mathematical apparatus.

It is worth noting that some often repeated quotes are often very confusing. Bernard Mandeville introduced the phrase, "the immoral qualities of individuals can lead to the economic well-being of society as a whole." Adam Smith himself condemned Mandeville's views. Nota bene Mandeville was a natural-born immoralist who irritated his colleagues and the public with statements and publications proving that "there is nothing holy". He presented each virtue or noble behaviour, indicating how many misfortunes and evil resulted from them. In his view, charity and social assistance were mistakes because they led to laziness and idleness. Mandeville seemed to take pleasure in insisting that virtue does not exist at all and that all its manifestations are just a cover of selfish satisfaction. Adam Smith criticised such statements. Searching for good qualities and natural inclinations in a man, he was relieved to find that selfish individuals can cooperate, which may prove beneficial for the good of society as a whole. In this conciliatory way, we interpret the ideal image of the economy supported by the mechanism of perfect competition, even today.

The neoclassical school (with all its diversity) proved that theoretical considerations could be formalised and take the form of a complex model which does not fully reflect the economy. Still, due to the correct selection of variables and their functional relationships, it can quantify and describe the dependencies occurring in the real economy. What makes the model approach strong, however, is also its risk (Rodrik, 2016). Both the economist Joan Robinson and the writer Jorge Luis Borges pointed to the banal fact that a 1:1 map would not be of any help for a stray tourist. However, there is also no

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single and "most appropriate" set of variables and their connections selected for a specific topic.

Each model is a challenge for the constructor and the user. The former should put into his pocket his prejudices and views that violate the objectivity of the research and devote all his energy to the identification of the most essential and functional variables. The latter should know very precisely the assumptions made so as not to tell nonsense in his interpretation of the results. Formal advancement, with advanced econometrics and mathematical statistics, increases both parties' expectations and challenges. When the language of description becomes formal and difficult, two dangers emerge, and these are apparent facts in modern economics. The first danger is the neglect of fundamental ethical questions (Sedláček, 2011): what will be good or bad for society or the environment? The second danger is hiding scientific doubt behind a screen of elite knowledge to avoid answering questions about the credibility, objectivity and usefulness of the obtained results (Rodrik, 2016). Often, a standard researcher's answer is enough: I got that result from the model.

There may be a regret for the past centuries of their lost values about the change in understanding and practising economics. This could be the ground for cultivating idealistic and, at the same time, completely unrealistic visions. I do not take up this topic at all. Regretting the removal of morality from the economy would now be too naive, late and counterproductive in the conditions of accelerated technological progress, permanent modernisation, mass consumption and increasing populism. The media brings us daily news emphasising irreversibility of civilisation and social changes. At the same time, they show the threats posed by mass culture and highlight examples of boundless selfishness in the individual, racial or national dimension. These are trends to be reckoned with, but they don't necessarily mean surrender. I recall the words of Czesław Miłosz from the "Treatise on Moral" (sic!): "The course of the avalanche changes depending on the stones on which it rolls".

Let the critical question become the starting point for further considerations: should economics be content with a descriptive approach based on models, collected data and research results, communicating numbers and suggesting relationships between them? Is the economist only to be statistically well-equipped and convinced of its infallibility person, as a public presenter of quantified events? Is she/he to be limited to the self-righteous and quirky statement: "I will show you how it is, in my opinion, and do what you want with yourself"? Suspiciously this sentence resembles a well-known reply of king Louis XIV who answered the ministers worried about the condition of the state and kingdom's future with a smile: "Après nous, le déluge."

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Positive economics and normative economics

Positive economics (Samuelson, 1947; Friedman, 1953), i.e. descriptive economics, is often presented as absolutely objective science. This usurpation seems to disregard that economics is a social science, not a natural and experimental science. Good economics textbooks clarify that economic laws and regularities have historical and statistical credibility, not absolute. Engel's law works but „so far" should be added. Data analyses seem to confirm specific ownership of consumer choices. However, research into trends in consumer preferences is needed to identify again the relationship between income and food expenditure. Moreover, these observed regularities are far from a reproducible experiment explaining the unconditional chemical reaction of a CFC compound with stratospheric ozone.

In ordinary perception and often in the scientific community, it is tacitly assumed that an economist, driven by the will to know, discovers a certain regularity that occurs objectively in reality and, of course, does it selflessly and entirely objectively. This is similar to the assumptions we know from the faith-based belief that the holy books of any religion cannot be wrong since they were written under the influence of the holy spirit. Thus this source cannot be a perfidious deceiver. This positive conviction, already present in Descartes' writings, accompanies us to this day. Trust in our senses and mental operations come from the religious belief that the supreme being enables us to know the truth. One forgets the complexity of human nature and its active role as a „transmitter" of reality that shapes its message in a specific social context. After all, philosophy and social science drew such a conclusion a long time ago and this is represented in the writings of Immanuel Kant.

