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NARODOWY PROGRAM ROZWOJU HUMANISTYKI

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A POSTHUMOUS TRIBUTE TO TADEUSZ KOTARBIŃSKI

Let us look at two words – *dog* and *flight*. Both are nouns, and both can serve as subjects of a sentence. School grammar books teach us that the subject of a sentence is the word that shows what the sentence is about. If so, the sentence *A dog began to bark* is about a dog, and the word *dog* has its counterpart in reality, namely some dog. Let us look at the sentence *The flight took two hours*. It is about a flight. Applying a similar reasoning as in the first case, we arrive at the conclusion that the word *flight* has its counterpart in reality that is some flight.

Be careful, warns Kotarbiński, creator of the philosophical doctrine known as reism; it is at this point that we have made an error known as hypostasising. It occurs each time when, on the basis of the presence of some noun in the language or, more generally, a nominal phrase referring to some abstract entity, we infer that an object of which this noun or nominal phrase is supposedly the name exists in reality. In fact, however, the word *flight* is only seemingly a name; in other words. it is an imitation of a name, an apparent name, and in Kotarbiński's terminology – an onomatoid.

That onomatoids make up a semantic category distinct from names is the first observation of semantic reism. Onomatoids are names of abstracts, whereas genuine names are names of concrete objects. Hence, from the point of view of semantic reism, all names of properties, such as *roundness*, relations, such as *brotherhood*, states of affairs, such as the phrase *geographical location*, events, such as the word *journey*, phenomena, like *fluorescence*,

or processes, like *ageing*, are not names but onomatoids. Such words as *feature*, *relation*, *state of affairs*, *event*, *phenomenon*, or *process* are also onomatoids, as well as the words *meaning*, *sense*, *connotation*, *intension*, *range*, *denotation*, *extension*, *semantic function*, and many, many other semiotic terms.

According to a semantic reist, genuine names include words like *round* as the name of all concrete round objects, *brother* as the name of such-and-such men, *cleaned* as the name of all things that have been cleaned, *ageing* as the name of all such-and-such things, persons, or animals. Yet a reist observes that the same word, *ageing*, used in reference to an issue, problem, fashion, trend of ideas, cultural current, political programme, or system of government ceases to be the name of a concrete object, becoming the name of some abstract entity instead, and thus moves from the semantic category of names to the semantic category of onomatoids.

At this point, the question arises whether every genuine name refers to some object in the physical sense. What should a semantic reist do with such words as *genie*, *Muse*, or *chimera*? They do not refer to any abstract; on the other hand, however, they are not names of any concrete object existing in the world. This dilemma is solved by Kotarbiński by assuming these words, as well as other expressions of this kind, to be genuine but empty names, not onomatoids. In his opinion, this categorization is motivated by the following arguments.

Firstly, most English-speaking people who would hear or utter the word *genie* would imagine more or less the same thing: a small humanoid creature of such-and-such appearance. The case is quite different with the word *absorption*, for example. It is either understood only conceptually, without imagining anything at the same time, or this understanding is accompanied by some accidental derivative images, different for every person, or even different each time for the same person. One person may imagine a filter filled with coal granules, while another – the word *śpiewak* [*singer*], in which the *a* was absorbed from the root and shifted to the suffix *-ak*.

The word *faun*, although having no referent, is a genuine name because speakers uttering it think of a certain person, or rather a character; it is only that their intention falls upon a place in empirical reality which is empty. The case would be similar if a person not familiar with Warsaw ZOO said (in good faith): *the gorilla in Warsaw ZOO in 1980*. The phrase is a name, not an onomatoid referring to an abstract entity; only it is an empty name, because there were no gorillas in Warsaw ZOO in 1980.

Secondly, an empty name cannot be the grammatical subject of a true

singular or universal (general) sentence referring to persons or objects, because its appearance as a subject will result in the sentence being false. However, it has the following feature:

> Let the word 'chimera' serve as an example. It is defined in ancient mythology as a lion's head with a goat's body and serpent's tail. No such monster has ever existed, and hence it is an empty term. But if its denoting elements (that is, 'lion's head', 'goat's body', 'serpent's tail') are replaced by other denoting terms, 'head', 'thorax', 'trunk', we obtain the whole 'head with thorax and trunk', which is a term and denotes any (mature) insect. A similar operation cannot be performed on those terms which are not empty concrete terms, although they also do not denote persons or things. They are such words as 'smoothness', 'relationship', 'tune', 'shift', and, generally, what are called names of properties, relations, contents, events, etc. (Kotarbiński 1979a: 44)

The third argument in favour of classifying words like *chimera* as names, not onomatoids, is as follows. By saying *This is a pine* and supplementing this utterance with a pointing gesture, we construct a meaningful sentence: true if the object pointed to is indeed a pine, false if it is not. In this utterance, as well as in ones of a type similar to *Warsaw is a city*, the word "is" appears, according to Kotarbiński, in its fundamental role, that is, as a sentence-creating functor which takes genuine names as its arguments. The word "is" is used in the same manner in sentences containing empty names, for instance *Polihymnia is a Muse* or *This is a donkey's horn*

> The reason for this is obvious. If someone, pointing to a ram's horn, said *This is a donkey's horn*, she/he would say a falsehood, but nevertheless a perfectly well-formed sentence. If, however, someone pointed to the same thing, or to anything that can be pointed to with a gesture, and declared *This is a relationship*, she/he would utter a nonsensical sentence. (Kotarbiński 1955a: chap. 2)

Nonsense is here understood as a string of words which is disconnected with regard to semantics, because one syntactic position is occupied by a word belonging to a different semantic category than the one designed for this particular syntactic position. In this case, the copula "is" – in the

schema *This is A*, when this is uttered with the same intention as if a given object was being pointed to – appears in its already-mentioned fundamental role; hence on both its sides it requires the presence of genuine names, either denoting, like *table*, or empty, like *Hermes* or *nymph*. If a word other than a genuine name appears there, it will cause "is" to stop connecting the words adjacent to it into a syntactically coherent whole. Instead of a sentence, we will obtain a sequence of unconnected words, not creating a well-formed whole. It is evident that not only the semantic, but also the syntactic aspect is being taken under consideration. Hence Kotarbiński's reism can be described not only as a semantic, but also as a semiotic reism. Correspondingly, *Or is although* and *Theft is a crime* will be understood as nonsensical sentences. The latter will be considered a nonsensical set of words if the speaker used the copula "is" in its fundamental role, that is, made a statement about theft, understanding "is" in the same way as normally, like in a sentence *Snow is white*, which declares that snow is one of many white things. Our intuitions usually rebel at such a view of the issue. We are fine with the idea that the sentence *Or is although* is nonsensical. But *Theft is a crime* is not a nonsensical but rather a true sentence. This reaction is provoked by two circumstances.

The first is the fact that while *Or is although* goes against the rules of grammar, *Theft is a crime* does not. Hence we are willing to accept only the first sentence as nonsensical.

Secondly, our non-acceptance of the sentence *Theft is a crime* as non-sensical stems from the fact that in this sentence the deep structure, for instance *Someone who steals is a criminal*, is visible from underneath the surface structure. And in this sentence there are no onomatoids, while the copula "is" appears in its fundamental sense: after all, both *someone who steals* and *a criminal* are names with non-empty denotation. Thus, it is possible to perceive the sentence *Theft is a crime* as non-nonsensical, but only on condition that it is viewed as an abbreviation standing for a sentence that is free of onomatoids; an abbreviation in which the word "is" appears in a different role than the fundamental one.

In Kotarbiński's semiotic reism, therefore, there is a differentiation between genuine names and onomatoids; the former are divided into denoting names (singular and general) and empty names. Both empty and denoting names – including proper and general names – are considered suitable both as the subject and as the predicate of a sentence. Nominal phrases, called descriptions in logic, such as *the highest mountain in Europe*, *whoever studies English* or *a man weighing 350 kg*, can also fulfil both these functions.

Apart from that, semiotic reism promotes a certain programme. Its recommendation is to eliminate onomatoids from ultimate statements, especially important ones; to substitute phrases containing onomatoids with their paraphrases, intra-linguistic translations, that are free of onomatoids; as well as to be ready to do so at any time. This is not because of a generalised opposition to formulating abstract or metaphorical expressions. On the contrary, the former are useful, because at times they make it possible to neatly and succinctly formulate a thought that would otherwise be verbose and overly detailed; the latter are also useful, because they enliven a lecture, making it vivid and graphic, more convincing and easier to memorize. Yet they are useful only if they serve as substitutes: if it is possible to give their expanded alternative version that can be understood literally, and if that version only contains genuine names. According to a semiotic reist, an essential impossibility of providing such a translation indicates that the sentence in question is nonsensical. As to the justification for the above theses and programme, Kotarbiński himself admitted that it was:

> naively intuitive and based on common induction. It can often be observed that when we want to explain to a person the proper sense of a statement containing noun(s) which are not names of things, we ultimately arrive at a formulation which no longer included such nouns. (Kotarbiński 1966b: 434)

Elsewhere, Kotarbiński asked rhetorically:

> Should we wish to explain to a child what the word "similarity" means, should we not show him in turn several pairs of objects which look alike, and say: "Look, here are two sparrows: this one is grey and that one is grey, this one is hopping and that one is hopping, this one has a short beak and that one has a short beak. These two birds are similar one to the other. And here are two windows: both are rectangular and both have rectangular panes, separated by thin pieces of wood. These two things are similar one to the other. Do you understand now what similarity is?"? Or suppose that in the class we encounter in the text the word 'recovery', which the pupils do not understand. We shall tell them: "Whenever a person has been ill, and later was better, and now is still better, we speak of recovery." (Kotarbiński 1979a: 44)

Kotarbiński states that:

> This leads to the supposition that it is always so. [...] This
> in turn results in the surmise that it is so probably because
> every object of cognition is a thing. [...] One step more and
> we conclude that every object is knowable in principle, that it
> is a possible subject matter of cognition, and that there are no
> other objects – which yields ontological concretism. (Kotarbiński
> 1966b: 434–435)

In the last twenty-five years of his life, Kotarbiński thought that this
ontological concretism, that is, ontological reism, serves to reinforce the
above-quoted justification for the theses and programme of semiotic reism.
Earlier, he had regarded the ontological thesis as the main one, writing, in
the same study, that "originally, concretists were fond of stating, above all,
that every object is a body, and lately [1958] they are fond of stating that
all onomatoids vanish in ultimate formulations" (Kotarbiński 1966b: 434).
Hence, according to Kotarbiński, ontological reism is the view that only
things exist – inanimate or animate, so this includes humans, animals, plants
– but always corporeal, physical, tangible things. Corporeal and tangible:
it is, therefore, somatist reism as well, also known as pan-somatism or, as
it has already been mentioned, concretism. Concretism has the nature of
materialist monism, because it assumes that no other entities but bodies
can be ascertained by experience. This also means that it is impossible to
encounter universals anywhere; therefore, they do not exist. This view is a
version of ontological nominalism.
In epistemology, a reist takes a position which Kotarbiński called radical
realism: she/he rejects the assumption that there exist immanent images,
which are supposed to arise in a person every time this person perceives,
recalls, or imagines something. That something appears "in our mind's eye"
is just a metaphorical manner of speaking; in reality, there is nothing inside
us, there exists no intentional or ideal object which would be 'similar' to
that which is the transcendent, i.e. external, object of our perception or
recollection. The only thing that exists is that which is being perceived
or recollected. When we fantasise, what we imagine does not exist as a
single object; its elements (brought together by our imagination to create
something that in reality does not exist anywhere) do exist, but they are
scattered: either as parts of various things or animals or as discrete tangible
things.
Kotarbiński, with his usual modesty, considered his views in the area of
ontology and epistemology to be a conjecture, derived inductively from
experience. He expounded them, among others, in his celebrated handbook

Gnosiology: The Scientific Approach to the Theory of Knowledge (Kotarbiński 1929/1961, 1966), which was used by more than one generation of Polish humanists. One does not have to accept ontological reism or radical realism in order to accept the programme of semiotic reism. It is possible to realize this programme without engaging in ontological and epistemological considerations, treating it as valuable advice of an experienced educator, a past master in the art of teaching, a luminary of Twardowski's school – the famous Lvov-Warsaw school. Kotarbiński's disciples: Maria Ossowska, Stanisław Ossowski, Mieczysław Wallis, Janina Kotarbińska, Alfred Tarski, and others, as well as the disciples of his disciples, had the opportunity to find out that the programme was indeed beneficent, although not all of them were ontological reists or radical realists.

Much confusing babble – for instance upon the topic of meaning – would have been avoided if this therapeutic procedure, advised by the great healer of the humanities had been applied: to use no onomatoids when speaking of important things, and to steer clear of hypostases.

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Semiotic reism is a grammar of language; or we might even say: a school grammar of language, but handled by a teacher of philosophy and logic, with an eye not just on one particular ethnic language, but rather on any language, considered as a means of conveying clear and distinct ideas. The grammar of language, in turn, was regarded by Kotarbiński as a chapter in the grammar of action, while speech was considered a kind of action:

> *Czy wolno spytać o coś? – Pytaj! – Chciałbym wiedzieć,*
>
> *Co gorsze: głupstwo zrobić, czy głupstwo powiedzieć?*
>
> *– Złudny przemycasz kontrast w zapytaniu gładkiem:*
>
> *Wszak drugie jest pierwszego szczególnym przypadkiem.*

> *May I ask you something? – Ask away! – Tell me | Which is worse: to do a stupid thing or to say one? | – You smuggle in a deceptive contrast in a smooth question: | After all, the latter is a special case of the former.*

A *sui generis* grammar of action is provided by the science of "methods of doing anything in any way," that is, a general theory of action, dubbed praxiology by Alfred Espinas in 1890. The same label was used, probably

independently, by Eugeniusz Słucki in the 1920s, and then by Kotarbiński, with whom it has been associated ever since, not only in Poland but also worldwide. Espinas came up with the idea of praxiology, Słucki located it between economy and the general theory of things in the classification of sciences. Alexander A. Bogdanov outlined it, fifty years ago, as a general theory of organization, and Kotarbiński wrote the first monograph on praxiology, *Traktat o dobrej robocie* (1955), translated into English under the title *Praxiology* (1965; literally, *A Treatise on Good Job*). So far [1983], there have been seven editions of the Polish version [another one was published in 2000]; it has been translated into English, Czech, Japanese, German, Russian, Bosnian-Croatian-Montenegrin-Serbian, and Romanian.

