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LINGUISTICS: ACCUMULATION OR REVOLUTIONS?

I. INTRODUCTION: THE NATURE OF A PARADIGM

1. Contemporary historians of knowledge admit that there exist two possible ways of development in science: one is based on the conviction that the particular theories replace one another without any possibility of using the accomplishments of the previous one, whereas the other represents the standpoint that any development must include *reorganization* and enrichment of the previous theory, i.e. the theories influence one another even if they are contradictory in order to constitute what is called progress in science¹. In the second case, the newer one should explain better the given phenomena or in Chomskyan terminology² on the level of linguistics, it should reach a higher level of adequacy.

If we reject Chomskyan explanation, the problem remains, in what way and on what basis should we distinguish the more adequate theory. Should we depend on the logical analysis of the hypotheses or examine the opinion of scientists, their convictions and intuitions?

In this paper both approaches to science will be examined, using mainly T. S. Kuhn's theory of paradigms with the brief analysis of the way they can be applied to linguistics, having assumed that linguistics can be regarded as an autonomous discipline. This problem of the scientific nature of linguistics will be mentioned in the example of Esa Itkonen's methodological views. The next step should be to examine the applicability of cumulativism and Kuhn's theory of revolutions to linguistics, which is

¹ See T. S. K u h n, *Dwa bieguny*, Warszawa 1985.

² See N. C h o m s k y, *Aspects of the Theory of Syntax*. Cambridge, Mass. 1975, Massachusetts Institute of Technology Press.

most conspicuous in the case of transition (or change) from the formalized theory of meaning (e.g. that of Carnap³ and Wittgenstein⁴) to pragmatics of language (cf Austin⁵ Searle⁶ and Grice⁷ at least in some of its aspects) but this is a subject for a separate analysis⁸.

2. Karl Popper in his book *The Poverty of Historicism* remarks that the law of progress in science is, according to some philosophers, "deducible from the tendency in human individuals which impels them to perfect their nature more and more"⁹, repeating after Comte the well known observation. Quoting J. S. Mill¹⁰ he says that the law of progress is in fact "progressiveness of the human mind"¹¹. Popper himself admits that this theory is naive and replaces it by a better one, i.e. he finds the conditions of progress showing what renders progress impossible. Here he enumerates: controlling, suppressing, social institutions and adds that sometimes progress is enabled by chance. Human, personal factor constitutes the irrational but important element.

This conviction that there exists accumulation in knowledge is the most common sense one although it is not popular among the philosophers of science. Notions such as *scientific revolution*, *paradigm* or *research programme* are felt as deeply internalized by many methodologists. Paradim is the most interesting term to explain.

³ R. Carnap, *Introduction to Semantics and Formalization of Logic*, Cambridge, Mass. 1959, Harvard University Press, and, by the same author, *The Logical Syntax of Language*, London 1971, Routledge and Kegan Paul Ltd.

⁴ L. Wittgenstein, *Tractatus Logico-philosophicus*, London, Henley 1981, Routledge and Kegan Paul.

⁵ J. L. Austin, *How to do Things with Words*, Oxford 1962, The Clarendon Press.

⁶ J. R. Searle, *Speech Acts. An Essay in the Philosophy of Language*, Cambridge 1970, Cambridge University Press.

⁷ H. P. Grice, *Logic and Conversation*, [in:] *Syntax and Semantics*, eds. P. Cole, J. L. Morgan, vol. 3, *Speech Acts*, New York 1975, Academic Press, p. 41-59 and, by the same author, *Further Notes on Logic and Conversation*, [in:] *Syntax and Semantics*, ed. P. Cole, vol. 9, *Pragmatics*, New York 1978, Academic Press, p. 113-127.

⁸ See K. Jaszczołt, *The Influence of the Vienna Circle Science of Language on the Paradigms in Modern Linguistics*, (M. A. dissertation), Łódź 1987, p. 23-87.

⁹ See K. R. Popper, *The Poverty of Historicism*, London, New York 1986, p. 153.

¹⁰ J. S. Mill, *Logic*, Book VI, Chapter X, Section 3.

¹¹ See Popper, *op. cit.*, p. 153.

It is necessary to mention the most common definitions of this term. According to the *Dictionary of Philosophy*:

paradigm, (Greek. *paradeigma*, from *para*, 'beside', and *dekhynai*, 'to show' meaning 'model', 'exemplar', 'archetype', 'ideal'.) [...] 2. In science, a model pattern, or ideal theory from which perspective phenomena are explained¹².

Two of many definitions suggested by Kuhn¹³ say that the term *paradigm* includes 'all the internalized convictions of a scientific group or, according to the other sense, paradigm is a "disciplinary matrix", i.e. a common feature or belief of all the people who deal with a given branch of science. However, Margaret Masterman in her paper *The Nature of a Paradigm*¹⁴ remarks that Kuhn uses the term *paradigm* in at least twenty one different senses: as universally recognized scientific achievements; myth; philosophy (set of beliefs); tradition; scientific achievement; "an organizing principle which can govern perception itself"; "a general epistemological viewpoint"; "a new way of seeing", and many others¹⁵. In her opinion they can be divided into:

1) metaphysical paradigms (e.g. a new way of seeing),

2) artefact (construct) paradigms (e.g. actual instrumentation),

3) sociological paradigms (a set of scientific habits, e.g. as a scientific achievement).

They develop and expand within *normal science* but only within themselves. That is why, contrary to Popper's view, here progress is irrational: there are no reasons for overparadigmatical development.

Masterman bases her analysis of Kuhn on *The Structure of Scientific Revolutions* of 1962 so taking the later *The Essential Tension* into account, we can easily get rid of these problems and assume only two definitions of paradigm taken from the later work.

¹² See P. A. Angeles, *Dictionary of Philosophy*, New York, Cambridge 1981, Barnes and Noble Books, a Division of Harper and Row, Publishers, p. 203.

¹³ See Kuhn, *op. cit.*, p. 407.

