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APPLICANT'S OWN ACCOUNT OF HIS SCHOLARLY ACCOMPLISHMENTS

This document is a concise version – which I edited in English by myself – of the document called “Autoreferat” I had written in Polish. Both documents have been prepared to be attached with my application to start the **habilitation procedure**.

Sections 1–4 describe my 40-years long academic career. Prior to being awarded in **1982** the Ph.D. degree in sociology from the **Jagiellonian University**, as well as afterwards, I worked incessantly until 2006 for the Institute of Sociology at that university, being affiliated first with the Chair of Theoretical Sociology, and subsequently with the Chair of Research on Group Processes. My work for the Pedagogical University in Kraków that followed after I left the Jagiellonian University and continues until today is dealt with in the last fourth section of my **scholarly autobiography**.

The final Section 5 provides a description and self-evaluation of the **collection of works** I'm submitting as the basis for the decision concerning my habilitation. The collection comprises a **book** (*The Social and the Common. A Sociologico-Philological Study*. Kraków 2013: Universitas, in Polish) as well as **16 most important articles** chosen from among all publications after the doctorate.

1. Beginnings of my scientific way (1973–1982). Ph.D. thesis.

Born in Kraków (1950), with the diploma from the Nowodworski High School I began **my first studies at the Jagiellonian University in 1968**. I received my **M.A. degree in sociology in March 1973** to be immediately employed as instructor at the **Institute of Sociology**.

My master's thesis was based on a survey I carried out on a sample of student population with the use of a self-administered questionnaire. The main results of my research were published in the paper

(1) “ wiatopogl d studentów – próba charakterystyki na podstawie empirycznych bada socjologicznych” [Students' Philosophical Beliefs: A Tentative Description Based on Empirical Sociological Research]. *Zeszyty Naukowe UJ: Prace Socjologiczne* [series published by the Jagiellonian University Press] 1974 z. 2 [issue 2]: 35–52.

This paper opens the **list of 21 articles** which I consider – along with my **recently published book** – as **most important part of all my scientific output** (see also [Publications](#) on my personal website). There are only **2 empirical papers** on that list. While the second of them reports on the results of an experiment, this one falls under “survey sociology”, often erroneously equated with empirical sociology *tout court*.

The experience in doing survey research – which I owe to participating in projects of my colleagues, mainly as a statistical advisor – has always played a marginal role in my scientific profile, leaving no trace in my publication record except paper (1). Nevertheless, **“Methods and techniques of social research” and “Statistics” have become and remain my first teaching specialty**.

My knowledge of statistics has to do with **my second 5-year studies** I completed in **1975** at the Jagiellonian University with **M.Sc. degree in mathematics**. Working on my master's thesis (“Entropy of a dynamical system”) under the supervision of Professor Andrzej Lasota (1932–2006) I prepared

my first paper in the hard sciences. I owe the opportunity to present it to the supervisor of my sociological master's thesis, Professor **Hieronim Kubiak**. With his help I enrolled in the VIIth UNESCO International Seminar on the Use of Mathematics in the Social Sciences (Jabłonna near Warsaw, **1974**). My primary task as participant was to serve international guests with my knowledge of foreign languages (English, Russian, and French), but during the conference I was also asked to join the team of lecturers. The paper I presented was accepted for publication in the conference volume along with the papers by great figures of mathematical social sciences, James Coleman and Claude Flament, the author of *Applications of Graph Theory to Group Structure* (1963). In his pioneering work, which I came to know after the conference, he had left an open mathematical problem. An article, which I wrote in French, containing the solution of that problem and few other theorems on **signed graphs**, was **my first contribution to mathematical sociology**.

My paper appeared in **1976** in a French journal prior to the proceedings of the 1994 UNESCO seminar. Hence, my contribution to that volume is third on the **list of 5 papers I consider my most important publications before the doctorate**. The bibliographical data for two articles in question are as follows

(2) "Processus d'équilibration et sous-graphes équilibrés d'un graphe signé complet." [Balancing Process and Balanced Subgraphs of a Complete Signed Graph]. *Mathématiques et Sciences Humaines* 14, no. 55 (1976): 25–36.

(3) "Measures of Association for Nominal Variables." Pp. 247–255 in *Problems of Formalization in the Social Sciences*. Ed. by K. Szaniawski. Wrocław-Warszawa-Kraków-Gdańsk 1977: Ossolineum.

The second paper (3) is my only contribution to theoretical statistics (my later statistical publications have a didactic character). The next paper from the list of 5, like (2), deals with signed graphs, but it is a purely mathematical work.¹

(4) "Enumeration of Weak Isomorphism Classes of Signed Graphs." *Journal of Graph Theory* 4 (1980) no. 2, 127–144.

However, **I did not abandon sociology for mathematics**, as shown by the last of 5 most important papers published before the doctorate.

(5) "Zmiany strukturalne a proces polaryzacji społeczeństwa" [Structural Change and the Polarization Process in a Society]. Pp. 163–202 in *Elementy socjologii dialektycznej* [Elements of Dialectical Sociology]. Ed. by Piotr Sztompka. Poznań 1981: PWN Publishers

I decided to combine sociology with mathematics at the very beginning of my way. The UNESCO conference helped me choose this specialization and define my future research interests. No less important was my first encounter with Professor **Klemens Szaniawski** (1925–1990), eminent Polish logician and philosopher. He became known to Warsaw sociologists first as the lecturer of statistics in the Institute of Sociology, Warsaw University.² In the 1970s, Szaniawski ran there a seminar on mathematical sociology for faculty and postgraduate students. I attended his seminar and presented there my own results which were later included in my **doctoral dissertation**.

