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# INTERDISCIPLINARY METHODOLOGY IN INTERNATIONAL ECONOMICS

## Introduction

Today interdisciplinarity is a global trend in research and education areas.

The first trendline is a contemporary version of the epistemological quest for systematic integration of knowledge.

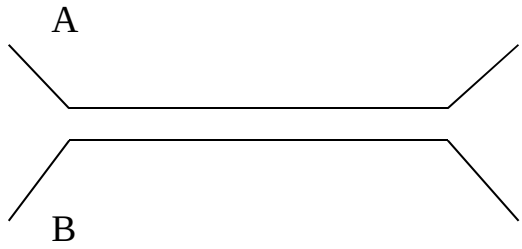
The second trendline is an extension of the definition of synthetic paradigms.

The third trendline is akin to critical interdisciplinarity and anti- and nondisciplinarity moving.

The fourth trendline is a discourse of "postnormal science" and a new Mode of knowledge production.

The modern methodological cross-disciplinary practice distinguishes three approaches: interdisciplinary, multidisciplinary and transdisciplinary.

Multidisciplinary means that the points of view on the common problem of two disciplines A and B are considered simultaneously, but they are not integrated. The connection between disciplines is situational, there is no commonly created matrix, objects of disciplines remain unchanged and unimproved.




Under an interdisciplinary approach, the point of view on the common problem of two disciplines A and B is integrated (combined) for a more generalized understanding. Interdisciplinary involves the mutual integration of organizing concepts, methodological procedures, epistemology, terminology, data and organization of research and education.

Transdisciplinary aims to study the modern world on the basis of the unity of knowledge and the solution of mega- and complex problems. It involves collaboration among academic researchers and non-academic stakeholders. Transdisciplinary research is the activity of shared conceptual and methodological paradigms in order not only to integrate but also transcend their respective disciplinary perspectives.

Table. Key features of multidisciplinarity, interdisciplinarity and transdisciplinarity

| Multidisciplinarity | Interdisciplinarity | Transdisciplinarity |
|---|---|---|
| Juxtaposing | Interacting | Transcending |
| Sequencing | Integrating | Transgressing |
| Coordinating | Focusing | Transforming |
| | Blending | |
| | Linking | |

Source: Klein (2017).

## 1. Transdisciplinary methodology in international economics

The international economy is a sophisticated and complex phenomenon which has economic, political, social, psychological, historical, institutional and other factors intertwined in it. The above determines the use of transdisciplinary methodology, based on economic paradigm taking into account theory and methodology of related disciplines. One of the features of the transdisciplinary methodology is that it creates a methodological framework not only for combining knowledge of different disciplines, but also for analysing new processes and phenomena, in particular the modern international economics.

Transdisciplinary methodology of the international economy suggests the use of evolutionary and behavioural economics methodologies. New evolutionary synthesis means, that is a unified view of the world which bridges the gap between the physical and human sciences, on the one hand, and to create a possibility to do a social choice, on the other hand. The crucial point for the economic theory is microscopic diversity, in other words microeconomic diversity. Variability and individual diversity at the microeconomic (microscopic) level drive the evolutionary process. They are the main ingredient to the creativity of evolutionary processes in terms of their potential to generate methodological novelty. Particularly, in international economics are used to such methodological approaches like regular evolutionary system, evolutionary game theory, evolutionary stable strategies, evolutionary stabilities, indirect evolutionary approach (Dhamy, 2017).

## 2. Evolutionary theory and behaviourism

The methodological basis of behaviourism is largely based on the evolutionary theory of Darwin. In particular, biology along with mathematics is a paradigm base for solving static and dynamic problems. Regarding economic statics (defined as the logic of coordination), biology provides its first paradigmatic pillar in the form of a

systematic approach for organic systems such as, for example, the work of Ludwig von Bertalanffy unified in the General Systems Theory (GST). GST is a transdisciplinary, interdisciplinary and multiperspectival domain. It brings together principles and concepts from Metaphysics, Philosophy of Science, Computer Science, Biology and Engineering, Geography, Sociology, Economics and Business. For international economics are two fundamental ideas of GST very important. Firstly, all phenomena can be regarded as a web of relationships among their components. Secondly, all systems have common patterns, behaviour and properties.

One has to keep in mind three principles of GST: totality, complexity and relativity.