¹⁴ M. Masterman, *The Nature of a Paradigm*, [in:] *Criticism and the Growth of Knowledge*, eds. I. Lakatos, A. Musgrave (Proceedings of the International Colloquium in the Philosophy of Science, London 1965, vol. 4.), Cambridge 1970, Cambridge University Press, p. 55-89.

¹⁵ *Ibidem*, p. 63-65.

And although for Kuhn science including periods of so called normal science and revolutions means only natural science, when we define it as knowledge which has its theses and apparatus (i.e. language), linguistics fulfills the condition of being one¹⁶.

A. Motycka¹⁷ distinguishes three aspects of Kuhn's paradigm: sociological, methodological and ontological one. So a paradigm is a model of research, methodological structure, "way of seeing the world". This approach can be called functional, whereas meta-theoretic one of Masterman shows paradigm as a "set of convictions or knowledge"¹⁸.

Applicability of the theory of paradigms to linguistics is difficult because of the relative character of scientific revolutions, i.e. their various importance. Hence one of the possible solutions is to replace the notion paradigm with the set of paradigms. This idea is involved in the notion of microrevolutions and, according to B. Tuchańska¹⁹, can be a point of reference for relativization of revolutions or cumulation of scientific changes. This replacement is said to describe knowledge and can be applied to human science as well. The notion of a paradigm can function only as a heuristic category.

3. Having assumed the meaning of paradigm, we must follow Kuhn²⁰ in his rejecting the idea that the development of science

¹⁶ The linguistic meaning of the term can be defined as follows: "Intersecting morphosyntactic categories form a framework or matrix within which the paradigm of a lexeme may be set out". P. H. Matthews, *Morphology*, Cambridge 1974, Cambridge University Press, [in:] F. Karlsson, *Paradigms and Word Forms*, *Studia Gramatyczne VII*, Wrocław 1985, p. 137; "A paradigm for a part of speech N in a language L is a pattern P of inflexional realisations for all combinations of morphosyntactic features associated with N such that some member n of N exemplifies P (i.e., displays all and only the realisations in P)". A. Carstairs, *Notes on Affixes, Clitics and Paradigms*, I.U.L.C. 1981, in: Karlsson, *Paradigms and...*, "A paradigm is best conceived of as a matrix defined by the morphological dimensions of the language, whose cells are the inflected forms. Paradigms are characteristically full". M. Aronoff, *Lexical Representations. Papers from the Parasession on the Lexicon*, eds. D. Farkas & al, Chicago Linguistic Society, Chicago III, [in:] Karlsson, *Paradigms and...* It is obvious that the meanings of paradigm in the philosophy of science and in linguistics cannot be confused. Both of them can be used to describe the science of language but whereas paradigm defined by Karlsson deals with morphology, the Kuhnian one can be used to describe linguistic theories.

¹⁷ See A. Motycka, *Relatywistyczna wizja nauki. Analiza krytyczna koncepcji T. S. Kuhna i S. E. Toulmina*, Wrocław 1980, p. 37.

¹⁸ Cf. B. Tuchańska, *Kuhnowskie pojęcie paradygmatu a problem opisania rozwoju nauki*, "Zagadnienia Naukoznawstwa" 1987, nr 1(89), p. 69-84.

¹⁹ *Ibidem*.

²⁰ Kuhn, *op. cit.*, p. 377.

can be stated as a gradual approaching of the truth (i.e. verisimilitude). This remark can be derived explicitly from the concept of paradigms that do not influence one another as no common ground can be found for their followers. They use different languages, different terminology and have different aims. So the process of *changing* (if any) one paradigm into another lacks any *overparadigmatical* point of view.

It is important to mention the distinction between Popper's and Kuhn's view on the existence of a neutral language to assert observed facts. Popper says that theories do share such a language, whereas Kuhn maintains that "truth may, like proof, be a term with only intra-theoretic applications"²¹, i.e. every theory elaborates its own language that is valid only within one paradigm. And this is how a theory-choice exists: people try to translate each other's theory into their own language.

So Kuhn²², similarly to Popper, denies any progress by accretion, he believes in the existence of revolutionary replacement of one theory by a new incompatible one, while the observed facts are deeply influenced by the scientific theory, which renders the existence of any neutral observation language impossible.

Some scientists²³ doubt in the possibility of distinguishing revolutions from *normal science*. The revolutions are not extensive enough to satisfy Kuhn's criterion. But what differentiates Popper's view from that of Kuhn is the belief of the first that science is constantly on the verge of revolution constituted by refutation, whereas the latter maintains that normal science is a *normal* state of the development of knowledge, ruined from time to time by revolutions. Kuhn bases his view on psychology, whereas Popper - on logic²⁴.

The other view on Kuhn's methodology is well shown by Lakatos and Feyerabend:

²¹ I. S. Kuhn, *Reflections on my Critics*, [in:] *Criticism and the Growth...*, p. 266.

²² Cf. T. S. Kuhn, *Logic of Discovery or Psychology of Research?* [in:] *Criticism and the Growth...*, p. 1-23.

²³ Cf. S. E. Toulmin, *Does the Distinction Between Normal and Revolutionary Science Hold Water?* [in:] *Criticism and the Growth...*, p. 39-47.

²⁴ "In my view the normal scientist, as Kuhn describes him, is a person one ought to be sorry for. [...] The normal scientist, in my view, has been taught badly. He has been taught in a dogmatic spirit: he is a victim of indoctrination". K. R. Popper, *Normal Science and Its Dangers*, [in:] *Criticism and the Growth...*, p. 52-53.

The dogmatic attitude in science - which would explain its stable periods - was described by Kuhn as a prime feature of *normal science*. But Kuhn's conceptual framework for dealing with continuity in science is socio-psychological; mine is normative. I look at continuity in science through *Popperian spectacles*. Where Kuhn sees *paradigms*, I also see *rational research programmes*²⁵.

[...] I do not see how the desirability of revolutions can be established by Kuhn. Revolutions bring about a *change* of paradigm. But, following Kuhn's account of this change, or *gestalt-switch* as he calls it, it is impossible to say that they led to something better. It is impossible to say this because pre- and post- revolutionary paradigms are frequently *incommensurable*²⁶.

