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LOGIC

The second part. A System of Logic. Section i. Of words.

§1. The Significance of Words for Logic.

In English treatises on logic, such as those of Mill and Bain, words are first considered, and concepts only afterwards.¹ The older manuals of logic, French as well as German, commence at once with the most difficult matter, namely concepts. Such treatises are Zimmermann's and Lindner's manuals of logic for the gymnasia.² But in Germany likewise the English way is now adopted, as may be seen in the logics of Lotze, Sigwart, or Wundt, and also in the Austrian government's ordinance for gymnasia of the year 1884 [with its logical doctrine on words].³ It is therefore advantageous, indeed mandatory, to clarify the value of words for logical thought.

Representations, in which animals also are skilled, require no language. Animals perceive surrounding objects through their senses. Yet they do not merely sense and perceive the objects present, but also remember their past sensations, perceptions, and observations: A swallow returns every spring to its nest and recognises it; that is, it discerns that its new observation of the nest – this spring's present observation – is the same as last year's, which it must recollect.

A man likewise senses and represents various things without the aid of words. A child gathers many sensations, perceptions, and non-sensory represen-

¹ (All footnotes in this section are the translator's.) In the manuscript, Marković consults J. Schiel's German translation of J. S. Mill's *System of Logic* (1843), published as *System der Deductiven und Inductiven Logik* (Braunscheig, 1868), as well as G. Compayré's French translation of A. Bain's *Logic: Inductive and Deductive* (1870), published as *Logique Déductive et Inductive* (Paris, 1875).

² Marković probably has the following manuals in mind: G. A. Lindner's *Lehrbuch der formalen Logik* (Wien, 1861 etc.) and Robert Zimmermann's *Philosophische Propaedeutik* (Wien, 1852 etc.).

³ In the manuscript, Marković consults H. Lotze's *Logik. Drei Bücher, vom Denken, vom Untersuchen und vom Erkennen* (Leipzig, 1874), W. Wundt's *Logik, eine Untersuchung der Principien der Erkenntnis und der Methoden wissenschaftlicher Forschung*, zwei Bände (Stuttgart, 1880), and C. Sigwart's *Logik*, zwei Bände (Freiburg i. B., 1873/1878).

tations into his consciousness before understanding a single word. A craftsman exercises his skill by combining the tactile and visual sensations derived from the material he shapes with the muscular sensations of the hands and fingers with which he works. Yet he could not verbalise even the smallest part of these tactile, visual, and muscular sensations. A fiddler or pianist is aware of an immense number of tactile or muscular sensations which the plucked strings or struck piano-keys, as well as the fingers or hands that pluck or strike, awoke in him. Indeed, such a man distinguishes these sensations from one another and immediately perceives when he plucks the wrong strings or strikes the wrong key, but still, he cannot verbalise his tactile or muscular sensations. To a physician, who, by sounding the chest and observing the fever and the warmth of the skin, etc., recognises the nature of a disease, his delicate feeling is of much avail; but he could not verbalise his subtle sensations. Nor could any book guide him – only his hearing, sight, and touch, which he had to discipline. The knowledge acquired through such sensory training remains in the possession of that individual; he cannot communicate it in words to another, nor generalise it. It could be transmitted from the elder to the younger only by living example. The elder can but encourage the younger to train himself in feeling, until he attains the right and requisite one.

But when a man wishes to impart to another his insights into equalities, similarities, and differences concerning things – into relations among things in general – then words are required to express these insights. For example, if one sought to instruct another without words about the relation one has detected among many objects scattered across the world – all of which evoke a sensation of heat – he would have to bring the other to each such object. In this way the other could receive from every such object the impression of heat for himself, so that by comparing all the sensations he receives he might conceive the representation of their similarity. But how much more reliably, easily, and quickly one evokes in another the representation of that similarity when the former expresses his representations by means of words such as heat, sun, flame, friction, etc., combining them into propositions apt for expressing thoughts. Our real insights are nothing else than general claims concerning the relations of many things. The most fitting expression of such insights are words of general sense. For example, the general word “tree” expresses representations of the same characteristics, that is to say, of relations among the many individual things to which the same word “tree” applies. Like any other general word, *it expresses a unity among the many*. Such words are a great aid to general insights. All reasoning places several general representations in relation. For example, $8 \cdot 9 = 72$ contains only general representations, each of which ex-

hibits a particular relation: the number eight, multiplication, the number nine, equality, the number seven, the number ten, multiplication, the number two, and addition. These words concisely stand for a plurality of representations, while the arithmetical signs above do so yet more concisely. How long would it take our sensory perception to apprehend that $8 \cdot 9$ makes 72, and how much faster and more certain is our thought when aided by general words, or by other (arithmetical or algebraic) general signs.

True, the deaf and dumb likewise learn to think with general representations, and they too attain [general] insights without the aid of words. Yet general signs, especially the gestural ones, also assist them. Nevertheless, words are far clearer, more distinct, more complete, more rapid, and more fitting signs of general representations [or concepts] and their relations, than are gestural signs.

Only in the form of words do representations attain clear generality so that they may become the elements of logical thought. Lotze has well pointed out how greatly words aid the development of general representations [or concepts], without which no science could arise, not even logic. Painters, whose sight is sharpened to discern subtle differences among colours, say there are as many as a thousand distinct colours. Let us suppose we had a thousand words for colours, instead of the ten current principal words. Would we gain by such a multitude of special words [or lose]? We should be at a loss for it would be impossible to memorise so great a number of particular linguistic signs. Amid the variety of specific, finely distinguished colours, there exist several classes. Thus, each kindred class of colours we name with a single word, for example red, yellow, blue, etc. True, in doing so, we disregarded the finer differences among individual colours within a single class; but we bring into prominence [the cognitive real aspect] – a far more valuable side, from the logical point of view. By a single word – “red”, “yellow”, or “blue” – we indicated the sensory-qualitative resemblance among all the individual colours included in the same class.

Thus a word unites equal or similar sensations; it is a product of cognitive comparison and generalisation and, by becoming one, it preserves in the mind every generalisation formed at any time, for future use. [Thus] the words red, yellow, blue, etc., establish the general representation by which we represent all the particular colours of the same sort: red, yellow, or blue. Likewise, through words, clear general representations become possible. Words are the indispensable consolidators and accelerators of our thought, which without them would fall asunder and proceed in the form of countless individual representations – an enormous mass of structureless and unrelated [psychological] fragments. Words give order and connectedness to our thought by consolidating the same

or similar representations, comparable to algebraic formulas. For example, $a \cdot a = a^2$ gathers into itself all the individual numerical instances embodied in that short formula.