Praxiology is concerned with any intentional activities and considers them with regard to their effectiveness, efficiency, usefulness, practicality, and creativity. It observes and scrutinizes deeds and actions carried out in various fields of reality, behaviours of different actors, agents and authors– not only humans but also animals, e.g. beavers constructing lodges, bees and ants building nests, or birds preparing for migration. It collects observations and experiences of managers, military, legal, and diplomatic strategists and tacticians, experienced practitioners and theoreticians, blue- and white-collar workers, chess- and card-players. It converts these contributions into generalizations. In analysing concepts connected with acts and their merits, it strives to free itself from emotional judgements and set aside features characteristic of particular disciplines. The point is that the results should apply to any 'good job' (*dobra robota*), regardless of the peculiarities of a given type of work.

Thanks to such an approach, praxiology is more than "a science of efficient action," "a general action theory," "a general technology of actions," "the logic of action," "general methodology" – though all these descriptions were used by the author of *Praxiology*: not only does it offer a theoretical basis for disciplines such as management, but it also gives theoretical grounds for reflections and, above all, postulates within social philosophy and social policy.

For instance, by invoking results achieved in praxiology, Kotarbiński pointed out that it is a mistake to count teacher's work among services and, accordingly, make it pay less than a turner's work. A turner transforms an unformed piece of metal into a formed one, while a teacher transforms an incompetent person into a competent one. But a person is the most important element of the system of production. After all, the degree of importance is determined not by the agent's distance from the physical contact with the material

but rather by how difficult it is to find a replacement. One conclusion is that theoretical sciences, including humanities, are no less important than practical disciplines, in particular the technical ones. The former are an indispensable prerequisite for the latter.

It is the hallmark of Kotarbiński's attitude and mind-set that he imbued his praxiology with social and civil reflections, that he enriched it with moral elements. In that way, it gained a broader scope and a greater capacity to influence society than it would have done by adopting a purely technical or technocratic approach. It proved valuable in humanist terms and – in accordance with Kotarbiński's intention – became a part of broadly-understood ethics, which encompasses:

> three principal fields of problems: How to act in order to act effectively? How to act in order, as far as possible, to avoid unpleasantness for oneself and for others, and on the contrary, to make life as pleasant as possible? How to act in order to be in agreement with one's conscience? (Kotarbiński 1966c: 511–512)

Answers to these questions depend on one another: you do not act effectively if the work is a constant ordeal for you; on the other hand, wrestling with one's conscience does not make life pleasant. Thus, recommendations in the field of pragmatics, ethics in the narrower sense, social philosophy, and philosophical anthropology criss-cross and partly overlap. In fact, in most cases it is hard to tell whether a given praxiological rule has been derived from cool calculation or, as Kotarbiński would put it, from 'postulates of conscience' or 'obvious necessities of heart' (*oczywistości serca*). He thought that one should always follow the latter, since any activity which ceases to obey 'heart's necessities' spills over into violence:

> *Gdy zaś pięść z mózgiem same pozostały w parze,*
> *Oto skutek: mózg rządzi – tak, jak mu pięść każe.*
>
> *And when the fist and the brain were left alone,*
> *Here's the result: the brain rules – governed by the fist.*

He would oppose violence not only for personal reasons – expressed at one point in the words: "I've always taken the bit between my teeth and will take the bit between my teeth as before" – not only for moral and civil reasons, as a defender of human dignity and freedom of conscience: but also because he bore in mind that:

> *Rozum w pełni rozkwita pod strażą wolności,*
> *Wolność rozkwita w pełni pod strażą rozumu.*
>
> *Reason flourishes under the charge of freedom,*
> *Freedom thrives under the charge of reason.*

Thus freedom is not only a lofty ideal that must be pursued according to a higher moral imperative, but also something tangible and advantageous, recommended by reason, which estimates profits and losses. And this situation keeps repeating itself: spiritual and material values blend together:

> *[. . .] imponderabilia zlekceważył, zatem*
> *Źle zważył, źle obliczył, przegrał, poniósł stratę.*
>
> *he neglected the imponderables, and so*
> *he weighed it wrongly, miscalculated, lost.*

A frequent paradox indeed: we are often forced to weigh something which is by nature devoid of any weight. But we know it will tip the scales.
These imponderables, endowed with a tangible material value, include trust. Trust is recommendable not only for moral reasons, for the sake of human dignity, but also for practical ones – utility. After all, redundant control makes for a double loss: it costs, takes time and money, and, in addition, it reduces profits, because it suppresses the initiative of the controlled, discourages them from efficient work, encourages indifference, since "who doesn't act at all, won't make a mistake." One should, therefore, avoid superfluous commands and prohibitions, respect individuality, dissimilarity, independence:

> *Choć więc – jeśli się zatną – możesz ponieść stratę,*
> *Ceń sobie koła, mistrzu, za to, że zębate.*
>
> *Thus although you will suffer losses once they jam,*
> *Value the cogwheels, master, for their teeth.*

Clearly, two forces complemented and reinforced each other in Kotarbiński: a sympathy for material, practical needs and an attachment to moral, spiritual values. Kotarbiński-praxiologist, on account of his specialization, was an advocate of efficient organization of teamwork; yet Kotarbiński-philosopher was aware of a lurking danger: "in the bonds of organization, the truth will go to the devil" – and called for respecting the rights of the individual.
Just as he imbued his ideas about efficient action with attention to, and concern for, moral goods, so he formulated his ethical reflection – but never

commands and prohibitions – bearing in mind practical possibilities and necessities of life. On an everyday basis, not just once in a blue moon, he recommended, half-jokingly: "1. Be fond of doing something. 2. Love somebody. 3. Don't be a scoundrel. 4. Live seriously." When he recommended virtues, he would lay down the requirement – seemingly not very demanding, but how difficult to satisfy – "that virtues should not contradict virtues." What he meant here were everyday virtues rather than the highest ideals, since he kept in mind that "what is best may not be good" and remarked that "the virtue of perfection will also benefit from moderation." If he gave advice, it concerned not so much as what to pursue as what to avoid, what to refrain from; and he would justify this by pointing out that a given type of behaviour leads to results that are unwanted in some respect, usually a practical one, e.g.: "Eschew five misdemeanours: tone, face, sarcasm, irony, taunt. Coexistence without refraining from them is a true agony." So he would rather discourage than encourage, since he believed that in ethics: "you know what to do, when you know what not to do."

He said of himself that he follows the Quaker rule: to ascribe honesty and noble motivations to others. He would go to greater lengths in this than most people would: down to the border of naivety in dispute, down to the risk of a loss. It seems that he came to know the taste of disappointment, unavoidable in the way he had chosen: with a melancholic smile, he would say that his patron, St. Jude Thaddaeus, was 'the worst saint', the advocate of desperate cases. In a discussion or a polemic, he never indulged in sarcasm or irony, which he regard as ungentlemanly. Thus the only weapon at his disposal were valid arguments. He wielded it with absolute and unconditional loyalty. Obeying the rules of a chivalry duel often made him defenceless against unscrupulous opponents. Fortunately, he was able to disarm even them with his winsome , friendly, kindly, hearty manner.

A trustworthy or reliable guardian (*spolegliwy opiekun*) – this was the archetype of Kotarbiński's ethics, the role model for a teacher and a tutor. The guardian's duty is to protect her/his near and dear – children, family, subordinates charges– from danger, against misfortune. He wrote that "neglecting such a defence would be a shameful deed." There is, however, no obligation to love each neighbour. Neither is the guardian obliged to ensure that her/his charge attains the highest pleasure, joy, satisfaction, wealth, happiness. These are – he would say – only additions stemming from moral generosity.

People who knew Kotarbiński had the opportunity to appreciate the scope of his own generosity, the number of people whom – according to his own

'heart's obviousness' – he regarded as his charges, whom – in keeping with the 'postulates of conscience' – he felt obliged to provide with his reliable protection. So, for years, he paid people who helped him with everyday activities – personal secretaries, drivers, janitors, messengers – a regular monthly salary, although they were being paid by the institutions which had hired them. He believed that on account of their tasks and the continual contact with him they entered the circle of the folk , whom he should have protected against poverty. It was a kind of moral 'stratagem' or 'ruse' on his part. After all, he had deliberately envisioned a rather modest ethical programme: only care for a handful of loved ones under your protection. And only be concerned with their defence, because it is the only realistic goal. Yet such a project would not satisfy his heart. Following the voice of feeling, he had adopted an interpretation that allowed him to care for a fairly substantial group and to include 'achieving satisfaction' under the heading of defence against dangers. In this way, the rationalist idea of task minimalization was safeguarded, and yet the practice fulfilled the needs of a heart sensitive to human misery. It was a triumph of noble-mindedness and kind-heartedness – both secular and evangelical.

The project of the ethics of a trustworthy guardian – minimalist, or rather anti-maximalist, defensive, as opposed to acquisitive; the doctrine of reism and radical realism – rationalist, or rather anti-irrational; his philosophy of action, philosophical anthropology, and social philosophy underlying Kotarbiński's praxiology – all this stems from a view that he called practical realism.

Practical realists follow common sense, so that, first of all, they only consider actions that they are able to carry out. In other words, they cut their cloak according to their cloth, contrary to the Romantic catchphrase *Mierz siły na zamiary!* – "adjust your strength to the aim" (Adam Mickiewicz, "Pieśń Filaretów," "The Song of Philaretes"). Next they select the action which seems to be of the greatest importance in a given context. And an action is more important if it nullifies or prevents greater evil. The evils in turn comprise, above all, cataclysms: extermination, illness, pain, poverty. Thus the practical realist's actions are guided by necessities, "conditions that must be met lest you face a disaster." For this reason, they would give precedence to research seeking to prevent cataclysms, at the expense of disciplines which fulfil other needs. Accordingly, science would have priority over fine arts; and they would value the latter mainly because it fights, drives away, and prevents ugliness, and only secondarily for creating beauty, giving delight and satisfaction.

Practical realism is the attitude of a mature person, a paternal approach, the attitude of an experienced guardian, who is aware that living conditions "on this planet – infinitely beautiful and, so far, infinitely atrocious" force them to abandon many dreams and desires and undertake primarily defensive activities – due to the responsibility for others resting on their shoulders. Presumably, this sense of responsibility determined several resignations in Kotarbiński's life – he gave up, for instance, an artistic career to which he was drawn by interests, talents, and family tradition.

At this point, it is difficult to resist the impression that his warm and cordial personality, his imagination and sensitivity, both poetic and pictorial, his fondness for beauty and art, his need to be of help to others and express his friendship, his dedication to the highest ideals – would perhaps chime with a philosophy different from the one which he created and served.

He must have renounced other philosophy, more attractive in various respects, precisely under the influence of practical realism – the approach which he had adopted in his youth and recommended for the sake of higher and more urgent humanitarian, social, civil, patriotic duties:

> *Miast śledzić słońc obroty [. . .] użyć źrenic*
> *do mikrokontemplacji przyziemnych gąsienic*
>
> *Instead of following solar rotations, [. . .] to use pupils*
> *for microcontemplation of down-to-earth caterpillars.*
>
>
> *[. . .] nieosiągalnych poniechać zamierzeń,*
> *sięgać po to, co można mieć. Nie sięgać szerzej.*
>
> *to abandon unattainable goals,*
> *to reach for what one can have. Not tostrive for more.*

Instead of climbing the peaks of wisdom, we should "get rid of foolishness," "spurn misleading stories, be clear-headed," "let go of unreliable phantasy," reject "the illusion of soothing dreams," and, finally, "train [other citizens] in everyday virtues." That was the code laid down by Kazimierz Twardowski's school, dictated to him by the historical situation of his fatherland, by the misery and destitution of a nation.

Truth, and only truth, should not be limited, according to Kotarbiński, by the minimalist constraints adopted by him voluntarily; honesty is an absolutely valid requirement. Breaking this rule is an appalling deed; who has committed it, condemns himself to moral death:

To już nie on, choć niby wygląda jak dawniej.
Ale przypatrz się oczom, a dostrzeżesz zmianę.
Oczy trupa też obco łypią z twarzy znanej.

It's no longer him, though he looks like before.
But look him in the eye, and you'll notice the change.
A corpse's eyes also glow strangely from a familiar face.

A philosopher whose mission is to teach and educate; who combines a cool intellect and a warm heart, who welds thought and action into one harmonious way of life; who grounds knowledge in practical reason, propagates it, undermining false beliefs, and uses it as a means of attaining virtue; which in turn he associates with utility; who is bold enough to defend the freedom of conscience and human dignity: such a figure brings Socrates to mind. And this is precisely the name once chosen by Karol Irzykowski, who dubbed Kotarbiński 'Warsaw's Socrates'.

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Tadeusz Kotarbiński was born on 31 March 1886 in Warsaw. His father, Miłosz Kotarbiński, a painter and a composer, was the director of the School of Fine Arts in Warsaw; his mother, Ewa, née Koskowska, was a pianist; his paternal uncle, Józef, was an actor and a playwright, director of Juliusz Słowacki Theatre in Cracow. Young Kotarbiński studied philosophy at the Jan Kazimierz University in Lvov in the years 1907–1912, under the supervision of Kazimierz Twardowski, and obtained his Doctor of Philosophy degree for the dissertation *Utylitaryzm w etyce Milla i Spencera* (*Utilitarianism in the Ethics of Mill and Spencer*). He chose classics minor and had the opportunity to use this skill in Warsaw, as a teacher of Greek and Latin in the private Mikołaj Rej High School. In the years 1919–1929, he was an associate professor at the University of Warsaw, and a full professor in the years 1929–1961: until 1951 at the Philosophy Department and then at the Logic Department. During World War II he gave lectures at the underground University of Warsaw as part of the system of secret education (the so-called *tajne komplety*, clandestine classes), and after the Warsaw Uprising of 1944, until January 1945, he lectured in Radom. Once the war was over, he co-organized the University of Łódź, becoming its rector (1945–1949) and then a professor up to 1951. He attended the I Congress of Polish Science but remained silent throughout.

In the years 1927–1955 he chaired the Warsaw Philosophical Society, in 1948–1977 he was the President, and after 1977 the Honorary President,

of the Polish Philosophical Society. Since 1929 he was a member of the Learned Society of Warsaw, up to its dissolution in 1951. In 1946–1951 – a corresponding member and subsequently a regular member of the Polish Academy of Learning (PAU) in Cracow up until its dissolution. Since 1951 he was an ordinary member of the Polish Academy of Sciences (PAN) and in the years 1957–1962 – its President.