Science as we know it is not a temporal succession of normal periods and of periods of proliferation; it is their *juxtaposition*²⁷.

Incommensurability of the theories (or paradigms) is a subject of many discussions among scientists. Some of them maintain that there exists a variance of empirical consequences and observational variance when a theory is replaced by another, i.e. that incommensurability is caused not by the changes of meaning of scientific terms itself. But this thesis²⁸ is rather doubtful as all these variances, including these of the empirical consequences, observational, methodological and ontological ones, can be derived from the linguistic one. Our perception of the facts, its quality and structure, are the same, prior to any influences of the accepted theory. If we deny this statement, we obtain a conclusion that there are no statements that could be the basis for theory-building; every observational language can be replaced by a new one and this is what Kuhn seems to approve of.

Alina Motycka²⁹ gives another important reason for the fact that there is no sufficient conception of science that could be

²⁵ I. Lakatos, *Falsification and the Methodology of Scientific Research Programmes*, [in:] *Criticism and the Growth...*, p. 117.

²⁶ P. K. Feyerabend, *Consolations for the Specialist*, [in:] *Criticism in the Growth...*, p. 202.

²⁷ *Ibidem*, p. 212.

²⁸ See K. Jodkowski, *Płaszczyzny niewspółmierności w ujęciu T. S. Kuhna i P. K. Feyerabenda. Zmienność obserwacyjna*, [w:] *Studia Filozoficzne* 5, Warszawa 1984, p. 119-134.

²⁹ See A. Motycka, *Some Symptoms of Crisis in the Philosophy of Science*, "Science of Science" 1986, vol. 6, no.1 (21), p. 53-71.

also applied to linguistics. She mentions the lack of unified epistemological description and that therefore the context to which a conception of science refers cannot be explicitly stated; the set of categories to explain situation $T_1 - T_2$ (change of theories) is chosen arbitrarily and describes this situation in terms of a conception of science (on the level of ready theories). These theories are characterized from the point of view of logic (e.g. Popper) or of psycho-sociological factors (e.g. Kuhn). According to Motycka the deficiency of the epistemological description makes the conceptions of science incomparable³⁰. This observation shows the necessity of unifying the level of analysis of science, although it does not show any solution to this problem.

II. APPLICABILITY OF PARADIGMS TO LINGUISTICS

1. Robert Beard in his article *Is Separation Natural?*³¹ states that the relations between morphemes and their grammatical functions show their inevitable separation, i.e. morphemes are not biunique signs: sound and meaning are not inseparable. This observation is, according to Beard, corroborated by the existence, in his opinion, of *null* and *empty* morphemes which should not be regarded as exceptions.

Grammatical morphemes, being paradigmatic (in the linguistic sense of this term), differ in this aspect from lexemes which have no mediating paradigm and must relate to meaning, as Frege, Pierce and Katz put it. As to morphemes, "[...] a complete account of any IE language shows that polyfunctional affixes overwhelmingly dominate"³², as he shows in the example of various language, mainly German and Turkish. In English one of many cases of such a polyfunctionality would be the different meanings of the ending *-er*, e.g. in *drinker*, *eraser*, *sleeper* (sleeping car), whereas *-er*, *-ist*, *-ant*, *-or*, etc. can have the same value in the names of some jobs, such as: *writer*, *typist*, *assistant*, *conductor*³³.

³⁰ "[...] e.g. the logical conception makes it possible to ascribe traditional cognitive values to science (such as truth, explanation and rationality based on them), whereas the paradigmatic conception of science gets along without these values. An independent opinion on whether these values should be ascribed to science or not is impossible, *ibidem*, p. 53-54.

³¹ R. B e a r d, *Is Separation Natural?* "Studia Gramatyczne" 1985, nr 7, p. 119-133.

³² *Ibidem*, p. 124.

³³ Examples after B e a r d, *op. cit.*, p. 121.

What is important for our analysis is the conclusion of Beard's paper: he says that grammar does not contain a logical processor, it is only a system of arbitrary rules which cannot be explained in nonlinguistic terms. There is no one-to-one-correspondence between form and meaning in morphology. So we can conclude that if there is no such relation on this level, we cannot assume its existence in linguistics at all³⁴.

This analysis exemplifies Kuhn's and Feyerabend's conviction mentioned before that there can be no unified observational language independent of the assumed theories. If natural language has no logical processor, we can always add not only words (or morphemes), but also meanings to the previously established system. This would be a point which helps us to decide on the thesis of incommensurability of theories, in the same way rejecting the possibility of cumulativism.

2. As we have already mentioned, Kuhn admits that revolutions are one of two complementary aspects of the development of science. Besides, they are not meant to be so; they are based on the consensus omnium of the scientists. In the case of natural sciences Popper³⁵ says that it is not enough to say that a theory can gain universal consent on the basis of examining the semantic values of the terms in which it is expressed. In other words, "the research on the development of any knowledge cannot be replaced with the studies on the use of language system"³⁶. Therefore, in the field of linguistics we would have to concentrate on the attempts to create an ideal theory that constructs as its device an ideal language, a pattern that in fact does not seem to exist, although some linguists try to find such an abstract model³⁷.

We cannot pick out one theory without special criteria of choice. Kuhn³⁸ says that five features: accuracy, cohesion, generality, simplicity and fruitfulness compose the sufficient cri-

³⁴ "Thus the speech act must involve the simultaneous operation on several mental levels, grammatical and extragrammatical. In addition to several levels of phonological filtering, the processing of various levels of semantic, syntactic, lexical and morphological rules, the brain also implies deductive logic to the grammar as well as to the context of the speech act during performance" Beard, op. cit., p. 130.

³⁵ See K. R. Popper, *Logic of Scientific Discovery*, London 1956.

³⁶ *Ibidem*, p. 16.

³⁷ See A. Wierzbicka, *O języku - dla wszystkich*, Warszawa 1965.

