SUMMARY

# Methodology of Linguistics. An Outline

## Preliminary note

The aims of the book are specified.

The author has tried to make use of lectures on methodology of linguistics he had held in the first quarter of the 21st century. The content of the book is far from being adequately comprehensive. Hence its subtitle *an outline*.

The book concentrates on research in linguistics proper, as opposed to many areas of human concern with speech, such as, for example, glottodidactics, translatology, rhetoric, marketing, or phonetics.

The most important goal pursued in the book is offering a survey of the problems and principles of scientific research in the field of theoretical linguistics as well as a reasonably rich exemplification of the relevant investigation processes – with their achievements and failures.

A number of introductory methodological examples, for the most part culled from Polish, are described in a preliminary way.

## Chapter I. Science as research activity

Each methodology is a certain branch of *science*. It is part of a broader domain which covers *theories* of various classes of external phenomena. That broader domain is precisely *science* in its entirety.

The reservation is made to the effect that the exclusive subject matter to be dealt with in the book is *research activity* of individual scholars or their groups / teams.

### A. The concept of scientific research

The definition of „science" as *scientific research* adopted in the book reads:

(S) systematic publicly relevant cognitive evaluation of expressions

The constituents of the definition are briefly discussed and justified (the relevant details are specified in AB 1998).

As far as linguistics is concerned, its public relevance is claimed to be automatically safeguarded by the fact that any human society (even an extremely small one) is inherently and necessarily based on its natural language code (or codes [and subcodes]).

### B. Theory. Methodology. Methodology of science. Logic

The following distinctions and assumptions related to science are adopted:

- there are *theories*, i.e. complex expressions dealing with certain domains of phenomena outside those expressions where, first, definite premisses concerning those phenomena, second, certain relevant initial observations, third, corresponding conclusions and generalizations, are stated;
- there are *methodologies*, which are themselves theories, but theories dealing with *chains of actions* having to do with external phenomena, actions which are supposed to bring about some *expected* publicly relevant effects;
- *methodology of science / scientific methodology* is in contrast with *practical methodology* (such as that resulting in the use of post in non-oral communication); methodology of science pursues merely theoretical aims, i.e broadening some initial knowledge by adding knowledge attained in the course of certain relevant reasonings, viz. the use of pertinent implications;
- there is *logic*, i.e. knowledge of the initial existence of overall *multiplicity* of mutually related phenomena which can be handled in terms of *implications*.

Scientific methodology is inherently *non-technological*. The reason is that science necessarily materializes, ultimately, in speech alone; and speech emerges from no technology.

### C. Logic – ontology

The essence of logic consists in the necessary presence of relations within a multiplicity and differentiation of states of affairs. The corresponding main term is *implication* as a relation between any non-existent or existent antecedent state of affairs and an accompanying it and different from it *existent* consequent state of affairs. This is consonant with the ancient philosophy of Heraclitus, Anaxagoras, Pythagoras or Aristotle. As a result logic appears to be practically equivalent to the central domain of philosophy called *ontology* or theory of the whole of existence.

The author adopts the following schematic ontological / logical image of the Reality which is assumed to have a fundamental character:

**I. Language and Reality**

$$\begin{array}{lcccccccl} \mathrm{sb}_i & & \text{did} & & \text{with } \mathrm{sb}_k \,/\, \mathrm{sth}_m & & \mathrm{sth}_{o_w}/_{r_z} — & & \\ & \times & \blacktriangleleft\blacktriangleleft & \times & [\{ & & \} ] \times \{ & & \} \blacktriangleright\blacktriangleright \\ \mathrm{sb}_j & & \text{knows} & & \text{about } \mathrm{sb}_l \,/\, \mathrm{sth}_n & & \mathrm{sth}_{p_w}/_{s_z} — & & \end{array}$$

**II. 1. Knowledge. General situation**

$$sb_i \quad \text{⏮knows [about} \quad \times \quad \{ \; sb_k \,/\, sth_m \; \} \quad \times \quad \{ \; sth_{\alpha —} \; \} \text{ ⏭}$$
$$sb_j \qquad\qquad\qquad\qquad\quad sb_l \,/\, sth_n \qquad\qquad\quad sth_{\beta} —$$

**II. 2. Knowledge. of speaking beings**

$$sb_i \quad \times \text{⏮knows [about} \quad \times \quad \{ \; sth_{\alpha —} \; \} \quad \times \quad \{ \; sth_{\varphi} — \; \} \text{ ⏭}$$
$$sb_j \qquad\qquad\qquad\qquad\quad sth_{\beta —} \qquad\qquad\quad sth_{\psi} —$$

*Comments*.