An optimistic and positive economist, like some outstanding representatives of science in the early Enlightenment (circa 200 years ago!), is therefore treated as a thinker furnished with specific and unquestionable knowledge. Of course, the scientist selflessly instructs the little ones to her/his best moral standards. As part of a general positive interpretation, getting to know the economy is treated, similarly to the mechanistic worldview, as a finite set of facts about the universe. In other words, it is a practical and unauthorised application to the social science rules of reductionism, determinism and materialism (von Mises, 1957). We do not know everything about the economy yet, but we will apply economic theories and methods to our research- and eventually there will be no more economic secrets for us. Like the priest of knowledge, the economist gradually reveals the whole economic truth.

Within the framework of a positive economics, we observe, as far as we want to see it, the exceptional carelessness that accompanies the models used and the results announced. Apart from checking the formal correctness

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of the models and the calculations themselves, the obtained results are not verified in terms of the influence of the cultural, ideological, and social context or simply the subjective approach of the researcher himself (Rodrik, 2016). As a rule, no questions about the consequences of implementing the proposed solutions are asked. The publication of the results is related to the gesture of Pontius Pilate. The scientist washes his hands and thus does not take responsibility for the activities of decision-makers and politicians he has provided with „objective" knowledge.

It does not take great inquisitiveness to notice phenomena in the media that openly undermine the absolute and indisputable objectivity of a positive scientific research. Two different packaging companies obtain two diverse expertises to promote their products and toundermine competitor. Another example can be the Life Cycle Analysis implementation taking into account the environmental impact of fossil fuels. LCA may indicate the supremacy of lignite since the analysis does not start with the "cradle", i.e. the creation of an open pit mine, but with the energetic use of lignite. By the way, idle discussions on the price of energy include the cheapness of hard coal, but the cost analysis does not consider external costs. Are we dealing with lies or scientific mischief? Well, most often not, because scientists whose work we would instead not recommend can easily lay claim to the objectivity of their approach just hiding some assumptions relevant to their outcome. Therefore, they take no responsibility for too far-reaching interpretations nor the impact on the environment and society.

A normative approach concerned with moral issues or the natural environment is sometimes criticised or even discredited by mainstream economists as being too clearly dependent on many social contexts and often not subject to testing. Moreover, in social sciences and politics, the normative approach is sometimes viewed with suspicion on account of discretion and possible abuses, the most dramatic expression of which was the racial and ideological crimes of the twentieth century. What is worse, populism very often appropriates and ridicules the normative approach by introducing into the media utterly devoid of scientific justification but still evaluating terms (examples typical for Poland): „better sort of people", „real Pole", and „national".

The odium of the lack of scientific trust affects the normative approach. At the same time however, these supposedly „description limited" economists advise active politicians in making normative decisions concerning the economy and society. Reading scientific publications and, above all, the media shows that setting the interest rate, subsidy amount, or minimum wage becomes the subject of strongly and politically conditioned decisions. The increasing threats to the prosperity of future generations are also subject to camouflaged and the most normative judgments of economists. In particular,

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these are decisions regarding the scope and pace of exploitation of non-renewable natural resources. It is a kind of hypocrisy because there are positive economists who advise in goodwill behind the politicians' backs.

This article aims not to address the specific problems in which the descriptive and normative approaches collide. However, when it comes to future generations in the context of environmental living conditions and the availability of resources, it is hard not to mention "the tyranny of the discount rate". Simply speaking, it is about the highly normative approach of a positive economics to the problem of determining the present value of future benefits and costs. It is known that the commercial interest rate is inherently short-sighted and utterly entrenched in the current economy. And yet it often becomes a decision-making tool with a very distant horizon, affecting the welfare of future generations.

Perhaps the most sceptical critic of the positive approach was von Mises (1957), who exhorted economists to be humble, arguing that, like historians, they are most credible only when they talk about the past. Commenting on the present and forecasting, they attribute to themselves a level of certainty that belongs to experimental science. This is where my article ends with a general discussion of competing approaches: normative economics versus positive economics. The paper aims to focus on the part of the economics that deals with the subject of sustainable development. Further considerations will concern the only treatment of ecological economics, which is the field of economics in which interdisciplinarity and joint review of economic, social and environmental aspects of development are most clearly exposed (Perrings, 2008a).