³⁸ Kuhn, *Dwa bieguny*.

teria to estimate the adequacy of a theory. But, as was said before, the communication between the followers of different theories is not unlimited; it is possible only within certain bounds. According to the author of *The Essential Tension*³⁹ the existence of two independent schools in art is easier to imagine because they can be both successful and correct, which is hardly possible in the case of scientific theories. Therefore, science can be regarded as more or less⁴⁰ cumulative, excluding the cases of accepting wrong assumptions prior to observation, as it approaches the most adequate explanation all the time (no matter whether it exists or not), whereas art cannot.

As we can see, paradigms are not strictly theories. They are mainly actual examples of admitted scientific achievements, real solutions to the problems that constitute the aim for future research. Moreover, the change of paradigms need not mean the break of consensus omnium; a new paradigm gains its success gradually by means of restructuralization of the vision of the world that was demanded in the previous one.

Kuhn raises a question which, if we substitute linguistics for science, looks like this: because of the visible multiparadigmatic structure of linguistics⁴¹, a communication among the followers of different theories is necessary for a development to take place. But is any cumulation of knowledge and progress possible? The question will be answered, if at all, after having examined the nature of revolutions in linguistics.

3. Dell Hymes⁴² is rather against paradigms in the science of language. He says that Kuhn does not establish any criteria by which the scientific status of a paradigm would be guaranteed. He admits that the Chomskyan approach may be called paradigmatic because many linguists agree to it, having however no strict rules of distinguishing it from the previous one. And

³⁹ *Ibidem*, p. 478.

⁴⁰ More or less- because e.g. the discovery of Uranus or oxygen or X-rays were not cumulative, they were independent of the actual theory or hypothesis that dominated in science. Examples after K u h n, *Dwa bieguny*, p. 478.

⁴¹ The multiparadigmatic structure is obvious in this meaning of the term paradigm; not all linguists belonging to different schools have the same ontological assumptions and convictions towards language. They differ both in their understanding of the aim and procedure of language analysis and in the beliefs necessary to begin a research.

⁴² See D. H y m e s, *Introduction: Traditions and Paradigms*, [in:] *Studies in the History of Linguistics. Traditions and Paradigms*, ed. D. Hymes, Bloomington, London 1974, Indiana University Press, p. 1-38.

The notion of paradigm has been taken to refer to philosophies of science, to psychological assumptions, to analytic practices, but not to social realities⁴³.

A new paradigm should be superior, more successful than its predecessor, it should explain both the old and the new things. But as Hymes observes, within linguistics the successive paradigms (or: cynosures, as he calls them) do not fulfill both conditions which causes their failure to gain a universal acceptance. To sum up, it is more proper to speak about progress or revolutions than about paradigms as such which would have to refer to changes of social realities as well. Linguistics is a specific branch of knowledge where it is impossible to distinguish separate paradigms. This state may be caused by the level of its present development or by its specific nature.

According to Percival⁴⁴ the notion of revolution can be applied to linguistics, whereas it is doubtful if that of paradigm can. He says that there is a definite point in time when a field achieves scientific maturity and every scientific discipline has its chronologically earliest paradigm, called the first paradigm. And although, in Kuhn's opinion, social and behavioral sciences are in a state of disagreement as they never acquire the first paradigm, his theory can in a sense be applied to linguistics when we regard the transformational-generative grammar as one of the revolutions and the whole grammatical tradition is viewed as a succession of paradigms. But Chomskyan theory of grammar can be called a revolution only when we accept a certain meaning of a revolution: a change which is brought about by a single scientific genius; then a paradigm is constituted by one period of normal science and each scientific revolution corresponds to a paradigm. But such an approach seems to be artificial. Problem solving is continuous and demands many solutions so no theory can be ascribed to one scientist.

Consequently, Percival says that it can be proved that TGG has necessary components for being a paradigm:

- (1) symbolic generalization (basic and transformation rules),
- (2) models (ontological model),

⁴³ *Ibidem*, p. 10.

⁴⁴ See W. K. Percival, *The Applicability of Kuhn's Paradigms to the History of Linguistics*, "Language" 1976, vol. 52, no. 2, p. 285-294.

(3) values (simplicity, generality, factual accuracy, comprehensiveness of coverage and correct methods of approach).

The only trouble is caused by the sociological dimension, i.e. now to explain the fact that not all linguists follow TGG. So Percival says that according to Kuhn linguistics is "either in the pre-paradigm stage of interschool rivalry" (so far it has failed to achieve scientific maturity) "or else a field which (though scientific) intrinsically eludes analysis in terms of paradigms"⁴⁵.

Here the possibilities of application of Kuhn emerge: pre-paradigm stage, non-scientific speculation and prescriptive grammar until the end of the eighteenth century are replaced with the *first paradigm* in the beginning of the nineteenth century: comparative philologists - Bopp, Rask, Grimm et al., replaced again with a new paradigm after a revolution (middle seventies of our century-neogrammarians).

In fact, it is not easy to say when the first paradigm emerged in linguistics (if it has already emerged at all). Koerner⁴⁶ distinguishes three following paradigms of Schleicher, de Saussure and Chomsky which introduced some revolutionary changes to this discipline. First regarded linguistics as science analyzable in the way parallel to that of natural science, the second introduced the new way of language description in terms of its structure, synchrony, diachrony and arbitrariness of sign, whereas the third constituted a new ontological model which can be derived from the symbolic generalizations, i.e. logical form of basic and transformation rules. Koerner says that it is not sufficient to recognize the social nature of the paradigm. He suggests the concept *climate of opinion* put to use by Carl Becker, to avoid the confusion between an achievement of an individual and the "atmosphere prevailing in a given period of time"⁴⁷ denoted by the latter term. Consequently, *Schleicherian* or *Saussurean* paradigm means important changes in linguistic theory and the methodological procedures of investigation⁴⁸.

⁴⁵ *Ibidem*, p. 291.

⁴⁶ See E. F. K. Koerner, *European Structuralism: Early Beginnings*, [in:] *Current Trends in Linguistics*, vol. 13, *Historiography of Linguistics*, ed. T. A. Sebeok, The Hague 1975, p. 717-827.

⁴⁷ *Ibidem*, p. 720.