He was also a founder member of the Polish Semiotic Society (PTS). While he enjoyed good health, he participated in its meetings, and often took part in the discussions.

In 1957–1960 he was the Vice-President, from 1960 to 1963 – the President, and then Honorary President of Institut International de Philosophie. He received honorary doctorates from a number of universities both in Poland and abroad (the universities of Bratislava, Brussels, Florence, the Jagiellonian University, the universities in Łódź, Oxford, and Sofia, and the Medical University in Łódź). Six foreign academies admitted him as their member.

Several hundred works by Tadeusz Kotarbiński include, besides *Gnosiology* (1929/1961, 1966a) and *Praxiology* (1955b, 1965), the following books, not translated into English: *Kurs logiki dla prawników* (*A Course of Logic for Lawyers*) (1955a), *Wybór pism* (*Selected Writings*) in two volumes (1957–1958), *Wykłady z dziejów logiki* (*Lectures on the History of Logic*) (1957/1985), *Sprawność i błąd* (*Efficiency and Error*) (1960), *Medytacje o życiu godziwym* (*Meditations on Decent Life*) (1966d), *Hasło dobrej roboty* (*Good Job*) (1968), *Studia z zakresu filozofii, etyki i nauk społecznych* (*Studies in Philosophy, Ethics, and Social Sciences*) (1970a), *Szkice z historii filozofii i logiki* (*Sketches in History of Philosophy and Logic*) (1979b). He also published volumes of verse: *Wesołe smutki* (*Merry Sorrows*) (1967 – third extended edition), *Rytmy i rymy* (*Rhythms and Rhymes*) (1970b). This is the source of the poetic fragments quoted above, and of the two final verses of one of the poems:

> *Bez zmiany czegokolwiek wszystko się zmieniło*
> *I wszystko jest, jak było – z wyjątkiem wszystkiego.*

> *Without any change, everything has changed,*
> *And everything's as usual – except for everything.*

<div align="center">***</div>

The Polish Semiotic Society paid the last tribute to Tadeusz Kotarbiński in the following obituary:

Tadeusz Kotarbiński, born 31 March 1886 in Warsaw, died 3 October 1981 in Anin near Warsaw. Founder member of the Polish Semiotic Society. For seventy years, he taught and demonstrated, by his own example, how to express independent thought in clear and precise words and have the courage to bear witness to the truth.
Polish Semiotic Society.

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Jacek Juliusz Jadacki
LEON CHWISTEK'S VIEW ON LANGUAGE

1. INTRODUCTION

In his paper *Uwagi w sprawie programu prac z zakresu historii semiotyki* (*Studia z Historii Semiotyki*, vol. II, Wrocław 1973, pp. 209-210), Jerzy Pelc advised the following course of work on the history of semiotics:

> [. . .] The greatest advancement of the study of semiotics is observed in the fields of logics and philosophy [. . .] I would advise beginning [. . .] the enquiry from those two fields. [. . .]. Initially it is necessary to limit oneself exclusively to monographic studies. [. . .] I would also advise to begin from a thorough research on the most outstanding exponents of semiotics.

The current study is my second step towards the fulfilment of this advice. The first was my analysis *O poglądach Romana Ingardena na język*, which discussed Roman Ingarden's views on language and which appeared in the fifth volume of *Studia Semiotyczne* (Wrocław 1974, pp. 17-54).

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Leon Chwistek was perhaps the most versatile Polish scholar of the first half of the 20th century. He was the creator of rational mathematics and the defender of nominalism in the philosophy of mathematics. As a formal logician and methodologist, he realized in practice the appeal for the forma-lisation of sciences as semantic systems. As an ontologist, he presented the theory of plurality of realities, and his epistemology was based on the broadly

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understood empiricism and realism. In psychology, he was an adherent of experimentalism, and in ethics – of a brand of rigorism. In aesthetics and theory of art he was leaning towards relativism, and as a critic he supported formism. As a painter, he created extraordinary zonist paintings, and he also authored an Expressionist novel.

He was especially concerned with the issues of the language in three periods: 1916-1917, 1920-1924, and 1930-1937. The first period opens with his study *Sens i rzeczywistość*, the last closes with the work *Überwindung des Begriffsrealismus*. His main work, entitled *Granice nauki*, is the most crucial to the reconstruction of Chwistek's views on semiotics; hence the following synthesis of his convictions is based mainly on this book.

2. SIGN, MEANING, VERACITY

Every object may be a sign, but no object is a sign *per se*. It becomes one due to a certain contract, which may be arrived at without deciding what object precisely is the sign (1935, 1963: 55): a thing, a collection of elements, a system of impressions or perhaps some extra-temporal entity; a singular object (sign-specimen) or a collection of such objects (sign-type). Entering into such considerations is only harmful pedantry – harmful because it threatens to entangle one in purely verbal debates, for instance this one: when *a* ceases to be an *a*, and becomes a *d* or an *o* (1935, 1963: 11). It must be accepted that the PROPER content of the word "sign" cannot be defined (1935, 1963: 56). It is necessary and sufficient to simply point out the (simple) signs that we use, and the rules of constructing complex expressions from them (1935, 1963: 55). The possible indefiniteness may be overlooked for as long as it does not cause some serious disturbances in the very application of those signs (1935, 1963: 11). Such rules are indispensable because complex expressions cannot be constructed entirely at will; absolute arbitrariness sooner or later leads to contradiction (1935, 1963: 35).

All signs are two-fold objects. One aspect of them are the more or less defined sets of sounds, the other aspect are the more or less defined meaning (1920a, 1960: 101), expressed by means of those sounds (1920b, 1960: 105). This meaning can be understood in two ways. Primarily, in speech, an expression is a sort of a label of the perceived object; its meaning is no more than the obvious, an principal SKELETON of that object, the schema of reality (1935, 1963: 213). In this case, the object in question is always a real object; after all, general objects, to which the verbs, adjectives or some nouns

allegedly refer, do not exist (1917, 1963: 3, 6; 1923, 1961: 109). In the case of sentences this is a certain distinct real event (1932, 1961: 127); a relation between the elements of extra-lingual reality in the case of affirmations, or the lingual reality in the case of negations (1921, 1961: 65; 1935, 1963: 129). Secondarily, especially during reading, the place of that skeleton is taken by a certain experience (1932, 1961: 121), namely an IMAGE or THOUGHT which occurs during the reflection upon the method of applying this expression in speech (1932, 1961: 129; 1935: XX-XXI). The rise of such a secondary meaning, i.e. image, is a condition for the emergence of appropriate habits that make using expressions (general names) possible (1932, 1961: 121).

The reflex of answering to a certain set of images with a stable lingual behaviour develops only due to the fact that, during the acquisition of language, a given expression is assigned an unchangeable meaning in the primary understanding (1932, 1961: 128). Only as a result of the habitual application of expressions in speech, which was fixed in the above way, does the secondary meaning of expressions emerge. The images of which it consists are similar in the case of various users of the same language. This similarity diminishes as the distance from the realm of everyday life increases. Outside that realm, only partial communication is possible. Hence, among others, all attempts at searching for some inter-subjectual meaning of a given language's expressions, which would be accessible to all its users, are doomed to failure (1932, 1961: 121).

Since the original meaning of all expressions – including sentences – are real objects or sets of real objects, a meaningful statement (proposition) is true when it corresponds to reality. For EXPERIMENTAL, perceptual propositions, the benchmarks of that correspondence (conformity) are identical with the primary benchmarks of common sense. Thus, if they correspond to those benchmarks, they are absolutely and unconditionally true. For instance, the sentences: *The distance between my flat and the university is more than 10 centimetres* (1930-1933, 1961: 206; 1935, 1963: 24) or *Two times two makes four* (1921, 1961: 42) belong to such absolutely true propositions. However, the absoluteness, indubitableness of such propositions has a very uncertain basis: it is embedded in our convictions (1930-1933, 1961: 208). Hence the scope of experiential propositions is very limited and the boundaries – uncertain (1930-1933, 1961: 207). It would be difficult to expect more at this point than the above generalities.

In the case of SCIENTIFIC (theoretical) propositions, the given proposition's veracity, or lack of it, depends on the way in which the scopes of expressions present in this proposition have been established. It is therefore a

relative feature of certain propositions, but it is capable of being determined with enough strictness (1935, 1963: 78). It is a relative feature, because it is dependant on all accepted solutions, on a system of propositions, in which the proposition, to which veracity is ascribed, appears – and those that are in essence temporary and revocable. Even if all those propositions which are repeated in all solutions were assumed to be absolutely true, that very choice would constitute an obvious arbitrariness (1930-1933, 1961: 207-208). Yet this relativity of the veracity of extra-experiential (analytical) propositions should not be confused with the utility benchmark. After all, a thing can be utile with respect to various purposes. It is, of course, possible to set an objective or task, the reaching or fulfilment of which would be facilitated by falsity or absurdity (1930-1933, 1961: 206). But if some scientist (including a mathematician) accepts a given assumption or description (definition), and not any other, his arbitrary choice can be assumed to be in keeping with the utility benchmark only inasmuch as it is useful for granting the largest possible productivity to the given branch of science (1921, 1961: 42; 1932, 1961: 134).

3. THE NATURAL LANGUAGE

The natural language lays claim to FULLNESS (1924, 1960: 54). It permits speaking about everything: it is possible to speak about speaking, to signify expressions with expressions, unlimitedly use such terms as *all expressions*, *all properties* etc. (1935, 1963: 16). This fullness, however, is accompanied by indefiniteness, ambiguity and internal inconsistency (1935, 1963: 17).

The natural language is INDEFINITE, because it does not possess:

(1) clear benchmarks, which would make it possible to distinguish

(a) meaningful expressions from expressions devoid of meaning (1935, 1963: 13),

and

(b) true sentences from sentences that are untrue (1935, 1963: 18);

(2) clear rules for creating expressions, especially a clearly-enough defined substitution principle; hence general (universal) propositions with strictly defined contents are absent in the natural language (1935, 1963: 93).

Furthermore, the natural language is AMBIGUOUS (1921, 1961: 46; 1930-1933, 1961: 192; 1935, 1963: 55), because expressions that belong to it are vague (1935, 1963: 55, 74) and polysemantic (1935, 1963: 4); hence it is possible to form such propositions as *This is white and not white*, *Electrons are real and unreal*, which demonstrate the vagueness of the scope of certain words (1935, 1963: 96). Finally, the natural language is INTERNALLY INCONSISTENT, because applying it to the description of whatever exceeds the simplest phenomena of everyday life leads to a contradiction (cf. the paradoxes of Eubulides, Grelling etc.) (l935, 1963: 8).

Despite its fullness, therefore, the natural language is an imperfect tool due to its indefiniteness, ambiguity and internal inconsistency (1935, 1963: 5). Hence it needs to be improved (1935, 1963: 13-14). Such an improvement may be attempted by means of two methods: the analytical or the constructional one.

4. THE ANALYTICAL METHOD

Application of the analytical method requires us to essentially recognize the natural language's claim to fullness and accept that its imperfections may be alleviated by the explication and systematisation of ready, existing expressions. If so, it would require only to conduct a content analysis of the given expression to establish its ESSENTIAL, TRUE and DISTINCT meaning.

The above assumes that it is possible to arrive at absolute, final knowledge. This assumption is accompanied by a conviction that natural expressions actually possess such true and definite meaning; all that is needed only to discover and systematise them (1923, 1961: 114). It is, however, a delusive conviction. Natural expressions do not have a single TRUE meaning; the natural language does not contain grains of absolute truth (1935, 1963: 9). We shall never discover what goodness, beauty, love, friendship or the human soul really are by searching for the internal meanings of the relevant words from the natural language – because this cannot be discovered by any method (1924, 1960: 52; 1935, 1963: 4). It is possible to try to determine, one way or another, the scope of a certain expression, for instance the notion of decency, and depending on the quantity of people pronounced decent as a result, that action would be more or less effective. It is possible to give such a meaning to the notion of decency, that not even a single person would be found decent; the word *decency* would then become useless. One way or another, the question of what really is the scope of a given natural

expression – of who is REALLY decent – is simply absurd (1935, 1963: 204). No expression of this kind, including the simplest names: *horse*, *sparrow*, *penny*, *cigarette* or *man*, has either a clear-cut scope or a clear content.

Of course, it is difficult to confuse, for instance, *friendship* with *horsemanship* (1924, 1960: 52), but at some point the content analysis reaches a stage when it is impossible to decide whether the given expression applies to the given object or not (1935, 1963: 10-11). This is corroborated by the ancient paradoxes about the bald man, the heap of sand (both ascribed to Euclid) or the rustle (ascribed to Zeno of Elea) (1935, 1963: 11). It is also easy to realise this when trying to conduct the simplest dichotomous division on expressions belonging to the natural language (1923, 1961: 113).

Thus, the natural language is not a system of clear and unambiguous expressions, and as long as it remains natural, and hence full, there can never be such a system (1935, 1963: 9). What is more, there is no need to look for this system in the natural language (1935, 1963: 47-48). Incidentally, the shortage of results achieved by the analytical method indirectly attests to the ineffectuality of this path (1921, 1961: 39): this path inescapably leads to the quibbles of verbal metaphysics.

This is because, while conducting the content analysis of an expression belonging to the natural language, we finally substitute certain natural expressions with other expressions which are also natural, and hence not free from ambiguity and polysemanticism (1935, 1963: 11).

At the same time, it must be remembered that such ascriptions are made on the basis of the classical *definitio per genus proximum et differentia specifica*. Thus, another fallacy is added: that we are actually able to find such *differentia specifica*. Most often, or in reality always, it is just the feature that makes, say, a sparrow different from a canary, that is assumed to be the *differentia specifica*. The real state of affairs is thus obscured, this state of affairs being that as a final point, the word *sparrow* – like the majority of expressions belonging to the natural language – is introduced by pointing a finger to a live specimen of this bird (1935, 1963: 12). The result of the earlier pseudo-verbal definition is usually that instead of statements which are natural, but at least straightforward, we end up with statements which are only quasi-unambiguous, but in reality only over-elaborate and heavy (1935, 1963: 216). No method makes it possible to effectively distinguish between the more and less ambiguous expressions in the natural language; this fact to a sufficient degree undermines the validity of efforts with respect to content analysis conducted in this manner.