¹The paper appeared in the journal that, unlike the French journal, has been included in the Web of Science, having there 3 citations. For my 2 papers on signed graphs, Google Scholar reports on 8 and 19 citations, respectively. My public profile at Google Scholar is given at the address: <http://scholar.google.pl/citations?hl=pl&user=UbV3VuAAAAJ>.

²His student and successor in this role, Professor **Grzegorz Lissowski**, is now head of the Chair of Statistics, Demography, and Mathematical Sociology, Institute of Sociology, Warsaw University. He is a scholar who could evaluate my accomplishments in the specialization we both represent in Poland.

“Model równowagi strukturalnej. Teoria grafów oznakowanych i jej zastosowania w naukach społecznych” [Structural Balance Model. Theory of Signed Graphs and Its Applications in the Social Sciences]

Having engaged – soon after receiving my second master's degree (1975) – in the study of **signed graphs** and their applications, I continued my investigations under the advisorship of Szaniawski and **defended my thesis at the Jagiellonian University in September 1982**. The time of martial law in Poland did not favor publishing books. My long dissertation (367 pages) remained unpublished, yet all new mathematical results presented in there appeared in international journals. Papers (2) and (4) are discussed by Thomas Zaslavsky in his annotated bibliography of publications on signed graphs (www.math.binghamton.edu/zaslav/Bsg/).

2. In the Chair of Theoretical Sociology (1983–1989).

When the Institute of Sociology, being one of few departments (called Institutes in Poland) functioning within the then Philosophico-Historical Faculty of the Jagiellonian University, was divided into smaller units (here I will call them “chairs”), I became a member of the Chair of Methodology and History of Sociology. Cooperating simultaneously with the Warsaw center of mathematical sociology, I was participating – before and after the promotion to the position of **assistant professor** (*adiunkt*) – in collective projects initiated by Professor **Piotr Sztompka**, head of this chair of which the name was later changed to **Chair of Theoretical Sociology**. Paper (5) I mentioned in the previous section was my contribution to the volume he edited. My involvement in further activities of his Chair, focusing on historical rather than theoretical issues (history of Polish and Italian sociology, in cooperation with the University of Rome) was rather marginal. Myself, I was working mainly on **microsociological applications of graph theory**, a research area that is usually subsumed under **Social Network Analysis**.

SNA is a formal variety of “structural approach” in the social sciences, as well as an interdisciplinary scientific movement, which then entered the phase of institutionalization.³ It has recently got out of its niche and became part of mainstream sociological theorizing, so you can find networks also in recent works on trust by Professor Sztompka. At the time when I was a member of his team, his role in the work on the topic R.III.9.4.2 “Graph theory and its implications for the sociology of microstructures” was limited to formal supervising me – then a young researcher who was happy with becoming the “principal investigator” of the project accepted under the then system of state grants.

Some of the assistant professors who had been the members of the Chair of Theoretical Sociology went each his own way after habilitation. So did **Jacek Szmata** (1950–2001), associate professor since 1987, with whom my fate was closely bound on the next stage of my academic career (see Section 3). Jacek Szmata, like our common immediate superior, insisted on active presence in the world science. The contacts he had made during his first visit to the West helped him organize an international conference in the Interuniversity Center in Dubrovnik in 1982. He did not manage to arrange for publishing the conference materials in a book, which for me meant losing an opportunity to publish my paper.

Over the second stage of my career, my publication output was enriched with one translation (of a paper) and 3 papers. I count all three of them among **16 most important articles that appeared**

³An international association (of which I am member since 2002), named International Network for Social Network Analysis, grouping network scientists, was formed in 1978. See my article “Sie społeczna” [Social network] which I wrote as an entry for (Polish) *Encyclopedia of Sociology*, vol. IV (2002).

after the doctorate until today.⁴

The common theme of the three papers in question is a **metatheoretical analysis of the concept of structure and structuralist postulates in the social sciences and in mathematics**. The first article appeared in 1985 in the special issue of *Studia Filozoficzne* containing the papers dedicated to Professor Szaniawski on his 60th birthday by his students and collaborators. The second article won the first prize in the competition organized every year by the association of young faculty (instructors and assistants professors) of the Jagiellonian University. In the third article, which like the second appeared in *Studia Socjologiczne* (a leading Polish sociological journal), I proposed a formalization of the classical Simmelian concept of “social form”. I also computed the number of distinct structural forms of elementary two-actor social systems (called “minimal social situations”). For the concreteness and novelty of the latter result, I attach the highest value to this paper, which has to do with my understanding of success in science, shaped during my mathematical studies, namely, I learnt to appreciate above all strict stating and solving concrete problems or discovering new areas where such problems can be posed.