⁴⁸ For more information see Z. Wąsik, *Paradygmaty i rewolucje naukowe w językoznawstwie*, "Kultura i Społeczeństwo" 1986, nr 3, p. 97-103 and, by the same author, *Semiotyczny paradygmat językoznawstwa*, Wrocław 1987.

Dell Hymes and John Fought⁴⁹ explain the terminological difficulty connected with using the term *paradigm* by introducing the notion of *movement*. They accept the use of this term when it means "a movement that is the central focus and force for change in a period of time"⁵⁰. They state that any synchronic "state of affairs" is characterized by a "relation between a central movement and a range of traditions"⁵¹. These traditions may also change internally. Therefore they distinguish between paradigms and movements, and sub-paradigms and peripheral movements⁵².

This is how the example of linguistics corroborates the well known criticism of Kuhn⁵³ that he does not specify how to distinguish a new paradigm from a new articulation of an old one. What can be concluded at this stage is only that Kuhn's theory as a whole does not fit linguistics as in a similar way it does not fit Darwinism. If what Kuhn says is true about distinguishing science from non-science on the basis of possessing a paradigm by the former, his theory cannot be applied to linguistics; the number of competing schools is high and the rules of distinguishing paradigms are not clear. So, according to Percival, uncritical acceptance of Kuhn's theory of scientific revolutions could cause a lowering, not a raising of scientific standards in this discipline⁵⁴.

Paul Diderichsen's⁵⁵ view is more optimistic: he says that if we can speak of a scientific revolution, the revolution occurred with Rask. He says it is impossible to speak about a Kuhnian paradigm of research in the philosophical grammar of the eighteenth century which extended and integrated the older ideas, applied the methods of new philosophical etymology to many, not only IE languages. This way continuous scientific progress can be made by *problem-solving*, thanks to the first comparativists. As he says,

⁴⁹ See D. Hymes, J. Fought, *American Structuralism*, [in:] *Current Trends en...*, p. 903-1176.

⁵⁰ *Ibidem*, p. 1130.

⁵¹ *Ibidem*, p. 1131.

⁵² Cf. *ibidem*.

⁵³ See Toulmin, *op. cit.*, p. 39-47.

⁵⁴ Cf. Percival, *op. cit.*, p. 292.

⁵⁵ Cf. P. Diderichsen, *The Foundation of Comparative Linguistics: Revolution or Continuation?* [in:] *Studies in the History...*, p. 277-306.

[...] this combination of text- philology and comparative linguistics has continuously been an essential characteristic of the whole paradigm. The paradigm was slightly altered in the course of the nineteenth century, particularly by the *Jugendgrammatiken*, who tried to find more strictly causal explanations of linguistic change. But their activity did not lead to anything that could be called a revolution⁵⁶.

Newmeyer⁵⁷ seems to be an optimist too, although he says that if there was a Chomskyan revolution, it was not a Kuhnian one. The reasons are simple: there is no basis for the linguists to regard generative grammar as an obligatory paradigm. However, Chomsky's grammar can be considered a new paradigm from the other point of view as his transformations transform deep structures into the surface structures, whereas Harris's establish systematic relations between surface structures. But it is at least doubtful whether we can speak about any revolution or crisis in this transition. The change from Harris's grammar to the following stages of Chomsky's theory of transformations is a proof either for a transition of paradigms or, what is more likely, for non-existence of any paradigms at all, as the competing schools do not tend to establish any increase of *verisimilitude*. Consequently, Chomskyan explanatory adequacy remains a distant aim.

It is interesting that the term *paradigm* is sometimes said to be useless as it cannot be applied as an analytic category; there seem to be no sufficient criteria to separate the following from the preceeding one. Thus, we can presume that the concepts of paradigm and revolution are historical ones and they cannot be analytic and that the problem of generative grammar will disappear when it starts to be regarded as history, not a present linguistic event. But such a conclusion shows only that some linguists⁵⁸ approve of the applicability of these notions to the science of language but give them a new, non-Kuhnian dimension, which makes things even more complicated not only in their merits but on the level of language as well.

August Schleicher⁵⁹, a nineteenth-century linguist, says that

⁵⁶ *Ibidem*, p. 302.

⁵⁷ See F. J. Newmeyer, *Has There Been a Chomskyan Revolution in Linguistics?* "Language" 1986, vol. 61, No. 1, p. 1-7.

⁵⁸ *Ibidem*.

⁵⁹ See A. Schleicher, *The Darwinian Theory and the Science of*

language develops according to certain laws and that the Darwinian rules applied to the species of animals and plants are "equally applicable to the organisms of languages, that is to say, as far as the main features are concerned"⁶⁰. Consequently, he compares a genus to a language family, species to languages, races of species to dialects, and varieties of species to sub-dialects and idiolects. It is not going too far to presume that such an evolutionary development of languages "inspires" an evolutionary development of theories that describe language reality. This is, in fact, similar to what Koerner⁶¹ claims:

[...] as I have indicated in the cases of Schleicher and Saussure Chomsky's ideas cannot be regarded as entirely novel and without antecedents⁶².

He stresses Chomsky's relationship with Zellig Harris, Nelson Goodman, Roman Jakobson and Morris Halle, and consequently with Praguean phonology and post-Saussurean linguistics. His opposition towards Skinner's *Verbal Behavior* does not mean a change of the whole of the existing paradigm. Koerner claims that the historian of linguistics needs "a firm grasp of the *res gestae*" to help to establish a new paradigm. Otherwise this discipline will remain one of "questionable methods and dubious value"⁶³.

In another work⁶⁴ he proposes a very interesting way of applying the Kuhnian theory to the science of language: in his opinion a new type of history-writing should be established, based on strong, well-defined principles which would equalize this state of knowledge with *normal science*. It is not *normal science* as such because linguistics, being a social discipline, cannot be analyzed on the same level with natural sciences. What we can do

Language, [in:] *Linguistics and Evolutionary Theory*. Amsterdam Classics in Linguistics, ed. E. F. K. Koerner, vol. 6, Amsterdam, Philadelphia 1983, John Benjamins Publishing Company, p. 1-32.

