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A microparadigm and a scientific microcommunity – Kuhn revisited¹

Abstract. Nearly half a century ago Thomas Kuhn's *'The Structure of Scientific Revolutions'* marked a major turn in understanding the nature, organization and change in science. Ever since, the concept of a scientific community has been undergoing some profound transformations which virtually resulted in its abandonment in the studies of science.

In this paper I put forward a concept of a scientific microcommunity, accompanied and concurrently created by an adequate microparadigm. The approach presented here stems from the very roots of Kuhn's conception, yet aims to avoid some of its most serious shortcomings. The 'micro' prefix does not reflect only upon a size of a community, nor solely on level of analysis. It acknowledges of all the regular scientific activities and transformations that occur within paradigms, but do not necessarily lead to total revolutions or fundamental incommensurability. In consequence, it admits a vision of science as both theory- and problem-driven, shaped by communities which are closely bound to certain micro-models of the world, but at the same time remain context-dependent and open to changes.

Keywords: microparadigm, scientific microcommunity, Thomas S. Kuhn, scientific practices

Mikroparadygmat i mikrowspólnota naukowa – ponowne spojrzenie na koncepcję Tomasza S. Kuhna

Abstrakt. Prawie pół wieku temu praca Thomasa Kuhna pt. „Struktura rewolucji naukowych” wyznaczyła zasadniczy zwrot w rozumieniu charakteru, funkcjonowania i rozwoju nauki. Od tego momentu pojęcie wspólnoty naukowej ulegało wielu przeobrażeniom, które spowodowały, że właściwie zniknęło ono z obszaru studiów nad nauką. W artykule przedstawiam koncepcję mikrowspólnot naukowych oraz towarzyszących im mikroparadygmatów. U podstaw prezentowanego podejścia leżą najważniejsze założenia koncepcji wypracowanej przez Kuhna. Niemniej ma ono również na celu uniknięcie niektórych z jego najpoważniejszych niedociągnięć. Przerostek „mikro” nie odzwierciedla tutaj jedynie wielkości wspólnoty naukowej, ani nie odnosi się tylko do poziomu analizy. Pozwala on natomiast rozpoznać zarówno „normalne” praktyki naukowe, jak i rozmaite przemiany zachodzące w ramach paradygmatów; przemiany, które nie muszą prowadzić do rewolucji czy zasadniczej niewspółmierności. W rezultacie, prezentowane tu stanowisko umożliwia spojrzenie na naukę jako rozwijającą się zarówno poprzez teorie, jak i rozwiązywanie praktycznych problemów, oraz ukształtowaną przez wspólnoty, które są ściśle powiązane z określonymi mikro-modelami świata, a jednocześnie pozostają zależne od swojego otoczenia i otwarte na zmiany.

Słowa kluczowe: mikroparadygmat, mikrowspólnota naukowa, Thomas S. Kuhn, praktyki naukowe

Although nowadays analysing science in terms of collective practices is fairly common, it was only in 1962 that Thomas S. Kuhn and his *The Structure of Scientific Revolutions* prepared the ground for this major turn in philosophy of science. Kuhn objected to hitherto accepted 'development-by-accumulation' understand-

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ing of science and introduced a vision of irregular, total shifts, leading to incommensurable ways of seeing world and practicing science in it. And, what is most important, he introduced the notion of paradigm and took notice of a collective nature of scientific practice. For Kuhn scientific community could not operate without a paradigm, while a scientist out of any community (and without a paradigm) ceased to be one. Basically, paradigm, consisting of both verbally explicit rules and the tacit knowledge², allowed the community members to choose problems that were researchable and solve them according to some pre-set rules.

The microparadigm and microcommunity approach presented in this article is intended to strike balance between a paradigm-driven ‘puzzle solving’ and a more dynamic vision of science. I aim to elaborate an approach that is applicable to processes and communities specific for social sciences, departing from Kuhn’s areas of interest, that is, ‘hard sciences’ such as physics or chemistry. Thus, my conception is based upon the acceptance of high disintegration of social sciences, which never have been operating within one model of the world, and, it seems, never will be. Yet, this state of the art is not conceived as a disadvantage, but rather a necessity and an opportunity.

The article starts with a brief account of the major transformations that Kuhn made after the first edition of *The Structure*. For his intents to explain and delimit the notion of paradigm and its relation to community served as a point of departure for the approach introduced in this paper. Still, the initial ideas were also developed in the course of an exploratory case-study research undertaken among Polish scholars applying grounded theory methodology in their work. Grounded theory was analysed as a potential microparadigm with an accompanying microcommunity. Thus, the gist of the article consists of a presentation of various aspects of microparadigm and microcommunity functioning, extensively illustrated with examples from the case-study research.

