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Functions of natural sciences and the functions of social sciences

1. Introductory remarks

Few scientific problems can boast a literature so rich as that related to the discussions of analogies between natural sciences and social sciences, or – as we strive to take a look from the other side – to all the peculiarities of social sciences relative to the natural ones.¹ Those discussions are truly multifaceted, however, a number of issues have typically been seen as the most prominent: a. similarities vs. differences of the subject matter of scientific inquiry (i.e., the question whether natural reality is essentially similar or different from social reality),² b. similarities vs. differences of theoretical models constructed in order to structure reality in both areas of scientific inquiry (i.e., the question whether theoretical models constructed within natural sciences remain essentially similar or fundamentally different from

¹ S. Ossowski, *O osobliwościach nauk społecznych*, Wydawnictwo Naukowe PWN, Warszawa 2001; P. Sztompka, *O osobliwościach nauk społecznych raz jeszcze*, „Studia Filozoficzne” 8/1974, pp. 3–21; F. Znaniecki, *The Method of Sociology*, Farrar & Reinhart, New York 1934; T.S. Kuhn, *Struktura rewolucji naukowych*, PWN, Warszawa 1968.

² P. Sztompka, *O osobliwościach...*, pp. 3–21; R. Cichocki, *Kulturalizm Floriana Znanieckiego a opozycja naturalizm – antynaturalizm*, in idem, *Socjologiczne implikacje wczesnej filozofii Floriana Znanieckiego*, Instytut Socjologii UAM, Poznań 1995.

those of social sciences),³ c. claims concerning similarities vs. differences of the methodological procedures utilised to acquire, gather and process empirical data (i.e., the question whether the research models used within natural sciences are similar or fundamentally different from those used in social sciences),⁴ d. aiming at value-neutrality vs. the assumption that reference to values is inherently inevitable in both areas of scientific inquiry (i.e., the question whether the impact of values on the course of research conducted within natural sciences is essentially the same or fundamentally different from that occurring within social science research),⁵ e. analogies and divergencies of the functions of scientific knowledge produced in both areas of research inquiry.⁶

This paper is focused on issues involved in the last of the above-mentioned problems, namely, the analogies and differences between the functions of knowledge produced by natural sciences and of the knowledge is produced within social sciences.⁷ I would like to emphasise that my concern is not with humanities at large but specifically with the social sciences. When it comes to humanities the question at hand would seem to be much more complex.⁸

This paper is focused on exploring, on the one hand, the analogies when it comes to the functions of the systems of knowledge produced by natural sciences as well as by social sciences, and on the other hand, on investigating the essential differences when it comes to the functions of the systems of knowledge generated by social sciences, which are in no way performed by the systems of knowledge of natural sciences.⁹

It is often assumed that one of the principal social reasons for the existence of science comes in the facilitation of effective means of controlling reality, both natural and social.¹⁰ Those means of control can be classified into one of the two categories on the basis of the function of this control:

³ L. Nowak, *Wstęp do idealizacyjnej teorii nauki*, PWN, Warszawa 1977.

⁴ I. Gołowska, *Naturalizm – antynaturalizm jako spór o charakterze metodologicznym*, "Ruch Prawniczy Ekonomiczny i Socjologiczny" LXV, 1, 2003, pp. 5–12; A. Pałubicka, *Naturalizm i antynaturalizm*, in Z. Cackowski et al. (eds), *Filozofia i nauka*, Ossolineum 1987, p. 403 ff.

⁵ M. Weber, *Wissenschaft als Beruf*, in idem, *Gesammelte Aufsätze zur Wissenschaftslehre*, J. C. B. Mohr, Tübingen, pp. 582–613.

⁶ R. Cichocki, *Proces oddzielania badań stosowanych od badań podstawowych i jego konsekwencje dla nauk społecznych*, „Humaniora. Czasopismo Internetowe” 4(20)/2017, pp. 83–99.

⁷ Ibidem.

⁸ B. Kotowa, *Humanistyka a przyrodoznawstwo. Konflikt czy dialog*, in J. Płazowski, M. Suwary (eds), *Człowiek, kultura, przemiany*, Wydawnictwo Uniwersytetu Jagiellońskiego, Kraków 1998, p. 129 ff.