The value of words for logic is shown also by the fact that logic is concerned in the first place with the form [or the mode of connection] in which representations are combined; and that form is the form of a proposition. Truth resides not in any single representation, but only in a combination of several. If I say “sun”, I cannot follow up that single word and the bare representation it evokes with the question: Is “sun” true, or is it not true? But when I say, “The sun warms”, or “The sun does not revolve around the earth”, others understand me, and can judge whether they hold to be true what I think and manifest in one of the foregoing propositions.

Truth or falsehood pertains only to a combination of representations; and a combination of representations – that is, a judgement – must be expressed in the form of a proposition. Since propositions are the natural form of logical judgements [or combinations of representations], the words required for forming propositions are likewise required for logic.

§2. The Kinds of Words Required for Logic.

Not all kinds of words are equally required for logic, nor equally valued by it.

When I utter a single word, such as “*sun*”, it will evoke a clear representation in a hearer only if he at once forms a proposition in his mind – for example, the sun warms, the sun is round. *Thus only those kinds of words which are required for the forming of propositions have logical value.* Propositions require at least a subject and a predicate. Subject-words note an object, whether real (actual) or merely conceived, while predicate-words express something of that object.⁴ Yet the subject of a proposition does not note beings (substances). For example, when I say time flies, shadow is dense, or virtue is beautiful, I am not affirming that time, shadow, or virtue are beings [or the metaphysical quantity] existing on their own. But the subjects of the propositions undoubtedly express an independent representation, that is, an independent object of thought. Thus the subject is the basis upon which the predicate rests, that is, upon which rests the expression of some property belonging to the object noted by the subject. As an independent object of thought [– the content of a thought or what someone thinks –], the object noted by the subject is expressed through a substantive,

⁴ In light of Marković discussion of connotative and non-connotative names in §5 below, I use the verb “note” throughout the text where one would normally expect “denote” or “signify”. For further explanation and justification of this choice, see my introductory essay above.

while the predicate, which predicates to the subject some property [or action, i.e. performance], is typically expressed by an adjective. The connection which unites the predicate-representation with the subject-representation is called the copula, and is expressed by an auxiliary verb. The copula is precisely that which expresses whether the predicate is joined with the subject or separated from it. Since propositions require a subject, a predicate, and a copula, the three [grammatical] kinds of words that express these are the required logical expressions. *Thus substantives, adjectives, and verbs are the kinds of words required for logic, and valued by it.*

There are propositions consisting of only two words: a subject and a verb. In such propositions the verb performs a double function: it notes an action or a state, and predicates it to the subject. Indeed, there are propositions consisting of only one word, such as *grmi* (= thunders) or *bliešti* (= flashes).⁵ The older a language is, the more frequently it employs such seemingly subjectless propositions. Yet these are not truly subjectless propositions; rather, the subject is represented in them by a demonstrative pronoun. In the old (Croatian) language, the pronoun is appended at the end: *grmi to* (= thunders that). In the Romance languages, there is the pronoun *il*; in the Germanic languages, there are the pronouns *it* (English) and *es* ((German)), most often before the verb [while in our language it stands at the end]. True, the subject is not indicated by a name, but it is at least pointed to by a [demonstrative] pronoun.

No doubt, from the logical standpoint, three kinds of words are most essential for propositions: substantives, adjectives, and verbs. Personal, demonstrative, and interrogative pronouns stand in the place of substantives (they replace them), while indefinite pronouns and numerals fulfil, in a certain measure, the same function that (adjectives) do. Prepositions, connectives, and relative pronouns express relations or connections between concepts; they are important constituents of language in so far as logical judgements are concerned.

Verbs, prepositions, and connectives are required for the logical connection of concepts (or of judgements), and substantives and adjectives for expressing the concepts themselves. Thus, in this section in which we regard words [or signs] as the expressions of concepts, we may, following Mill, confine ourselves to substantives and adjectives, which together are, in a word, called *names* (*nomina*).

⁵ Unlike English, Croatian allows for grammatically complete single-word declarative sentences, which cannot be translated into English without addition of a pronoun. Thus, the correct grammatical translation of the Croatian declarative sentence “Gmri” is “It thunders”. What Marković then says in the passage applies to older versions of Croatian; it is absent in the modern language, and is in fact quite similar to the form of the proposed English translation.

Taking into consideration in this section only names, following Mill, we classify them, according to their logical value, as follows.

§3. (General and Singular Names.)

Names are either general or singular. A general name [whether substantive or adjective] is one which expresses a representation equally applicable to many objects, that is, to each of them in the same manner; while a singular name is one which is applicable in a definite way to a single object only.⁶ General names are, for example, human, animal, and citizen; singular names are personal and place names. Every general name precisely characterises its object and briefly indicates a property [or quality] of that object; whereas a singular name does not characterise its object, but merely points to it [or signifies it]. For example: this is a human, this is a plant, this is an ore – here, the general name characterises the object by some property; while this is Zagreb, this is Vienna, this is Ivan Pavlović, and this is Petar Pavlović – here the name in no way indicates any quality of an object, but merely points to that object. Place and personal names are mere marks for particular objects, whereas a general name is the brief sign [or an indicator] of an object. General names have a far higher logical value than singular ones.

Collective names differ from general names. A general name, such as human, notes many particulars in such a way that the name belongs equally to each; whereas a collective name does not belong to any one particular, but to the whole collection [of particulars] – for example, the name army. But when a collective name belongs in the same manner to many collections, it is at once a general name. For example, army is a collective name and at the same time general, since there are the French, English, Russian, Bulgarian, etc. [armies].

§4. (Names of Objects and of Properties.)

Names are either names of objects [i.e. they express an object] or names of properties [i.e. they express a property]. The former note objects or things, the latter note properties; for example, human is a name of an object and humanity a name of a property.

⁶ Across the entire manuscript page, written vertically in pencil, there appears a sentence – perhaps intended as Marković’s alternative formulation of the passage – which reads: “A general name is one that holds, in the same sense, of an indefinite number of objects; whereas a singular name, in the same sense, holds of one object only – for example, ore, animal, human; Petar, Ivan, Zagreb, etc.”.

In the fashion of medieval Schoolmen, Mill calls the names of objects concrete and the names of properties abstract. Other contemporary logicians, on the contrary, call concrete only what is particular, and abstract what is general. In medieval scholastic fashion, Mill further maintains that adjectives also are names of objects; for example, “white” is a name of an object (or a concrete name), and whiteness a name of a property (or an abstract name).

Is not the name white a sign of a property? How then can it be called a name of an object (or a concrete name)? Mill justifies his practice as follows. When I say, “snow is white”, here the name “white” is not the name of a property but a sign for an object; I note the property by the word “whiteness”. That is the name of a property, or an abstract name. I cannot say: snow is whiteness, but must say: snow is white. In this case I do not represent the property as something independent. But when I say, whiteness is the colour of innocence, I do represent whiteness as something independent, abstracted from things. Mill therefore says that white is a *concrete* name – that is, a name tied to things – because it does not express an independent representation, but one which must be represented together with a thing. By contrast, the name whiteness is abstract, because it notes an independent representation abstracted from things.