By the end of 1980s, I left the main field (theory of signed graphs and its applications in the social sciences) on which I had worked before the doctorate and some time later. As my interest in general methodological issues had weakened, I began to look for another field within mathematical sociology where I could produce new publishable results. I expected that my travel to the United States would help me find a new specific problem area for future research. My stay, arranged under an agreement on direct exchange between Jagiellonian University at the branch of the University of Wisconsin located in Stevens Point, began in September **1989**. After some time I spent in that small center, I moved to Chicago to meet **James Coleman** once again. I attended his seminar and another seminar he ran at the University of Chicago with Gary Becker, the 1992 Nobel prize winner in economics.

Professor Coleman (1926–1995), the author of *Foundations of Social Theory* (1990), was a leading representative of **Rational Choice Theory**, which has until today remained one of hard science ways of theorizing in contemporary sociology. The formal variety of this orientation makes an extensive use of mathematical **game theory**. **Game-theoretic modelig of elementary social phenomena** has become – besides **sociological applications of graph theory** – my second narrower specialization in mathematical sociology, the one which involved teaching, too. I mean a monographic course, usually entitled “Game and decision theory for the students of the social sciences”, I had taught for many years when I was employed in the Institute of Sociology.

During my visit to the US, lasting until mid February 1990, I edited an extended English version (“A Combinatorial Theory of Minimal Social Situations”) of my 1987 paper in *Studia Socjologiczne*. I submitted my **contribution to social combinatorics** for publication to the *Journal of Mathematical Sociology*, the most important refereed journal in my specialization. My article, containing generalizations of the formulas presented in the Polish version, appeared in that journal two years later (1992).

3. In the Chair of Research on Group Processes (1990–2006)

Jacek Szmátka, who faced after habilitation a similar problem of where to direct further research efforts, chose **microsociology**. Having published a textbook (*Małe struktury społeczne*, 1989) on “small social structures”, he got interested in theorizing and doing research on group processes in the way he learnt in the USA from **David Willer**, the author of the so called **Elementary Theory of Social Relations**. To test his theoretical hypotheses on power distribution in **network exchange systems**,

⁴They are listed in the **Appendix**. For each paper, its ordinal number is followed by the symbol (the year of appearance with a *a, b*, etc., added where necessary) assigned to it on the list of all my publications arranged in the chronological order.

Willer founded at the University of South Carolina a laboratory for experimental research on microsystems in which actors could negotiate transactions and exchange resources as occupants of connected positions within a fixed network determining who may communicate with whom. The Elementary Theory and Willer's paradigm for doing empirical structural microsociology did attract Jacek Szmata so much that he set his heart on setting up a similar research center at the Jagiellonian University. When I got acquainted with his actions, I decided to join the Microsociological Laboratory, new research unit he founded within the Institute as soon as he had left the Chair of Theoretical Sociology. When he became a full professor (1992), his Lab was promoted to the rank of a chair. If its name, **Chair of Research on Group Processes**, were modified by replacing "research" with "theory and research", it would render much better aims and scientific interests of its founder and his collaborators. My role in the Chair in some respect resembled that played by **John Skvoretz** working at that time with Willer in the South Carolina Lab.⁵ Having a mathematical background, Skvoretz wrote Quick Basic programs needed to run network experiments, as well co-operated with Willer in formal theoretizing and statistical data analysis.

The research grants⁶ awarded to Professor Szmata over the years 1991–1998 by state Committee for Scientific Research (KBN) helped us equip our lab with a local computer network (the server and 6 stations) similar to that installed in Willer's laboratory. Having obtained necessary software from the American partner, we could carry out our own experiments on **exchange networks** and subsequently on **conflict networks** (the doctorate of Joanna Heidtman). Although my own work focused, first of all, on **formal modeling of network exchange systems**, I also helped my colleagues with planning and running experiments (I learnt programming in Quick Basic in order to adjust Skvoretz's programs to our research objectives). Every time Jacek Szmata went overseas for a longer time span to lecture at American universities, I was responsible for the current activities of his chair. In particular, I often had to replace him as lecturer of **microsociology**, which course has become in this way my **second teaching specialty**.

The most important result of our first common project (supported from the first research grant) was the **publication of the book** whose title translates as *Structure, Exchange and Power. Studies in Theoretical Sociology*. It is a collection of papers I co-edited with J. Szmata and M. Kempny.⁷ It was Jacek Szmata that initiated the project and decided on whom to invite as contributors, yet I became the first co-editor because I had to check the whole text and prepare its camera-ready version (309 pages) for the publisher.

The second co-editor was also the first author (with me as the second author) of the paper which was placed at the beginning of the book, as it conveys its metatheoretical message. The English version of this article ("On Four Myths of Sociology and Three Generations of Sociological Theories"), which appeared in 1994 in *Polish Sociological Reviews*, is one of 2 co-authored papers I decided to include in the list of 16 article published after the doctorate because I assess my contribution as significant, even though I was not the first author of those two papers. The second of these papers ("Conflict in Networks") – with J. Szmata and J. Skvoretz as 1st and 2nd author, and Joanna Mazur (now Heidtman) as 4th author – appeared in *Sociological Perspectives* (1997). My concrete contribution to

⁵John Skvoretz (now a professor at University of South Florida) has become later a key figure of SNA. He is currently holding the post of the President of INSNA (see footnote 3).

⁶The information on all research grants in which I took part throughout my academic career is given both versions (Polish and English) of my *Curriculum Vitae*.