⁹ B.R. Kuc, *Funkcje nauki. Wstęp do metodologii. Nauka nie jest grą*, Wydawnictwo PTM, Warszawa 2012; A. Podgórecki, *Pięć funkcji socjologii*, in *Socjotechnika*, vol. 1, Książka i Wiedza, Warszawa 1968, p. 34; M. Surmaczyński, *Podstawowe problemy metodologiczne nauk społeczno-politycznych*, Wydawnictwo Uniwersytetu Wrocławskiego, Wrocław 2010.

¹⁰ L. Nowak, *Wstęp do idealizacyjnej teorii...*; F. Znaniecki, *The Method...*

– the function of cognitive control over reality – encompassing all forms of research activity which allow for gaining knowledge about reality and understanding its operative mechanisms: conceptualisation, description and diagnosis, explanation and prediction.

– the function of instrumental control over reality – encompassing all possible forms of interfering with reality that are employed on the basis of scientific knowledge: monitoring and oversight, designing and constructing, optimisation and development of complex technologies, as well as actions oriented towards: emancipation, adaptation, ideology, destruction, social engineering and empowerment.¹¹

The first group of functions (cognitive control over reality) is implemented on the basis of both the knowledge relating to natural reality as well as the knowledge relating to social reality, which does not in itself necessitate a similarity between those functions in the two areas of knowledge. The second group of functions (instrumental control over reality) is also borne by knowledge derived from both areas, however, the range of instrumental control seems much narrower when it comes to the natural sciences (monitoring and oversight, designing and constructing, optimisation and development of complex technologies) than the corresponding range on the part of social sciences (functions: adaptive and integrational, emancipatory and empowering, critical and delegitimising, ideological and legitimising). In my view, this difference in terms of the ranges of functions constitute one of the key differences between the two areas of knowledge.

2. Basic requirements for scientific knowledge that allow for executing the function of cognitive control over reality

One of the points of social significance of scientific knowledge comes in the facilitation of cognitive tools for understanding relevant fragments or aspects of reality, or – in consequence – for exercising effective cognitive control over those fragments or aspects of reality in line with the historically accepted cognitive standards. The quest for effective cognitive control means that when it comes to the knowledge fashioned in both social and natural sciences one expects it to fulfil at least four basic and interrelated requirements, which are usually specified as: a. conceptualisation, b. description and diagnosis, c. explanation, d. prognostication.¹²

First requirement – conceptualisation. Conceptual structures contained within those systems of knowledge should allow individuals as well as groups of individuals with relevant competencies to properly conceptualise the fragment of reality and

¹¹ W. Strawński, *Funkcja i cele nauki – zarys problematyki metodologicznej*, “Zagadnienia Naukoznawstwa” 3(189)/2011, pp. 323–335.

¹² K.R. Popper, *Cel nauki*, in *Wiedza obiektywna. Ewolucyjna teoria epistemologiczna*, Wydawnictwo Naukowe PWN, Warszawa 1992, p. 252; L. Nowak, *Wstęp do idealizacyjnej teorii...*

its description. Relevant conceptual sets should be constructed in such a way that would allow for cognitively capturing and reproducing this picture in the form of a conceptual model. Thus, for example, a researcher in the field of supramolecular chemistry who is focused on weak hydrogen bonds has to possess a conceptual apparatus allowing for the conceptualisation of the states of affairs or processes taking place in complex structures in order to perform research in line with the established standards. In a similar vein, conceptual systems used in social sciences are required to be able to conceptualise relevant fragments of social reality. Irrespective of their focus (e.g., dynamics of small social groups, processes of shaping organisational structures of great corporations, processes transforming public opinion in the public sphere, processes of structural social changes in different levels resulting from the pressure of mass social movements, the processes of globalisation societies under conditions of globalisation, or the dynamics of cultural change), sociologists must also have access to relevant conceptual resources allowing for the conceptualisation of a state of affairs, phenomenon or process that constitutes the object of their inquiry. In both types of research, conceptualisations have to be undertaken in ways that allow for the description of the relevant fragment of reality and communication of this description of the states of affairs, phenomena or processes to another researcher with the requisite competencies.¹³