⁶⁰ *Ibidem*, p. 30.

⁶¹ See E. F. K. Koerner, *Four Types of History Writing in Linguistics*, [in:] E. F. K. Koerner, *Toward a Historiography of Linguistics. Selected Essays*, Amsterdam 1978, Amsterdam Studies in the Theory and History of Linguistic Science III. Studies in the History of Linguistics, vol. 19, John Benjamins, p. 55-62.

⁶² *Ibidem*, p. 41.

⁶³ *Ibidem*, p. 46.

⁶⁴ See E. F. K. Koerner, *The Importance of Linguistic Historiography and the Place of History in Linguistic Science*, [in:] Koerner, *op. cit.*, p. 63-69.

is merely to use the accomplishments of natural science as linguistics has its own object of investigation and tools as well.

So Koerner⁶⁵, like Percival, does not believe in the possibility of straight application of Kuhn's doctrine to the history of linguistics, although some concepts like *paradigm* can be useful "if, and only if, they are redefined for the particular requirements of linguistic historiography"⁶⁶. Both of them object to the way in which the term *revolution* is applied, not to its applicability to linguistics as such. The reason is that this notion is misused by some linguists who try to apply it to certain changes which prove in fact the continuity and development of the science of language. The best policy is, according to Koerner's views, to adopt Kuhnian theory together with these of Lakatos, Merton, Nagel, Popper and others, using them critically, which is better than having no conceptual framework. But it is very difficult in the history of any science to find a particular moment when a revolution takes place. It is always easier to judge when we take a more distant event into account. For instance, Koerner⁶⁷ is quite convinced that the year 1876 marks a revolution in linguistics, whereas with 1957 and Chomsky's *Syntactic Structures* he is full of doubts, seeing it as a result of a long process of theory change rather than a sudden change of a paradigm⁶⁸.

Moreover, it is worth mentioning that treating the most common example that is Chomskyan TG grammar as the only well-defined paradigm in the science of language, or as one of the three existing paradigms, is insufficient. It might occur useful to observe other transitions and their nature, even if they are less conspicuous, to find the proper *conceptual framework* for linguistic analysis.

III. SOME VIEWS ON THE AUTONOMY OF LINGUISTICS

1. Autonomy of linguistics has been the subject of discussions and analyses since the thirties of our century, the times of

⁶⁵ Cf. E. F. K. Koerner, 1876 as a Turning Point in the History of Linguistics, [in:] Koerner, *Toward a Historiography...*, p. 189-204.

⁶⁶ *Ibidem*, p. 190.

⁶⁷ Cf. *ibidem*, p. 203.

⁶⁸ See Wąsik, *op. cit.*

Prague school structuralism. However, it is always important to state what we understand by autonomy: the separate subject of linguistic research or the ability of this discipline to exist in separation from other human sciences.

It can be generally said that linguistics is a science that deals with human ability to participate in acts of communication i.e. it is a human science dealing with human beings as speakers and hearers. It is interested in rules of language and the ability to communicate⁶⁹. Therefore the difficulty arises how to select the subject of this science from the problems analyzed by other disciplines and, consequently, what point of view to accept to analyze its autonomy. Besides, it is important not to confuse the subject of the discipline (a language) and science of language as such, expressed in *metalanguage*. Zawadowski⁷⁰ presents a scheme that clears these confusions. According to him, sentences that belong to epistemology of linguistics inform about linguistics, whose sentences in turn inform about language.

As far as the comparison of this discipline to natural sciences is concerned, Koerner⁷¹ says that during the past hundred and fifty years linguistics has attained the status of science and its position within the social and behavioural sciences is similar to that of physics for the natural sciences: it is a model for other disciplines such as sociology or psychology. But simultaneously in another paper he⁷² asserts that it is not important for the history of linguistics whether it is an exact science, an empirical science or a speculative science ("Geisteswissenschaft"), and its basic source of inquiry is man's intellect, his curiosity so, in general, he himself.

Three ontological positions seem to be on an equal level for explaining the status of linguistics: (1) the nominalist view which identifies sentences with physical manifestations, (2) the

⁶⁹ See F. Grucza, *Zagadnienia metalingwistyczne*, Warszawa 1983.

⁷⁰ See L. Zawadowski, *Lingwistyczna teoria języka*, Warszawa 1966, p. 14. See also by the same author, *Inductive Semantics and Syntax*. The Hague 1971, Mouton. In Poland L. Zawadowski is one of the followers of the conception of autonomy of linguistics. Antoni Furdal belongs to the oppositionists of this view. See A. Furdal, *Językoznawstwo otwarte*, Opole 1977. According to his view, we live in times of integration of human sciences and it is language, not theories as such, that is precise and different from other subjects of other human sciences.

⁷¹ Koerner, *Four Types...*, p. 59.

⁷² Koerner, *The Importance...*, p. 63.

conceptualist view identifying sentences with some psychological reality, and (3) the realist (Platonist) view which regards sentences as abstract objects, independent physically and psychologically in their existence. The conceptualist one proves to correspond to this presentation as it can provide linguistics with a status of autonomous science if we confine the meaning of autonomy to the separation from other sciences, abstracting from its epistemological aspect. However, the Langacker's⁷³ model could stand in opposition to our considerations: in his view grammar is not situated on the separate level in human mental faculties; it is placed in the cognitive level, there being no linguistic one⁷⁴.

The ontological positions enumerated above lead Katz⁷⁵ to the radical hierarchization: he regards Chomskyan grammar as "the second of the two scientific revolutions"⁷⁶, after that of Bloomfield. Nominalism is said to be replaced by the conceptualist view, and the taxonomic conception of grammars by a generative one. So this opinion proves to be another interesting aspect of the discussion on the nature of the science of language. The notion *scientific revolution* seems to be misused or at least used with a hidden assumption of a certain methodological standpoint.