(i) The core of the schemata is the image of the overall hierarchy of cartesian products (with their symbol ×) of the *a priori* situations dubbed 'did' and 'knows'; accordingly, what is stipulated is the universal presence of the proportional four-tuples, eight-tuples, etc., as arrangements of the corresponding phenomena.

(ii) A fundamental element of the image is the sign „—"; it symbolizes the contradictory contrast of suitable elements indicated by Greek letters as subscripts.

(iii) Part II.2. serves as an image of the phenomenon of speech;

it consists in the transformation of the contrast envisaged in the righthand side of part I into the epistemic object (shown in the center of the schema), i.e. into something such that somebody knows something ***about* it**,

where contrasts of a higher order, e.g. of a numerical character, make their apearance (here, Greek letters from the final fraction of the alphabet are used).

That kind of transformation is possible exclusively where proportional contrasts are *embodied* in the shape of expressions with their proportionalist system; its convenient name is *natural-linguistic code*.

## Chapter II. Fundamentals of *Weltanschauung*

From the introduction of the main traits of logic and ontology the author proceeds to substantiate his claims which constitute an exposition of a definite theistic non-literary *Weltanschauung*.

The relevant reasoning includes several points.

First, the observation of the primordial all-embracing experience of duality is stated. It finds its formal rendering in the schema of implication.

Second, existence is taken to necessarily represent a multiplicity of objects organized in proportional n-tuples, according to the schema *ak : bk :: al : bl*.

Third, the whole of existence which can be called *the Reality* or *all* (where no limits are imposed on *all*) is not an empirical / sensually accessible object. The object is accessible exlusively to all *speaking* beings *via* their languages with the crucial words just indicated.

Fourth, the Reality is finite.

Fifth, the presence of, on the one hand, inorganic objects, and, on the other hand, organisms, is acknowledged. The latter ones are distinguished by the primitive, i.e., indefinable, properties: *did*, *knows that* with their plural proportional instantiation in the case of each organism. The presence of some inorganic objects as a necessary condition of an organism is *materially* implied. However, there is no *strict* implication between any inorganic objects and any organism as a *necessary* condition of the inorganic objects. Therefore, virtual indirect sensual contact of any organism with any parts of a maximum inorganic object, which may be called *a universe*, is not equivalent to the organism's access to the Reality. The Reality amounts to a multiplicity of universes, in harmony with Ockham's (14th century) idea of such a multiplicity; this is also in harmony with the universal linguistic distinction of the pluralisable word *universe* (cf. *universe : universes*) , as opposed to the word *Reality* with its necessary feature of being a *singulare tantum* (cf. *Reality : * Realities*; as against, for example: *the following two realities: the reality of contemporary France and the reality of contemporary Germany*).

Sixth, a rather involved linguistic reasoning dealing with the interaction between the concept *can* and questioners shows the necessary existence of the abovementioned conceptual non-empirical „primes". Their important traits are stated.

# Chapter III. Fundamentals of logic in the ontological approach

## A. Introduction

The most general truth of logic says that any contradiction entails all contradictions and thus non-existence of anything. This is absurd in view of the fact that it is impossible to say something and to simultaneously say that the former saying has never occurred. The simplest wording of this content is the logical law called the law of simplification: $\boldsymbol{p \Rightarrow (p \vee q)}$.