Second requirement – description and diagnosis; when it comes to the systems of knowledge produced by natural sciences, they are expected to allow for a description of states of affairs, phenomena and processes related to relevant fragments of natural reality. In most general terms, it entails the capacity to address the following questions: what is the state of affairs? What rules exist within structures? At what intensity do phenomena occur? How are the processes progressing? A meteorologist tracing systematically the weather processes with the help of available measurement-based data is capable of specifying the state of major weather phenomena shaping the weather situation over Europe by pointing to the location all the major low- and high-pressure systems, specifying the physical and chemical characteristics of key processes occurring in the atmosphere, which make an appearance in the form of winds or precipitation, and, finally, the meteorologist should be able to point out the processes occurring between the main elements of the pressure systems as well as to determine their impact on expected states of weather in the foreseeable future. A similar expectation relating to the capacity for description and diagnosis of a specific phenomenon is formed with respect to social knowledge. A sociologist diagnosing the scale of the phenomena of social exclusion in the specific urban community must be able to address the following questions (just as his colleague from the natural science department): what is the scale of the state of affairs within this community, what is the degree of this exclusion, what phenomena can serve as

¹³ E. Babbie, *Badania społeczne w praktyce*, Wydawnictwo Naukowe PWN, Warszawa 2004; L. Nowak, *Wstęp do idealizacyjnej teorii...*

indicators of deepening and broadening and which of ameliorating and narrowing of the state of exclusion, what is the dynamics of processes within the excluded communities. Similarly to the meteorologist, the sociologist should also be able to communicate his findings to another person with requisite competences – taking into account, of course, the greater number of theoretical perspectives from which such a diagnosis can be conducted in the social sciences.¹⁴

Third requirement – explanation; it is expected of the systems of knowledge constructed in the natural sciences that they should constitute an effective tool for the explanation of states of affairs, phenomena and processes in the relevant area of knowledge, i.e., addressing such questions as: What are the underlying reasons of these states of affairs? Why are such phenomena taking place? What factors determine the course of these processes? An atomic physicist studying the processes of Uranium fission encounters fission phenomena occurring under various laboratory conditions and has to possess a model allowing for the demonstration of the factors significant for the process (including the hierarchies of significance within this space), i.e., he has to be able to point to the essential reasons in order to explain the phenomenon. A similar condition has to be met in the social sciences, albeit in a much less restrictive fashion. For instance, a sociologist studying the phenomenon of skills mismatch between the graduates of higher education institutions and the demand on the regional labour market is going to have to address such questions as: what is the scale of this mismatch? What significant factors impact the phenomenon of mismatch between the graduates and the regional labour market? What factors associated with the functioning of the higher education institutions alleviate or intensify such mismatch? An explanation of the state of affairs, apparition of phenomena and the course of processes requires, on the one hand, a construction of a space of factors significant for the state of affairs, phenomenon or object under consideration, and, on the other hand, it requires a definition of the hierarchy of significance among those factors that would distinguish between the primary and secondary ones. Without a doubt, the level of advancement of the natural sciences means that its practitioners much more often can use theoretical models allowing for the linking between factors considered to be important and the phenomenon or process under consideration.¹⁵

Finally, when it comes to the fourth requirement – those systems of knowledge are supposed to allow for effective prognostication, i.e., addressing questions such as: What phenomena are going to occur in the foreseeable future? How are the states of affairs going to change in the predicted future? What directions of change are going to occur in the foreseeable future? And all this should be done with the degree of precision acceptable at the given state of knowledge advancement. The effectiveness of theoretical knowledge as a tool for predicting the course of events

¹⁴ E. Babbie, *Badania społeczne...*; L. Nowak, *Wstęp do idealizacyjnej teorii...*

¹⁵ L. Nowak, *Wstęp do idealizacyjnej teorii...*; K.R. Popper, *Cel nauki*, p. 252.

and processes constitutes one of the chief criteria of value when it comes to natural sciences. Irrespective of whether such predictions relate to the internal processes within a complex organic molecule or the phenomena and processes occurring within a great low-pressure system over the Atlantic or the phenomena and processes associated by necessity with the fission of a certain amount of Uranium under precisely defined conditions or the lowering numbers and health-levels of the population of Polar bears. A sociologist prognosticating the directions of change in political attitudes and electoral preferences of a society would have to address the following questions: what new patterns of electoral behaviour are going to emerge in the coming elections? Are there going to be any changes in the ways middle-class votes? What change perspectives are visible in the preferences of the youth? What is the change trajectory in terms of civic engagement measured by voter turn-out? The expectation that the value of the explanatory power of a theoretical model is determined by its prognostication capacities is a postulate equally serious in relation to social-scientific knowledge as with respect to natural-science knowledge.¹⁶

Quite obviously, due to the fundamentally different level of scientific advancement in the two domains of knowledge, one cannot expect equal effectiveness of the tool in the form of accumulated theoretical knowledge of the natural sciences and the social sciences in the process of conceptualisation, description and diagnosis, explanation, and monitoring and prediction.