⁷The third co-editor, Marian Kempny (1954–2006), an anthropologist from Warsaw University, did not share the pro-science stance of the first and second co-editor. His main task was to contact the publishing house in Warsaw. The contributors to the volume were the co-editors themselves and collaborators or postgraduate students of Jacek Szmata.

the work of four authors consisted in interpreting Willer's three types of social relations (exchange, coercion and conflict) as special cases of the Nash bargaining problem. As regards the metatheoretical paper with Jacek, my role was to reformulate some too radical statements of my colleague in order to make the message of our paper (the distinction of 3 types of sociological theorizing) more convincing for those sociologists who still reflect on their discipline in terms of the traditional opposition between positivistic and humanistic approach.

Apart from the paper I co-authored, the 1993 book I co-edited contains my **two extensive articles** (their joint size exceeds 80 pages; see items 5:1993c and 6:1993d in the Appendix) which form in fact the **theoretical and experimental part of one study**. The formal framework I proposed in the first part was applied in the second part to design a replication of an experiment done by David Willer. Today I think that it would be better for me to publish at that time my two-part study – extended by my own methodological introduction – as a separate book and submit it as a dissertation for the next academic degree.

The mistake which my colleague and myself both became aware of – however too late, when *Structure, Exchange, and Power* already appeared in print – was our decision to edit our book in Polish to get it published as soon as possible. To make up for the lost opportunity to make our product known to a larger audience, we intensified – over the years to come (1993–1998) – our activity at the international forum by participating in few conferences of the highest rank. Whereas the paper I presented in 1993 in Paris at the centennial congress of International Institute of Sociology was only an English abbreviated version of my theoretical article in the 1993 book, I went to Bielefeld to take part in the 13th World Congress of Sociology (1994)⁸ with a paper containing few quite new results which I obtained, working hard on the new specific research field I had found at long last with the help of Jacek Szmata and his American collaborators.

When David Willer, just after he had edited the special issue of the journal *Social Networks* (1992) on exchange networks, encouraged me to “look at the theories presented there with an eye of the mathematician”, I took up the challenge. That's how my long term enterprise, not yet finished, was born. **My aim was to mathematically elaborate all main formal models of exchange process in social systems endowed with network structure**. Following Willer's suggestion, I started from analyzing the oldest network approach to exchange, which was initiated by Richard Emerson (1973)⁹ and formalized by Yamagishi and Cook in their 1992 paper in *Social Networks*. The next step after the presentation of my first results in Bielefeld was my participation in the International Conference on Social Networks (London, 1995). The paper I presented there (it was published in the proceedings) became a germ of a larger study, containing many theorems with proofs. For its size (nearly 50 pages) exceeding the limits imposed on authors by refereed journals, I accepted the invitation to include my work (“Toward a Formal Theory of Equilibrium in Network Exchange Systems”) in the book, which was then being prepared by Jacek Szmata and his American colleagues. The volume entitled *Status, Network, and Structure. Theory Development in Group Processes*, edited by him, J. Skvoretz, and Joseph Berger¹⁰, appeared in 1997 in Stanford University Press.¹¹

⁸I was elected there for the 4-year term to the Board of **Research Committee #42 (Social Psychology)** at **International Sociological Association**. My last international experience during my work for the Chair of Research on Group Processes took place in Summer 1998. I worked then as **visiting professor** for University of British Columbia, Vancouver (teaching the course “Experimental research in sociology”) and moved from there to San Francisco to present a paper at the ASA Meetings.

⁹Emerson's original contribution is best known to sociologists, as it was discussed by Jonathan Turner in the first edition of *The Structure of Sociological Theory* (1978).

¹⁰Professor emeritus of Stanford University, the senior and leading member of the circle of scholars doing “theory and research on group processes”; he co-authored one of pioneering works in mathematical sociology

After that important publication I went ahead with **my own monograph** *The Mathematics of Exchange Networks* (I decided to write it in English). I began from preparing its Part II (Mathematical Theories of Power in Exchange Networks: Chapters 3,4,5) which were to have a more mathematical character than Part I (Structural Models: Chapter I: Structural Mathematical Sociology; Chapter 2: Exchange Relations and Network Exchange Systems). Chapter 4 (The Principle of Equal Dependence) was finished first, as it was edited by extending my Stanford article with further theorems. In Chapter 3 (Exclusion and Power) written next, I presented my mathematical elaboration of Willer's idea that uneven distribution of benefits across the actors occupying positions in an exchange network is produced by inter-positions differences with respect to structurally determined ability to exclude one's neighbors in the network from transactions. This second variety of network exchange theorizing was being developed by Markovsky and Willer since 1988 when their seminal paper with Patton appeared in *American Sociological Review*. The third variety consists in studying the solutions of an n-person game (given in the form a “characteristic function”) that is constructed to represent an exchange network. I elaborated this approach, proposed by Phillip Bonacich, in Chapter 5 (Game Theory and Exchange Networks) I completed by the end of 2003.

Although Part I was not then ready to be processed by the publisher, I submitted both parts to the Jagiellonian University Press with a review written by Piotr Swistak (a Polish mathematical sociologist working in the USA, University of Maryland), but soon I took the manuscript back when I realized that Part I needs more substantial changes. However, my further work on the text of my monograph brought at that time only some enlargement of Chapter 5. In Summer 2004 I placed the whole Part II (with bibliography, some 200 pages ready for printing) on my personal website which I set up in April that year to have a place in the Web for communication with fellow researchers in a new field I entered at the beginning of 2004.