5. THE CONSTRUCTIONAL METHOD

The constructional method, in turn, may boast significant achievements. It is particularly productive in the works of logicians and mathematicians, but also those by, for instance, codifiers of law (1924, 1960: 52; 1932, 1961: 130).

In accordance with this method, the natural language needs not explication and systematisation, but re-formation from the very foundations. Above all, it is necessary to reject its claim to fullness, because it is the source of indefiniteness, ambiguity and internal inconsistency. The colloquial language is an effective tool if its LIMITEDNESS is accepted (1935, 1963: 128-129). It will be free from those features, if no attempts are made to use it to describe phenomena which do not belong to the world of objects of everyday use (1930-1933, 1961: 192; 1935, 1963: 4). Next, it is necessary to reject the assumption that the expressions of any language are clear and unambiguous *per se*, and to abandon the hope, connected with this assumption, of gaining the final knowledge regarding their meaning. Expressions can became clear and unambiguous only in the course of appropriate procedures (1935, 1963: 47-48). Semantic analysis may be an introductory step to those procedures.

However, the proper improving procedures begin only afterwards. In practice, they consist in creating an entirely new language, which makes it possible to speak about issues exceeding the everyday with no threat of indefiniteness, ambiguity and internal inconsistency (1935, 1963: 58). Validity of substituting such new language instead of the natural language derives from the fact that any language may be considered to have a finite number of words (1917, 1961: 7) and, generally speaking, it is possible to imagine such a grouping of sets of those words that everything that ever was and ever would be said in that language would be thereby exhausted (1917, 1961: 8). Such a language, created *ad hoc*, is no longer indefinite, because it is provided with a list of simple expressions and with a set of rules of abbreviation and rules of demonstration (which delineate the principles of recognizing given expressions as statements of a certain system).

The differentiation between meaningful expressions and expressions devoid of meaning can be made on the basis of the rule selected without constraint (1912: 63; 1917, 1963: 9; 1935, 1963: 13). This is because language formations arrange themselves into one, unbroken range. On the one end of that range there are meaningful expressions (those which possess sense) in the scientific understanding, including meaningful statements, i.e. propositions. The other end consists of expressions which are entirely devoid of meaning: which are semantically empty (1921, 1961: 98; 1935, 1963: 13). Depriving the

language of indefiniteness in the above manner results in the disappearance of the foundation for the *a priori* division of propositions into analytical and synthetic, since it turns out that all theorems are derived from the primary theorems, whose arrangement precisely delineates the meaning of primary expressions.

Expressions, whose meaning has been thus delineated, can be used without a prior insight into that meaning (1932, 1961: 121), as long as the arrangement of the primary theorems which it determines is not exceeded; if it is, there is the danger of standing in the face of issues that are irresolvable because they permit any resolution (1922: 543). This results in the removal of the source of the language's ambiguity (1935, 1963: 74-75). On the other hand, it turns out that, strictly speaking, no rule is an analytical proposition, because there is none that would not bring in something materially new, would be provable and would be accepted totally without constraint (1921, 1961: 45; 1935, 1963: 41).

6. ARTIFICIAL LANGUAGE

A language thus constructed, free from indefiniteness and ambiguity of the natural language, is no longer threatened by contradiction (1921, 1961: 46). There are, however, two issues that must be borne in mind.

Firstly, that this language is not some substitute in relation to the natural language. After all, in any field, in which there is a need to communicate, we are doomed to using the natural language. The formal language (e.g. the language of symbolic logic) – because this language is precisely what we are dealing with here (1921, 1961: 41) – is not a means of communication, but only a tool that makes it possible to delineate the boundaries (limitations!) of the natural language and to check whether those boundaries are not exceeded when that language is used (1935, 1962: 216). We SAY *Socrates is a human being* regardless of whether in the UTTERANCE we use the word "Socrates" as a proper name, as an individual name (a sign referring to a set of only one designate), or as a general name (a sign of a freely chosen set). If, however, we READ this text and want to follow precisely that which is written, we are obliged to UNDERSTAND this inscription as equal to the theorem that the set "Socrates" is a sub-set of the set "human being". Any other understanding would signify adding one's own interpretation – which may perhaps be alien to the sender of that message – referring to, for instance, our knowledge of, or doubt in, the existence of a definite human being named Socrates, to the image of this personage we have or not have, etc. (1932, 1961: 124-125).

Secondly, the formal language should, just as the natural language, follow the rules of sound reason, chiefly the rule of non-contradiction (1935, 1963: 6-7). This sound reason ought not to be equated with the everyday common sense in the meaning of everyday prudence, the requirements of which change depending on the conditions of life (1935, 1963: 2) and which does not always take the rule of non-contradiction under consideration (1935, 1963: 6-7). A theorem which is possible to be constructed in the formal language, but concurrently counter to the rules of sound reason, must be rejected. One such theorem is the rule of subordination (assuming the strong understanding of the general sentence, i.e. $(x)CPxQx$, not $NExKPxNQx$), because it leads to accepting the existence of unreal entities. Having accepted that all devils are vermin – and there is no reason not to accept this – we would be obliged to accept by the same token that some vermin are devils and so, consequently, that devils do exist (1935, 1963: 8-9, 91). In such circumstances, while reflecting on the issue of the soul, we might overlook the fact that, perhaps, the very world soul is empty (1935, 1963: 5). Accepting such entities, in turn, inevitably leads to the vagueness of our language's expressions and to the emergence of illusory issues.

The drawbacks of the analytical method become even more evident when it is applied to scientific language. Then, it is even more clearly visible that the enterprise relying on the explication of primary scientific notions is scientifically futile due to those notions' lack of clarity (1921, 1961: 39, 46). It may be said that, for instance, in physics the notion of the location of the electron ought to be determined broadly enough for the notion of the electron's momentum to receive a narrow enough scope. It is not surprising, therefore, that the TRUE location and momentum are impossible to establish; the search for the TRUE location and TRUE momentum is just as absurd as the attempts to establish the meaning of TRUE decency (1935, 1963: 202). A similar case involves the polysemanticism of the notion of the straight line and the resultant possibility of constructing various systems of geometry (1921, 1961: 40).

Semantic analysis of the language of science may, at the most, give an impulse for the conscious definition of scope and contents (1921, 1961: 461). Such specification relies on– in keeping with the constructional method – substituting primary notions with strict language formations (1921, 1961: 48; 1922: 342). They should be selected in such a way to enable finding their counterparts in the natural language (1932, 1961: 129) and to enable accurate anticipation of the results of experiments prepared by ourselves (1930, 1961: 195-196). They cannot be required, however, to enable anticipation

of spontaneous phenomena occurring in life (1921, 1961: 71) – except, of course, the simplest events (1932, 1961: 129). Because the meaning of these strict language formation is entirely defined by primary theorems (1932, 1961: 113). Outside the system of those theorems, it is difficult to speak of any understanding of them, let alone a clear one.

7. FINAL REMARKS

Chwistek not only called for the creation of a formal language and re-creation of primary sound reason notions in it, but attempted to put this proposal into practice. This found its expression in the system, which he constantly continued to improve, of rational semantics: the theory of expressions, which would describe their primary features: relations of precedence, inclusion, substitution and semantic identity, in a manner formal (1935: XXIII) and free from metaphysical premises (1935: XIX).

LIST OF LEON CHWISTEK'S STUDIES CONCERNING THE ISSUES OF LANGUAGE

1912 – *Zasada sprzeczności w świetle nowszych badań Bertranda Russella.* Rozprawy Akademii Umiejętności, Wydział Historyczno-Filozoficzny 30: 68.

1916 – *Sens i rzeczywistość* (typescript).

1917 – Trzy odczyty odnoszące się do pojęcia istnienia. *Przegląd Filozoficzny* XX[2-4]: 122-151. *Idem* [in:] 1961: 3-29.

1920a – Formizm. *Formiści* I[2]: 2-3.*Idem* [in:] 1960: 100-104.

1920b – Poezje formistyczne Czyżewskiego. [Introduction to:] T. Czyżewski, *Zielone oko. Poezje formistyczne. Elektryczne wizje.* Kraków, 5-6. *Idem* [in:] 1960: 105-106.

1921 – *Wielość rzeczywistości.* Kraków: 96. *Idem* [in:] 1951: 30-105.

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Urszula Żegleń
SEMANTIC ANALYSIS OF RELATIONS IN ROMAN INGARDEN'S ONTOLOGY

Among various methods of doing philosophy, contemporarily, a prominent place is occupied by the analytic method. It has been widely developed in different versions of analytic philosophy and there are attempts to transfer it to those philosophical conceptions that historically and methodologically seem to be distant from the limited language approach of "the picture of the world." More and more works are being published to compare the method of analytic philosophy with methods of maximally understood philosophy, especially with the phenomenological method. (Certainly, the similarities between the two methods are drawn in: Urmson 1956 and Spiegelberg 1960. Moreover, cf. Bar-Hillel 1957; van Peursen 1959 and 1969; Schmitt 1962; Tillman 1966; Küng 1968, 1969 and 1972.) Comparative works of this type — generally speaking — take two directions:

1° looking for certain relations between the phenomenological method and the analytic method based on tools of formal semantics, or simply discussing the issue of using this type of formal analyses to phenomenology (e.g. Krysztofiak 1995),

2° looking for certain relations between the phenomenological method and the analytic method based on empirical or linguistic semantics, that is developed by common language philosophers and linguists (e.g. Thomasson 2007).

Such tendencies became a stimulus to undertake yet another attempt to apply the analytic method to a certain fragment of phenomenology. The

aim of the present paper is to apply the semantic analysis as hard analysis (that is a method of formal semantics) to characterize certain relations in Ingarden's ontology. Here, following Ingarden, ontology is a certain theory which concerns pure possibilities "necessary interrelationship among pure ideal qualities, or among the elements of the ideas' contents, and finaly [...] the relations among the collective ideal contents belonging to different ideas" (Ingarden 1962, I: 45; 2013, I: 62). The development of this issue is Ingarden's analysis of the content of ideas presented in the second volume (Ingarden 1961, II: 65ff) of his *opus magnum* that is *Spór o istnienie świata* (*Controversy over the Existence of the World*) published in three volumes[1]. But the problem of the characterization of ideas by their content was present much earlier in Ingarden's analyses, mainly in his study of the essence of object presented in his Habilitationsschrift *Essentiale Fragen* (1925/1972). The essence is something pointed out by the content of idea. Hence the important task of Ingarden's ontology is to inquire into the relations between ideas of the same hierarchy as well as relations between an idea and an individual objects which fall under the idea. The first type of relation is called specification, the other — exemplification. The specification relation occurs between ideas distinguished on account of the content. What results is a dichotomous division into general and specific ideas. General ideas have such a selection of the "constant" content that they do not completely exhaust the endowment of any individual object, but taken all together are an ideal equivalent of some moments of (qualitative) endowment of certain individual objects (Ingarden 1961, II: 100). Whereas specific ideas are those in whose content there are "constants" which completely exhaust the endowment of individual objects[2] (Ingarden 1972: 371). Therefore every individual object is a direct exemplification of a specific idea, that is "the transition from a specific idea to an individual object does not require eliminating any qualitative <<variable>>, but only a <<transition>> from formal <<variables>> to their particular values, that is a fulfillment of concretization" (Ingarden 1972: 373). General ideas can be further divided according to the degree of their generality. Thus the lowest level in the

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[1]There are not, however, any complete English translation of this significant work. The second volume has not been translated into English. In the Polish version of this paper I used the Polish second edition of both volumes, and in the present English version I also use the recent English translation made by Arthur Szylewicz of the first volume. The rest of quotations are translated from the Polish edition by the interpreter of this paper.

[2]Although it concerns both ideal and real object, with some restrictions added in the latter case.

hierarchy of ideas is occupied by specific ideas which, in turn, find their "concretizations" in self-existing individual objects which can be divided into ideal and real.

Let's consider first the relation between ideas belonging to one hierarchy of ideas. Let's have a closer look at the relation which occurs between two ideas from the same hierarchy of ideas but which are different in terms of their generality. This relation — as noted before — is called "specification", however maximal and simple specifications need to be distinguished. Maximal specifications occur between two general ideas, from which one is less general, while simple specifications occur between a certain general idea and the least general idea from a given hierarchy of ideas, that is a specific idea. There may occur a whole hierarchy of ideas with a decreasing degree of generality between a general idea and a specific idea which is its specification. Let Ingarden's text explain the hierarchy of ideas:

"Ideas differ among one another in terms of generality, and therefore there is a certain hierarchy between them. If we take into consideration a number of such ideas as e.g. a) geometrical figure in general, b) polygon in general, c) quadrilateral in general, d) parallelogram in general, e) square in general, then the first is the most general in relation to the remaining ones, any other is much less general, and moreover <<falls under>> — as it is usually said — the preceding ones. The former and the latter concerns the CONTENT of the mentioned ideas. The increasing degree of generality stands out when moving from the bottom, that is from the idea <<square in general>> towards the idea <<geometrical figure in general>>, we encounter brand-new material variables in their contents. When in the idea <<square in general>> there is only the material variable <<with a certain absolute length of sides (<<a square is an equilateral rectangular parallelogram with a certain absolute length of sides>>)>>, then in the idea <<parallelogram in general>> occur two new variables: <<with CERTAIN interior angles>> [...] while in the idea <<quadrilateral>> additionally occurs a new variable: <<with a certain number of pairs of parallel sides>>, etc. Whereas the hierarchy between the mentioned ideas consists in that 1) in the contents of these ideas there are at least some constants which are THE SAME, 2) in a less general idea which <<falls under>> a more general idea, to replace a certain variable in the content of a superior idea, there occurs a certain constant which is one of the possible specific cases allowed by the variable. Other specific cases of the same variable occur as <<constants>> in the content of OTHER ideas which fall under the same <<more general>> idea [...]. The least general, and at the same time the lowest is a specific idea [...]" (Ingarden, 1961, II: 96-97).

The intuitions present in the text will be helpful in explaining and

defining the specification relation. On the basis of the quoted text it is easy to deduce that in order to define the specification relation, it is necessary to take into account the content of ideas, which is composed of "constant" and "variable" components. They shall be noted by means of the following expressions $Con(Q, X)$ and $Var(Q, X)$ which read, respectively: "Quality Q is a <<constant>> in the content of idea X" and "Quality Q is a <<variable>> in the content of idea X." The present analysis is limited only to a characterization of material content of the idea which takes into account only qualitative "constants" and "variables," that is, only such elements of the idea which determine the qualitative endowment of objects falling under given ideas. The paper completely omits the formal and existential analyses of the content of the idea.