The first conviction that I would like to express in this article is the following: theoretical models perform the first key function of scientific knowledge, i.e., they provide indispensable tools for the cognitive control over the environment. The models achieve this through the provision of tools for conceptualisation, description and diagnosis, explanation, monitoring and prognosticating the states of affairs, phenomena and processes. I am convinced that, an interesting analogy holds in this respect between social and natural sciences. In a similar vein, social sciences, just as the natural ones, strive to perform the first function of scientific knowledge: cognitive control over reality (albeit with substantially inferior effect). By providing the tools for conceptualisation, description and diagnosis, explanation, monitoring and prognosticating of the state of affairs, phenomena and social processes they enable a more or less effective cognitive control over a specific fragment of social reality, which is available to the interested individual or collective agents. A sociologist building a system of knowledge within his discipline, just as his colleague representing the natural sciences, is constructing and utilising tools that are indispensable for the cognitive control over the environment. What a sociologist has at hand is the conceptual model of a specific phenomenon, process or fragment of social reality, or he might be constructing such a model, which would then be matched to this phenomenon, process or fragment of reality in line with a specific

¹⁶ L. Nowak, *Wstęp do idealizacyjnej teorii...*; K.R. Popper, *Cel nauki*, p. 252; S. Pabis, *Metodologia i metody nauk empirycznych*, PWN, Warszawa 1985.

methodology. Gradually, subsequent corrections would allow it to pursue the proper level of cognitive efficiency.

It goes without saying that the processes of cognitive control with respect to the natural world are not identical with those applying to the social world. However, the key function of scientific knowledge in both areas of science remains fundamentally similar: scientific knowledge is expected (in both natural and social domains) to provide cognitive control over reality in line with the historically shaped standards of particular disciplines.

This does not mean, however, the processes of developing effective tools for cognitive control over the environment would be identical in the sciences oriented towards natural reality and those concerned with social reality. This relates as well to the verification of the effectiveness from the perspective of the main groups of users, possible applications, ways of utilisation and effects obtained in both groups of sciences. And the reasons for the key differences between the two groups of sciences stems, among other things, from the fact that within natural sciences only one fundamental model of cognitive control is applied, while multiple such models are in operation within the social sciences. Therefore, when it comes to the social sciences each of the key requirements of cognitive control over the environment (conceptualisation, description and diagnosis, explanation, monitoring and prognosis) multiple models are applied even with respect to the same state of affairs, phenomenon or process.

3. Functions specific to the knowledge in the domain of social sciences which allow for evaluative and motivational control

What seems of primary importance is boundary setting between basic and applied research. I have discussed this issue at length in an earlier paper.¹⁷ I assume that the principal difference between the two types of research boils down a distinction in terms of the functions that serve. The dominant function of basic research (both in natural and social sciences) consist in the cognitive function, i.e., the cognitive control over reality (which I characterized above), and the dominant function of the applied research comes in the practical function, i.e., provision of applications in the form of tools for exercising instrumental control of reality, which can take different forms in social practice.

Scientific knowledge in natural sciences faces another obvious requirement: conceptual and theoretical models constructed by the natural scientists in order to exercise cognitive control must provides effective tools for instrumental control of specific elements of reality. These tools have to provide a necessary level of effi-

¹⁷ R. Cichoński, *Proces oddzielania badań stosowanych...*, pp. 83–99.

ciency in transforming their selected aspect of natural reality. What is understood by instrumental control in natural sciences can be boiled down to four requirements: monitoring and surveillance, design and construction, optimization as well as creation of complex technologies enabling transformations of state of affairs and affecting the structure of reality as well as the processes occurring within them in order to obtain end-products with designed parameters. It is also in relation to the knowledge generated within social sciences that similar requirements have been postulated, i.e., it should allow for: a. Control and monitoring of phenomena and social processes (e.g., control over the processes of social exclusion and the monitoring of the quality-of-life in cities), b. Design and construction of social institutions (e.g., designing management systems in banks, designing models of health care systems), c. Building complex technologies (e.g., mass marketing technologies regulating the streams of buyers, massed technologies of shaping public opinion through their social media systems, mass acknowledges of shaping political preferences with the use of Big Data). Due to the vast scope of the issue the analogies in terms of functions all different types of knowledge require as separate approach, and in the present paper that focus is going to be exclusively on the functions of social sciences.