The whole trend of relativism in its strong version where the reality depends on language (is relative to it) could make the point of the autonomous status of linguistics stronger, not to mention the logical positivism and their belief in empirical evidence and meaning as a method of verification. Devitt and Sterelny⁷⁷ say that the positivists "are committed to a powerful and [...] thoroughly false metaphysics" by judging only from what is given as "the given is what verifies statements and hence is all that can provide meanings"⁷⁸. But in spite of these confinements we cannot ignore this important contribution to the discussion on

⁷³ See R. W. Langacker, *Foundations of Cognitive Grammar*, L.A.U.T. 1983, vol. 1, Series A, No 99, 100, Trier.

⁷⁴ For details see B. Lewandowska-Tomaszczyk, *Conceptual Analysis, Linguistic Meaning and Verbal Interaction*, Łódź 1987.

⁷⁵ J. J. Katz, *Introduction*, [in:] *The Philosophy of Linguistics*, ed. J. J. Katz, Oxford 1965, Oxford University Press, p. 1-16.

⁷⁶ *Ibidem*, p. 14. See also by the same author, *An Outline of Platonist Grammar*, [in:] *The Philosophy...*, p. 172-203.

⁷⁷ See M. Devitt, K. Sterelny, *Language and Reality, An Introduction to the Philosophy of Language*, Oxford 1987 Basil Blackwell Ltd.

⁷⁸ *Ibidem*, p. 189-190.

the status of linguistics. However, the counter-arguments of the linguists who are against the autonomy should be taken into consideration as well.

2. Derwing⁷⁹, an opponent of autonomous linguistics (AL), maintains that AL initiated by de Saussure was in fact influenced by behaviorism in psychology; according to what Labov calls *Saussurean paradox*, language is social but its acquisition occurs by individual intuition; linguistic knowledge is a part of psychology as knowledge is a psychological concept; there exists no linguistic structure independent of the speakers; formal conception of AL does not account for the use of language: AL descriptions do not possess psychological reality⁸⁰.

These are the main objections of Derwing. Esa Itkonen distinguishes two levels of linguistic analysis:

AL, being the conceptual precondition of linguistic investigations dealing with external evidence [...], is situated at a *different level* than the latter⁸¹. Therefore defending AL is fully compatible with espousing the use of external evidence. (This is my own methodological position). All that matters is that conceptual distinctions are preserved⁸².

That is why today there are several equal AL theories based on intuitive evidence and that is why the empirical one should be taken into consideration as well.

Besides, Itkonen⁸³ states that natural language can be analyzed on the same level as logic. Both can be regarded as learned a posteriori: both speaking and inferring must be acquired. Both are based on biological maturation and observations. So Itkonen follows the Wittgensteinian school of logic and denies any specific character of natural languages. But he says that rational explanation can constitute the explanatory model for the human sciences⁸⁴ and that:

⁷⁹ B. L. Derwing, *Against Autonomous Linguistics*, [in:] *Evidence and Argumentation in Linguistics*, Berlin, ed. T. A. Perry New York 1980, Walter de Gruyter, p. 163-189.

⁸⁰ Examples after E. Itkonen, *Causality in Linguistic Theory*, Bloomington 1983, Indiana University Press, p. 7-8.

⁸¹ I.e. any other kind of linguistics (my own remark).

⁸² Itkonen, *op. cit.*, p. 10.

⁸³ *Ibidem*, p. 67.

⁸⁴ *Ibidem*, p. 220.

[...] the degree of formalization is inversely proportional to the degree of discipline adequacy. It depends on one's personal taste and/or on the purpose at hand which of these two desiderata one happens to prefer⁸⁵.

He adds⁸⁶ that linguistic theory uses rational explanation because of our intuitive knowledge of rationality principles, which means using a synthetic causal model different from correlational models of sociology or physics⁸⁷. The names of the models are irrelevant for this presentation, what matters is only the differentiation made by Itkonen concerning linguistics versus other sciences.

Itkonen suggests hermeneutics as an alternative, non-positivistic philosophy of science. He maintains that the model of natural sciences is not directly applicable to linguistics:

I shall also argue that grammatical theory is non-empirical. More particularly, grammatical theory should be regarded, in my opinion, as qualitatively different not just from the natural sciences, but also from the empirical human sciences⁸⁸.

Besides, he claims that synchronic AL is methodologically similar to logic and philosophy. The only difference is that linguistics does not contain a prescriptive component, but all these branches of knowledge are non-empirical. They do not deal with space-time entities and are normative sciences as opposed to psychology or sociology. Within the latter only space-time linguistics can be formulated.

This view seems to be very controversial. According to Østen Dahl⁸⁹ it is completely mistaken, mostly because we can never distinguish intuitions from sense-data perceived directly. That is why linguistic intuitions may as well be regarded as experience and compared to natural science ones. However, Itkonen⁹⁰ ar-

⁸⁵ *Ibidem*, p. 314.

⁸⁶ *Ibidem*, p. 259.

⁸⁷ For explanation of these terms see Itkonen, *op. cit.*

⁸⁸ E. Itkonen, *Grammatical Theory and Metascience. A Critical Investigation into the Methodological and Philosophical Foundations of Autonomous Linguistics*, Amsterdam 1978, Amsterdam Studies in the Theory and History of Linguistic Science IV. Current Issues in Linguistic Theory, vol. 5, John Benjamins, p. 20.

⁸⁹ Ø. Dahl, *Is Linguistics Empirical? A Critique of Esa Itkonen's Linguistics and Metascience*, [in:] *Evidence and Argumentation...*, p. 133-145.

⁹⁰ E. Itkonen, *Reply to Dahl. Second Rebuttal*. [in:] *Evidence and Argumentation...*, p. 137-162.

gues that linguistic phenomena can be correct, incorrect or doubtful, which is impossible in natural science where all events must be correct. Research objects in linguistics can behave incorrectly, they are of different kind:

Unlike the basic statements of natural science, the basic statements of grammar do not describe particular spatio-temporal occurrences, but rules. For instance, it is a rule of English that the past tense of *sing* is *sang*⁹¹.

Moreover, in science when the actions do not agree with the rule, they can falsify the rule, whereas in linguistics this is the action that can be incorrect as well.