§5. (Connotative and Non-Connotative Names.)

Names are either *connotative* or *non-connotative* (denotative). A name is connotative if it notes an object and at the same time connotes a property; while a name is non-connotative if it notes either an object alone or a property alone.

Every general name of an object is connotative. For example, the name human notes many particulars, and at the same time indicates their property, namely their humanity. The name human is predicated only of a being to which all the required properties belong. Yet the name human directly notes nothing but beings, and only indirectly notes also a property. It thus notes objects and connotes a property (*notat rem, connotat atributum*). On the other hand, the names whiteness, length, virtue, and humanity note a property alone, without at the same time noting objects. These are non-connotative names. The adjectives white, long, virtuous, and humane are, according to Mill, connotative names. The names white and long note all white, that is, all long objects, and connote the properties whiteness and length.⁷ Therefore, according to Mill, all general

⁷ In handwritten version of Marković’s *Logic* preserved at the Zagreb Institute of Philosophy, part of this sentence was clearly omitted unintentionally by the transcriber, which renders the sentence less coherent. The translation here therefore follows another version of *Logic*, archived at the Croatian Academy of Sciences and Arts in Zagreb, portions of which were edited and pub-



names of objects (i.e. concrete names or names tied to things) are connotative – whether substantives, such as human, plant, and ore, or adjectives, such as white, long, and good. But general names of properties – or, according to Mill, abstract names – are all non-connotative; for example, whiteness, length, and goodness, because these names note properties alone, abstracted from things, and therefore do not indicate things.

But of what sort are singular names? Are they connotative or non-connotative? By their origin, place and personal names are connotative [– these are *κατ' ἐξοχήν* singular names]. For example, a village is called Drumlin (= *Brdovac*), which must once have been named after a drumlin. At one time the village lay upon that drumlin, but today it lies in the valley. Hence a place-name, though connotative at first, may in the course of time lose all connotation and become a mere mark. The village Underhill (= *Podsusjed*) will retain its name even though the fortress Hill (= *Susjed*) be brought utterly to ruin, and the hill at which the fortress stood be entirely levelled. The village will retain the name Underhill, even though it is no longer under Hill. The same holds of surnames. At first the surnames Blacksmith (= *Kovač*) or Blacksmithy (= *Kovačić*) were connotative, but afterwards they lost their connotation. Thus the descendants of a Blacksmith or a Blacksmithy may be lawyers; yet they will retain the surname. Singular names, therefore – place-names and surnames – though originally connotative, gradually lose their connotation, and when they become the mere singular names, they are altogether non-connotative. At this day the surname Tall (= *Dugonja*) or Tally (= *Dugač*) is borne by men of the shortest stature, who have inherited the surname from forefathers that were in truth tall.

Mill and other English logicians tend to say in scholastic fashion that general names – such as human – note many particulars, and connote the properties which each of these particulars possesses. The same, in the terminology of contemporary logicians, especially the German, is said as follows. A general name, such as human, has an extension, comprising all particular humans, and a content, comprising all the characteristics of the concept of human.

One may discern the logical significance of connotative names. It is often difficult to determine precisely how many properties some general name of an object connotes, that is, how great a difference between the properties of objects is required to justify the difference in their names. For example, many once sought to justify their savage treatment of black slaves by alleging that they

lished as an appendix in Marotti, *Tročlani sklop*, pp. 313–379; the sentence in question appears on p. 361 (see the bibliography in the introduction). For further information on Marković's *Logic* manuscripts, see the introduction above as well as Marotti, *Marković's Critique of Hegel's Logic*, pp. 5–11 (see the bibliography).

were not human.⁸ In biology, it is hard to decide whether the name plant or the name animal should be assigned to some organic form, or under what species or subspecies some particular ought to fall. Thus the question of the connotational value of names leads to the question of logical concepts, especially to the content of such concepts. In everyday life, men employ connotative names without knowing what property a name connotes, or what characteristics the concept expressed by a name contains. Such men thus name [or express] with the same connotative name things which, in their properties, are wholly alike, or only superficially similar. Logic instructs every science to remove these defects of ordinary speech: each science must use every word with a fixed connotation. The functioning of every science is hampered by being compelled to employ words from ordinary, unscientific language which lack connotation, or possess only a distorted one.

§6. (Affirmative and Negative Names.)

Names are either *affirmative* or *negative*. For example, human/not-human (i.e. non-human), mortal/not-mortal (i.e. immortal), happiness/not-happiness (i.e. unhappiness), will/not-will (i.e. no will or unwillingness).⁹ The logical sense of the negation “*not*” is not the same in all negative names. In examining what sort of sense it bears, we shall first set out Mill’s conception, then Wundt’s, and finally add our own remarks concerning our (Croatian) language.¹⁰ The word not-human may note all objects save humans, that is, all objects that lack every human characteristic. In that case, the word not-human would note rocks, trees, water – indeed, countless objects, each devoid of the properties that belong to humans. But we call by the name not-human precisely someone with all the human characteristics save the characteristic of goodness. When the name not-human notes as much as the names brute or savage, then, *by its logical*

⁸ The sentence is translated here according to Marotti, *Tročlani sklop*, p. 362 (see fn. 7).

⁹ Throughout this section, Marković chiefly examines names consisting of an affirmative word prefixed with the negation “*ne*” (“not”). In all such cases, I have rendered them literally as “not + *F*” to preserve the Croatian morphological structure and the idea of Marković’s analysis, while supplying in angle brackets their more idiomatic English equivalents – typically affirmative words with the prefixes “*im*” or “*un*”.

¹⁰ In the manuscript, next to this sentence there is a pencil-written remark: “Miklošič’s syntax doctrine”. The remark refers to the doctrine of the Slovenian philologist Franc Miklošič (1813–1891), whose work Marković explicitly consults in the following discussion – namely his *Vergleichende Grammatik der slavischen Sprachen* (Wien, 1852–1875). Miklošič was one of Marković’s professors at the University of Vienna in the 1860s, as recorded in the “Nationale und Studienkatalog der Philosophischen Fakultät” (<https://phaidra.univie.ac.at/detail/o:783713>).

sense it is affirmative, though by its grammatical form negative. The genuine negative name is negative not only merely in its linguistic form but in its sense also; that is, such a name notes the absence of all the properties noted by its rival affirmative name. Such a name is, for example, *not-visible* (i.e. invisible).

Just as there are names which are negative in their linguistic form but affirmative in their sense – for example, the name not-human when it notes brutes – so likewise there are names affirmative in their linguistic form but negative in their sense. For example, by its linguistic form, *lazy* is an affirmative name, but by its sense a negative one, since it notes those who do not work.