1. Criticism of Kuhn’s ideas and his response

Kuhn’s vision of science immediately received some strong criticism from a range of philosophers (see, above all, Lakatos, Musgrave 1970). Altogether, Kuhn turned out to be much less ‘revolutionary’ than his first adversaries thought him to be (Eng 2001; Fuller 2000; Latour 2008: 91; Restivo 1983). The course of science as puzzle-solving, with scientists reluctant to delve into any extraordinary problems that could threaten the group consensus, appeared extremely hindering and non-creative. By the same token, the distinction between pre-paradigm, or so-called

² Tacit knowledge is understood here as a range of unwritten and unspoken conceptual and sensory information and images, based on various emotions, experiences, intuition, observations, etc. (Polanyi 2005). It can be understood either as embodied knowledge or the one embedded in material and intellectual contexts (Sismondo 2010: 190).

protosciences (such as philosophy or sociology, according to Kuhn), and normal science seemed too schematic and forces to assess social sciences as immature and underdeveloped.

In the second edition of *'The Structure...'* and further articles, Kuhn made a number of attempts to clarify his conception and further admitted some serious transformations to its primary version.

Firstly, Kuhn attempted to clarify the notion of paradigm (Kuhn 1970 a & b; 1977). According to him, a paradigm in a broad sense should be understood as a disciplinary matrix comprising of symbolical generalizations, metaphysical presumptions, values and exemplary puzzle-solutions; “‘disciplinary’, because it is common to the practitioners of a specified discipline; ‘matrix’, because it consists of ordered elements which require individual specification. Constituents of the disciplinary matrix include most or all of the objects of group commitment described in the book as paradigms, parts of paradigms, or paradigmatic” (Kuhn 1970 b: 271). In a narrow sense, the notion of paradigm stands for a concrete solution to a problem, or simply one of the parts of a disciplinary matrix – an exemplification.

Secondly, Kuhn admitted that each of the competing schools from the pre-paradigm period could share something alike to a paradigm and, what is more important, that there might occur circumstances under which two paradigms could coexist peacefully in the period of normal science (Kuhn 1970 a). He even admitted that: “Many episodes will then be revolutionary for no communities, many others for only a single small group, still others for several communities together, a few for all of science” (Kuhn 1970 b: 253).

Kuhn also stated that although in normal science it was the community that judged the solutions elaborated by its members, its unanimity or size should not be overestimated. Communities may well split into a number of subgroups, each counting even as few as a hundred members or less, sharing a somewhat peculiar, but a valid version of a paradigm (Kuhn 1970 b: 253).

Thirdly, the idea of paradigms’ incommensurability shifted from the focus on fundamental and insuperable ‘gestalt switches’ of rivalry paradigms, to the emphasis on merely ‘partial communication’, which “can be improved upon to whatever extent circumstances may demand and patience permit” (Kuhn 1970 b: 232)³.

Yet, some intellectuals still hold that Kuhn never made a proper shift towards collective approach to science⁴. Edmund Mokrzycki argues that Kuhn did not man-

³ This way, the notion of incommensurability resembled more of a kind of conceptual incompatibility, discernible from the so-called ‘methodological incommensurability’, which pertained to the criteria of theory evaluation (Sankey and Hoyningen-Huene 2001: vii-xxxiv). Such a stance allowed to accept that some terms cannot be fully translated between different theories, but at the same time a rational debate over these theories remained possible, as scientists applied different values in evaluating particular results of their work. In consequence, paradigm choice was not determined entirely by its community (see: “The Incommensurability of Scientific Theories”, *The Stanford Encyclopedia of Philosophy*).

⁴ This lack of full recognition of group processes by Kuhn lies in contrast with the works of his predecessor and inspirer – Ludwik Fleck. For example, Fleck considers changes in thought styles (which to a large extent resem-

age to replace an individual scientist with a group subject; in his conception a group remained a sum of individual members making particular decisions, rather than an emergent, integrated entity (Mokrzycki 1990). Moreover, Krzysztof Abriszewski and Łukasz Afeltowicz describe Kuhn as a representative of the so-called theory-centrism in which science is considered as theoretical knowledge (here: paradigms) and scientists' activities as mental and logic operations (here: puzzle solving). A proper collectivist stance towards science, according to them, requires taking into account all the mundane, socio-temporal practices (Abriszewski 2010: 57; Afeltowicz 2011: 26-28).