The field that appeared attractive to me so much that I couldn't help but leave my main research area for some time was the **theory of voting games**. I got acquainted with the theory of multi-person games when I was working on Chapter 5, but my interest in voting games had more to do with watching the debate which took place in Poland soon after an attempt – successful, as it turned out in Lisbon – was made by the EU ruling elites to change the voting system designed for the EU Council in the Nice treaty (2001). I began my study of voting games from writing a computer program (POWERIND) which I needed to compute classical measures of voting power (the Banzhaf index and the Shapley-Shubik index). There followed the publication of 2 popular science articles in a Cracow daily, and of 3 theoretical papers of which I will tell more in Section 4 as they appeared in the next period of my academic career. The full documentation of my activities in this area over the years from 2004 to 2010 can be found on my website (section [Voting Games](#)).

Although Part I still remained unfinished, I gave priority to getting published as soon as possible at least part of new developments until then reported solely in Part II. Having selected my key results pertaining to the third strand of formal theorizing on exchange networks, I prepared a sizable article (“On the Core of Characteristic Function Games Associated with Exchange Networks”), which was accepted for publication in *Social Networks*, a refereed journal which, for its high impact factor, has been assigned as many as 45 points (with 50 as the maximum possible value) under the system of evaluating publications recently implemented in Poland. However, it is not the rating of the journal but my awareness of the quality of my contribution that makes me see in this paper my top achievement

(*Types of Formalization in Small-Group Research*, 1962).

¹¹Jacek Szmataka was proud of being the first co-editor of the book on which Jonathan Turner wrote in his review: *There is nothing in the literature like this exciting project. The authors are among the best and the brightest in the theory-driven research tradition of world social science [...] All the articles are well written, and there is not a single weak one in the collection.*

after the doctorate. My own high evaluation of this paper has been confirmed by being invited by the editor of the journal to act as a reviewer in my specialty.

I also count among my important accomplishments over the third phase of my career **3 other important articles** which take up the topics that were the subject matter of my earlier publications. My third paper (1994b) in *Studia Socjologiczne*, included in the special issue on Rational Choice Theory, is my next contribution to “social combinatorics”. Two other papers belong to the field of general methodology. The first of them (“Co to jest nauka?” [What Is Science?]) appeared in 1995 as a contribution to the volume entitled *Nauka. To samo i tradycja* [Science. Identity and Tradition]. It was later republished in a collection of readings (*Badania empiryczne w socjologii*, [Empirical Research in Sociology], 1997) for the course of “Methods and techniques of social research”. The second paper (“Socjologia teoretyczna jako nauka normalna” [Theoretical Sociology as a Normal Science], my fourth in *Studia Socjologiczne* (1998), brings my further considerations on attempts to make sociology a “normal science” in the meaning that is due to Thomas Kuhn.

Over 17 years of my work for the Chair of Research on Group Processes my publication output was enriched with 12 important articles (items 4 through 15 in the list given in the Appendix). Most of them are longer than a typical journal article. Only two, “Sie społeczna” [Social Network] and “Socjologia matematyczna” [Mathematical Sociology], are necessarily short, as they are entries I wrote for the Polish Encyclopedia of Sociology upon the request of its Editor in chief, Professor **Władysław Kwańiewicz**. He invited me to editorial committee as its only member having solely the Ph.D. degree. He appreciated my accomplishments and research interests. Unfortunately, he cannot speak or write about it, as he died in 2004.

Professor Jacek Szmatka passed away in October 2001. If he lived a little longer, he would certainly be glad to learn that the Nobel prize in economics was awarded in 2002 to Vernon Smith for his experiments on simple bilateral markets. Since Smith's methodology and substantive issues he addressed have been fairly close to what Jacek and his American collaborators did in their labs, my Colleague would welcome an independent confirmation that his way of doing theoretical and empirical sociology was worth being continued. Though marginal in Poland, this way has ceased to be so in the US, as evidenced by the entries devoted to Willer and Markovsky in *Encyclopedia of Social Theory* edited by George Ritzer (2005).

The Chair of Research on Group Processes was working for some time after the untimely death of its head and my parting with the Jagiellonian University 5 years later. From the beginning of the academic year 2003/2004 to the end of the academic year 2004/2006 I was employed there as a lecturer (a position, which unlike that of an assistant professor, involves teaching only).

4. In the Institute of Philosophy and Sociology, Pedagogical University (2007–2013)

1st October, 2006, I started work for the Pedagogical University in Cracow. The decision to employ me as assistant professor had to do with the employer's expectation that I would complete soon my habilitation dissertation. As I failed to meet this requirement in two years, my full-time employment was not extended for the academic year 2008/2009. Since then **I was working for 4 successive academic years as an external lecturer** hired under contract to teach (as previously) “Methods and techniques of social research” and “Statistics” for sociology students, and “General sociology”, a supplementary course in the curriculum at the Pedagogical Faculty. I also taught “Microsociology” at a private college (Frycz-Modrzewski Cracow Academy).

Working in either position, as assistant professor or independent lecturer, I continued my scholarly career, being active simultaneously in three research fields.