There is a particular subclass of names which are negative in their sense, though affirmative in their linguistic form. These are privative names: they note the absence of some property which one might reasonably expect the object to possess. For example, the name blind human notes the *absence* of sight, which is the required and natural property of every human being. We cannot [logically] say of a rock that it is blind; we say it only in a poetic, figurative manner, as in blind alley or dumb luck.

Every affirmative name asserts [or connotes] certain properties. By contrast, a negative name, even when negative by its logical sense, connotes no property; it notes only the absence of the properties noted by its rival affirmative name. Privative names, on the other hand, such as blind or deaf, note – that is, connote – two things: the absence of some [by the nature typically] expected properties, and the presence of others on the ground of which one might also have expected the presence of the absent properties. For example, a blind human possesses all the properties of humans save that of sight.

Wundt understands negative names as follows. Names or concepts are negative if they arise from affirmative names by the mere prefixing of the negation “*not*”. Those are mistaken who say that every negative word expresses the opposite concept – indeed, the contradictory opposite – of that expressed by its rival affirmative word. In fact, only in an opposition such as white/black are both concepts definite. When, however, a negative word is formed by prefixing the negation – as in not-human or not-white – there does not thereby arise the concept opposite to that of the affirmative word, but only a concept different from it, [not contrary to it]. How, and to what extent, the affirmative concept differs from the negative remains indefinite. It is merely assumed that both the affirmative and the negative concepts are subordinated to the same higher concept, and are mutually disjunctive. For example, white and not-white are subordinated to the same higher concept “coloured”, but disjunctively. Hence one may say: every affirmative word, with its rival negative word, forms a *dichotomy* (disjunctive ratio). In this, only one term – the affirmative – is definite, while the other – the negative – is indefinite, and it notes whatever concept

can stand in dichotomy with the affirmative. [Thus,] the word not-white may note any colour different from white. In this way, a negative word is, by its sense, some affirmative word which is different from the affirmative word and is indefinite. When an affirmative word stands in disjunctive ratio with only a single other word different from it – that is, when the dichotomy is genuine – the negative word takes on the sense of the affirmative opposite. Many Latin words with the privative particle *in*, Greek words with the privative particle α [namely *\alpha privativum*], and German words with the privative particle *un*, do not note mere negatives expressing only an indefinite difference from affirmatives. Rather, they assert fully definite, and by their sense affirmative contraries to their rival affirmatives. For example, the words not-happiness and happiness form a fully definite dichotomy, and stand in a definite and affirmative opposition, as do the words black and white.

Let us now consider negative words as they appear given the [syntactical] nature of our (Croatian) language. [I (Marković) think that] there is not a single word in our present language constructed after the fashion of the examples found in German logic manuals: *nicht-Mensch* or *nicht-weiss*. In Latin or Greek the negations *non* or *οὐ* can be combined into a single word only with pronouns; but in compounds with substantives or adjectives one employs the negations *in* or α (this α being expressly called privative α). To these words correspond *un* in German, *in* in Latin, and α in Greek. The German examples in the logic books – *nicht-weiss* and *nicht-Mensch* – are not words of ordinary speech but artificial constructions, devised merely to exemplify the logically contradictory opposition “not A” in relation to the affirmative concept “A”. It is said that “not-A” notes whatever concept other than “A”, while remaining wholly indefinite as to what concept different from “A” is intended, or of what sort it may be. Thus, when we examine the negative words employed in ordinary language, we cannot say that any of them indefinitely note whatever concept is different from that expressed by the rival affirmative word. In our language there are no words like *ne-biel* (= not-white) or *ne-čovjek* (= not-human). Rather, every negative word in our language [– every word beginning with *ne* (= not) –] notes a definite opposition [or a concept contrary] to the representation noted by the rival affirmative word. And if an affirmative word notes several properties, the rival negative word denies only one of them – the one regarded as the principal property. Thus a not-human is someone who possesses all the properties of a human save goodness; and not-brothers are blood-brothers who, lacking the love proper to brothers, hate one another instead.

There is a different relation (in Croatian) between the rival words *sreća* (= happiness) and *nesreća* (= not-happiness, i.e. unhappiness) or *volja* (= will) and *nevolja* (= not-will, i.e. no will or unwillingness). *Nevolja* (= not-will) is

not merely the negation of will, but by its sense asserts a wretched condition in which a man is neither free nor willing. *Nesreća* (= not-happiness) notes a wholly definite emotional state, opposite to happiness and lacking every single characteristic of it. Negative adjective words, such as *nezrio* (= not-mature, i.e. immature), *neznani* (= not-known, i.e. unknown), *nečist* (= not-pure, i.e. impure), etc., note certain affirmative qualities which stand opposed to those expressed by their rival negative words. True, in the linguistic form they merely negate or deny the properties expressed by the affirmative words; yet by their sense they express an affirmative and definite property [contrary] opposite to those expressed by the affirmative words. The words “*neslan*” (= not-salty, i.e. unsalty) or “*nesladak*” (= not-sweet, i.e. unsweet) might appear to be our examples of the logical construct not-white, or more generally of the logical contradiction “not-A”. But in fact they are not. *Nesladak* (= not-sweet) does not note whatever indefinite taste-quality different from sweet, but notes instead the taste-quality precisely opposite to sweet, and does so in a wholly definite manner.

Thus, [I would say,] negative words, as employed in everyday [Croatian] language, never note *an indefinite property* opposed to that expressed by their rival affirmative word. Rather, *by their linguistic form they deny that property*, but by their sense they assert *some particular affirmative property* opposite to the property expressed by the rival affirmative word. Ordinary negative words are instances of logical contrariety (*oppositum contrarium*), not of mere logical difference [or disparity], nor yet of mere logical contradiction (*oppositum contradictorium*).

But in our (Croatian) language certain negative words are formed of {...}.¹¹
{...}

§7. (Relational and Absolute Names.)

Names are either *relational* (relative) or *absolute* (non-relative). A relational name is one which does not belong to a single thing in itself, but only in refer-

¹¹ At this point, Marković exposition shifts from negative Croatian words formed by prefixing affirmative words with “ne” (= “not”) to those formed in a different way. In the remainder of this subsection, he considers words created with negative prefixes such as “bez” (literally “without”). Such words are typically rendered in English with the suffix “less”, for example, “*bezdanji*” (= “bottomless”) or “*bezvodan*” (= “waterless”). Given their content, the final three passages of §6 are omitted in this translation, as they are scarcely translatable into English without extensive additional explanation, while any analogous English example would fail to capture Marković’s intended point. For the omitted original Croatian passages, see §6 in Marotti, *Tročlani sklop*, pp. 365–367.

ence to some other thing; for example, the names equal, similar, different, father and son, right and left. An absolute name is one which belongs to a thing, or to a kind of things, in itself; as the names human or plant.