Altogether, the above ideas resulted in some profound refinements of Kuhn's initial conception. In particular, Kuhn acknowledged of the limits to the sizes of revolutions and the communities: "[I]t need not be a large change, nor need it seem revolutionary to those outside a single community, consisting perhaps of fewer than twenty-five people. It is just because this type of change, little recognized or discussed in the literature of the philosophy of science, occurs so regularly on this smaller scale that revolutionary, as against cumulative, change so badly needs to be understood" (Kuhn, 1970 a: 180-181). And, what is most important here, the acceptance of a paradigm among members of community turned out to be less dogmatic than it seemed at first glance, while normal science appeared to witness several-rival schools as well as some minor shifts, not even close to revolutions (Kuhn 1970 b: 249).

2. A microparadigm and a scientific microcommunity approach

A microparadigm and a microcommunity approach⁵ is a result of several theoretical transformations to Kuhn's conceptions and an exploratory case-study research, carried out in y. 2010-2012 under a working title of "Reception of the Grounded Theory in Poland" among Polish scholars who applied grounded theory methodology in their research. It was undertaken in order to check and elaborate several assumptions inspired primarily by Kuhn's work. I conducted twelve in-depth interviews and analysed several written sources (e.g. newsletters, websites content, syllabuses) until elaborating a fairly coherent theoretical frame. Selected results of the case-study will be included in the following chapters so as to illustrate the most important features of the microparadigm and microcommunity approach.

Grounded theory methodology was originally created by Barney G. Glaser and Anselm L. Strauss and put forward in 1967 in their seminal book *The Discovery of Grounded Theory: Strategies for Qualitative Research*. It was considered an

ble Kuhn's paradigm) as coming from inside a collective, specifically its esoteric, elite circle, not as a result of some outer influences. See: Fleck, L. (1979), *The Genesis and Development of a Scientific Fact*, Chicago: University of Chicago Press.

⁵ So far the notion of a microparadigm appeared in a number of studies of science, however, nowhere has it been analysed in detail (see: Rhetsky, Iossifov, Loh, White 2006; Siebert 2010: 461-463; Vezzoni, Pozzi, Villa 1989).

attempt to create a bottom-up, fairly rigid research methodology, based on two approaches: symbolic interactionism and quantitative traditions of The University of Columbia. With years, the initial ‘classical’ approach developed into several variants, out of which the constructivist has become the most common (but not the only) among Polish researchers.

In the following chapters grounded theory methodology will be referred to simply as ‘GT’.

2.1. The structure of paradigms – from a global paradigm to microparadigms

The term ‘microparadigm’ reflects the fact that in social sciences it is possible to sketch a sort of a structure of paradigms, ranging from the ones on the highest level of generality, enormous size and a large margin of flexibility, to those of high precision, limited scope and fairly fixed content⁶. Thus, at the ‘top’ of the paradigms’ structure there are a few global paradigms which operate above discipline boundaries. Subsequently, there are so-called base-paradigms which stem from the global ones and are usually limited to several disciplines or fields of interest. And finally, there are microparadigms which operate in several specific problem areas, usually within disciplines.

Global paradigms are considered as broad and established traditions that influence many scientific disciplines at a time. They provide criteria to make a distinction between science and non-science as well as delineate the most basic assumptions of ontological, epistemological and methodological nature. A community operating around a global paradigm is immensely large. Its members do not know each other in person, have no or very few common means of communication. Many times members of one global paradigm community deem members of another one non-scientists. Thus, two competing global paradigms can be seen as incommensurable both in conceptual and methodological way, while their mutual translation seems impossible as their languages have almost nothing in common. For example, in social sciences we can differentiate between two global paradigms that still stir much controversy: a normative and an interpretive paradigm⁷.

⁶ The idea of paradigms structure came as a result of an attempt to achieve a compromise between the abovementioned assumptions: first, acceptance of a multi-paradigm nature of social sciences, second, Kuhn’s hints towards limited size of communities and small range of influence of the ‘revolutions’. It took a three-tier shape following to several intuitions given by my research participants, especially their recognition of the influences between qualitative / quantitative sociology, symbolic interactionism and GT, afterwards reconstructed also on the basis of Krzysztof Konecki’s GT handbook (Konecki 2000).