Apart from the function of instrumental control over structures and social processes (which remains the most similar one to the function of knowledge within natural sciences, as it encompasses monitoring and surveillance, design and construction, optimization and modelling as well as creating technologies) at least three pairs of different functions can be named that the use of basic knowledge generated within social sciences has been facilitating.

The first pair includes:

- The adaptive function which consists in the adaptation of individuals and social collectives to the requirements of the existing social system (adaptive control, it comprises for instance such applications as: designing educational systems as well as other institutional processes of upbringing geared towards the acceptance and respect for the existing institutional order¹⁸ as well as

- The emancipatory function which consists in providing individuals and collectives with the conditions for building empowered relations vis-à-vis the social system (emancipatory control) – it comprises for instance that applications as: shaping sociological imagination as well as social sensitivity, anti-alienation and elimination of different forms of violence, emancipation.

The second pair includes:

- The ideological function which consists in the shaping the collective and individual consciousness in line with the dominant ideological system (ideological control) – it comprises for instance such applications as: providing ideological

¹⁸ K.S. Cameron, R.E. Quinn, *Kultura organizacyjna – diagnoza i zmiana. Model wartości konkurujących*, Oficyna Ekonomiczna, Kraków 2006.

legitimacy, legitimacy of the status quo, support of order, adaptation to the system, conservative reform, reaction or utopia, as well as:

– The critical function which consists in the shaping the collective and individual consciousness in critical approaches to social reality (critical control) – it comprises for instance such applications as: critique or order, delegitimization, reform, modernisation, destruction, revolution and progressive utopia.¹⁹

The third pair includes:

– The social engineering function which consists in the modelling of thought and behaviour of individuals and those in-line with assumed criteria (social engineering control) – it comprises for instance such applications as: indoctrination and worldview control, total mobilisation and control of collective attitudes, activation²⁰ and channelling of collective activity,²¹ behavioural manipulation and control of individual attitudes,²² as well as

– The empowerment function which consists in providing individuals and collectives conditions for creating their own systems of norms and values as well as cognitive and instrumental tools that are required for them to be able to define the situation as independent agents (empowering control) – it comprises for instance such applications as: shaping the autonomous capacity for evaluating reactions of public institutions, which is rooted in one's own value standards, shaping civic competencies that allow for empowering definitions of situation and the public sphere and civic activity²³ based on one's own knowledge resources, shaping the autonomous consumer competence based on one's own normative standards, shaping empowered attitudes towards reality that influence the activity in the public sphere or under market conditions.²⁴

¹⁹ P. Pluciński, „Miasto to nie firma!” *Dylematy i tożsamość polityczna miejskich ruchów społecznych we współczesnej Polsce*, „Przegląd Socjologiczny” vol. 63, 2014; idem, „Prawo do miasta” jako ideologia radykalnych miejskich ruchów społecznych, „Przegląd Zachodni” 1(342)/2012, pp. 17–42.

²⁰ A. Podgórecki, *Socjologia jako narzędzie polityki społecznej*, in *Socjotechnika*, t. 2, Książka i Wiedza, Warszawa 1968, pp. 547–548; N. Hill, J. Alexander, *Pomiar satysfakcji i lojalności klientów*, Oficyna Ekonomiczna, Kraków 2003; R. Wiszniowski, *Marketing wyborczy*, Wydawnictwo Naukowe PWN, Warszawa – Wrocław 2000.

²¹ A. Czarnecki, R. Korsak, *Planowanie mediów w kampaniach reklamowych*, PWE, Warszawa 2001; J.P. Kotter, J.L. Heskett, *Corporate Culture and Performance*, Free Press, New York 1992; R. Wiszniowski, *Marketing wyborczy*.

²² P. Pawełczyk, *Socjotechniczne aspekty gry politycznej*, Wydawnictwo Naukowe UAM, Poznań 2000; P. Pawełczyk, D. Piontek, *Socjotechnika w komunikowaniu publicznym*, Wydawnictwo Naukowe Instytutu Nauk o Polityce, Poznań 1999; A. Podgórecki, *Socjologia jako narzędzie polityki...*, pp. 547–548.