Relational names are of two kinds. Relational names that belong equally to two or more objects standing in a relation are called *shared* or *simultaneous*; while, when different names express each of the two things which stand in a relation, the two names are *reciprocal* or *correlative*. The words equal, similar, and different hold of two or more things; each word belongs alike to all the things which stand in the relation of equality, similarity, or difference. Precisely two things stand in a correlative relation and for each of them a different name applies; yet a name holds for a thing itself only by virtue of its standing in a correlative relation to the other – for example, father and son, cause and effect, husband and wife, hill and valley.

Shared names are not connotative. When I say $A = B$, I do not thereby indicate either the properties of the *As* or of the *Bs*, but merely assert the logical relation of identity between their properties. For this reason shared names are important, since they are properly logical terms.

The correlative relation differs from the shared, or simultaneous, relation; in it exactly two objects are concerned, such that each is something else, and a different name expresses each. But in what relation do they then stand? If I say thus: *A* is *B*'s father, I express the same fact as when I say, *B* is *A*'s son; these are two propositions which note the same. If *B* is *A*'s son, then *A*'s fatherhood and *B*'s sonship stand in the same factual relation, only regarded from *A*'s side in the first case, and from *B*'s side in the second. Correlative relations thus exist between two things, each of which has its own characteristic properties with reference to the other correlated with it; and the same fact concerns both, but under different aspects. Correlative relational names are always connotative.

The question arises: Can there really be absolute names? Mill maintains that there can, and that such names actually exist. The characteristics ascribed to an object by a relational shared name – for example, that it is equal, similar, or different – and the property of an *object* indicated by a correlative name, would vanish if there were no other object besides it. But the property which an absolute name indicates in some object would remain to it even though no other object existed besides it. For example, the name human is absolute, and the properties it indicates belong to a human irrespective of all other objects.

Bain does not assent to this opinion; he maintains rather that there are no absolute names, but that all are relational. For example, the word human indicates lifehood, reasonhood and a particular formhood. By their lifehood, humans are like animals; and we can clearly represent their reasonhood and formhood

as qualities only when, at the same time, we represent their contrarities, namely unreasonhood and non-human formhood. Were there no unreasonable animals alongside reasonable humans, we should not even consider reasonhood as a distinct, characteristic property of them. We represent no property merely by itself, but always in relation to some different or opposite property. Every property is relational – or, better, *relative* – since it is clearly representable only with reference to some different property. We have already spoken of the law of differentiation among psychological laws and facts, which constitute the necessary ground of logic.¹² A representation of one object can be clear to us only by differentiating its qualities from those of other objects. Thus every property, every characteristic of an object, is relative, because it belongs to that object only in relation to other objects. No property is absolute, and no characteristic belongs to a single object by itself, but (depends) upon the existence of other objects besides it. Relativity is therefore universal; we may even call it *universal relationality*, since it holds equally for one thing, for another, and for any within the whole. *Bain* distinguishes the two kinds of relationality we have already considered – the shared and the correlative – from universal relationality, calling the former *special*. By asserting universal relationality, *Bain* holds that, since every characteristic is relational, all words would have to be correlative, that is, twin words – like right/left or up/down – and that no word should be taken as standing alone.

Bain's requirement, however, is not well founded. It would only hold in those cases where every characteristic stood in relation to but one different characteristic, namely, its opposite, and the relationality were merely correlative; as in night/day, life/death, down/up, or good/evil. But when explaining the law of differentiation, *Bain* himself observes that one quality – for example brightness – differs not only from its contrary, darkness, but also from hardness, bitterness, scent, and innumerable other sensory qualities. Since this is so, the relativity of a property or of a thing would not be adequately expressed by attaching to the word for that property or thing only one correlative word for the opposite. Rather, there would have to be as many twin words as there are properties or things different from the original; and such a language would grievously hinder thought.

¹² Here Marković has in mind the last (seventh) section of the first part of *Logic* – “The Psychological Ground of Logic”. For more details on this section, see the introductory essay above.

Appendix 1.

Aristotle had already classified concepts according to kinds of words. His very term “*kategorema*”, or “category”, which the Latins later rendered “*praedicamentum*”, shows that kinds of expressions underly his ten categories, in which he arranged concepts. These ten kinds of expression of concepts can be reduced to four: substantives, as expressions of objects or things; adjectives, as expressions of properties; verbs, as expressions of actions or states; and the so-called particles, as expressions of relations – that is, of connections among concepts. *Sigwart, Lotze, and Wundt* likewise recognise four chief kinds of words, corresponding to four chief kinds of concepts – the same as in Aristotle.

Steinthal attaches far less weight to the significance of words for thought, and sets logic at a distance from language. It is worth briefly showing his opinion.

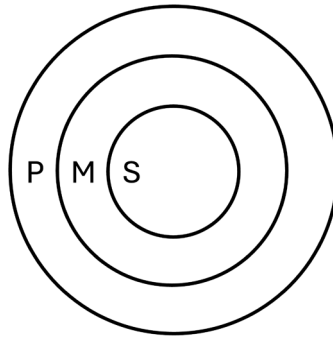
Plain sense perception takes place without words and requires none. Higher cognitive activity, however, which transforms sense perceptions into non-sensory representations, at the same time produces words as the expressions of those representations. The memorising and recollecting of representations occur by means of words. *Sensations are particular*, whereas representations are, probably, already in some measure general; and words do not note sensations, but representations. Different grammatical forms express different relations among representations; but words are merely expressions of representations, not of logical concepts.¹³ Grammatical forms are expressions of connections among representations only, not among logical concepts. Words and concepts, grammatical and logical forms of connection, are not the same. The logical kinds of concepts – namely, beings, properties, and actions – differ from the grammatical kinds of words – namely, substantives, adjectives, and verbs. Virtue, sweetness, and blueness are, from the logical point of view, likewise mere qualities (properties), just as virtuous, sweet, and blue are. The grammatical difference between the substantival and the adjectival form has nothing to do with the logical difference between concepts. Logic operates only with concepts; hence it requires only words which are expressions of concepts – that is, of completely independent representations; and the expressions for these are substantives (*Steinthal, A Characterisation of the Principal Types of Language Construction*,¹⁴ pp. 76–105).

We may see in *Steinthal*'s remark on Aristotle how he sets logic at a distance from language, and concepts from words (in *History of Linguistics among the*

¹³ The sentence is translated here according to Marotti, *Tročlani sklop*, p. 370 (see fn. 7).

¹⁴ Heymann Steinthal, *Charakteristik der hauptsächlichsten Typen des Sprachbaues* (Berlin, 1860).