⁷ This is not to say that the two are exhaustive or opposing to each other. Very many intellectuals describe nowadays more than two dominant paradigms in sociology, yet these were particularly recognisable both for my research participants and at a time when GT appeared in Poland, thus shaping its conditions of becoming a microparadigm. Moreover, it seems that they often served as certain ideal types of models of reflection and practice: the normative paradigm was identified with positivism and quantitative research, while the interpretative paradigm

Base-paradigms serve as elaborations of a global paradigm within narrower areas – a discipline or a field of problems. They give some more straightforward rules according to the selection of problems of research as well as ensuring methods and preferred ways of theorizing. Members of a community that share a base-paradigm are mostly aware of their affiliation. They may be at odds with the representatives of other base-paradigm communities, yet, as long as they identify them as belonging to the same global paradigm, they recognize each other as scientists. To give an example, symbolic interactionism and quantitative traditions of the University of Columbia, which are a base of GT, may be seen here as two base-paradigms representing the global interpretive and normative paradigm.

Finally, at the intersection of a number of base-paradigms there are several microparadigms with specific microcommunities. A microparadigm can emerge in specific institutional, organizational, and biographical conditions as a result of diffusion of ideas in different geographical areas or as a detailed elaboration of selected research methods and theoretical assumptions that are granted within a base-paradigm (or several base-paradigms, as it seems in the case of GT). Consequently, a microcommunity is an entity of limited size and defined margin of flexibility when it comes to a paradigm application. It operates by its own means of communication, while its members share a common conceptual scheme (stemming from the base-paradigm, but also including some specific features and a tacit component), education and similar experience. Microparadigms that come from the same global paradigm (or from an intersection of many base-paradigms) are only partially incompatible and allow one scientist to move between them, only by means of his or her sensitivity to the subtle conceptual and pragmatic changes that occur between the microparadigms.

Further in this paper, I will refer to the notion of a microparadigm in Kuhnian narrow sense. I understand it as an exemplar which performs four functions: semantic function (providing a variety of concepts in order to define and solve a puzzle), puzzle identification, research assessment, and solution identification (Bird 2000: 68–71). As Nickles explains: “In guaranteeing solvability, the paradigm assures scientists that they already know the solution implicitly in the sense that all the necessary resources are known and that the correct solution will be recognized quickly once it is expressed explicitly” (Nickles 2003: 149). What follows is that

described as ‘humanist’, ‘constructivist’ or ‘qualitative’. See for example: Hałas, E. (1987), *Spoleczny kontekst znaczeń w teorii symbolicznego interakcjonizmu*, Lublin: Wydawnictwo KUL, p. 19; Piotrowski, A. (1990), *Teoria a badania empiryczne. Parę uwag o ich związku w orientacjach współczesnej socjologii*, [in:] *Teoria i praktyka socjologii empirycznej*, Giza-Poleszczuk A., Mokrzycki, E. (eds.), Warszawa: Wydawnictwo IFiS PAN; Wyka, A. (1993), *Badacz społeczny wobec doświadczenia*, Warszawa: Wydawnictwo IFiS PAN, p. 43–45. For more details on the distinction see also: Wilson, T. P. (1971), *Normative and Interpretive Paradigms in Sociology*. In J. D. Douglas (ed.), *Understanding Everyday Life. Toward the Reconstruction of Sociological Knowledge*, London: Routledge and Kegan Paul, p. 57–79.

exemplars encompass the axiological, normative-evaluative, and more pragmatic (or rather organisational) dimensions.

From such a standpoint there is no vicious circle in explaining the link between a paradigm and a community. That is because a paradigm remains ontologically prior to a community (these are the scientists that group around a certain paradigm), but, in epistemological terms, the community is precedent to a paradigm (a paradigm can be delineated once the group is recognized; Jodkowski 1990).

2.2. Microparadigm's relations to global and base-paradigms

A global paradigm can influence a microparadigm twofold. On the one hand, once a global paradigm is fully recognized by a community, its significance for a day-to-day scientific practice remains fairly small. On the other, if a global paradigm is deemed non-scientific (or a crisis emerges), it seems impossible to act as a scientist within any of communities related to it.

GT appeared in Poland around 30 years after its formulation by Glaser and Strauss. Up to the 90ies the normative paradigm together with quantitative methodologies prevailed at most universities, while the exchange of ideas and people remained extremely limited. Together with the democratic transition, new qualitative approaches, which had been common in the U.S. and Western Europe, begun to appear and develop. At the same time, the fact that such a major socio-political transformation was in no way expected by sociologists evoked some serious doubts about the adequacy of quantitative methods for anticipating and understanding the dynamics of societies.