²³ S. Benhabib, *Trzy modele przestrzeni publicznej*, „Krytyka Polityczna” 3/2003, pp. 74–89.

²⁴ P.E. Szostok, *Poczucie podmiotowości komunikacyjnej w samorządzie terytorialnym w Polsce*, Wydawnictwo Adam Marszałek, Toruń 2017; P.E. Szostok-Nowacka, *Znaczenie poczucia podmiotowości dla aktywności społecznej w przestrzeni samorządowej*, *Annales Universitatis Mariae Curie-Skłodowska*, vol. XXVI, 1, 2019, pp. 141–157.

Those three pairs of functions remain significantly interconnected in the sense that the first part of each constitutes functions objectifying individuals and collectives vis-à-vis social structures, and the second part constitute empowering functions for individuals and collectives vis-à-vis social structures. Quite clearly, the typology proposed above is just one of many possible typologies of the functions of knowledge. What speaks to its advantage however, is that it is useful for correct arising the observed directions of the ways in which contemporary social knowledges used, and furthermore, it is good enough in the sense that it contains the great majority of all known uses of knowledge, on top of which it is also completing adds it allows for ordering the whole range of uses of this knowledge.

4. Final remarks – consequences of the multiplicity of functions within applied social sciences for basic research conducted in social sciences

The main point of this article hinges upon the assumption that one of the key factors distinguishing between applied natural sciences and applied social sciences is a difference of the functions used by them for instrumental control over the environment. When it comes to natural sciences there is one function with relatively homogenous set of employed applications, when it comes to the social sciences it is a set of six functions which comprise a very large and heterogenous set of practical applications. Basic natural sciences facilitate the needs of applied natural sciences for basic knowledge which then allow for effectively executing the following practical uses: monitoring and oversight, designing and constructing, optimisation and development of complex technologies. Where applied social sciences implements a vastly larger range of practical applications as apart from those that are similar to the natural sciences they also have our full range of specific uses which are associated with the above discussed functions: indoctrination and emancipation, steering consumer behaviour and the shaping of consumer competence that allows for defending against such steering, triggering political mobilisation and facilitating autonomous civic competence, designing social promotion campaigns and shaping critical attitudes with respect to marketing activities.

This multiplicity of functions of social knowledge as well as the greatly more numerous sets of applications of such knowledge to practical aims translates into both the multiplicity of requirements for basic research set by the applied social science as well as the diversity of those requirements. This takes place within all that specific aspects of the cognitive function. Adaptive applications of social knowledge require a fundamentally different conceptualisations social structures than emancipatory applications. The model of social reality indispensable for designing an effective system of information in a big corporation has to be based

on a fundamentally different set of significant factors than the model of reality to be used for purposes of political mobilisation. Applications associated with critical modelling of reality require a fundamentally different way of description than apologetic applications. The diagnosis of social phenomena constructs it for the sake of public policy is fundamentally different from those used for the sake of mobilising towards destructive activities, including total forms of mobilisation. Prognosticating the changes in social inequality for the sake of raising the efficiency of vocational education systems are clearly based on assumptions different than those used in emancipatory applications. The analysis of detailed mechanisms of the impact of these functions (and applications) specific for the social sciences on basic research in social sciences requires a separate analysis.