Its formula is equivalent to the righthand side of the formula below which can be called „Wittgenstein's tautology" (as presented in his *Philosophische Grammatik*):

$$[p \Rightarrow (p \vee q)] \equiv [(p \wedge q) \vee (p \wedge \sim q) \vee (\sim p \wedge q) \vee (\sim p \wedge \sim q)]$$

Here is the corresponding deduction:

**[p ∨ q & square]**

**(p → p ∨ q)** ≡ ~ (p ∧ ~ p ∧ ~ q) ≡ ~ p ∨ p ∨ q ≡
≡ (~ p ∧ p ∧ q) ∨ **(p ∧ p ∧ q)** ∨ **(~ p ∧ ~ p ∧ q)** ∨ (p ∧ ~ p ∧ q) ∨
∨ (~ p ∧ p ∧ ~ q) ∨ **(~ p ∧ ~ p ∧ ~ q)** ∨ **(p ∧ p ∧ ~ q)** ≡
≡ **(p ∧ q)** ∨ **(~ p ∧ q)** ∨ **(~ p ∧ ~ q)** ∨ **(p ∧ ~ q)**

Further relevant comments are added. In particular, a critique of Leibniz's approach to existence is presented.

The problems of vagueness and of the principle of excluded middle with its possible suspension are discussed.

The author concentrates on the logical rule of contraposition and on De Morgan's laws as the main points of logic immediately leading to the acceptance of the methodological principle of radical criticism.

Several examples of reasoning in terms of contraposition, a reasoning which eliminates wrong judgements, show the crucial importance of the logical principles discussed in this subchapter.

### B. Implication. Material implication

Implication, in particular, material implication, is characterized in much detail, with relevant broad illustrations.

Special attention is called to the necessary non-identity of the antecedent and the consequent of implication and literal non-repetitiveness of expressions playng an identical role in sentences.

### C. Selected inferential functors

Certain phenomena of inference other than the basic implication are discussed.

An important part of the discussion is dedicated to the Polish functor *skoro* ‚once'. The functor is shown to be similar to implication: both of them exhibit a non-categorical nature.

### D. Strict implication

The two realms of organisms, those who speak and those who / which do not speak, are paralleled by the distinction which opposes the broader material implication to strict implication. The latter is based on the *necessary* relation of the consequent to the antecedent, given the *semantic* nature of the *expressions* involved (the negation of the conseqent in conjunction with the antecedent yielding a contradiction, cf. * *She is Jack's mother, therefore she has not given birth to Jack*.). For obvious reasons, it is only speaking beings who have access to strict implication (but each such implication, as soon as it is true, can also be fomulated as a material implication).

An important part of the core of common logical considerations revolves around *false* or possibly false formulas of strict implication. The corresponding error

is called *non sequitur*. This critical qualification of certain utterances is discussed in some detail.

There are various types of strict implication and of their exponents.

The author discusses, in particular, disjunction. Its most basic form is the post-position of the connector *if* with the accompanying clause, cf. *One is standing if one's body is in no other position*. But there are a number of other forms of disjunction as well. They always have an analytic, rather than synthetic / existential, character.

The area of strict implication borders with the division of statements into classificatory / taxonomic ones (cf. *male* vs. *female*), ordering / gradatory ones (cf. *pound* vs. *gram*), typological ones (cf. *renaissance* vs. *baroque*). This division is given some attention.

### E. Example of application of the principles of logic to a study in linguistics

A linguistic controversy is commented upon as an example of a possible object of application of the principles of logic to specific texts. (One of the parties referred to in the example is the author of the book.)

## Chapter IV. Osmosis of methodology and theory in science

### A. Introduction

The necessity of interaction between methodology and theory is demonstrated. The main point where they meet in a kind of intersection is the phenomenon of knowledge.

### B. The concept 'know that'

The concept 'know that' taken to be primitive is characterized. Moreover, existence of its denotata is analytically proved.

### C. The concept of knowledge. Supplements

1. **Wittgenstein's claim [wenn einer es weiss, weiss es keiner]**
   The rationality of the claim is demonstrated in a strictly formal way.
2. **The problem of lack of knowledge**
   The contrast between necessary existence of knowledge and the necessary broad lack of knowledge as exhibited by organisms is discussed.
3. **Equivalence: $\alpha \equiv [\exists x$ knows that $\alpha\ (x)]$**
   The nature of the equivalence is elucidated. The relevant claims are justified.