Firstly, I went on writing my sociologico-mathematical monograph. Chapter 1, which doubled its size from the planned 40 pages, was finished in August 2011. You can read it, as it is available on

my website (in section Exchange Networks) where you will also find the detailed table of contents and information on which chapters (4 out of 6, some 300 pages ready to print) have been completed. *The Mathematics of Exchange Networks* will no longer be anyhow connected with my plans to apply for any academic degree or title. When my work is finished, I will try to get it printed, possibly as a volume within the series “Structural Analysis in the Social Sciences” published by Cambridge University Press.

Secondly, I was working on mathematical theory of voting systems. In Fall 2007, I attended an international conference organized by the Natolin European Center in Warsaw. I was invited to present a paper – along with many leading European experts in voting theory – as the author of two articles that appeared earlier that year in the Polish political science journal *Międzynarodowy Przegląd Polityczny* (it was issued until 2010 by the Sobieski Institute). 3 years later the book containing my paper (“The Blocking Power in Voting Systems”) for the Natolin conference appeared in a reputable British European publishing house. I introduced in this paper the distinction between “winning power” and “blocking power” and proposed a measure of the latter that is based on counting small size minimal blocking coalitions. The paper is the last item on the list of 16 most important articles I have published since the doctorate until now.

Thirdly, in this last phase of my academic career I entered quite a new research field. “Few can foresee whither their road will lead them till they come to its end” (Tolkien, *The Two Towers*). My road has led me to an area that is closer to pure **humanities** than to my earlier research interests. An excursion into the field where **sociology meets the sciences of language** has ended for me with publishing my first **book** whose initial title (later trimmed by the publisher) reads in English translation: “The Social and the Common in Masters of Social Thought and in Main European Languages.” The first step on the road to this event was my paper presentation on the All-Polish Congress of Sociology in Zielona Góra (September 2007). The paper, which I presented there, had been destined for *Studia Sociologica* (the sociological series within *Annales Universitatis Paedagogicae Cracoviensis*). I could have stopped my “adventure” at this point, but I could not resist getting involved even deeper. Thus, my article, which appeared in print in 2010, became the first part of larger study, whereas the successive versions of the second part appeared on my website (in the Miscellanea section). Meanwhile, I presented another paper (“How Main European Languages Conceptualize the Social. A Case of Linguistic Relativity”), this time at the World Congress of Sociology (July 2010, Gothenburg, Sweden). In mid 2012 I asked Professor Tadeusz Gadacz (the Chairman of the Institute of Philosophy and Sociology) whether the “sociologico-philological study”, which I had just finished, could be accepted as **habilitation dissertation**. I heard from him that I should supply the reviews made by two full professors of sociology recommending the publication of my book as meeting the necessary requirements. **In January 2013 I received the reviews with such a conclusion** from two specialists in the history of sociology, Professor **Włodzimierz Winclawski** (Nicolaus Copernicus University, Toruń) and Professor **Mirosław Chałubiński** (The Zielona Góra University).

Having made the corrections and enlargements suggested by reviewers, **at the beginning of May 2013, I brought the final text of book to the Universitas publishing house.** The publication was supported by my employer because **as of 1st April 2013 I am again a full-time worker (assistant professor) of Pedagogical University.**

My book entitled *Spoleczne i wspólne. Studium socjologiczno-filologiczne* [The Social and the Common. A Sociologico-Philological Study] **appeared in September 2013**, earlier than stated in the contract between the author and the publisher but too late to have an option to apply for habilitation under the old regulations. However, following the suggestions of my colleagues acquainted with my scholarly accomplishments, **I decided as early as in June 2013 to follow the path opened by the new**

law on academic degrees and titles.

5. A summary of scholarly achievements documented by publications

The basis I'm proposing for evaluating my scholarly achievements in sociology consists of: (1) **16 most important articles** which have been published in refereed journals or edited books after conferring on me the Ph.D. degree (1982) until today; (2) the **monograph** which has just appeared in print.