All in all, it was not until the interpretive paradigm started to be recognised that GT gained ground in Polish social sciences. However, the very places in which it initially showed were the ones where qualitative traditions had been cultivated before. It seemed that the scope of acceptance for qualitative methods, or the global interpretive paradigm, was one of the main factors differentiating the role and ways of applying GT in various academic centres that were included in my research. Generally, places with no previous inclinations towards qualitative methods had more difficulty in reaching the acceptance of GT; or eventually did so much later than the universities with such traditions.

In the meantime some scholars, who were later actively popularising GT, took advantage of the fact that any global paradigm was rarely universally rejected and left Poland for the academic centres where they were trained and pursued their careers in 'qualitative-friendly' environments. For example, Krzysztof Konecki went to the U.S. and collaborated there with Anselm Strauss. Soon after his return, he became one of the busiest proponents of GT in Poland.

Today the interpretive paradigm or qualitative methods do not stir such heated debates as 25 years ago. From the point of view of participants of my research, they

still are an important, yet a fairly distant point of reference, of historical rather than everyday importance.

A different relation occurs between base-paradigms and microparadigms. Once put on the normal science map, they exert much more influence on the microparadigms than global paradigms. Thus, a base-paradigm does the work of a Kuhnian disciplinary matrix, providing a general set of statements, values and methods of research. Thanks to the roots in the same base-paradigm, the related microparadigms are commensurable to a great extent. They do differ in what was called their 'core', but at the same time the researchers representing diverse microparadigms share similar concepts, values and analytical procedures.

Despite GT's originally having twofold background, it was symbolic interactionism that gained more acknowledgement from Polish researchers than the Columbia school. Basically it served as a meta-perspective for the members of GT and other related microcommunities. It was considered a point of departure for cooperation between various academic centres. Moreover, it allowed combining concepts and procedures from diverse but related microparadigms, for example in order to successfully negotiate between GT's core and tacit expectations characteristic for each university. Altogether, drawing a line between GT and symbolic interactionism seemed complicated, and, oftentimes, unnecessary. As will be shown below, GT's core was defined by a set of procedural requirements to be applied in practice; requirements which still concurred with the assumptions characteristic of symbolic-interactionist.

2.3. A microparadigm and a microcommunity – mutual development and context-dependency

As mentioned above, a microparadigm's emergence can hardly be named 'a microrevolution', for it makes a bearing on solely a part of scientists belonging to a base-paradigm community and seldom has any impact on its fixed components. Rather, its appearance is a result of some elaborations of a base-paradigm or popularisation of what has been already been present elsewhere. In consequence, a microcommunity starts to develop around the originators of a new microparadigm or as a result of the work of an individual who previously learnt the fixed components and the tacit part of a base- and a microparadigm by practicing them within another community.

As was mentioned above, it was only in early 90ies that the opportunities to publish and associate opened and a new wave of diverse approaches could gain ground in Poland. GT was one of them, taken up by a few Polish scholars out of whom Krzysztof T. Konecki of the University of Łódź soon became an expert and the main proponent. He was one of the first to get acquainted with the methodology, also in its tacit aspects (thanks to his stay in the U.S.), while Łódź was the place

where qualitative methodologies had been present decades before. Especially the biographical method of Alfred Schutz served as a connection to GT, at first in Łódź, and later in Wrocław as well⁸.

Yet, these were precisely the mentors and supervisors that evoked GT to their students. This is what happened to Krzysztof Konecki, who was presented to GT by Professor Zbigniew Bokszański, and many other researchers participating in the research. Even today the proximity of an experienced scholar remains one of the factors in favour of including GT in Master and Doctoral Theses, not only for the institutional and analytical support they give, but mainly thanks to their tacit, 'hands-on' knowledge.

Hence, a microparadigm and a microcommunity emergence never takes place in a vacuum, quite the opposite – it is closely bound to cultural, organizational and even legal context, let alone academic traditions. This is why in various countries there can exist somewhat different, yet still adequate versions of seemingly identical microparadigms⁹. These are the specific conditions in which the microcommunity members operate that make every microparadigm unique, yet compatible.

Nevertheless, it was not until Krzysztof Konecki's comeback from the U.S. and his intense, often non-academic activity in Poland that more universities and scholars were attracted to GT. The first book to present it comprehensively, after a series of turndowns from the academic publishers, was released by a commercial company. Then, in spite of reluctance from the University of Łódź, an open-access, Polish and English journal was started¹⁰. Still, the milestone in GT becoming a microparadigm in Poland was set with the first Polish GT handbook (Konecki 2000). This time it was a strictly academic undertaking; a publication in a well-known academic company showed GT was regarded scientifically important. Additionally, it fostered dissemination of the idea among scholars and helped in teaching students, both highly influential in the face of the hitherto scarcity of any Polish handbooks for qualitative research.