Both "constants" and "variables" are ideal concretizations of pure qualities. A "constant" is an ideal concretization of a certain completely specified ideal quality. Whereas a "variable" is an ideal concretization of the pure possibility of concretizing, in an appropriate individual object, of a certain ideal quality from the range of ideal qualities in which range is determined by a constant factor of a given "constant" or by certain "constants" of the content of the same idea (Ingarden 1962, I: 53ff; 2013, I: 69ff). In every "variable" of the content of the idea, a constant factor, which is a concretization of a certain kind quality, and a variable factor, which is a concretization of a certain possibility, can be distinguished. Just as "constants" of the content of the idea are ideal concretizations of unambiguously specified qualitative moments, "variables" are only ideal concretizations of the possibility of a certain object's entitlement to a qualitative moment (which has not been established unambiguously) from a specified class of such moments. Further, a "constant" of the content of an idea can be distinguished from a "variable" because the former creates a concretization of a certain kind of quality, while the latter — a concretization of a certain pure possibility, in particular the possibility of concretizing individual objects of one of the special cases of this kind quality. This can be interpreted in the way that "variable" has a certain range of variability, which range is composed of particular cases of a given quality Q. For example, if a "variable" is "a certain skin colour," then quality Q stands for "a skin colour," while V_Q stands for the range of variability of skin colour. Thus V_Q stands for particular specified shades of skin colours, and thus for the fact that specified shade q of a specified skin colour which belongs to the range of variability of quality Q can be notated in the form $q \in V_Q$.

After this introductory explanation it is possible to notate what it means

that idea X falls under general idea Y from the same hierarchy of ideas, that is idea X is a specification of idea Y.

$$(1\text{i})\ XSY \overset{def}{=} \bigwedge_Q [Con(Q,X) \prec Con(Q,Y) \vee \bigvee_{Q_1} Var(Q_1,Y) \wedge Q \in V_{Q_1}] \wedge$$
$$\bigwedge_Q [Var(Q,X) \prec Var(Q,Y)] \wedge \bigwedge_Q [Con(Q,Y) \prec Con(Q,X)] \wedge$$
$$\bigwedge_Q [Var(Q,Y) \prec Var(Q,X) \vee \bigvee_{q \in V_Q} !Con(q,X)] \wedge$$
$$\bigvee_Q [Var(Q,Y) \wedge \sim Var(Q,X)]$$

The formal notation may cause objections as the only known signs are functors from the classical propositional calculus and quantifiers, while also new expressions have been introduced quite conventionally. Using quantifiers may seem quite artificial from a purely formal point of view, and on account of introducing new expressions the whole notation may seem illegible. However, when this seemingly long and unclear notation has been interpreted, then it seems that Ingarden's intuitions can be appropriately understood. Idea X is a specification of idea Y if and only if:

1) for every quality Q it is necessary that if quality Q is a "constant" in the content of idea X, then quality Q is a "constant" in the content of superior idea Y or belongs to the range of variability of a "variable" in the content of this superior idea.

2) for every quality Q it is necessary that if quality Q is a "variable" in the content of idea X, then quality Q is a "variable" in the content of superior idea Y.

3) for every quality Q it is necessary that if quality Q is a "constant" in the content of superior idea Y, then quality Q is a "constant" in the content of idea X.

4) for every quality Q it is necessary that if quality Q is a "variable" in the content of superior idea Y, then quality Q is a "variable" in the content of idea X or there exists such one quality q from the range of variability of quality Q that this quality q is a "constant" in the content of idea X.

5) There exists such one quality Q that quality Q is a "variable" in the content of superior idea Y and quality Q is not a "variable" in the content of idea X.

This definition gives formal conditions which must be met in order for general idea X to be a specification of a more general idea Y from the same hierarchy of ideas. The definition takes into consideration only qualitative "variables" and "constants" of the content of ideas, because their presence

in the content of ideas allows to know if the idea is more or less general in the same hierarchy of ideas. In order to illustrate the specification relation, another example may be drawn: let's discuss two random ideas from the above mentioned hierarchy, e.g. the idea "parallelogram" X and the idea "quadrilateral" Y.

1) The first condition states that for every quality it is necessary that if this quality occurs as a "constant" in the content of idea X, then it also occurs as a "constant" in the content of superior idea Y or belongs to the range of variability of a "variable" in the content of this superior idea. The "constants" of the idea "parallelogram" (that is idea X) are: "being a polygon," "being quadrilateral," "being a parallelogram." The first two also occur as "constants" in the content of the idea superior to the idea of "parallelogram" that is in the idea of "quadrilateral" (in our example in idea Y). However, it is not specified in the idea of "quadrilateral" whether it is supposed to be a parallelogram, i.e. there is no "constant" quality of "being a parallelogram." Whereas in the content of the idea of "quadrilateral", there is a possibility of the relation of being parallel between pairs of opposite sides to occur or not. Thus it can be said that "being a parallelogram" belongs to the range of variability of the "variable" of the content of the idea of "quadrilateral," which is a quality of "a certain relation between pairs of opposite sides, in which the relation has been distinguished on account of the relation of being parallel."

2) The second condition states that for every quality it is necessary that if quality Q is a "variable" in the content of idea X, then quality Q is a "variable" in the content of superior idea Y. The "variables" in the idea of "parallelogram" are: "a certain size of interior angles," "a certain length of sides." These qualities are also "variables" in the content of the idea "quadrilateral."

3) The third condition states that for every quality it is necessary that if quality Q is a "constant" in the content of superior idea Y, then quality Q is a "constant" in the content of idea X. The "constants" in the idea of "quadrilateral" are: "being a polygon" and "being quadrilateral." These qualities are also "constants" in the content of the idea "parallelogram."

4) The fourth condition states that for every quality Q it is necessary that if quality Q is a "variable" in the content of idea Y, then it is a "variable" in the content of idea X, or there exists such one quality q from the range of variability of quality Q that this quality q is a "constant" in the content of idea X. The "variables" in the idea of "quadrilateral" are: "a certain size of interior sides," "a certain length of sides," "a certain relation

between pairs of opposite sides, which relation has been distinguished on account of the relation of being parallel" (that is, the relation of being parallel between pairs of opposite sides either occurs or not). The following "constant" qualities belong to the range of variability of the last "variable": Q_1 — "being parallel of two pairs of opposite sides," Q_2 — "being parallel of one pair of opposite sides," Q_3 — "not being parallel of both pairs of opposite sides." In the content of the idea "parallelogram" "being parallel of both pairs of opposite sides" (that is Q_1 here) is a "constant." Moreover the above mentioned "variables" of the idea of "quadrilateral" are "variables" of the idea "parallelogram."

5) The fifth condition states that there exists such one quality Q that quality Q is a "variable" in the content of superior idea Y and quality Q is not a "variable" in the content of idea X. In the discussed example such a quality is the quality which can be determined as "the relation of being parallel between pairs of opposite sides which occurs or not."

Also, certain additional conditions for the "variable" and the "constant" of content of a general idea can be given. These conditions are as follows:

(2i) $Var(Q, X) \land q \in V_Q \prec\ \sim Con(q, X)$

It is necessary that if quality Q is a "variable" in the content of general idea X and quality q belongs to the range of variability of quality Q, then quality q is not a "constant" in the content of idea X.

(2ii) $Con(Q, X) \prec\ \sim Var(Q, X)$

It is necessary that if quality Q is a "constant" in the content of general idea X, then quality Q is not a "variable" in the content of idea X.

Due to these conditions — as can be easily noticed — it is excluded that the same quality is both a "variable" and a "constant" in the content of the same idea.

Having presented these explanations it is possible to move to determining the relation which occurs between a specified general idea and the "lowest" idea which is its specification. This relation is called the maximal specification relation. The definition which characterizes the relation is of the following form:

(3i) $XS_mY \overset{def}{=} XSY \land \bigwedge\limits_{Q}[Var(Q, Y) \prec \bigvee\limits_{q \in V_Q} !Con(q, X)]$

Idea X is a maximal specification of idea Y — which means that idea X is a specification of idea Y and for every quality Q it is necessary that if quality Q is a "variable" in the content of idea Y, then there exists exactly one such quality q from the range of variability of Q that q is a "constant" in the content of idea X.

Again let's illustrate this with an appropriate example. In the discussed hierarchy of ideas, a specific idea is the idea "particular square," that is the idea "square" with a specified length of sides, e.g. having q units. Let the idea "such square" be the name of idea X, and the idea "square in general" — of idea Y. Now it is possible to discuss only the second element of the conjunction as the first has already been taken into consideration in the preceding example. The qualitative "variable" in the content of the idea "square in general" is only "a certain length of sides." The range of variability of this "variable" encompasses particular specified lengths of sides. Thus it is necessary that since "a certain length of sides" is a "variable" in the content of idea "square in general," then there exists exactly one specified length of sides, let's say of q units, which is a "constant" in the content of the idea "specified square" (with the length of sides of q units).

The formal analysis of the maximal specification relation may result in formulating certain relations which shall be presented with their proofs.

(3ii) $X S_m Y \prec \sim \bigvee_Q Var(Q, X)$

1. $X \ S_m \ Y$ assumption
2. $\bigvee_Q Var(Q, X)$ assumption of the proof by contradiction
3. $Var(Q_1, X)$ 2
4. $Var(Q_1, Y)$ (3i), (1i)
5. $\bigvee_q [q \in V_{Q_1} \wedge Con(q, X)]$ 4, 1, (3i)
6. $Q_2 \in V_{Q_1} \wedge Con(Q_2, X)$ 5
7. $Con(Q_2, X)$ 6
8. $\sim Con(Q_2, X)$ (2i), 3, 6
    contradiction

Conclusion 2

(3iii) $X S_m Y \Leftrightarrow X S Y \wedge \sim \bigvee_Q Var(Q, X)$

a) 1. $X S Y$ assumption
2. $\sim \bigvee_Q Var(Q, X)$ assumption

1.1. $Var(Q, Y)$ additional assumption

1.2. $\sim Var(Q, X)$ 2

1.3. $Var(Q, X) \vee \bigvee\limits_{q \in V_Q} !Con(Q, X)$ 1, 1.1., (2i)

1.4. $\bigvee\limits_{q \in V_Q} !Con(Q, X)$ 1.3, 1.2

3. $\bigwedge\limits_{Q}[Var(Q, Y) \prec \bigvee\limits_{q \in V_Q} !Con(q, X)]$ 1.1. $\prec$ 1.4

    XS_mY 3.1., (3i)

b) 1. XS_mY assumption

    $XSY \wedge \sim \bigvee\limits_{Q} Var(Q, X)$ 1., (3i), (3ii)

Hence it is visible that the maximal specification relation occurs between X and Y when the specification relation occurs between X and Y and there is no quality in the content of idea X that is its "variable."

On the other hand, as has been already stressed only the specific idea does not have "variables": "AN IDEA IS SPECIFIC IF ITS CONTENT IS COMPOSED OF CONSTANTS WHICH COMPLETELY EXHAUST THE QUALITATIVE ENDOWMENT OF AN INDIVIDUAL OBJECT and in this respect any closer determination of the content of a specific idea is out of the question as it is in the case of general ideas [...]" (Ingarden 1972: 372-373).

The above statement shall be understood thus that qualitative endowment of an object is determined only by qualitative "constants" of the contents of a specific idea. However, it seems that in Ingarden's ontology the occurrence of qualitative "variables" in the content of a specific idea is not adjudicated. They do not occur in the content of specific ideas of ideal individual objects. The problem appears in the case of real objects (i.e. individual objects lasting in time). It seems that Ingarden's ontology does not give a solution to this question (but it is not from the lack of adequate instruments of analysis, but simply because of the richness of real domain). Because the type of individual objects is not adjudicated in this analysis, and the previous remarks support the elimination of qualitative "variables," at least in the case of the idea of an ideal individual object, hence it is assumed here that a specific idea does not have "variables." Thus it is possible to give the following definition of a specific idea:

(4i) $Spec(X) \overset{def}{=} \sim \bigvee\limits_{Q} Var(Q, X)$

Idea X is a specific idea — which means there exists no such quality Q

that is a "variable" in the content of idea X. Due to determining maximal specification it is visible that idea X is the maximal specification of idea Y if and only if it is a specification of idea Y and idea X is a specific idea. Formally, it can be notated in the form of the following conclusion resulting from definition (3i):

Conclusion 3

(3iv) $X \ S_m \ Y \ \Leftrightarrow X \ S \ Y \ \wedge Spec(X)$

This conclusion, similarly to the previous one, is notated by means of strict equivalence, which seems to be meritorically correct. For it is necessary that if a certain idea is the maximal specification of another idea, it is a specification of this idea and it is a specific idea, and contrariwise, it is necessary that if a certain specific idea is a specification of another idea, then it is the maximal specification (because it is not possible to find a "lower" idea in the hierarchy of ideas if the specific idea is treated as the "lowest" idea in a given hierarchy of ideas). It needs to be added here that functors of strict implication and equivalence come from system S1 of modal logic.[3] The proof of 3 is very simple due to (3iii) and (4i).

The next type of relation in Ingarden's ontology is the exemplification relation, that is a relation which occurs between an idea and an individual object which falls under a given idea. Also in this case it is needful to refer to the characteristics of the content of ideas. However, already on the basis of the previous remarks it is possible to state what it means that an individual object a is an exemplification of idea X. It means that for any quality Q it is necessary that if quality Q is a "constant" in the content of idea X, then quality Q in a concretized form belongs to the individual object, and for any quality Q it is necessary that if quality Q is a "variable" in the content of idea X, then there exists such one quality q from the range of variability of Q that a concretization of q belongs to object a.