Literature

- Babbie E., *Badania społeczne w praktyce*, Wydawnictwo Naukowe PWN, Warszawa 2004.
- Benhabib S., *Trzy modele przestrzeni publicznej*, "Krytyka Polityczna" 3/2003.
- Cameron K.S., Quinn R.E., *Kultura organizacyjna – diagnoza i zmiana. Model wartości konkurujących*, Oficyna Ekonomiczna, Kraków 2006.
- Cichocki R., *Kulturalizm Floriana Znanieckiego a opozycja naturalizm – antynaturalizm*, in idem, *Socjologiczne implikacje wczesnej filozofii Floriana Znanieckiego*, Instytut Socjologii UAM, Poznań 1995.
- Cichocki R., *Proces oddzielania badań stosowanych od badań podstawowych i jego konsekwencje dla nauk społecznych*, "Humaniora. Czasopismo Internetowe" 4(20)/2017.
- Czarnecki A., Korsak R., *Planowanie mediów w kampaniach reklamowych*, PWE, Warszawa 2001.
- Gołowska I., *Naturalizm – antynaturalizm jako spór o charakterze metodologicznym*, "Ruch Prawniczy Ekonomiczny i Socjologiczny" LXV, 1, 2003.
- Hill N., Alexander J., *Pomiar satysfakcji i lojalności klientów*, Oficyna Ekonomiczna, Kraków 2003.
- Kotowa B., *Humanistyka a przyrodoznawstwo. Konflikt czy dialog*, in J. Płazowski, M. Suwary (eds), *Człowiek, kultura, przemiany*, Wydawnictwo Uniwersytetu Jagiellońskiego, Kraków 1998.
- Kotter J.P., Heskett J.L., *Corporate Culture and Performance*, Free Press, New York 1992.
- Kuc B.R., *Funkcje nauki. Wstęp do metodologii. Nauka nie jest grą*, Wydawnictwo PTM, Warszawa 2012.
- Kuhn T.S., *Struktura rewolucji naukowych*, PWN, Warszawa 1968.
- Marody M., Giza-Poleszczuk A., *Przemiany więzi społecznych. W stronę teorii zmiany społecznej*, Wydawnictwo Naukowe Scholar, Warszawa.
- Nowak L., *Wstęp do idealizacyjnej teorii nauki*, PWN, Warszawa 1977.
- Ossowski S., *O osobliwościach nauk społecznych*, Wydawnictwo Naukowe PWN, Warszawa 2001.
- Pabis S., *Metodologia i metody nauk empirycznych*, PWN, Warszawa 1985.
- Pałubicka A., *Naturalizm i antynaturalizm*, in Z. Cackowski et al. (eds), *Filozofia i nauka*, Ossolineum 1987.

- Pawełczyk P., *Socjotechniczne aspekty gry politycznej*, Wydawnictwo Naukowe UAM, Poznań 2000.
- Pawełczyk P., Piontek D., *Socjotechnika w komunikowaniu publicznym*, Wydawnictwo Naukowe Instytutu Nauk o Polityce, Poznań 1999.
- Pluciński P., „*Miasto to nie firma!*” *Dylematy i tożsamość polityczna miejskich ruchów społecznych we współczesnej Polsce*, „Przegląd Socjologiczny” vol. 63, 2014.
- Pluciński P., „*Prawo do miasta*” jako ideologia radykalnych miejskich ruchów społecznych, „Przegląd Zachodni” 1(342)/2012.
- Podgórecki A., *Pięć funkcji socjologii*, in *Socjotechnika*, vol. 1, Książka i Wiedza, Warszawa 1968.
- Podgórecki A., *Socjologia jako narzędzie polityki społecznej*, in *Socjotechnika*, t. 2, Książka i Wiedza, Warszawa 1968.
- Popper K.R., *Cel nauki w: Wiedza obiektywna. Ewolucyjna teoria epistemologiczna*, Wydawnictwo Naukowe PWN, Warszawa 1992.
- Strawiński W., *Funkcja i cele nauki – zarys problematyki metodologicznej*, „Zagadnienia Naukoznawstwa” 3(189)/2011.
- Surmaczyski M., *Podstawowe problemy metodologiczne nauk społeczno-politycznych*, Wydawnictwo Uniwersytetu Wrocławskiego, Wrocław 2010.
- Szostok P.E., *Poczucie podmiotowości komunikacyjnej w samorządzie terytorialnym w Polsce*, Wydawnictwo Adam Marszałek, Toruń 2017.
- Szostok-Nowacka P.E., *Znaczenie poczucia podmiotowości dla aktywności społecznej w przestrzeni samorządowej*, *Annales Universitatis Mariae Curie-Skłodowska*, vol. XXVI, 1, 2019.
- Sztompka P., *O osobliwości nauk społecznych raz jeszcze*, „*Studia Filozoficzne*” 8/1974.
- Taylor F. S., *Historia nauk przyrodniczych w zarysie*, Biblioteka Problemów, PIW, Warszawa 1959.
- Weber M., *Wissenschaft als Beruf*, in idem, *Gesammelte Aufsätze zur Wissenschaftslehre*, J. C. B. Mohr, Tübingen.
- Wiszniewski R., *Marketing wyborczy*, PWN, Warszawa – Wrocław 2000.
- Znaniecki F., *The Method of Sociology*, Farrar & Reinhart, New York 1934.