4. **The difference between „virtual possibility" and „literary possibility / literary <possible world>"**
   The difference is shown to have its strictly analytic aspect.
   **Appendix. Additional remarks on expressions considered fictional or non-fictional**
   The controversy between theism and atheism has been discussed. The rationale behind theism is shown.
5. **A commentary on „antirealism"**
   The postulate of substituting „proper assertibility" for „truth" which is voiced in various forms by „antirealists" is shown not to be a viable way of solving the epistemological difficulties which the concept of truth involves.
   **Appendix. A gloss on the skeptical tendency with respect to ‚knowledge'**
   The claim of self-refutation of skepticism is voiced; the claim is based on the accepted fact of common knowledge of the all-embracing truth of what is expressed by the tautological alternative.

## Chapter V. A logical classification of scientific studies

### A. Introduction

„Studies" are meant to be well delimited, concrete investigations, rather than vast and heterogeneous disciplines like zoology, geography, history or theory of art, etc.

Some relevant examples of „studies" are discussed.

### B. The conceptual basis of the classification

The basis consists in the intersection of the two crucial parameters inherent in the prime ‚know that'. These are, on the one hand, the opposition of the concepts of truth / existence and falsity / non-existence, on the other hand, the opposition of contradiction and non-contradiction.

### C. The fourfold division of scientific studies

The conceptual basis introduced in subchapter B yields the following four major fields of scientific studies:

I. synthetic studies: 1. idiographic studies (existence), 2. nomological studies (non-existence of non-selfcontradictory possible counterparts of what is existent; example: dogs without inborn tails); nomological studies of linguistic phenomena are claimed to be necessarily non-existent;

II. analytic studies: 1. studies in contradiction (impossibility / necessity; example: particular studies within mathematics), 2. studies in non-contradiction (possibility); these are called here *constructivistic* studies (examples: technology, legislation [projects before their materialization]).

### D. The problem of constructivistic studies in linguistics

Apart from ordinary constructivistic projects such as possible sets of rules of transliteration (for certain alphabets), some linguists develop artificial schemes of generating natural speech strings (one classical example is Jakobson's (1948) system of artificially recovering Russian conjugation). Such schemes do not belong to idiography. The author shows that their nature is essentially different from the example of transliteration; they are closely similar to literary works.

## Chapter VI. The central domains of scientific methodology: proof; explanation

### A. A brief characterisation of proof and explanation

The nature of both proof and explanation is, at bottom, that of implication.
Proof is an operation on a claim which consists in assigning it its *qualitative* logical value, i.e. truth or falsity.
Explanation is an operation on a claim which consists in assigning it a *quantitative* value in terms of its informative power, by showing that the informative power of the conjunction of the claim as a consequent with a suitably adopted antecedent excludes a greater number of logically independent states of affairs than the consequent alone, where the measure follows from a certain conceptual community of the conjuncts (not: from the trivial addition of informative power of any *arbitrary* conjuncts).

### B. A detailed account of proof and explanation

1. A joint account of proof and explanation.
   Detailed properties shared by proof and explanation are described.
2. An account of proof.
   Detailed special properties of proof are described.
3. An account of explanation.
   Detailed special properties of explanation are described.

### C. Examples of proof and explanation in linguistics

1. **Proof**
   The main example is that of the conditions of a small fragment of Polish inflection. One relevant example: ***ze zorganizowaną przestępczością*** vs. *z zaangażowaniem*.
2. **Explanation**
   The main example is that of the historical change of Slavonic declension where a very rare ending *-ov* in the Genitive pl. (or a continuant of the ending) replaced

the null ending of tens of thousands of masculine nouns by accordingly transforming them. Cf.: old Slavonic * *ne bylo rabŭ* ∠ Polish *nie było rabów*.
Several further examples of linguistic explanation are adduced.

## Chapter VII. A general characterisation of linguistics

### A. Introduction

Several subchapters are announced as necessary in supplying the reader with basic information about linguistics.

### B. The status of linguistics *proper*

What is called *linguistics proper* is shown to be opposed to multifarious *other* domains of science dealing with language and speech (such as translatology, language games, intelligence service activity or phonetics).

Linguistics proper is preoccupied with *natural language codes* ***in toto*** and the ***entirety*** of their use.

### C. Linguistics in the history of culture and science. Its interrelations with other domains of science

A brief account of the history of linguistics proper is presented.