These conditions can be formally notated in determining the exemplification relation:

(5i) $aEX \overset{def}{=} \bigwedge_{Q}[Con(Q, X) \prec Q(a)] \wedge \bigwedge_{Q}[Var(Q, X) \prec \bigwedge_{q \in V_Q} !q(a)]$

In the case when an individual object "falls under" a specific idea, the

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[3] The formal characteristics of system S1 can be found e.g. in Hughes, Cresswell (1968: 216-230).

relation is called the direct exemplification relation. Thus it seems legitimate to treat the direct exemplification as a case of exemplification. What results is the following definition:

(5ii) $aE_dX \overset{def}{=} aEX \wedge Spec(X)$

Individual object a is a direct exemplification of idea X — which means that this object is an exemplification of such an idea which is a specific idea. Also, there may be a case in which an individual object is an exemplification of an idea, but is not a direct exemplification. This case may be called an indirect exemplification, though Ingarden does not distinguish between exemplification and indirect exemplification. However, for the sake of clarity, indirect exemplification may be classified as an instance of the exemplification which is not direct exemplification. It happens if and only if an individual object is an exemplification of the idea which is not specific. Thus it is easy to give the determination of indirect exemplification:

(5iii) $aE_{id}X \overset{def}{=} aEX\wedge \sim aE_dX \Leftrightarrow aEX\wedge \sim Spec(X)$

The above considerations result in a simple conclusion about the three variants of exemplification: object a is an exemplification of idea X if and only if it is a direct or an indirect exemplification.

(5iv) $aEX \Leftrightarrow aE_dX \vee aE_{id}X$

Now let us give the condition for indirect exemplification.

(5v) $aE_{id}X \prec \bigvee_Y [aE_dY \wedge YS_mX]$

This implication can be proved with the following assumption:

(6i) $[aEX \wedge \sim Spec(X)] \prec \bigvee_Y [YS_mX \wedge aEY]$

Now let an individual object be an exemplification of an idea which is not specific. For example an individual square is an exemplification of the idea "quadrilateral." It is known from Ingarden's ontology that the qualitative endowment of the idea "quadrilateral" as a general idea does not completely exhaust the qualitative endowment of a specified square: "the repository of constants which occur in one such general idea [...] does not exhaust the full

material and formal endowment of a given individual object [...]" (Ingarden 1961, II: 100). Thus there is a certain specified idea which is in the same hierarchy of ideas as the idea "quadrilateral" and the specified square is an exemplification of this idea. For an ideal individual object such an idea is a specific idea and in the example considered here it is the idea "such specified square." Thus this idea is a maximal specification of the idea "quadrilateral."

Because only ideal individual objects are discussed here, the previously adopted assumption (6i) seems to be true. This assumption might be questioned, and even — who knows if it is not false in the case of real individual objects (lasting in time). Thus it seems that on the basis of Ingarden's ontology it is not possible to formulate such a condition for real objects. For Ingarden does not say anything about specific ideas then. And thus a certain John Smith is an exemplification of the idea "man," which is not a specific idea. Thus it is not possible to speak of the idea, exactly so specified, of the man John Smith is. What is not to be discussed here is the issue of all types of real objects, for example if there is a specific idea of a specified table, notebook, pencil, etc. Ingarden writes: "At this moment it is difficult to answer the question if there is such a specific idea under which falls an individual object changing in time." And further "the question arises on what the content of the idea under which this type of individual object falls is composed of — Is it a specific idea and contains only material constants, or is it still a certain general idea?" (Ingarden 1961, II: 100). Adopting the limitation which takes into consideration only ideal objects, it is possible to give the implication (5v) which has been already written as a necessary condition for indirect exemplification. Let us treat it as a theorem.

$$(5\text{v}) \quad aE_{id}X \prec \bigvee_Y [aE_dY \wedge YS_mX]$$

It is necessary that if individual object a is an indirect exemplification of idea X, then there is idea Y whose direct exemplification is this object, and idea Y is a maximal specification of idea X. Intuitively, it should be understood thus that idea Y is the "lowest" among ideas under which object a falls. The proof of this theorem is as follows:

1. $aE_{id}X$ assumption
2. aEX 1, (5iv)
3. $\sim Spec(X)$ 1, 2, (5iii)
4. $Y_1S_mX \wedge aEY$ 2., 3, (6i)
5. $Spec(Y_1)$ 4, (3iv)

6. aE_dY_1 4, 5., (5ii)

    $\bigvee\limits_{Y}[aE_dY \wedge YS_mX]$ 6., 4.

Let the following example be an illustration of this theorem: let object a be an individual square, while idea X — the idea "quadrilateral." It can be said that the individual square is an indirect exemplification of the idea "quadrilateral." But it is known from the previous remarks that if an individual square falls under the idea "quadrilateral," then there is the idea "such specified square," whose direct exemplification the square is and which, as known from the ontology, occurs as the "lowest" in the same hierarchy of ideas, that is it is the maximal specification of the idea "quadrilateral."

The relations analyzed here are the basic relations in Ingarden's ontology. Other relations (e.g. structural and radical transcendence) has been left out because their analysis would involve a previous presentation of their broad philosophical characteristics and seems to be difficult to convey with present means of formal semantics. However, it is believed that the present attempt to analyze formally a small fragment of Ingarden's ontology allows to explicate some ontological theorems more clearly and show the structure of objects of ontology. Obviously the question arises if and how adequately such an attempt could be made if other formal means were used. However, a positive conclusion both for language philosophers and philosophically oriented logicians is the thesis about the possibility of conducting such an analysis to a certain — as can be believed — satisfactory degree of adequacy.

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AUTOMATED RESOLUTION OF REFERENCES OCCURRING IN LEGAL TEXTS

1.INTRODUCTION

1.1. The Jagiellonian University ICT Faculty are involved in a research project called *ANAFORA*, whose main aim is to create a method of the automated resolution of anaphoric phrases — expressions used in formulating references occurring in the so-called primary legislation, that is Acts of Parliament, decrees, executive orders, etc. By the resolution of such expressions we mean operations that are about the identification of the cases of an expression occurring in a certain part of the text (divided into the so-called documents) and possibly finding all the referents of these expressions, that is, all documents containing information about the expression references.[2]

1.2. Work on the first part of the project, leading to the reconstruction of those semantic properties of the expressions whose knowledge is in some way important for the operation, was completed in 1981 and this is the part

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[1]The people listed as co-authors of the paper make up a research team led by F. Studnicki. The names have been mentioned in order of joining the team (in 1978-1979).

[2]The implementation of the method described herein will consist in its application in an ICT system designed for document search because the smallest portion of the information that such a system can provide is one consisting of the whole document (the whole paper of the whole section of the primary legal act), it is convenient and, on account of the aforementioned property of the system, absolutely sufficient to treat whole documents rather than phrases they contain as the referents of the anaphoric expression (that is the parts of the text to which the expression refers).

that will be described in this study. The research team is now working on the second part, whose aim is to confront the results obtained when working on the first part with the empirical material — the corpus of Polish primary legislation published between 1944 and 1979, represented by a sample of 200 such acts. The material also includes the regulations covered by the six codifications performed in that period. The third part of the project, aiming at the implementation of the method, that is leading the operations that add up to make it to a condition where the operation is performed by a digital machine, is just a preliminary stage of preparation. Only some of the programs of the operations have been done by now.

2. THE SEMANTICS OF THE ANAPHORIC EXPRESSIONS

2.1 The subject matter of the project is not only the resolution of the anaphoric expressions used in the formulation of the references in which the addresses of the referents are given explicitly (numerical references) but also the resolution of the references where the referents are indicated only by reference to some specific semantic properties (semantic references). The taxonomy of the anaphoric expressions we have adopted also identifies the so-called deictic expressions, where the referents are not indicated by supplying their absolute addresses, that is the numbers that match them with the original legal texts but by reference to the position they occupy in the texts in relation to the position of the document that contains the anaphoric expression. Another category are the so-called *associative anaphors*. This refers to cases where a document refers to (a) document(s) that only precede(s) it in a implicit manner, for example by way of using some marked and characteristically positioned phrases, such as 'however', 'regardless', 'apart from', 'irrespective of', etc. The semantic role of such phrases is about making the reader sensitive to the fact that the contents of the document where the expression appears are to be contrasted to the contents of the document(s) that precede it in the text or that is related to the contents of such documents with some other particularly strong semantic connections.

2.2 It must be stressed that not all the expressions that provide a number or other markings that correspond to some textual units in the original texts can be regarded as anaphoric expressions of the kind we are interested in. The documents that contain such expressions are thought to be only those that cannot be otherwise interpreted without the knowledge of the contents of those text units the expressions refer to. Therefore the expressions that introduce or repeal some legal norms or expressions indicating the

regulations that form the legal basis for the enforcement of other norms will not be considered anaphoric expressions of the kind.

2.3 The taxonomy of anaphoric expressions used in the formulation of references in primary legislation texts suits the kinds of indications that typify the expressions. By indication we mean the way the referents of an anaphoric expression act, a way which characterizes the expression. We distinguish between 4 kinds of anaphoric expressions: A (expressions that explicitly specify the addresses of referents), D (deictic anaphoric expressions), N (associative anaphors) as well as S type (semantic, that is, indicating their referents by calling upon the content substance).

2.4 In analyzing all types of anaphoric expressions, one needs to distinguish between the properties inherent in the surface structure and their semantic properties. When it comes to the semantic structure of the anaphoric expressions, we assume that at a certain level of generalization it looks analogical for all these expressions. Differences surface only in an investigation conducted at the lower level of generalization. At such a level each of the expressions, two direct semantic components can be identified: (1) the anaphoric functor and (2) the argument of this functor. By 'anaphoric functor' we mean a semantic component limited to revealing the illocutionary status of the expression in which it is contained, and, in particular, that it indicates the expression being anaphoric, that is, an expression referring to some information included in textual passages that it more or less clearly indicates. 'The argument of the anaphoric functor' ought to be construed as a component which carries information that is needed to identify the referents of the anaphoric expression being investigated.

Within the argument of the anaphoric functor, two direct semantic components ought to be identified: (1) its standard and (2) its specification. The role of standard is about it bringing some information on the kind of textual units the anaphoric expression references. Because what is of interest is only the information concerning the kinds of units, and therefore this information can appear in the standards of various anaphoric expressions. In such cases it can happen , and indeed it does happen, that the phrases that represent the standards of all these expressions in the surface structure become formally identical. The role of detecting specific properties of the referents, that is, indicating those of their properties that distinguish them from among all the units of the text equipped in the generic properties indicated by the standard, is performed by the second direct semantic component of the argument — its specification. The semantic structure of any elementary anaphoric expression (an anaphoric expression with just one indication) is explained by Fig. 1.
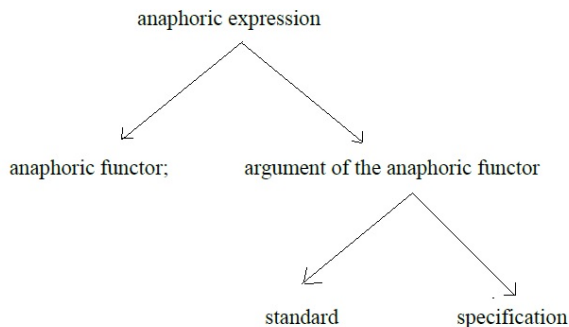
Fig. 1

2.5. The semantic structure of the anaphoric expression can be represented more or less completely in its surface structure. An incomplete representation may occur if some semantic components of such an expression are "nullified," that is, have no counterparts in this structure or when two or more of such components are jointly represented in the surface structure by one phrase that cannot be subdivided into two parts, each of which are representing one component. It often happens that the whole semantic structure of an anaphoric expression is represented in its surface structure by just one phrase, quite commonly made up of just one word. This is the case with the N-type anaphoric expressions (associative anaphors). In the case of incomplete representation, the components that have been "nullified" or that have shared representation with other components must be reconstructed by the addressee in the comprehension process. This can be done by making inferences based on information derived from extra-textual sources, such as the general or specialist knowledge on the part of the addressee. When the addressee is a machine, the inferences are made by means of some corresponding interpretative schemata, containing elements of general and specialist knowledge.

2.6. The process of comprehending a linguistic unit, such as a text or sentence, can only be treated as a process made up of a number stages that follow one another. If the process runs regularly, then with the end of each of the stages, the sense attributed to the text unit at the receiving end becomes more complete than it was at the previous stage. The process of understanding is usually "open-ended" because the recipient cannot reach a stage where nothing more could be added to make comprehension fuller.

Therefore the recipient must usually give up taking this process beyond a certain stage. It is usually around such a stage of the process where the sense which the recipient attributes to a linguistic unit is complete enough to satisfy the recipient's current need for information. The range of the information predominantly relies on the objective the information is needed to satisfy. Therefore every understanding can be regarded as instrumental. In cases where the information provided by a linguistic unit is necessary for an operation to be performed, we may speak of operational comprehension. The outcome of such comprehension processes can be thought to be satisfactory when it equips the recipient with information that is sufficient to perform an operation.

If the task of comprehending some linguistic units is left to a machine, the way the machine comprehends such units is always operational comprehension.

2.7. The operation of automated resolution of anaphoric expressions of the kind described above can be treated as a procedure composed of the following parts:

1. part 1: the identification of the anaphoric expression of a portion of a legal text (in a specific document, in particular);

2. part 2: the recognition of some semantic properties of the expression identified, leading to the generation of a formula that constitutes its generalized semantic representation;

3. part 3: using the formula that has been built in part 2 to select search procedures to be used in part 4;

4. part 4: the use of the search procedures selected in part 3 in the process of finding the referents of a given anaphoric expression, that is the documents the expression refers to.

Each of the parts covers one or more processes of comprehension. The process that obtains in part 1 is of a very general nature. It is limited to investigating one portion to ascertain whether the portion contains an anaphoric expression. The investigation is performed by way of reviewing the surface structure stratum of the unit of text, and a right document in particular, in search of some characteristic and characteristically positioned phrases, whose role is about making up the surface representation of the anaphoric functor. A positive result of this test launches a series of further

steps, which the subsequent parts of the operation described herein are made up of.

The second part describes a more complex comprehension process where a textual unit, document) identified in part 1 as one containing an anaphoric expression, is subject to two subsequent operations: the first is about identifying such component parts of the surface of a unit of text that can constitute the surface structure of an anaphoric expression. If the text unit (document) investigated contains more than one anaphoric expression, all these expressions must be identified. As we said before, it often happens that some semantic components of two or more anaphoric expressions (anaphoric functors of two or three such expressions)are represented in the surface structure of a language text jointly by one phrase only, sometimes one that consists of just one word. In such cases, all such expressions have in the surface structure of this unit a shared part, that is, one that belongs to each of those.