Ecological economics

At the outset, it must be clearly stated that social sciences differ fundamentally from natural sciences (Śleszyński, 2021). The natural sciences also reveal various scientific and social contexts and subjectivism, but empirical research based on repeatable and verifiable experiences forms the basis for further and sufficiently objectified inference. They are, therefore, falsifiable theories according to Popper's justified requirements. The erroneous opinion about the absence of asbestos toxicity can be verified. As a result of appropriate tests, it can be assessed in what circumstances and doses this substance may be carcinogenic. Whereas wrong economic opinion regarding the lack of the threat of inflation will be verified later and eventually will become a bad experience for citizens in the future. Moreover, it will be a lesson that cannot be used creatively in the future as the following pro-inflationary situation will be completely different.

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Biologists, geographers, chemists, physicists, and representatives of medical sciences have sets of numerical data and their sufficiently specific interpretations. Their achievements follow scientific advances but usually constitute a set of facts beyond discussion. These facts are entirely understandable for experts in a given narrow field of knowledge and rarely cause ongoing controversy and sharp disputes. Proper use of this knowledge would require introducing it into the bloodstream of the media flow and adapting it to the language and practice of social sciences. Conclusions from critical studies on harmful and dangerous environmental changes usually take the form of warning signals and normative recommendations. This is a challenge for the ecological economics, which should be able to take the correct position in the field of forest management, fisheries, the use of artificial fertilisers, the use of energy carriers, space management and many other issues. This position should express quantified guidelines for economists, activists, managers and politicians.

The natural sciences generate data and knowledge that ecological economics, fortunately, tries to adapt and transform into the language of economics. Sustainable catch-quota of fish, country forest cover, the rate of species extinction, the concentration of smog in the air or the accumulation of CO2 in the atmosphere are measurable phenomena that can be investigated empirically. Combined with the appropriate economic theory, they can be included in the most practical socio-economic considerations and the construction of development scenarios for fisheries or energy use. All in all, it is about one and the most critical strategy for the future – the sustainability scenario (Perrings, 2008b).

The ambition of the most creative scientists is to initiate discussions and formulate conclusions aimed at the sustainability of the biosphere and critical ecosystems, as well as the cohesion of dynamically changing societies. There are, of course, norms in these conclusions. Survival strategy translates into multiple goals, the imperfect but constantly improved formalisation of which are the Sustainable Development Goals proposed by the United Nations. They talk about fishing, eliminating pollution and social inequalities, and appropriate living conditions in the cities. These are all normative recommendations. Science created in such a context, dependent on verifiable theories and facts, can be both pragmatic and consistent with the guidelines of the sustainable development strategy.

Ecological economics, unlike environmental economics, does not only focus on applying neoclassical economic theories and tools to ecological problems (Martinez-Alier & Muradian, 2015). Its distinguishing features are the interdisciplinary problem analysis and the search for practical solutions that do not have to follow and meet the standard assumptions of neoclassical economics (Daly, 2007; Perrings, 2008a). For instance, the following assump-

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tions commonly present in orthodox economics can be questioned: maximisation of narrowly understood utility, substitutability of all inputs, inexhaustible energy resource, natural resources as „priceless" non-market goods, and ecosystem services as phenomena devoid of economic value.

Normative recommendations in the economy should indisputably concern the exploitation of natural resources and the pressures on the environment. At the same time, while remaining in a significant relationship with economic reality, they should consider the implemented production patterns and the observed consumption patterns. Normative recommendations resulting from basic research, then reformulated by the ecological economics, should become the content of decisions concerning, first of all, the protection of life and health as well as the living conditions of people and the state of the environment.

At this point, there is usually suspicion of representatives of natural sciences who know the anthropocentrism of traditional economics and fear its domination in the implementation of social and economic development projects. Therefore it is necessary to strongly emphasise the change in economic approach and introduce new interpretation of the relationship of the environment with the economy in the ecological and systemic perspective to the economic education. When it is aware of its limitations and threats, anthropocentrism is an opportunity to solve problems at the interface between the environment and the economy while respecting normative guidelines.

In the twenty-first century, in economics textbooks, unfortunately, one can find a repeated or slightly processed and sometimes biased or disguised scheme showing the following simple and one-way relationships: Natural resources → Processing and production → Consumption. The so-called linear model of the „cowboy" economy, by referring to the conquest of the Wild West, fits well only in an ideal world of free goods. It is based on the following assumptions: resources are unlimited and free, production and consumption cannot harm the environment and reduce welfare, consumers only consume, and the relationship between consumption and the atmosphere is negligible. All these assumptions should be disregarded today, and there is hard empirical evidence for this.

We expect the ecological economics to change the description of the world and economy. Thus, the description of the relationship between the economy and the environment is now more ecological and systemic (Figure 1) and, therefore, more complicated but revealing all significant limitations and threats. Essential drawing comments emphasise concern for the system sustainability. First, this system depends on the inflow of solar energy. So there is no question of being sustainable forever. Sustainability on a human scale takes into account the measure of time that we apply to our civilisation

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and culture. The inflow of solar energy activates the processes that ensure the functioning of the biosphere presented here as natural capital with all its resources and ecosystem services. Man-made capital is closely dependent on it. Two types of input, energy and matter, are transformed and, to a large extent, accumulate in a man-made capital.