The central line of development, culminatig in the contemporary world scene of linguistic research with the obvious domination of North-American achievements, embraces, chronologically, the following areas: first, the area of ancient Greece (from 6th century B.C. on), next, Roman, Arabian, West European (in particular, French and English), German (the most influential area in the modern era), Danish, Russian, Polish, American (the latter two – from the nineteenth century on), Czech and other areas. Separate territories where linguistics was most advanced since even much earlier times are India and China. A large number of prominent scholars (in particular, linguistic theoreticians, but also philosophers) as well as a list of linguistic schools have been recorded.

Close links between linguistics and philosophy or mathematics are stated to have always been present.

### D. The main trends in the history of linguistic-theoretical thought

Four main trends in linguistic-theoretical thought are distinguished: skepticism, psychocentrism, expressive logocentrism, gnosilogocentrism. Their crucial ideas are presented in a schematic way.

It is the contrast between psychocentrism and logocentrism that has been the central object of examination. Arguments against psychocentrism make up the bulk of what the author devotes his time to; with a clear preference for the

gnosilogocentric outlook as represented, above all, by Leibniz and by Wittgenstein as the author of his *Tractatus*.

### E. Public evaluation of linguistics

In view of the fundamental role language plays in any society, linguistics is necessarily a legitimate part of science. But its presence is not practically indispensable. This is clear as soon as we realize that most of the territory humans have ever inhabited knew no linguistics whatsoever wihout any detrimental effects of the situation for culture or civilisation. One may say: linguistics, unlike certain special activities concerning language, is publicly superfluous and culturally improductive (beyond rare contemplative interests of certain individuals).

### F. Linguistic investigation areas in the perspective of the relevant global parameters

A general survey of globally motivated domains of linguistic research is based on, first, the difference between facts of natural language codes taken in abstraction of indivdual events in space and time, as opposed to such events specified in space and time, second, the difference between facts within single codes and facts in a comparative perspective of variously selected sets of codes. The former distinction is related to de Saussure's famous dichotomy of *internal* and *external* linguistics.

A number of subordinate domains of linguistics have been mentioned. Their enumeration is not a relevant exhaustive and closed catalogue.

### G. Linguistic investigation areas in the perspective of the functional parts of language and speech

A synopsis of necessary sets of functional complexes of expressions which are instrumental in various aspects of linguistic communication, with their most commonly adopted nomenclature, is presented.

### H. Central functional problems of language and speech. Preliminaries

1. **Proportional sets**
   The crucial role of proportional sets of expressions as determining the nature of language is emphasized and illustrated.
2. **Units of language**
   Special attention is called to the indispensibility of the general (Saussurian in its origin) concept of *unit of language*, as opposed to vague labels such as *word*. An elaborate definition of *unit of language* is formulated and exemplified.
3. **Denotation-functional dispersion of expressions as perceptibles**
   The tremendous complication of the relationship between, on the one hand, meaningful communication, and on the other hand, perceptible phenomena

subservient to it is commented upon (under the metaphorical name as used in the title of this subchapter).

The major problem touched upon in this context is that of genuine polysemy as distinct from spurious polysemy.

The purely human origin of natural language(s) (natural-language codes) is stated and justified, in addition to the claim of the divine origin of the necessary underlying anatomic-physiological properties of the speaking organisms.

4. **Metalinguistic necessary truths**

Besides most general *necessary* truths such as that of the omnipresence of disjunction or tautological alternative, inherently connected with the primeness of *did*, there is a series of *metalinguistic* truths which are universally necessarry, i.e. such that the respective negations must be rejected on pain of indulging in some contradiction.

The author produces the following catalogue of truths of that character:

(i) Martinet's *double articulation du langaage* (its justification is presented)

(ii) the crucial presence of the opposition of true and false statements

(iii) presence of non-indifference of at least 2 states of affairs in the apprehension of any speaking being

(iv) presence, in every language, of the contrast of the values 'good' and 'bad'

(v) presence of the *main axiological* opposition of (literally injurious) lie vs. truthfulness (the opposition is described in much detail)

(vi) the nature of singular acts of speech as minimal events which underlie measure of time.

Additional comments upon phenomena merely *close* to full-fledged necessity are added. One of them is concerned with the inevitability of the rise of new natural-language codes / mutability of natural language codes coupled with what can be called „slow pace" of such changes.