From this point GT was reinforcing its position and gaining more attention from various scholars. In Łódź and Wrocław regular research teams were being built; Warsaw, Lublin and Cracow had their first, usually young researchers showing interest in GT. This rising popularity eventually gave an incentive to form a section

⁸ Scholars from the University of Wrocław got acquainted with GT in the course of an international project, in which its leaders decided to combine the biographical method with it. This way, GT was presented to both scholars and students, who at first participated in the project voluntarily and later were taught it on obligatory courses.

⁹ Microcommunities may then be analyzed in terms of operating as 'epistemic cultures', a term coined by Karin Knorr Cetina: "The notion of an epistemic culture takes up where this assessment leaves off. It brings into focus the content of the different knowledge oriented lifeworlds, the different meanings of the empirical, specific constructions of the referent (the objects of knowledge), particular ontologies of instruments, specific models of epistemic subjects. Epistemic unity, then, is a casualty of the cultural approach to knowledge production" (Knorr Cetina 2007: 364; see also Knorr Cetina 1999).

¹⁰ See: „Przegląd Socjologii Jakościowej” and „Qualitative Sociology Review”; at: http://przegladsocjologii-jakosciowej.org/index_pl.php and http://www.qualitativesociologyreview.org/PLE/index_pl.php

of Qualitative Sociology and Symbolic Interactionism within The Polish Sociological Association, which significantly facilitated holding regular meetings and working groups at congresses along with fostering the publishing work. Moreover, Polish Ministry of Science and Higher Education granted a fairly high number of points for publishing in the before-mentioned journal, and so confirmed its quality and prestige. Finally, numerous conferences, seminars and workshops around Poland followed, enabling scholars to get acquainted, share their experiences and pursue careers as GT researchers¹¹.

2.4. Microparadigm's functions and components

Generally, a microparadigm determines the main fields of interest for scientists that belong to a microcommunity. It does not need to settle definite areas, yet it does determine a certain way of seeing the reality. For instance, GT was considered adequate for almost any substantive field of interest, but as seen from a proper angle. Additionally, a microparadigm indicates the procedures for research and criteria of its assessment, leaving a margin for preferences and creativity of the researcher. Thus, basing on a set of ontological, epistemological and methodological assumptions related to a base-paradigm, a microparadigm has a specific core, which helps to carry the research and judge the correctness of its application.

GT's core, reconstructed on the basis of handbooks content and interviews, consisted of the requirement of simultaneous data collection and analysis as well as formulating and checking the hypotheses with the use of theoretical sampling. If any of these conditions was violated, the interviewees would talk about a 'remodelled' GT or GT applied as a 'gimmick'. In consequence, complying with the microparadigm's core is a must. Obviously, what each researcher precisely made of these requirements was probably more contingent and practice-dependent¹².

At the same time, the participants of the research recognised some features secondary to the core – those which were desirable, but not cardinal. Their application depended on whether GT was treated as a research programme or a tool box. Generally, a microparadigm considered a research programme requires a complete, systematic and versatile application of all the procedures, while the latter – microparadigm understood as a tool box – admits a more instrumental and fragmentary approach. For example, combining GT with selected procedures from the biographical method was a strategy allowing to comply with some semi-formal standards

¹¹ Again, it is worth emphasising that almost all of these initiatives were directed not only to GT-specific researchers, but generally to the representatives of the whole symbolic interactionism. The journal and the section in PSA presented achievements of academics working with the biographical method, discourse analysis or narrative approaches.

¹² Moreover, as long as the core requirements are fulfilled, a researcher also had a huge space for invention; a space in which the decisions are made upon somewhat contingent reasons: personal commitments, current tendencies, scope of GT acceptability in a certain academic centre, time and money restrictions.

applying to the size of the research sample and the amount of data analysed. These exigencies were not explicitly formulated, but became apparent in doctoral theses and during ‘internal’, unofficial peer reviewing. The clue was that both methodologies are ‘relatable’ thanks to their roots in symbolic interactionism.

2.5. Microcommunity practices

Depending on the scope of acceptability for a microparadigm and the intensity of activities taken up in relation to its application, a microcommunity can be seen as consisting of a chief academic centre and several secondary centres. Each and every needs to approve of the microparadigm’s core; yet not all of them has to treat it in terms of a research programme.

The chief centre gains the status of a leader thanks to its theoretical comprehension and innovative applications of the microparadigm as well as managing the area of communication inside and outside the community. It becomes an expert for the professionals, a destination for the potential followers, and the spokesman for institutions.