In the other operation, which part 2 consists of, each of the anaphoric expressions identified before is subject to testing aimed at revealing some generic semantic properties. What we mean is some properties that can be ascertained by means of an interpretative scheme used at this stage of the operation. All these operations are binary, that is, each of them can be either inherent in the anaphoric expression or may not. Using all the information supplied by the surface structure under investigation and by means of the interpretative scheme performing the operation described, the program generates a formula built on a language that we will call the language of semantic representation (JRS). These formulas will be called the formulas of semantic representation (RS formulas). Understandably, the formulas can only reconstruct some semantic properties of the anaphoric expressions investigated. These will be the semantic properties whose recognition is necessary at the right stage of the operation described here. It is easy to notice that the second part of the operation is a procedure leading to the transformation of the anaphoric expressions contained in the original text into their simplified and standardized counterparts in a language that is better suited for automated processing.

In part 3, the subject matter of comprehension are the RS-formulas generated in the second part. However, unlike in part 2, part 3 does not lead to generating linguistic units of some kind but to making a choice. In particular, a search procedure or a sequence of procedures ought to be chosen that would be best suited to searching for referents of the anaphoric expression equipped in generic properties that are reported by the right RS

formula.

There are some comprehension processes in part 4 done with the use of procedures launched by a choice made in part 3. The criteria on which the search in part 4 is conducted are based are much more specific than the ones used for the choice made in part 3. In particular, unlike what happens in part 3 (where the choice made by the program is dependent on rather few generic semantic properties), the search that will be made in part 4 must reckon with a practically unlimited diversity of peculiar semantic properties, postulated for referents by suitable anaphoric expressions.

2.8. The types of anaphoric expressions — A, D, N and S — will now be illustrated by means of some (fictitious) examples of legal acts that contain the anaphoric expressions.

Type A — anaphoric expressions that explicitly provide the addresses of referents.

Example 1

"#56. if the price should be paid in cash, CLAUSE 44 OF THE CIVIL CODE SHALL APPLY."

Example 2

"#15. If the perpetrator is under 16 years of age, the punishment PRESCRIBED IN CLAUSE 147 OF THE PENAL CODE shall be reduced by half."

Type D — deictic anaphoric expressions

Example 3

"#15. If the perpetrator is under 16 years of age, the punishment PRESCRIBED BY THE PREVIOUS CLAUSE shall be reduced by half."

Type N — associative anaphors

Example 4

"#15. HOWEVER, if the perpetrator of the crime is under 16, the punishment ought to be reduced by half."

Type S — semantic anaphoric expressions

Example 5

"#86. If no tariffs are in force, THE REGULATIONS OF THE CIVIL CODE CONCERNING RETAIL SHALL APPLY."

In each of the examples above, the sequences of words create a surface structure of an anaphoric expression. The semantic components of the anaphoric expressions occurring in examples 1-5 are represented in their surface structure in ways that are explained in the following table:

In example no.	phrase representing the anaphoric functor	Argument represented by phrase	Standard represented by phrase	Specification represented by phrase
1	Shall apply	Clause 44 of the civil code	#	44 of the civil code
2	Prescribed in	Clause 47 of the penal code	#	147 of the penal code
3	Prescribed by	Preceding clause	clause	preceding
4	however	n/a	n/a	n/a
5	Shall apply	The regulations of the civil code concerning retail	regulations	of the civil code concerning retail

Fig. 2

Concerning anaphoric expressions, indicated in examples 1 and 2, the problem of surface structure representation of their semantic components is clear. In particular, each of the components has its own sufficient representation in the surface structure of the expression. Therefore the referents of the expressions can be identified by the sole use of the information contained in this expression, and thus without the information coming from other sources.

In the anaphoric expression contained in example 3, the semantic component which we have called specification is represented by the phrase "preceding," but it is a deictic phrase, which makes a specific sense in a specific deictic system. In the case under consideration, such a system is created (which does not always obtain) out of elements of a linguistic nature only. One can speak of such a system particularly because the D-type anaphoric expression is included in a linguistic unit called a clause, which is part of a linguistic unit of a higher kind — the text of a legislative act — which is, as far as its surface structure is concerned, a linear collection of clauses and thus one on which the relations of 'precedence' and 'succession' are well defined. Therefore, if we assume that the clause indicated in example 3 is an element of this collection and is not its first element (which follows from the number that has been attributed to it), we can assume that the phrase 'preceding' represents the specification of the anaphoric expression contained in the regulation in a way that is sufficient for the identification of the (only) referent of the expression.

When it comes to example 4, the issue of the surface representation of the semantic components of the anaphoric expression it contains is a little more complex. In particular, the presence of the anaphoric expression in #15 is signaled in its surface structure only by one (one-word) phrase 'however', placed at the beginning of the clause. The role of such phrases has been presented above in 2.1. In Fig. 2 the phrase 'however' was classified as the

surface representation of the anaphoric expression included in example 4. One could claim, however, that the phrase represents, in the surface stratum of example 4, not only the analytical functor of the expression but the whole expression, too.

Such a claim would be only partly justified, though, as what we learn straight from the phrase is limited to the information that example 4 includes an N-type anaphoric expression. No other information that might be used in the identification of the referents of the expression (information that is usually carried by phrases representing the other semantic components of an anaphoric expression) is not included in the surface structure of example 4. The information that is missing can only be retrieved by way of using reconstruction mechanisms, particularly those whose functioning is about getting information from some external sources (cf. 2.5). Hence it can be assumed that the role of the phrase "however," used in example 4 resembles ones that in other types of anaphoric expressions are played by some characteristic phrases that represent in the surface structure a semantic component that we have called above the anaphoric functor.

It must be emphasized that the indication in example 4 is not as unambiguous as the ones that occur in 2 and 3. In particular:

a) It is by no means clear whether in example 4 there are one or more referents indicated. Let us assume that the whole information included in example 4 is known to us but that the only thing we know about its context is that the example is part of a text made up of clauses arranged in a linear fashion along with the numbers attributed to them and that it is not the first of the articles that belong to the text. As things are, it cannot be ruled out that the part played by the phrase "however" used in clause 15 is about contrasting its content substance not only with the contents of one of the clauses preceding #15 of the text, but the contents of two or more such clauses, each of which prescribe a different punishment for a different crime. Therefore, it cannot be ruled out that the anaphoric expression included in example 4 does not indicate just one clause but more.

b) Whereas there can be little doubt that the anaphoric expression included in example 4 (in clause 15) draws upon some information included in a clause or some clauses placed in the text preceding clause 15, it is by no means clear whether the expression only draws upon the information included in the clause that directly precedes clause 15 in this text or, perhaps solely, the information from some more (but not too) remote clauses.

The particular way of indicating referents that is characteristic for N-type anaphoric expressions means that the kind of indication used there can

be treated as something in-between the indication that more or less clearly shows the place where the referents are located in the text (the indication found in the A and D-type anaphoric expressions) and the indication that is about making a reference to some semantic properties of the referents (occurring in the S-type anaphoric expressions).

As regards the (S-type) anaphoric expression included in example 5, there is no doubt that all the semantic components of the expression are sufficiently represented in its surface structure. The way the expressions of this kind indicate referents has been sketched in 2.1.

3. INTERPRETATIVE SCHEME FOR THE ANALYSIS OF ELEMENTARY EXPRESSIONS —

INTRODUCTION

3.1. We have already said that at a certain stage of the operation of the autonomous resolution of the anaphoric expressions discussed here, the task or recognizing some of the semantic properties of such expressions is given to a program equipped in a special frame-like interpretative scheme (IS).[3]

IS contains as its proper part a certain data structure that adopts a more or less complicated form depending on the degree of complexity of the anaphoric expression which is subject to research in a particular case. We are dealing with the simplest form of the anaphoric expression and, in consequence, with the simplest form of IS, where the IS is an elementary anaphoric expression. We use this term to denote anaphoric expressions where only one indication (of any type) appears. All the anaphoric expressions appearing in the examples above have been the examples of this kind.

3.2. The simplest version of IS (hereinafter 'a ladder') will be treated as an ordered pair:

$$[T; R],$$

where T means a sequence of eight numbered fields, hereinafter 'terminals', R being a set of rules of which the operation of filling the terminals (allocating values to them) is governed . In line with the rules belonging to R, the two left-most terminals (1 and 2) form a unit meant to inform us which of the four kinds of indications currently occurs in the anaphoric expression

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[3]Schemes that have been introduced into ICT by M. Minsky (1975). The concept of [interpretative] frames was also developed by E. Charniak (1975).

being investigated. Each of the remaining terminals (3-8) informs us about whether there occurs a semantic value (different for each) in the anaphoric expression (only some selected semantic properties whose ascertainment is relevant for the right course of the third part of the operation). The rules belonging to the set R will be more precisely presented in 4. The arrangement of terminals making up the data structure is presented in Fig. 3 (cf. 4.1).

Each of the terminals can alternatively take the values of 1 or 0. Regarding the terminals 3-8, this results in the corresponding semantic values being binary. The filled-in ladder forms the elementary formula of the language of semantic representation (2.7.). This formula is a simplified semantic representation of the anaphoric expression. The role of such formulas in the operation of the automated resolution of anaphoric expressions (cf. Ibid.). The rules governing the filling of the terminals making up the ladder are identical with the rules of creating the elementary formulas from the language of semantic representation (JRS).

It is self-evident that matching a given anaphoric expression with a JRS formula is tantamount to translating this expression into the language. On account of the special character of the JRS, only some semantic properties of the anaphoric expression thus translated "survive" the translation operation. They are those semantic properties in particular that the program reconstructs using the IS. As can be seen, the role of the scheme is above all about limiting the actions performed at a specific stage of the operation to those that reconstruct within the JRS (a language better suited for automated operations than a natural language) some selected semantic properties of the expressions. This is especially so concerning those semantic properties that have some significance for the appropriate selection of the referent finding procedures (cf. 2.7.). At the same time, however, the interpretative scheme described before is designed in such a way as to make the constructed JRS formulas be used for reconstructing all such properties.

3.3. JRS is an artificial language and has a very simple syntax, which will be described in more detail in 6. The semantics of JRS is a simplified equivalent of the syntax of a language in which the anaphoric expressions are built, and thus a simplified equivalent of a passage of the language used in primary legislation texts.

JRS was built in such a way as to be capable of serving as the language in which expressions will be built that will be an outcome of the process of translation described before. In these processes, the only sources of information that can be used by the translation program include the surface structure of anaphoric expression currently in translation and

the IS interpretative scheme. Trusting that the processes we are talking about will lead to a satisfactory reconstruction of the semantic properties of the expressions in question is based upon an assumption that is called correspondence presupposition. The assumption has it that the connections between the formal properties and semantic properties of the anaphoric expressions are strong enough to make a program that uses an IS capable of making the inferences on some semantic properties of the expressions to be investigated on the basis of their formal properties.

3.4. The IS has been classified as a frame-like scheme. It needs to be stressed, though, that its functioning differs in some ways from the way standard interpretative schemes of its kind operate. In particular, the functioning of such schemes is first and foremost about making programs capable of making the right inferences from the information supplied by a given information scheme concerning the environment and thus organizing their knowledge of the external world. Unlike this, the information that the program can get by using the IS does not concern the external world (i.e. the environment using this systemic scheme), but relates to some properties of the data stored by the system. As can be seen, the functioning of the IS is about providing assistance to the system that uses it in organizing the information concerning the contents of its memory.

1. USING THE "LADDER" TO RECONSTRUCT THE SEMANTIC PROPERTIES OF ANAPHORIC EXPRESSIONS

4.1. Introduction

The data structure herein called the "ladder" takes the form of eight consecutive fields (terminals). The first left-most two fields are meant to reconstruct information concerning the type of indication that occurs in the anaphoric expression being investigated. The fields make up a unit we will call an indicational area. As regards the next six fields (terminals), each of them is meant to contain information about the occurrence or non-occurrence in the anaphoric expression of some marked semantic property. The fields (terminals) are ordered in a way that is reconstructed in Figure 3.

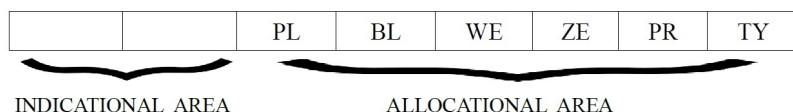|		PL	BL	WE	ZE	PR	TY

INDICATIONAL AREA   ALLOCATIONAL AREA

Fig. 3

Each of the markings — PL, BL, WE, ZE, PR, TY — is allocated to one semantic property, which is to be reported by the second area of the ladder to be called an 'allocational area'.

The semantic properties having the respective markings will be described below (4.8-4.13).

The analysis of the properties this paper describes is an abbreviated version of the analysis we made in the original account we made to report the first part of the ANAFORA research project. On account of the lack of space, we have to skip many of the details that have some importance for the implementation of the method we propose.

4.2. The role of the JRS formulas in the operation of the automated resolution of the anaphoric expressions in question has been presented above. The instrumental nature of this role means that the set of semantic properties reconstructed by these formulas can be treated as a collection of preliminary requirements imposed by the anaphoric expressions on the documents — candidates for the status of the referents of these expressions.

4.3 Indicational area (terminals 1 and 2)

The values taken by the terminals making up the indicational area are dependent upon the indicational type occurring in the currently instigated anaphoric expression. The types A, D, N and S are ascribed the values 11, 10, 01, 00 respectively.

The differences between the types have been outlined in 2.1. Some details will now be provided, but due to the limitations of space, they will not be fully developed.

4.4. Semantic value A

The property is about the anaphoric expression investigated indicating its referents by providing their internal addresses. These are the numeric or alphanumeric denotations allocated to these documents or multi-document blocs which also include the documents in the original text.

The addresses can appear in various forms. The differences between the forms will be about phrases that indicate the same addresses in the given anaphoric expressions possibly including different lexical units alternatively, various grammar words and differing configurations of words.

It often happens that the address that appears in the anaphoric expression is incomplete and thus ambiguous. We deal with such cases when a phrase may give the number of the clause and the section number but fails to make an explicit mention of the normative act that includes the text units. The disambiguation of such incomplete addresses must in such cases be made by special sub-procedures involved in the relevant procedures of

searching for referents.

4.5. Semantic property D

The outline of this property is given in in 2.1. D-type indications may occur in two variants. The first one of those will be called "direct deictic indication." It occurs when the anaphoric expressions refer to the documents that directly precede the document where the anaphoric expression is found or the document(s) that immediately follow in the text. All the examples of D-type anaphoric expressions presented so far were about this particular version.