Another difference depends on causality. Non-spatiotemporal sciences (i.e. linguistics, philosophy of logic) cannot be concerned with causality (cause-effect relationships of the data), so autonomous in AI means, according to Itkonen⁹², "autonomous vis-à-vis causal influences", although some traces of causality exist in, let us say, phonological rules of consonant change in their final position. But this causality is said to be of a psychological nature.

Besides. Itkonen⁹³ observes that the variables of natural science (length, time, mass) are measurable and so quantitative, as opposed to linguistic ones which are qualitative and non-measurable, culture-dependent and probabilistic. Consequently, he separates what he calls *agent's knowledge* (of speaking, thinking, inferring, i.e. about the rules of behaviour) from *observer's knowledge* (i.e. of natural science). Intuition and self-reflection are used in explication of the first, whereas the other uses observation and experimentation.

Finally, we can say that Itkonen is not in opposition to AI, although he gives it a different status, observes different kind of data and applies methods different from those of natural sciences. Autonomy can still be ascribed:

I emphasize in particular that the necessarily human character of language must not be thought to imply that all linguistic descriptions are necessarily of psychological, and therefore causal, character.

⁹¹ *Ibidem*, p. 159.

⁹² E. Itkonen, *Qualitative vs. Quantitative Analysis in Linguistics*. [in:] *Evidence and Argumentation...*, p. 347.

⁹³ *Ibidem*.

Grammar can be just a systematization of the conventions or norms:

It follows that it is wrong to regard AL descriptions as descriptions of competence, except in the quite general sense that the norms described are by definition known⁹⁴.

We can conclude that the voices against the autonomy of linguistics are less strong and convincing than those following it as can be observed in the example of these selected views. Itkonen's idea of placing this science on a different level seems to be the most interesting one; here linguistics is an autonomous science but causality observed in natural sciences cannot be ascribed to it. Consequently, the revolutions and paradigms we aim to distinguish are of different character as well as the nature of knowledge as such necessarily influences the method of its analysis. What is important is to distinguish language as a spatio-temporal process from language as an abstract product. This seems to be the source of different approaches and possibilities.

IV. CONCLUSIONS

What can be inferred from this analysis is the fact of a very strong relationship between the existence of paradigms and autonomous linguistics. It can easily be observed on the basis of many examinations conducted by the linguists and methodologists that the notion of paradigm can, or even must, be applied to the history of the science of language. Moreover, it helps to establish the major steps in the development of this science and therefore seems to be the best methodological attitude to deal with this discipline. As to the progress as such, we cannot describe it clearly because of the specific multiparadigmatical structure of linguistics. There are many standpoints in looking at this state of this branch of knowledge: it can be regarded as one (relatively low) level of its development or, as all followers of hermeneutics would say, as its specific nature.

Consequently, it would appear to be doubtful if it is possible to establish an objective or empirically verifiable pattern

⁹⁴ Itkonen, *Causality...*, p. 7.

of revolutions in linguistics. The importance of theories and their adequacy (or: correspondence to reality) cannot be explicitly and universally stated because of this multiparadigmatical state (or: nature) of the discipline. Besides, it is impossible to separate the exact events which would prove that what occurs can be undoubtedly called a revolution because, as Itkonen says, linguistics is a knowledge of human behaviour. So the observed phenomena can be doubtful, as opposed to their correctness in natural science where only the researchers can be wrong. Therefore the basic statements of linguistics are rules, not descriptions of spatiotemporal occurrences. However the latter can change or modify the rules. And when we deal with rules, it demands a different metatheoretical device to distinguish what is a revolution and what a revolution should mean in this kind of science without a simultaneous challenging of its existence. A new method of verification of this type of theory would help to diminish the discrepancies in understanding such notions as *revolution*, *paradigm*, *accumulation* and others, protecting this science from introducing a completely new kind of analysis, such as hermeneutics suggested by Itkonen, which would render any comparisons to other sciences impossible.

Therefore, what makes establishing a new method of verification more complicated is abstracting from the empirical reality. This leaves us without any device to check the level of the theory adequacy. It is necessary to add that there seems to be no solution how to deal with such a situation of multiparadigmaticity: to analyze the status of linguistics and its probable autonomy and only after that to decide if this state of the discipline is transitory or natural; or, as it was mentioned before, to start with defining the notion of linguistic fact in order to find out if it can be a point of reference for natural science methodology.

To sum up: in spite of all these difficulties and in spite of the fact that the level of adequacy the theories gain is far from being the highest, the analysis of particular theories and the metatheoretic observations make us presume that the *overparadigmatical* cumulativism in linguistics, i.e. accumulation of knowledge about language not only within one paradigm, does exist. The more so that the meaning, range and value of revolutions is doubtful, if not indeed their very existence. However this claim does not exclude the existence of paradigms, as shown in many

examples above. Finally, it can be observed that the theories replacing one another reject the *self-falsified* assumptions by necessary substitution, not by an external consensus to their rejection, which sheds some more light on the natural process of paradigm changes.

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JĘZYKOZNAWSTWO: AKUMULACJA CZY REWOLUCJE?

W niniejszym artykule rozważana jest możliwość zastosowania teorii paradygmatów Kuhna do historii nauki o języku. Odmienny charakter językoznawstwa w porównaniu z przyrodoznawstwem skłania wielu badaczy do stwierdzenia, że również metoda stosowana do opisu tej dyscypliny powinna być inna i jest nią hermeneutyka. Jednak okazują się, że znalezienie wspólnej płaszczyzny opisu nauk ma istotne znaczenie.

Przed rozpoczęciem analizy możliwości zastosowania takich terminów jak *rewolucja naukowa*, *paradygmat*, *akumulacja* konieczne jest moim zdaniem zbadanie charakteru językoznawstwa jako nauki, a szczególnie problemu jego autonomiczności. Tylko wtedy można orzec, czy po dostosowaniu pojęć Kuhna z zakresu filozofii nauki do specyfiki wiedzy językoznawczej spełniają one zadanie opisu tej dyscypliny w kontekście nauki jako całości.