Greeks and Romans,¹⁵ p. 198ff). By basing the syllogistic doctrine upon concepts rather than upon the expressions which precede them, Aristotle removed logic from the domain of language. He redeemed it from language, setting it in its rightful place: the realm of pure intellect, which, without words, thinks concepts themselves. In that wholly abstract sphere of reflection, words neither accompany nor support thought, nor yet restrain it. Rather, the relations of concepts subsist there silently, without words. When the three kinds of syllogism are illustrated by circles – for example, when the first kind is represented thus:



logic is transformed into the mathematics of thought, which is its true nature, freed from the dross and fetters which words impose upon it.

Steinthal explains the difference between logical thought and ordinary thought expressed in words as follows (*A Characterisation of the Principal Types* etc., p. 96 and p. 97). In its own way, a horse truly represents something when it connects the anticipation of painful pressure with the perception of a burden which a man lays upon it. The judgement of that man: “The burden presses”, adds nothing to the content of the animal’s former representation. But by making the burden the subject from which the pressure proceeds, he sets forth the connection of the two representations – that of the burden and that of the pressure – according to the *nature* of their content. In other words, he explains the mere actual connection of the two representations in our consciousness by the law of *causation*, according to which the representations of the burden and of the pressure must be connected in a determinate manner. Yet the proposition “The burden presses” does not fully express a purely logical thought. Nor would it be fully expressed even in such a form as this: “If heavy bodies (material things) are laid upon us, we consequently feel a certain pain”. This is still not logically exact; language never attains the precision of logic. Logic itself

¹⁵ Heymann Steinthal, *Geschichte der Sprachwissenschaft bei den Griechen und Römern* (Berlin, ¹1863, ²1889–1891).

has no language; it requires *algebra*. Hence, in order that a logical thought be actually expressed, the foregoing judgement, “The burden presses”, must be replaced by the following algebraic expression. Let bd note body, wg weight, ps pressure, p notes pain, and h heavy. Thus we obtain the following equations:

$$bd = wg \text{ (body = weight);}$$

$$bd + h = wg + h \text{ (heavy body = heavy weight);}$$

then $wg = ps$ (weight = pressure) and

$$wg + h = ps + h \text{ (heavy weight = heavy pressure);}$$

$$ps + h = p \text{ (heavy pressure = pain);}$$

$$bd + h = p \text{ (heavy body = pain).}$$

In other words, the concept “weight” is given with (interrelated to) the concept “body”, the concept “pressure” with the concept “weight”, the concept “heavy pressure” with the concept “heavy weight”, and the concept “pain” with “heavy pressure”, provided it enters into relation with a sentient being. Hence the concept “pain” must be connected with the concept “heavy body”, if, as something that pressures, it enters into relation with a sentient being, whether animal or man.

Thus would logic express it. Ordinary language would express it otherwise. On returning home and laying down his load, a man who had borne the pressure of a burden without a single word, would now exclaim: “My, the burden really pressed me; it was heavy”.¹⁶ He thereby once more represents a past fact, and apprehends (grasps with the intellect) the painful state which he had undergone, but which now has ceased with the lapse of time. By the proposition, “The burden pressed me”, he apprehends the past state he experienced, and construes it as the effect of the burden. He derives that effect from its nature – that is, from the weight of the burden. Such is the connection of representations which he expresses in words. But the connection of concepts is that which was given in the preceding algebraic equations, which, under the law of syllogistic interrelation, led to the conclusion: $bd + h = p$; that is, the concept pain is interrelated to the concept of heavy body, construed as the burden.

We must accordingly distinguish three levels of *the process of representation*. The lowest is the *animal* representation: a mere sense perception, not expressed in words. Higher is the ordinary human *non-sensory* representation, which is expressed in words. Highest of all is the *logical thought*: the pure thought of concepts and their connections, free of words – the thought expressed in algebraic signs, which are purer and more fitting for conceptual thought than words.

¹⁶ This and the following sentence are translated here according to Marotti, *Tročlani sklop*, p. 372 (see fn. 7).

But we may ask, is it not necessary to explain the foregoing formulas – $bd = wg$, etc. – by means of words? Assuredly, it is. One understands these algebraic formulas only once we have established that the word “body”, and the concept it notes, are to be marked by the letters bd ; the word and concept “weight” by wg ; and the word and concept “pain” by the letter p ; and so forth. Even though algebraic signs are shorter than words, they are still linguistic signs; and in reading them one must inwardly represent them as sounds. Thus may we object to Steinthal. Yet he also observes (*Outline of Linguistics* I,¹⁷ 47) that even our silent thought is always accompanied, at the least, by slight tongue-movements as though producing sound.

Nevertheless, Steinthal seeks to prove (pp. 48, 50, 51) that there is thought without words, and that a purely scientific, logical thought – such as the mathematical – may be exercised wordlessly. Thus, he seeks to prove, the judgement $3 + 4 = 7$ is fully expressed in visible arithmetical signs, which are to be grasped by sight alone, and need not be read as words. These signs are not signs of sounds or of words, but direct signs of thought; they are *ideographic*. Since every nation pronounces the same arithmetical signs $3 + 4 = 7$ in different words, this proves, he contends, that such signs are peculiar presentations of thought, altogether distinct from language. They may, indeed, be translated into words, but they need not be. Yet we may object to Steinthal that this is no strong proof. True, nations of different languages read and represent these arithmetical signs in different words; but *none represent them without words*. A child does not understand these signs until they have been explained to him in words; and even we, as adults, make the signs $3 + 4 = 7$ apprehendable to ourselves – though it be swiftly – only by translating them into the verbal signs: three and four are seven. Admittedly, the deaf and dumb learn to understand such algebraic signs without the help of words; but to them *gestural signs* serve as *substitutes* for words. And since such gestural signs are far slower expressions of visual sensations of numerical instantiated quantities (pebbles or sticks) than words are, the deaf and dumb cannot attain to mathematical expertise. But were Steinthal’s opinion true, they would have to be more competent in mathematics than those who speak.