However, the most important difference between the chief and secondary centres consists in the access to the tacit knowledge. All in all, getting to know the microparadigm’s core, the procedures of secondary importance, the tacit component and the unofficial exigencies of a specific university is possible only by means of practising. In the secondary centres the transfer of these components as ‘package’ is far more difficult or even impossible. Each secondary centre usually has its own, local ‘guide’, who plays crucial role in introducing new adepts but sometimes is more tied to a base-paradigm and does not practise within the microparadigm.

As was described above, GT’s microcommunity was being built along with various initiatives aiming to legitimise and institutionalise it as a microparadigm. At the time of research, it consisted of at least six places: University of Łódź as a chief centre and universities and individual scholars from Wrocław, Szczecin, Warsaw, Cracow, and Lublin as secondary centres¹³.

Generally, the size of a microcommunity should allow discriminating it from the wider context and other micro- and base-paradigms, and, at the same time, allow it to maintain necessary group cohesion and conceptual homogeneity. However, its borders are never fixed, while membership remains open – it is rather based on shared practices and interests than values or norms. The ultimate criterion of being a community member is the act of a self-identification by a scientist, and the fact of being recognized as a community member by others. Mutual recognition is

¹³ However, at the time of research a GT microcommunity could be somewhat seen as in-the-making, or a microcommunity in a weak sense. All of the activities described in this section of the paper were performed in a fairly concise and orderly way. The problem laid rather in the fact that secondary centres maintained almost no contacts with each other; they stayed connected by means of the efforts made by the chief centre (e.g. holding conferences, sending bulletins, organising publishing work).

feasible thanks to the fact that microcommunity members maintain direct interpersonal contacts, within (at least) some scientists and their centres of both formal and informal kind.

A microcommunity is also capable of performing a fairly concise strategy of communication. Again, it is usually conceived and implemented by the chief centre, with the secondary centres playing an auxiliary yet effective role. Its main goal is to promote the microparadigm's core. On the one hand, the core, consisting of a specific requirements towards practical application of a microparadigm, serves as a basis for integration and consensus between the microcommunity members. On the other, if the members of other communities are acquainted with it, then they are able to ascribe bad examples of a microparadigm's application to a researcher, not the paradigm itself.

At the same time, the microcommunity makes efforts to attract the new followers. The new members are generally recruited from novice scholars or students; and that is why including the base- and microparadigm into obligatory courses at universities is one of the most effective ways of its popularisation. One of my interviewees, trained in GT as a student, said that it came to her as something fairly 'natural'. In the case of GT, the popularisation efforts were reinforced by the fact that almost all the initiatives started in the process of its becoming a microparadigm were open-access (e.g. the journal and its website, monthly bulletins, a special portal for translators, PSA section website), which made it even more probable that anyone looking for general qualitative methods advice or knowledge, would come across it.

3. Conclusions

Altogether, a microparadigm consists of a set of components of ontological, epistemological and methodological nature, a specific core encompassing its more practice-bound requirements as well as a more negotiable and context-dependent tacit component. The 'micro' prefix indicates the fact that microparadigms and microcommunities should be fairly precise and rigid (both in terms of group order and the acceptance for discrepancies). They stem from the more general rules and procedures from the base-paradigm, and thus operate within larger paradigms and communities, surrounded by several other microcommunities and microparadigms. Sharing some most basic assumptions from global and base-paradigm, microparadigms are commensurable in a sense they are translatable to the extent which is allowed by a specific configuration of their antecedents. In other words, this is a commensurability evaluated already with paradigms on a certain level, not from some external, detached standpoint.

Generally, the members of a microcommunity share a common conceptual scheme (based on the paradigm's core and tacit component acknowledgement) as

well as education, language and experience. Ultimately, every microcommunity has to be analysed in a way that encompasses two standpoints – of individuals with their own rules of conduct and interests, and of a collective which exerts control and establishes its conceptual and operational borders. The aim is to catch the constant dynamics of negotiation, in terms of group cohesion and the paradigms' core and secondary procedures application.

To sum up, the microparadigm and scientific microcommunity approach allows examining science in terms of social practices, yet, sets reasonable limits to what we consider a scientific community and scientific practice. As a result of acknowledging both epistemological and social incentives that lay behind the scientific activity, this approach avoids narrowing the science to political play or technological effectiveness. At the same time, it does not yield the outdated vision of science as a socially autonomous, stable institution with delineated disciplinary structures, but captures it as a problem-driven, collective activity with elaborated methods of communication and quality control.