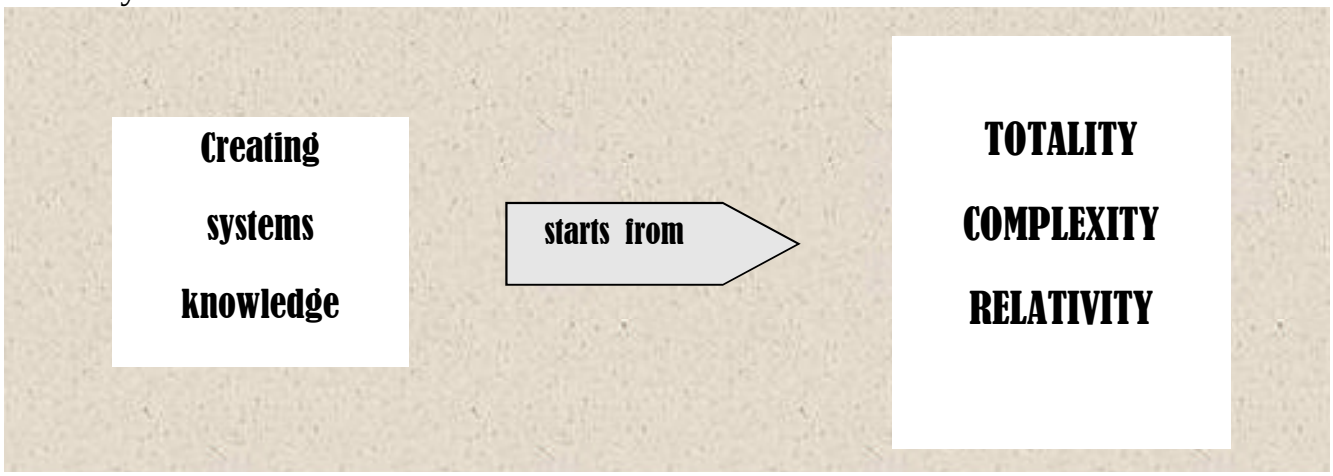



Figure 1. The Principles for Creating Systems Knowledge (Abnor I. and Bjerke B., 2009)

Totality means global economic interdependence around the world. Complexity characterises the behaviour of a system or model whose components (elements) interact in multiple ways and has a hierarchic structure. Relativity defines that every systems picture becomes partly dependent on the one who constructs it. Open and closed systems are substantial definitions in international economics, particularly open economy macroeconomics. The historical dynamics of the system, as its second paradigmatic pillar, is described by the concept of ontogenesis and phylogenesis. Ontogenesis means in this case changing of individual bodies (country, TNC, banks etc.) and phylogenesis refers to a shifting of great economic systems (clusters) like international integration communities, developed countries, emerged economies, least developed countries, development world and global economic system. The difficulties with establishing systematic procedures have led some economists to discard a transdisciplinary perspective altogether. Nelson and Winter have pointed out that they generally start with theoretical propositions and use any tools or language that are fit for a particular purpose of economic theorizing. Unlike advocates of universal Darwinism, they contend (Nelson and Winter, 1982): ‘We emphatically disavow any intention to pursue biological analogies for their own sake, or even for the sake of progress toward an abstract, higher-level evolutionary theory.‘

## 3. Social choice theory and prospect theory

Institutional mechanisms of the international economy are based on the methodology of system analysis, on the dialectic of the whole and its parts and include a policy of coordination, game theory, decision-making theory. The coordination policy is illustrated by the prisoner's dilemma; the game theory may pose 'battle of the sexes", median action games, 'stag-hunt game", 'ultimatum game' and 'dictator game'. The starting point concerning decision theory are the theory of social choice, based on K. Arrow's Impossibility Theorem and Kahneman-Tversky's Prospect Theory (PT).

Social choice theory attempts to analyse collective decision problems, for instance, Brexit. Arrow's impossibility theorem as a key doctrine in methodology of social choice holds the following four axioms:

( 1) Actors have unrestricted domain, which means that all logic preference-orderings are allowed.

(2) The Pareto criterion for efficiency is valid; if each actor prefers c to b, then society at large would prefer c to b.

(3) The choice between two options is independent of irrelevant alternatives, in other words, the context of a binary comparison does not play a role in the choice of the citizens.

(4) No individual should determine the collective decision (non – dictatorship); we can add to this axiom that citizens are not allowed to sell their right to vote (no-market condition) (Keizer, 2017).

Inasmuch is impossible, according to Arrow, to generate stable solution in social coordination, including international economic system, that needs to use other alternative theoretical concepts. Buchanan and Tullock, (1962), Harsany (1979), Usher (1982) have diversified a social choice theory. Substantial contribution have made to the social choice and decision theory of Kanehman and Tversky's. Their prospect theory is based on empirical observations of three effects: reflection, the certainty effect and the effect of small probabilities. At least two points are important for international economics. Firstly, this theory asserts that the expected utility principle should be modified by two weighting functions – value and probability. Secondly, PT is a descriptive theory of choice under risk, uncertainty and ambiguity. More detail put, while the expected utility of a risky prospect is $p_1 \cdot u_1 + \ldots + p_n \cdot u_n$,

where $p_1$ refers to the probability of the first outcome,

$u_1$ - utility. The prospect value is given by the following expression:

$w(p_1) \cdot v(u_1) + w(p_2) \cdot v(u_2) + \ldots + (w(p_n) \cdot v(u_n)$ (Peterson, 2009) .

The function w is a probability weighting function. The exact shape of w is an empirical issue. Weighting function for value is v. Prospect theory is used by estimates of integration and disintegration processes, particularly by Brexit outcomes for the EU and for the UK.

The methodological basis for the study of individual sectors of the economy is the Computable General Equilibrium model, gravity models and New Quantitative Trade Models (Emerson et al, 2017).

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