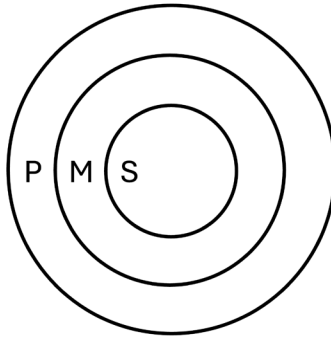
Steinthal, indeed, maintains that every science, the more it advances, the more it emancipates itself from words. The geometer, he says, draws a figure, adds auxiliary lines to it, and develops a lengthy proof; and for all this he has no need of language. Logic requires that we think concepts, not words; and he

¹⁷ Heymann Steinthal, *Abriss der Sprachwissenschaft, Erster Theil: Einleitung in die Psychologie und Sprachwissenschaft* (Berlin, 1871; 21881).

who apprehends the essence of a syllogism can present it far better in algebraic or geometrical formulas than in words. A logician sees an algebraic formula – for example

$$\begin{array}{l} MP \\ \hline SM \\ SP \end{array}$$

or a geometrical one



and at a single glance, without words, apprehends its sense. In like manner, by means of brief algebraic formulas, physics or chemistry may convey to the adept the most general laws of nature, without the use of words. Such formulas are perceived and thought, but not pronounced. They could, indeed, be pronounced – that is, translated into words – but thereby their clearness and precision are diminished, even though their intelligibility is increased.¹⁸ And the intelligibility of formulas increases, when they are expressed in words, only because we have learned to master thought by means of words; our thought flows more easily with their help, for we are accustomed to that dross. True, we thus apprehend these formulas in words; but their very purpose is that we should perceive and think them *without* words. Ordinary, everyday thought rest upon words; but at the higher stage of development, the mind strives to liberate itself from their burden. Yet even at its highest stage of development, the mind still requires certain perceptible signs as dross and as support for thinking concepts; it requires algebraic signs, as compared with which words are but coarse signs of concepts.

We see, then, that Steinthal inclines towards the conceptualist doctrine, according to which the human mind is able to think concepts and their connections pure and in themselves, abstracted from all sensory signs. When, in speaking of Aristotle, Steinthal says that logical thought unfolds in the purely

¹⁸ The sentence is translated here according to Marotti, *Tročlani sklop*, p. 374 (see fn. 7).

intellectual realm, where concepts and their relations are wordlessly observed, he is in fact asserting the possibility of intellectual perception – that is, of pure conceptual thought – which is nonetheless graphic. But [we claim that] pure thought cannot at once be graphic, for pure thought is so called precisely because it is abstracted from every sensibility or graphic sign. When Steinthal says that even at its highest stage of development the human mind requires certain graphic signs – geometrical or algebraic – for the thinking of concepts, he thereby acknowledges that a purely non-sensory representation of concepts is impossible, and that the furnishing of graphic signs for concepts serves only as a necessary substitute for pure thinking of them [– for thought entirely abstracted from sensibility]. He maintains that logic is the mathematics of thought; and thus the first figure of the syllogism, for example, is most perfectly illustrated by a graphic circular scheme or an algebraic formula.

We certainly cannot assent to his assertion that a logician, at a single glance and without words, apprehends the sense of the geometrical or algebraic graphic illustration of the syllogism we set down above. A momentary glance is insufficient even for an adept to apprehend the algebraic or circular formula. At the least, a brief observation is required; and some brief reflection must accompany that observation of the constituents of the formulas.¹⁹ Nor does that reflection occur without a silent utterance of the constituents of the formulas, somewhat in this fashion: All M is subordinated to P ; all S is subordinated to M ; therefore, all S is subordinated to P . However swiftly this reflection of the formulas translated into verbal signs may proceed, it is nevertheless requisite in order that the formulas be apprehended [or apperceived]. One apprehends the algebraic signs S , P , and M only because we have previously established that S shall note the subject, P the predicate, and M the *medius terminus*. One apprehends the dual noting of MP only because we have previously established that MP shall express the judgement: All M is subordinated to the extension of P .²⁰ Thus one apprehends a particular algebraic sign only as the sign of a word which signifies some concept; and one apprehends the connection of two signs, for example MP , only as a propositional sign – that is, as the sign of a logical judgement, or of a logical connection between two concepts. I cannot understand the circular formulas of the syllogism otherwise than by swiftly translating, in my mind, the presented circles and letters, together with their relations, into propositions, precisely as I translate the algebraic formulas.

Algebraic signs are [thus] *linguistic abbreviations*, not something wordless and soundless. True, they are shorter [than the corresponding words] and

¹⁹ The sentence is translated here according to Marotti, *Tročlani sklop*, p. 375 (see fn. 7).

²⁰ *Ibid.*

thus more convenient signs of concepts for rapid thought. Yet they can be apprehended only by one who knows for what word, as the expression of a concept, each algebraic sign stands. If, as Steinthal himself concedes, words are the requisite means of rendering algebraic formulas intelligible, then these formulas have neither clearness nor fine definiteness in themselves, but [possess them] only as abbreviated expressions of clear and precisely determined verbal presentations of concepts.²¹ The simplest formula is $a = a$. It is, indeed, a more brief expression of the logical principle of identity than the declarative judgement: every concept is equal to itself. But the formula $a = a$ is intelligible, clear, and precisely determined only after it has been expressed in words and it has been memorised that a notes any concept, that $=$ notes equality, and that the same letter expresses the same concept. Only with such a verbal explanation does the formula $a = a$ acquire a clear and precisely determined sense. Even an adept who has already thought the formula a thousand times cannot, on seeing it for the thousand-and-first, at a single wordless glance, apprehend it, but must swiftly utter it within his mind thus: a is equal to a .

In his endeavour wholly to emancipate logic from words, and to express logical concepts and their relations by algebraic signs, Steinthal acts similarly to the English logicians Boole and Jevons. Of them we shall speak elsewhere, and shall show that their endeavour likewise did not succeed.²²

Appendix 2.

By holding that words are not suitable, much less required, as signs of concepts and their relations, Steinthal opposes the treatment of kinds of words within logic according to their logical value. He addresses it as follows (in his work *Grammar, Logic, and Psychology*,²³ pp. 164–167 [– the work eminently necessary for anyone who wishes to enter more deeply into logic]). Words differ

²¹ The sentence is translated here according to Marotti, *Tročlani sklop*, pp. 375–376 (see fn. 7).

²² Here Marković refers to the last section of his *Logic*, titled “Boole’s and Jevons’ Attempt at the Reform of Logic”, in which he critically examines central elements of Boole’s and Jevons’ logical doctrines. He argues that their proposed reforms ultimately fail, and that the orientation advanced by philosophers such as Herbart, Lotze, and Wundt proves more promising. For further discussion, see Srećko Kovač, “Franjo pl. Marković: On the Hundred and Fiftieth Anniversary of His Birth”, pp. 184–185 (see the bibliography), and “Franjo pl. Marković i algebarska logika” [Franjo Marković and Algebraic Logic], in S. Kovač, *Logičko-filozofijski ogledi* (Zagreb: Hrvatsko filozofsko društvo, 2005), pp. 139–158.