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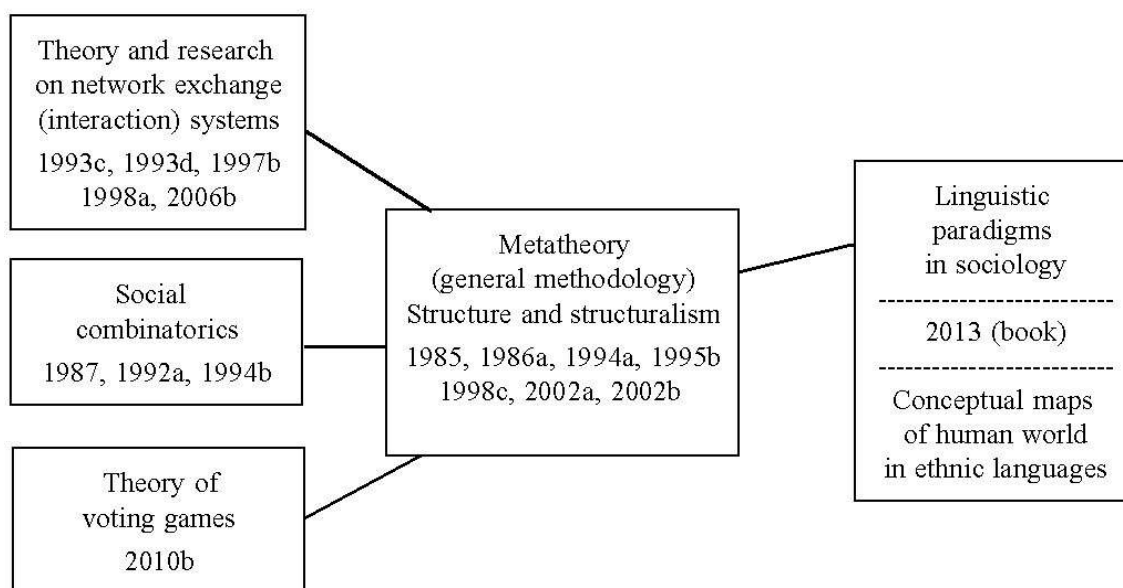
What motivated me in my work on this book was my interest (it dates back to my university studies) in the **boundary area between the social sciences and the sciences of language**. My „sociologico-philological study” is my first publication in this field, which as a whole may appear far from my main specialization, **mathematical sociology**. However, the **linguistic turn**, as I understand it in Part I of my book, encompasses importing the **paradigms of formal linguistics**, too. As regards Part II, those who would like to make sociology as close as possible to the hard sciences will also find there something for themselves: a sort of **quantitative content analysis** (counting the frequencies of key words) which I applied to the texts (in original languages) of the treatises by few masters of ancient and modern social thought. Nevertheless, in this part of my monograph, there prevails **qualitative sociologico-philological analysis**, inspired to a degree by eminent representatives of humanistic orientation in Polish sociology: Ossowski and Rybicki (he studied the meaning of *społeczno* [community] in Polish writers in the age of Renaissance). The **main finding** I arrived at in Part II consists in the discovery that two conceptual categories (they are referred to by their Latin names *sociale* and *commune*), which are needed to describe elementary forms of interpersonal ties, are related to each other in main European languages in four distinct ways.

Semantic differences between languages, like that between ancient Greek and Latin,¹² imply that it may often be hard to make compatible conceptual maps of the human world offered by particular languages. This problem is illustrated in my book in **Appendix 1 (written in English)** where you will find the history of translating Aristotle's term *koinōnia* into Latin and modern European languages.

I consider the book in question as my significant scientific achievement, but not the most important product of my scholarly work because I attach equal weight to 16 articles I have selected from among 36 publications after the doctorate. What counts most in my specialization (formal theorizing and experimental research on elementary social systems with network structure) is publishing original contributions in highly rated peer-reviewed journals. Scholars, who also publish monographs are exceptions. Since the practice of co-authorship is pretty common in the circle of researchers of group processes, I included two papers of the kind in the collection of 16 papers, as I consider my contribution significant, even if I was not the first author in either case.

6 out of 16 articles are written in English. 9 out of 16 have appeared in highly rated journals, Polish (1 in *Studia Filozoficzne*, 4 in *Studia Socjologiczne*, 1 w *Polish Sociological Review*) or international (1 in *Journal of Mathematical Sociology*, 1 in *Sociological Perspectives*, 1 in *Social Networks*). The **total number of points** (under the system of rating recently implemented in Poland) for 8 articles which appeared in 5 rated journals equals **145**.

Having quoted these numbers, I must add that my own evaluation of the remaining **7 articles which appeared in edited books** is equally high, as 6 of them contain new concrete results not published elsewhere. The contribution (1997b) to the book published by Stanford University Press, and the article in *Social Networks* (2006b) form my individual input to the theory of network exchange systems.



The above diagram shows the **components and structure of the scientific field** to which there belong the works I pointed out as my scholarly achievements to be considered in the habilitation procedure. **Metatheoretical works** are placed in the central box. There lies the beginning of my further activities. As many sociologists-theoreticians, I started off with general reflection on the

¹²My analysis of the difference in this respect between these first two languages of “social theory” was found especially interesting by one of two reviewers. His opinion encouraged me to extend the appropriate section of Part II by analyzing more source texts, in particular, Cicero's *De officiis*, which work is distinguished in Latin literature by high frequency of joint occurrence of the nouns *societas* and *communitas*.

methodological status of our discipline and the nature of its subject matter, to later direct my interests to more concrete problems. My case differs from other cases in that an equally important formative experience as pondering on the “peculiarities of the social sciences” (Ossowski) there became for me my getting acquainted during my second studies with the **mathematical understanding of the abstract concept of structure**.¹³

The distinction between *structure* and *form* (two categories equated with each other by Nadel and Fararo) that I had introduced formally in the 1980s helped me find my first more concrete field to study: **social combinatorics**. When I was working on my articles 1987 and 1992a, I found only one paper whose authors (Rapoport and Guyer, 1966) set to themselves and solved the problem of determining the number of “structurally distinct” (non-isomorphic) simple 2-person games. As regards my second field – **the study of network exchange systems** (more generally, interaction systems with network structure) – I found it already flourishing when I entered there at the beginning of 1990s to join American scholars who started their theorizing and research only few years earlier. Nevertheless, I found in that field many issues awaiting mathematical elaboration with the use of **graph theory** that makes it possible to formalize the **relational concept of structure**. My well advanced monograph on the mathematics of exchange networks is not yet ready to be published, but all most important results (except those concerning the distinction between weak and strong variety of exclusionary power) that form my input to this subfield of Social Network Analysis have already appeared in articles (1997b, 2006b).