What is resolutely excluded is so called monogenesis of language (in spite of some, not quie infrequent, phantasies to the contrary).

# Chapter VIII. Work on a scientific study and its principles. A general outlook

The essence of a scientific study is fomulated as follows:

*sb* ***says about*** *„sb knows about sb / sth that she / it is such, not: otherwise",* ***that*** *sb* ***knows*** *about* $sb_i$ / $sth_j$, ***that*** $\varphi$, *not:* $\psi$.

**Conditions:**

(a) lack of any instrument that might be external in relation to the aim of the research action,

(b) inaccessibility of omniscience: vulnerability to error,

(c) presence of knowledge,
(d) indefinability of knowledge: merely relative provability of knowledge

**The *superordinate* principle: the principle of radical criticism.**

Its application to an expected scientific statement:
sb says that __
(a) in earnest / in a serious way & literally
(b) in a solid way;
(b) = (b.i) with a purpose of attaining (near-)exhaustiveness,
(b.ii) in a continuous effort,
(b.iii) conscientiously,
(c) in a reasonably / moderately bold way.

**Subordinate principles.**

Pragmatic priciples (principles of colaboration in the investigation process, such as that of non-ignorance of the literature on the relevant subject matter, honesty, etc., are merely listed, but not discussed in detail).

Immanent principles.

These are principles rooted in the very nature of linguistic investigation with its following partial processes:

I. Process of conceptualisation.
II. Process of propositional selection.
III. Process of assertion.

## Chapter IX. General immanent principles of investigation

### A. Introduction

Within what has been called immanent principles of investigation it is necessary to distinguish, on the one hand, their part that applies to the whole of an investigation processs, and on the other hand, special principles in service of the subprocesses of the entire investigation process (as the subprocesses have been preliminarily listed).

### B. The postulate of adequate differentiation of objects of investigation

It is not the case that whenever an expression catches one's eye making one think that there is a correspondence between it and something that deserves to be acknowledged as an objective item qualified positively for undergoing a scientific investigation such an objective object is present.

Adequacy of differentiation of objects of investigation consists in, first, paying attention to *real* differences between complexes of possible objects of investigation, second, avoiding considerations of *unreal* differences between such complexes.

The following two principles take care of materializing the abovementioned adequacy: first, the critical principle called *non sequitur,* second, the principle of *informativity*.

### C. The critical principle *non sequitur*

The very nature of logic places this principle in the centre of corrective workings of scientific methodology. Accordingly, it was given much attention in the general presentation of logic.

There are various special manifestations of errors against which the principle is directed. One of them is the error called *equivocation* which results from negligence of differences between scopes of denotation proper to identical expressions in their purely perceptible aspect.

1. **Categorial mistake**
   The term applies to possible confusion in applying attributes to items whose nature excludes a given category of attributes.
   Errors of this kind are illustrated with several linguistic examples where certain solutions are criticized in much detail. One of them is the wide use of the term *iron.* (from *ironic*) as a lexicographic qualifier of words or set phrases with the intention to identify an inherent feature of the expressions, on a par with such features as *colloquial* vs. *formal*. This kind of use of the term results from vague associations accompanying the lexical items with what is proper to whole utterances in definite external contexts and is qualified as an intention of suggesting something additional to the hearer; such suggestion has its label *irony*. The author himself had followed the common wrong practice in his lexicographical works. A vast excerpt from his relevant autocritical article is cited. Further relevant illustrations are appended.
2. **The practical variety of the error „non sequitur": *ignoratio elenchi***
   Systematicity of scientific research can best be realized if the whole conceptual instrumentarium activated by scholars in their collective work were identical and known to be identical. However, this is impossible in an absolute sense. The reason is that knowledge is indefinable. What can be proved to be distinct, must be distinct from the point of view of at least two parameters.
   Still, there is a wide sphere of trivial misunderstandings between scholars: one of them takes another one, who says something, to mean what s/he does not mean, while it is rather easy to identify the difference. The fault of the former scholar has its Latin name *ignoratio elenchi*.
   Several examples of this kind of error in linguistic matters are dicussed.