However, the provision of goods and services necessary for a human being does not occur without significant changes in this system. Firstly, the energy absorbed in the production and consumption processes is an irretrievably used resource. According to the second law of thermodynamics, successive energy transformations dissipate energy in the form of useless heat. In turn, the matter is not only accumulated in man-made capital but also returned to the environment in the condition of pollution and waste. This type of system impact has multiple consequences. Material redundant from the point of view of consumption may be toxic or accumulate and generate dangerous phenomena, including climate change. Unfortunately, recycling is still a phenomenon of marginal importance, despite the optimists and the closed-system conceptual model of the so called circular economy.

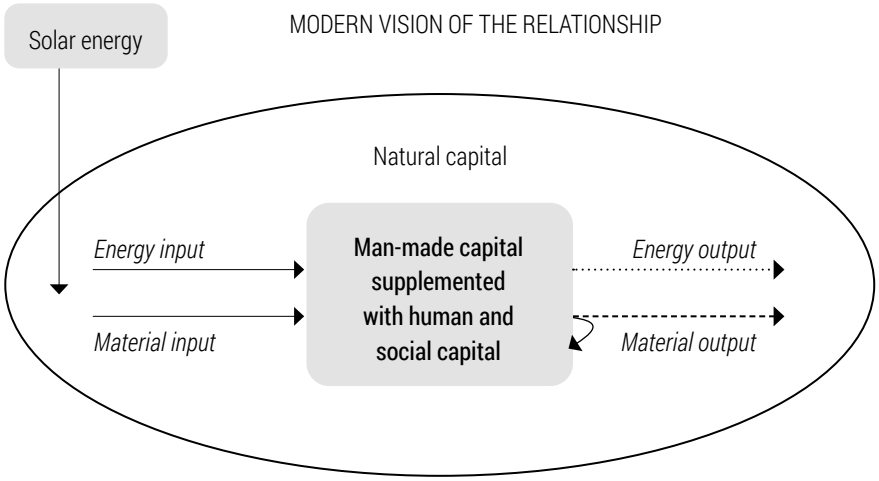

Figure 1. The relationship between the economy and the environment

The presented diagram brings some critical observations to the traditional description. First, it indicates a primary energy addiction. Since we are not green plants and will not survive thanks to photosynthesis, the limited availability of fossil fuels should be an essential element of any economic projection and analysis. Rather than juggling substitution within primary energy sources, it is desirable to prescribe the constraints imposed on the availability and lifetime of fossil fuels. Secondly, the matter released to the

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environment from production and consumption poses threats to the proper functioning of biogeochemical cycles in the biosphere and local ecosystems. This must lead to the normative definition of emission norms, immission norms, product standards and technological standards.

Regarding energy and pollution, ecological economics has serioustasks to be performed. Ecological economics should demonstrate that economic studies and projects locate themselves in the world of fiction and represent false consciousness conducting research and analysis without introducing appropriate ecological norms and standards. They lose contact with reality and recommend exclusively wishful solutions. They can only deceive decision-makers and the public and, as a result, lead astray by promising a bright future.

Conclusions

A normative approach to the ecological economics is needed in the complex age of increasing deficits and confronting threats to biological and social sustainability. We have reliable data from such sciences as biology, physics, chemistry, and medicine, which are sufficiently exact to inform what is dangerous, and where the most significant threats come from and thus suggest directions of change and their necessary scale.

The normative approach, based on the guidelines from basic natural sciences, allows for the creation of economic theories and models and then derives specific, quantitative premises from them for actions taken in the economy. Of course, together with the cost-benefit analysis as complete as it could be. The possible multiplicity of opinions and the variety of normative solutions should be treated as an expression of flexibility, variants and caution of the normative approach, not as its weakness and the result of inevitable ideological conflicts.

The educational role of the marriage of ecological economics with basic sciences (introduced into the university education) is worth considering. It should strengthen acknowledgement and respect for sustainability: prevent the erosion of the active involvement of new generations in local affairs and global problems, increase the cohesion and quality of a democratic society, and prevent narrow and one-sided specialisation of scientists (Śleszyński, 2021).

„The miller believes that wheat grows only so that his mill can work" (Johann Wolfgang Goethe). An economist and especially an ecological economist should notbehave (in her/his professional scientific, educational and social activity) like that miller for whom the entire outside world is only material to be processed in the only way known to him – without having to

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say whether wheat is worth to sow and reap and how to do it in terms of the consequences for the environment and other citizens.

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