References

- Abriszewski, K. (2010), *Wszystko otwarte na nowo. Teoria Aktora-Sieci i filozofia kultury*. Toruń: Wydawnictwo Naukowe UMK. [In Polish].
- Afeltowicz, Ł. (2012), *Models, artefacts, collectives. Research practice from the viewpoint of contemporary studies of science*. Toruń: Wydawnictwo Naukowe UMK. [In Polish].
- Afeltowicz, Ł. (2011), *Laboratoria w działaniu. Innowacja technologiczna w świetle antropologii nauki*. Kraków: Oficyna Wydawnicza. [In Polish].
- Bird, A. (2000), Thomas Kuhn, Chesham: Acumen and Princeton.
- Eng, L. (2001), The accidental rebel: Thomas Kuhn and *The Structure of Scientific Revolutions*. "STS Concepts".
- Fuller, S. (2000), *Thomas Kuhn: A Philosophical History for Our Times*. Chicago: University of Chicago Press.
- Glaser, B., Strauss, A. (1967), *The Discovery of Grounded Theory: Strategies for Qualitative Research*, Chicago: Aldine.
- The Handbook of Science and Technology Studies* (2008), Hackett, E. J., O. Amsterdamska, M. Lynch & J. Wajcman (eds.), 3rd ed. The MIT Press.
- Hoyningen-Huene, P. (1993), *Reconstructing Scientific Revolutions: Thomas S. Kuhn's Philosophy of Science*. Chicago: University of Chicago Press.
- Jodkowski, K. (1990), *Communities of scientists, paradigms and scientific revolutions*. Lublin: Wydawnictwo UMCS. [In Polish].
- Knorr Cetina, K. (1999), *Epistemic Cultures. How the Sciences Make Knowledge*. Cambridge, MA: Harvard University Press.
- Knorr Cetina, K. (2007), Culture in global knowledge societies: knowledge cultures and epistemic cultures. "Interdisciplinary Science Reviews", 32 (4), p. 361–375.
- Konecki, K. T. (2000), *Studia z metodologii badań jakościowych. Teoria ugruntowana*, Warszawa: Wydawnictwo PWN. [In Polish].
- Kuhn, T. S. (1962), *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.
- Kuhn, T. S. (1970), Reflections on my critics, in: I. Lakatos and A. Musgrave (eds.), *Criticism and the Growth of Knowledge*, London: Cambridge University Press, p. 231–78.

- Kuhn, T. S. (1970), *The Structure of Scientific Revolutions*. 2nd ed. Chicago: University of Chicago Press.
- Kuhn, T. S. (1977), Second Thoughts on Paradigms, in F. Suppe (ed.), *The Essential Tension*, Chicago: University of Chicago Press, p. 293–319.
- Lakatos, I., A. Musgrave – eds. (1970). *Criticism and the Growth of Knowledge*, London: Cambridge University Press.
- Mokrzycki, E. (1990), *Socjologia w filozoficznym kontekście*, Warszawa: IFiS PAN, p. 83-89. [In Polish].
- Oberheim, E., Hoyningen-Huene, P. (2013), The Incommensurability of Scientific Theories, *The Stanford Encyclopedia of Philosophy*, available at: plato.stanford.edu/archives/spr2013/entries/incommensurability/ [access: 12th Feb 2014].
- Restivo, S. (1983), The Myth of the Kuhnian Revolution, in R. Collins (ed.), *Sociological Theory*, San Francisco: Jossey-Bass, p. 293–305.
- Rzhetsky, A, I. Iossifov, J. M.Loh, K. P. White (2008), Microparadigms: chains of collective reasoning in publications about molecular interactions, “Proc Natl Acad Sci U S A.” 103 (13).
- Sankey, H., Hoyningen-Huene, P. (2001), Introduction, in P. Hoyningen-Huene, H. Sankey (ed.), *Incommensurability and Related Matters*, Dordrecht: Kluwer: vii-xxxiv.
- Siebert, R. (2010), *Manifesto of the Critical Theory of Society and Religion: The Wholly Other, Liberation, Happiness and the Rescue of the Hopeless*, Brill, p. 461–463.
- Sismondo, S. (2010), *An Introduction to Science and Technology Studies*. 2nd ed., Wiley-Blackwell.
- Knowledge: critical concepts, Stehr, N., R. Grundmann (eds.), New York : Routledge.
- Vezzoni, P., M. R. Pozzi, A. Villa (1989), The rise of a microparadigm in oncology, “Biology and Philosophy” 4 (1), p. 57–67.