## D. The princple of informativity

1. **Introduction**
   There is a kind of complementarity between subchapters A and B..
   Whereas in subchapter A the error of p r e s e n c e of w r o n g consequents in implication was pointed out, in subchapter B the error of a b s e n c e of n o n - - i d e n t i c a l consequents in implication is pointed out.
   In both cases what is taken to be an error is the lack of literal informativeness of an utterance or its „vacuosity".
   Positive injunctions concerning informative power of utterances include the following properties:
   (i) propositions should display maximum explicitness,
   (ii) the underlying concepts should display maximum non-ambiguity,
   (iii) intersubjective metric concepts are to be preferred, if possible, with maximum possible precision,
   (iv) generalizations should be as broad as possible,
   (v) as strong as possible hypotheses should be advanced,
   (vi) formal notation of definitions and propositions should be preferred wherever possible.
   Negative understanding of the principle of informativity implies illicitness of all kinds of real exclusive repetitions of identical items. A detailed discussion of the problem touched upon here was presented in Chapter II.
   Some examples of moves complying with the targets listed above are given.
2. **Contra *idem per idem***
   The error discussed in this subchapter can be dubbed „empty renominalisation". The phenomenon is illustrated with several examples.
   One special object of critique is registration of homonymy. It is shown that this kind of work on language cannot be a legitimate part of science.
   A number of other examples of real errors called *idem per idem* in linguistics are described.
3. **Contra *ignotum per ignotum***
   A number of examples of the error called *ignotum per ignotum* are described.
4. **Contra *regressum ad infinitum***
   The subchapter deals with the most fundamental and the most dangerous error of *infinite regress*.
   It is illustrated with the error the author himsef has committed. It consists in equating the so called truth claim accompanying any categorical declarative utterance with a possible utterance beginning in the prefix *someone knows that _*.
   A rather involved analysis of this idea shows that it inevitably leads to an irreparable infinite regress.
   The format of the present summary makes it impossible to reproduce the entire reasoning that leads to the statement of the error.

5. **Contra *circulum vitiosum*; contra *petitionem principii***
   These most elementary errors are illustrated with some examples that have been found in authentic reasonings.

### E. The principle of uniformity

The requirement behind this principle is: in two investigated situations taken to display the same relevant properties the same research moves should apply.

Certain examples are given.

## Chapter X. The process of conceptualisation. Special principles

### A. The problem of persuasibility of concepts

Many concepts comprise pragmatic features of some pressure exerted by speaker on recipient which aims at inclining him / her to assume a certain practical attitude. A feature of that kind is clearly incompatible with the necessary objectivity of utterances in science. Therefore, as a general rule, persuasible expressions cannot be accommodated in scientific texts.

Still, in some cases persuasion inherent in an expression is neatly separated from objective features of states of affairs. This characteristic allows us to make use of suitable persuasible expressions in scientfic texts. The author adduces the example of the well known sociological term *manipulation*: its correct defiition compiled by the author provides for a list of objective features of a human situation which is accompanied by an unequivocally separate gloss saying that what a manipulator does is bad.

A remark on the special features of expressions known as amelioravitivity and pejorativity is added.

### B. The principle of clarity and explicitness of concepts

The classical Cartesian postulate of clarity and explicitness of concepts utilized in science is recalled.

The first part of the postulate provides for maximum solvability of yes – no questions concerning presence or otherwise of the relevant properties in particular objects the concept in question is supposed to be applied to; the second part of the postulate provides for an explicit enumeration of the relevant properties.

The corresponding Latin maxim reads: *per clariora* (as applying to the search of substitutes for given concepts); a sarcastic Latin maxim addressing the error which is the opposite of the Cartesian postulate reads: *obscura per obscurius* („substitutng what is even more unclear for what is unclear").

A special remark is concerned with elimination of egocentric expressions in scientific texts. One powerful category of such expressions are intentionally metric,

but not objectively metric, adjectives and adverbs in their basic forms of „degrees of comparison", such as *long*, *big*, *rare*.

### C. The principle of maximum distinctiveness of terms; the problem of definitions

The most obvious postulate concerning terms used in scientific texts is recalled: any kind of unclarity of what the network of their scopes is is a serious logical flaw. Thus, what is necessary is constant control of mutual distinctiveness of the terms being introduced, with an eye to their being fully distinctive, i.e., ultimately, elimination of possible confusions, in accordance with the Latin maxim *veritas magis ex errore quam ex confusione*.