The **sociologico-mathematical side of the diagram** (the boxes which lie left of the center) also contains the third research field which is represented here by one article (2010b). This field – via the notion of a **rule** – is also somehow connected with the structuralist orientation in the center. However, my work on **voting systems** was also inspired by the events within the world of politics. Mathematical social sciences need not be detached from real life.

Part I of my recently published book, which I placed on the right **humanistic side of the diagram**, describes the benefits theoretical sociology might gain by importing **linguistic paradigms**, in particular, those which are based on understanding structure as a set of formal rules. Part II deals with **conceptual images of the world of interpersonal relations in ethnic languages**. For resorting here to **hermeneutic analysis**, even if supplemented with the use of quantitative methods of text analysis, the product I offer to the reader in this part of my book stands out against the rest of my scientific output, but it proves at the same time that I did not break the ties with the humanistic tradition of doing sociology.

Appendix

16 most important articles published after the doctorate

- (1) 1985 „Struktura i strukturalizm w matematyce a kierunek strukturalistyczny w naukach społecznych”. [Structure and Structuralism in Mathematics and the Structuralist Orientation in the Social Sciences]. *Studia Filozoficzne* 1985 no. 8–9 (237–238): 115–129.
- (2) 1986a „O pojęciu struktury w socjologii i w matematyce. Grafy jako modele całości społecznych.” [On the Notion of Structure in Sociology and Mathematics. Graphs as Models of Social Wholes]. *Studia Socjologiczne* 1986, no. 2 (101): 111–134.

¹³I owe my “enlightenment” in this matter mainly to attending the lectures of mathematical analysis (in fact, *la mathématique tout court*) run at that time in the Jagiellonian University by Professor Stanisław Łojasiewicz (1926–2002).

- (3) 1987 „Strukturalna klasyfikacja minimalnych sytuacji społecznych”. [Structural Classification of Minimal Social Situations]. *Studia Socjologiczne* 1987, no. 3–4 (106–107), 155–175.
- (4) 1992a “A Combinatorial Theory of Minimal Social Situations.” *Journal of Mathematical Sociology* 17 (1992): 105–125.
- (5) 1993c „Próba formalizacji sieciowej teorii wymiany”. [A Tentative Formalization of Network Exchange Theory]. Pp. 149–193 in *Struktura, wymiana, władza. Studia z socjologii teoretycznej* [Structure, Exchange and Power. Studies in Theoretical Sociology]. Edited by T. Soza ski, J. Szmátka, and M. Kempny. Warszawa 1993: Wydawnictwo IFiS PAN.
- (6) 1993d „Hierarchiczne systemy wymian. Powtórzenie eksperymentu Davida Willera”. [Hierarchical Exchange Systems. A Replication of an Experiment by David Willer]. Pp. 233–271 in *Struktura, wymiana, władza. Studia ...* [Structure, Exchange, and Power. Studies...].
- (7) 1994a* “On Four Myths of Sociology and Three Generations of Sociological Theories.” With Jacek Szmátka as 1st author. *Polish Sociological Review* 1994 no. 3 (107): 219–233.
- (8) 1994b „Analiza strukturalna konfliktu interesów w elementarnych systemach społecznych”. [Structural Analysis of Conflict of Interests in Elementary Social Systems]. *Studia Socjologiczne* 1994 no. 3–4 (134–135): 123–171.
- (9) 1995b „Co to jest nauka?” [What is science?]. Pp. 23–50 in *Nauka. To samo i tradycja* [Science. Identity and Tradition]. Edited by J. Go kowski and S. Marmuszewski. Kraków 1995: Universitas.
- (10) 1997b “Toward a Formal Theory of Equilibrium in Network Exchange Systems.” Pp. 303–350 in *Status, Network, and Structure. Theory Development in Group Processes*. Edited by J. Szmátka, J. Skvoretz, and J. Berger. Stanford 1997: Stanford University Press.
- (11) 1998a* “Conflict in Networks.” With J. Szmátka as 1st author, J. Skvoretz as 2nd author, and J. Mazur as 4th author. *Sociological Perspectives* 41 (1998): 49–66.
- (12) 1998c „Socjologia teoretyczna jako nauka normalna”. [Theoretical Sociology as a Normal Science]. *Studia Socjologiczne* 1998 no. 4 (151): 5–38.
- (13) 2002a „Sie społeczna”. [Social Network]. Pp. 28–36 in *Encyklopedia Socjologii* [Encyclopedia of Sociology], vol. IV. Warszawa 2002: Wydawnictwo Oficyna Naukowa.
- (14) 2002b „Socjologia matematyczna”. [Mathematical Sociology]. Pp. 73–79 in *Encyklopedia Socjologii* [Encyclopedia of Sociology], vol. IV. Warszawa 2002: Wydawnictwo Oficyna Naukowa.
- (15) 2006b “On the Core of Characteristic Function Games Associated with Exchange Networks.” *Social Networks* 28 (2006): 397–426.
- (16) 2010b “The Blocking Power in Voting Systems.” Pp. 75–92 in *Institutional Design and Voting Power in the European Union*. Ed. by M. A. Cichocki and K. yczkowski. Farnham, Surrey, England 2010: Ashgate.

Note: The author's own rating of his input to two co-authored papers (marked with *), expressed in terms of percentage, equals 30%. Their first co-author died in 2001.