²³ Heymann Steinthal, *Grammatik, Logik, Psychologie: Ihre Prinzipien und ihre Verhältniss zu einander* (Berlin, 1855).

from concepts. When Cicero writes the word *virtus*, it by itself expresses nothing more than manliness, yet for Cicero it is the sign of the concept of virtue. Likewise, the word virtue by itself expresses nothing more than strength, yet it is the sign of the concept of human ethical perfection. Words are indeed signs of concepts, but are not the same as concepts. Everyone admits this distinction, however. But one cannot even claim that kinds of words correspond to kinds of concepts. In logic, there is no difference between beautiful and beautifulness, or good and goodness. In logic, the concept “goodness” is not a substance but an attribute, just as the concept “good” is. The difference between good and goodness, that is, between the adjective and the substantive, is significant for grammar but does not exist for logic. Some affirmative words note (negative) concepts, and some negative words note affirmative concepts. For example, blindness is an affirmative word, yet it notes a negative concept – the negation of sight. The word immortality is negative, yet it notes an affirmative concept: timelessness. The distinction between the wider and the narrower concepts is significant for logic, yet it does not manifest itself in the words themselves. For example, animal and human as words do not show that the former is a sign of a wider concept and the latter of a narrower one. The contrariety of concepts is significant for logic, yet language does not recognise words that are contrary to each other; it recognises only contradiction. For logic, white/black, good/evil, or beautiful/ugly are contrary concepts (*contraria opposita*). In contrast, in language each of the two correlated words is in no way the opposite – that is, the rival – of the other, but merely a different word. Language cannot show in the words whiteness and blackness that blackness is a logical rival of whiteness. Negative words such as not-pure (i.e. impure), not-mature (i.e. immature), or not-sweet (i.e. unsweet) express contradiction in form, but by their logical sense they do not note contradiction; rather, they note the affirmative contrariety opposed to the affirmative words: pure, mature, and sweet. Therefore, kinds of words do not correspond at all to kinds of concepts, and for this reason the consideration of words according to their kinds has no value for logic.

But here, too, Steinthal undervalues the importance of words for concepts too much. If, as he himself admits, words are signs of concepts, then by their difference in sense they must manifest the differences of concepts. When Steinthal seeks to exemplify the logical contrariety of concepts, he does so with *words*: white/black and good/evil; yet these pairs are not merely different in sense, as he claims, but contrary. Otherwise there could be no folk proverbs such as: Even *black* hens lay *white* eggs [– these are contrary, not merely disparate words]. It is not logic that bestows contrariety upon such rival words; they possess it already, by the natural and reasonable consciousness of a people. Steinthal’s

contention that some affirmative words note negative concepts, some negative words note affirmative concepts, and that negative words are of themselves contradictions, although by their logical sense they express contrarities, likewise does not prove that words are of no value for concepts. Every affirmative word, even when it notes an affirmative concept in one respect, contains in another a negation. For example, the word eternal notes an affirmative concept, namely the perpetual continuance of life, yet [that word] also contains a negation – it denies the ending of life. And every affirmative word that notes a negative concept notes in another respect an affirmative one. For example, blindness notes, indeed, the negative concept of sightlessness; yet it notes not only the negation of sight, but also, in an affirmative manner, a peculiar and fully definite physiological quality of visual perception which occasions blindness. If many negative words note affirmative concepts, they also, in a certain respect, note negative concepts. For example, immortality notes the affirmative concept of the eternal yet once-created life. Nevertheless, in another respect, it bears a negative sense, that is, it denies the possibility of death. Nor is it true, moreover, that Steinthal's claim holds, namely, that negative words – for example, not-pure (i.e. impure) or not-mature (i.e. immature) – express a mere contradiction; whereas logic discerns in them concepts contrary to pure and mature. [I believe that] even to a man uneducated in logic, the word not-pure (i.e. impure) does not note the mere contradiction of purity, but rather a certain quality contrary to purity; just as to an educated man the rival words right/left do not note a mere difference in position or direction, as Steinthal claims, but rather opposite positions or directions. Steinthal exaggerates the alleged discordance of words and concepts. It is not the case that the discordance of words and concepts is demonstrated by an affirmative word noting a negative concept and a negative word noting an affirmative concept. The truth is that every negative concept is affirmative in a certain respect, and, again, that every affirmative concept is negative in a certain respect. Naturally, with some words, language can express only one side of a concept – its negative or its affirmative side. However, logical consideration also reveals, by comparing affirmative and negative concepts, that affirmativity and negativity are only relative, not absolute, with respect to all conceivable and actually conceived concepts.

Steinthal claims that words by themselves do not reveal the difference between the wider and the narrower concepts, which is true. For example, taken by themselves, the words human and soldier do not show whether one has a wider or a narrower sense compared with the other. But superordination and subordination of concepts manifests themselves also through comparison of their contents. Thus, if we compare the ordinary senses of the words “human”

and “soldier” or “villager”, we find that the former has a wider sense than the latter two. One cannot know, based only on its content, whether a concept is wider or narrower, superordinate or subordinate, but only after comparing it with other concepts. Therefore, one cannot expect of words that, without comparing their senses, they would reveal aught of the previous extensional relation. At first, one can discern the extensional difference between general and singular [or personal] words; for example, between the words human and Ivan Pavlović. For that reason, Mill has reasonably pointed out this first classification of words. The classification of words into *the words for objects* and *the words for properties* is likewise reasonable. Nor could one accept Steintal’s claim that, for logic, the words “white” and “whiteness” have the same value because they both note an attribute. The logical sense of the word white is not the same as that of whiteness. The word “white” expresses a property as a dependent representation that must be tied to the representation of a thing. In contrast, the word “whiteness” expresses a property – or, better said, a quality – as an independent representation that does not attach to the representation of a thing. The word “white” can stand as a predicate or an attribute; in that way its logical use corresponds to the adjectival linguistic form. However, the word “whiteness” can stand as an independent word, that is, a subject; in that way its logical use corresponds to its substantival form.

The logical value of relational [or relative] and correlational [or correlative] words is indisputable and inherent. The words equal, similar, different, and opposite, alone express the conceptual characteristics that one comes to know by the cognitive comparison of the qualities of two or more things.²⁴ Words that represent the logical relations of things based on their qualities were ordered, for the logical purpose, by language itself. Likewise, a distinct logical relation is manifested in the correlated words: right/left, up/down, and father/son. According to language itself, the word *right* has no sense unless it is taken in relation to the word *left* as its contrariety.

Finally, words themselves urge one to differentiate them on the basis of their logical connotation or non-connotation. This logical difference is expressed in the words themselves. Some words, as they note objects, at the same time characterise them; for example, this is a human, and that is a plant. Others – namely, words for persons and places – merely point to beings or things without characterising them; for example, this is Ivan Petrović, and that is Pavao Nikolašević; this is Vienna, and that is Berlin.

²⁴ The sentence is translated here according to Marotti, *Tročlani sklop*, p. 379 (see fn. 7).

That is how we can defend, against Steinthal, the method of *Mill* and other logicians, who take account, within logic, of kinds of words according to their logical value, and thereby prepare the way for the consideration of concepts.

Translated by Dušan Dožudić