Next, the extremely troublesome problem of various kinds of definitions of terms is raised without the whole set of the relevant formulas being described.

Preference is given to first adopting particular well separated attributes, next, conjoining them in a set usually symbolized as *XYZ*. The procedure is illustrated with a corresponding definition of syllabicity.

The problem of so called linguistic or technical definitions in Petrażycki's sense is briefly discussed.

### D. The principle of reductionism

The classical maxim that the principle of reductionism correponds to is Ockham's (14th century) formula *entia non sunt multiplicanda praeter necessitatem*.

Its sense is as follows: new terms are to be avoided unless it can be stated that the distinctiveness of the problematic terms is secured.

### E. The principle of productivity of concepts

The all-important principle of productivity of concepts reads: they should admit of stating truths other than those inherent in themselves. Several examples are discussed.

### F. The principle of correctness of definitions

The trivial rule of avoiding circularity in definitions is recalled.

### G. The principle of independence of empirical and non-empirical terms

The principle in question is rooted in the entire previous presentation.

### H. The principle of independence of terminology and claims

An elaborate example of the necessity of observing the principle in question is presented.

# Chapter XI. The process of propositional selection. Special principles

### A. Introduction

### B. The principle of „safety caesura": inomissible distinctions

In advance of developing an investigation of a specific set of propositions it is necessary to acknowledge the inomissible, or unquestionable, distinctions, such as those concerning analytic truths or the difference between proper names in their contrast with descriptions.

### C. The principle of search for problematic phenomena

What is here called „search for problematic phenomena" is the main heuristic principle. It promises the greatest number of *novel* scientific achievements. Problematic phenomena can be understood as phenomena which in authoritative scientific milieus continue to call for new efforts with an eye to reaching satisfactory solutions of what has not been *strictly universally* taken to be true.

A number of examples are pointed out.

One wide study in both linguistics and philosophy is presented in the same vein: the object of the study is the wide range of expressions whose centre is usually identified with the word *I*.

### D. The principle of utilising analogies

Several examples are presented.

### E. The principle of „safety background"; contra „ad hoc"

The necessity of constantly broadening the scope of phenomena taken into account in an investigation process is emphasized and illustrated by a number of critical insights.

### F. Classification as a project of sets of propositions

The nature of classifications / taxonomies is elucidated.

# Chapter XII. The process of assertion. Special principles

### A. Introduction. „Context of justification"

The difference between „context of discovery" and „context of justification" is recalled.

The crucial role of the process of assertion is emphasized.

**B. Construction principles**

1. ***Experimentum crucis*; its problematicity**
   The high requirements of the procedure called ***experimentum crucis*** are recalled. A failure and a success of *experimentum crucis* in linguistic investigations are illustrated.
2. **Thought experiment**
   An elaborate example of thought experiment in linguistics is presented. The following claim is substantiated: the crucial concepts *say that _, say:* _ do not entail the presence of voice medium.
3. **Intersections in justification**
   Intersections in justification are claimed to be legitimate and highly valuable means of attaining the relevant success. Suitable linguistic examples are adduced.

**C. Control principles**

1. **The principle of scrutinizing presupposed necessary conditions of propositions**
   An elaborate negative linguistic example is presented.
2. **The principle of scrutinizing non-presupposed necessary conditions of propositions**
   Several negative linguistic examples are presented.
3. ***Argumentum ad hominem***
   Scientfic critique called *argumentum ad hominem* is characterised as invoking a criticized scholar's own pronouncements. Two appropriate linguistic examples are cited.
4. **Diagnosis of sources of criticized claims**
   Such diagnosis, if correct, is valuable. Suitable linguistic examples are adduced.

**CODA**

The author emphasizes the crucial methodological value of certain pointed and correct, even if minute, observations of singular facts. He recalls programmatic recommendations in this vein pronounced by Hercen (as echoed by Baudouin de Courtenay) and by Michelangelo Buonarroti (as echoed by Kotarbiński).

**Bibliography**

*The author's works*

*Name index*