The second version, called "indirect deictic indication" occurs when a D-type indication points to the referents of the anaphoric expression by appealing to their being included in a bigger text unit JT^i (such as a chapter) that precedes the text unit JT^iwhich the document containing the expression forms part of, or by appealing to the fact that these are included in a larger text unit JT^k that appears in the text right after the unit JT^j. Here is an example of a document where an anaphoric expression of the kind occurs:
Example 6
"#88. In the case of sale by auction, THE RULES INCLUDED IN THE PREVIOUS CHAPTER SHALL APPLY."

The main source of the difficulties arising in the resolution of D-type anaphoric expressions is that the indications they contain tend to be ambiguous. This is particularly true of cases where indications point to more than one element (such as referring to the preceding and following clauses without specifying the number involved, rather than the preceding of following clause). The difficulties increase when D-type anaphoric expressions do not refer to some standardized text units such as clauses or sections but to some creations that cannot be identified without the application of some semantic criteria. This occurs when the anaphoric expressions refer to the 'following principles', or 'rules contained' in a text unit (a chapter), etc. Such anaphoric expressions can only be resolved with the use of special procedures whose activity is about phrase disambiguation. Such procedures must form part of the procedures of searching for referents.

It is obvious that the main reason for the difficulties occurring in the resolution of D-type anaphoric expressions is that the phrases that represent the arguments of such expressions in the surface structure are often affected by ambiguity.

4.6. Semantic property N

We have noted the ambiguity of N-type anaphoric expressions (2.8.). It ought to be stressed that, unlike the anaphoric expressions of other kinds,

N-type anaphoric expressions are always ambiguous, not just sometimes. This is caused by the fact that the representations of the semantic components of such expressions in the surface structure are reduced to a minimum.

4.7. Semantic property S

As we said before, the property is that, in the expressions that have these, the referents are not indicated by making a reference to some specific location in the text but by referring to some specific semantic properties. The example of the S-type anaphoric expression has been presented above (2.8.).

4.8. The allocation area of the ”ladder”

The second area of the ladder — the spaces from 3 to 8 — has been called the allocational area. Making use of this name is justified by the fact that all semantic properties reported by the terminals that make up the area concern the allocation of referents, that is, their location in the legal texts.

4.9. PL semantic property

This is about an anaphoric expression pointing to more than one referent. The anaphoric expression can be equipped by a third property in a number of ways. Concerning A-type anaphoric expressions, their plurality can be achieved by giving two or more referent addresses or by using a collective address, that is, an address subordinated to a certain multi-element bloc of documents (rather than one document) such as a chapter. Also, concerning D-type anaphoric expressions, plurality can be attained by using the generic name of the corresponding text unit (clause or section) in the plural.

Concerning N-type anaphoric expressions, on account of their confirmed ambiguity, it can never be out of the question that they are equipped in PL property. Therefore, it seems reasonable to treat all expressions of this kind as ones that have this property.

Burdening the program with examining whether the anaphoric expression being analyzed is equipped with a PL property is justified by the fact that when the expression proves not to have it, searching for its referents can be stopped after finding only one document that is a referent of this expression.

4.10 BL semantic property

The term ’bloc of documents’ is understood as a non-empty set of documents comprising one or more of such documents, occurring one after another in the original text.

The anaphoric expression is equipped in BL semantic property when it refers to a bloc of documents. A reference to a bloc of documents can occur either when the anaphoric expression exchanges the external addresses

of all the documents that are the elements of this bloc or by the occurring of the so-called collective address in the expression: the address of a text unit (chapter) making up the document bloc. All D-type anaphoric expressions are treated as equipped in BL semantic properties for the following reasons:

a) if the anaphoric expression has no PL semantic properties, that is, when it refers to just one document, then one is equipped in BL property only because a single document is by definition a bloc.

b) if a D-type anaphoric expression has PL properties, such as when it generally refers to the preceding or following clause, then any range of such a reference is questionable, there are no obvious reasons to accept that the documents thus indicated are separated from one another with documents that this indication does not refer to.

The same concerns N-type anaphoric expressions, which we will also treat as equipped in the property.

4.11. WE semantic property

These are expressions that refer to documents that form part of the same legislative act (Act of Parliament) which also includes the document that has the anaphoric expression. It must be stressed that the anaphoric expression can refer to documents that form part of the normative act and the documents contained in other normative acts. In such cases we have to deal with an anaphoric expression equipped in both WE property and the semantic property ZE (see below 4.12.).

It is obvious that all the anaphoric expressions of the types D and N are equipped in the semantic property WE.

4.12. ZE semantic property

This is a property of the anaphoric expressions that refer to documents other than those contained in the normative act whose part is the document that contains the expression. It has already been said that an anaphoric expression can be equipped in both WE and ZE (4.11.).

4.13. PR and TY semantic properties

TY anaphoric expression is one that refers to documents included in the same normative act but ones that directly precede or follow the document where the expression is found. PR is about something to the contrary. The same anaphoric expression can at the same time be equipped in a semantic property PR and TY.

4.14. The JRS formula, created by filling in all the terminals of the ladder with suitable values ought to be treated as a result of the transformation of the anaphoric expression into its equivalent in JRS — language of semantic representation — an outcome of a translation into JRS. As we said

before, on account of particular properties of this language, these formulas reflect only some of the semantic properties of the anaphoric expressions subjected to translation. Therefore, the information which the formulas will carry is just a simplified counterpart of the information contained in the expressions being translated. Despite this, the process of filling the terminals of the ladder is at the same time one of translation and one whose correctness is completely independent from the reality the anaphoric expressions subjected to translation refer to. The correctness of the process is totally dependent on whether the RS formula attained as a result of this correctly reconstructs the semantic properties of the anaphoric expressions in translation, and the ones covered by the IS interpretative scheme in particular. (cf. 3.). Therefore, in cases where the word 'clause' or 'principle' used in the anaphoric expression in the plural, the ladder terminal PL takes the value of 1. The terminal's taking this value ought to be treated as regular even when it has no referents in the corresponding text(s).

For similar reasons, filling the specific ladder terminal with value 0 only means that the anaphoric expression being investigated contains nothing that could indicate that the expression is equipped in the semantic property the terminal reports. Some deviations from these rules (pertaining to N-type anaphoric expressions) have been presented in 2.8. Importantly, JRS is the same-level language as the one in which the anaphoric expressions are built, not a metalanguage. Therefore we assume that RS formulas represent corresponding anaphoric expressions. Rather than the formulas describe the expressions in JRS.

On account of some analytical interdependency obtaining between semantic properties acknowledged in IS, all the reconstructions obtained as a result of the application of this scheme are to a degree redundant. It is obvious that in cases where the indicational area of the ladder takes the value of 01, the terminal TY adopts the value 1, etc.

5. SEMANTICS OF COMPLEX ANAPHORIC EXPRESSIONS

5.1. The distinction we are making between elementary and complex anaphoric expressions is based on semantic criteria. Therefore, the complexity we mean when making these distinctions is a semantic complexity reflected only more or less clearly by the formal properties of such expressions, that is, their surface structure.

We have said that (4.1.) indications that occur in anaphoric expressions of any type may be interpreted as requirements imposed on these expressions by documents that are candidates for being referents. Therefore,

from a pragmatic point of view, each of the requirements can be linked to an anaphoric expression and in particular with one that expresses such a requirement. The requirements expressed by elementary anaphoric expressions will be called elementary requirements; the ones expressed by complex anaphoric expressions — complex requirements.

5.2. That a document satisfies a requirement imposed by the anaphoric expression is not always enough to secure the status of a referent. It often happens that the document acquires the status only when it satisfies some requirements imposed by two or more anaphoric expressions, particularly by two or more elementary or complex anaphoric expressions interrelated with each other with special relationships and jointly making up an anaphoric expression (see below 5.5. — 5.9.).

Saying that an anaphoric expression is a complex anaphoric expression is tantamount to saying that the expression imposes on the documents in question more than one (elementary or complex) requirement. However, such a statement fails to provide information on what relationships obtain, in this case, between these requirements.

5.3. The term "c-component" of a complex anaphoric expression means an elementary or complex anaphoric expression which is its part. A 'direct c-component' of a complex anaphoric expression is such c-component which is not a c-component of any c-component of such an expression. All other components of complex anaphoric expressions will be called their indirect c-components.

The 'first order anaphoric expression' is such an elementary or complex anaphoric expression which is not a c-component of any other anaphoric expression.

The term 'model' of (elementary or complex) anaphoric expression in a given A file will be construed as a non-empty set of documents belonging to the A file which fulfills the description contained in the argument of such an expression. The term 'semi-model' of an (elementary or complex) anaphoric expression will be any non-empty subset of its model.

When a first-order anaphoric expression has its model in file A, we will call such a model a reference of this model in file A, with the documents belonging to this model called referents of this expression in file A.

5.4. The relationships that can obtain between the requirements imposed by a complex anaphoric expression on documents that are candidates to the status of referents will be presented by means of the following four examples:
Example 7

anaphoric expression is determined by a specific sub-model of the expression in the file, will be called a relation of independence.

5.6. The complex anaphoric expression in example 8 (Zza-8) is also a first-order anaphoric expression that has two c-components which are elementary anaphoric expressions (say, Eza-8.1 and Eza-8.2). Each of the components expresses a certain requirement imposed by Zza-8 on the documents-candidates to the status of its referents. However, the relation between the two requirements sets it apart from the one in Eza-7. The information on the kind of relation is included in the phrase 'as long as', which occurs in the surface structure of Zza-8 between the phrases representing the arguments of the elementary anaphoric expressions Eza-8.1 and Eza-8.2. The nature of the relationship will become manifest when we take into account the influence exerted by Eza-8.1 and Eza-8.2 on the shaping of the model Zza-8 in the (real or hypothetical) file A. In particular, I will predict that none of the direct c-components of the complex anaphoric expression Zza-8 in question determines on its own any sub model of the expression in file A. Therefore neither the fulfillment of the requirement expressed by Eza-8.1 nor the fulfillment of the requirement expressed by Eza-8.2 equips the corresponding documents in the status of referents of the complex anaphoric expression Zza-8. This status can only be enjoyed by the documents that at the same time fulfill the requirement expressed by Eza8.1 and Eza-8.2 (the documents included in chapter 6 and concerning the administration of punishment).

The relationship between the requirements expressed by the components of the complex anaphoric expression, whose special case is the relationship established by Zza-8, that is, the relation where the model of a complex anaphoric expression in file A is a multiplication of the models of all its components will be called the relation of positive coordination. The notion of negative coordination will be explained below (5.9.).

5.7. The relationship of positive coordination can of course also obtain more than two requirements expressed by the c-components of the anaphoric expression. The requirements bound together by this relationship will be called positively correlated requirements. The positively coordinated requirement systems will be pairs, threes or n-s of the (elementary of complex) requirements interrelated with the relationship of positive coordination; the systems of positively coordinated anaphoric expressions — the pairs, threes of n-s of (elementary or complex) anaphoric expressions expressing such requirements. The systems of positively coordinated anaphoric expressions are, of course, also anaphoric expressions — complex anaphoric expressions. Similarly, the systems of positively coordinated requirements are in them-

selves requirements — complex requirements, to be more specific. Notably, not all complex anaphoric expressions and not all complex requirements are at the same time such systems because the anaphoric expressions that constitute the c-components of a complex anaphoric expression may, as we know, express requirements that are independent of one another in the sense described in 5.5.

Elementary or complex requirements, whose fulfillment in itself guarantees a document a status of referent of a given anaphoric expression, will be called an independent requirement. A requirement expressed by an anaphoric expression of the first order is always such a requirement. A requirement expressed by an anaphoric expression that is a c-component of another (complex) anaphoric expression can either be an independent requirement or a dependent one depending on whether the model of anaphoric expression expressing this requirement in file A is or is not a sub-model of the complex anaphoric expression in this file.

5.8. A first-order anaphoric expression contained in example 9 (say, Zza-9) is different from the complex anaphoric expressions Zza-7 and Zza-8 in that the its second direct c-component (unlike the corresponding components of the expressions Zza-7 and Zza-8) is a complex rather than elementary anaphoric expression which has its own c-components (which are of course indirect c-components of the Zza-9).Therefore the semantic analysis of the expression Zza-9 must be performed subsequently on two planes: at the level of its direct c-components and at the level of its indirect components. It will have the form of a bottom-up analysis, which means that it will start at the lower and finish at the higher level.

The indirect components of a complex anaphoric expression Zza-9 (say, Zza-9.1 and Zza-9.2) are both elementary anaphoric expressions. Together they form a two-element system of anaphoric expressions that are positively coordinated. Therefore, if a complex anaphoric expression, whose direct c-components are these expressions, has a model in this file A, the model is a multiplication of the models of anaphoric expressions Eza 9.2.1 and Eza 9.2.2 in the file. At the same time direct c-components of a complex anaphoric expression Zza-9 (say, Eza-9.1 and Eza-9.2) are independent from each other. Therefore if a complex anaphoric expression Zza-9 has a model in file A, such a model is a sum of the models of anaphoric expressions Eza-9.1 and Eza-9.2 in this file and, in consequence, the sum of the model Eza-9.1 and the set that is a multiplication of the models Eza-9.2.1 and Eza-9.2.2 in the file.

5.9. A complex first-order anaphoric expression in example 10 (say,

Zza-10) is a particular case of an anaphoric expression whose direct components are bound with the relationship of negative coordination. This term is supposed to mean a relationship between two component parts of the complex anaphoric expression Zza with which, if the Zza has a model in (real or hypothetical) file A, the model is a difference between the models of the c-components.

We have said before that the information concerning the nature of the relation obtaining between the c-components of the anaphoric expression is usually contained in some peculiar and peculiarly positioned phrases occurring in the surface structure of this expression. In the expression Zza-7, this information was included in phrase 'and' whereas in Zza-98 in the phrase 'as long as'. These phrases undoubtedly play a role in anaphoric expressions that is analogical to that which in the classic propositional calculus are played by the conjunctions of alternative and conjunction. In the complex anaphoric expression Zza-10 a characteristic phrase 'except those' appears, located in the surface structure of this expression between the phrases representing the arguments of its two direct c-components. The role which this phrase performs in the expression Zza-10 can be treated as analogical to the role which in the formula $p \wedge (\tilde{\ }q)$ is played by the sequence of the symbols $\wedge\ \tilde{\ }$. The result of using in Zza-10 the phrase 'except those' is that if Zza-10 has a model in a given file A, the model is a difference between the models of its first and second direct component, that is the difference between the set of all documents contained 'in the preceding chapter (that is in the chapter that precedes the original text of the chapter, whose clause 42 is part of) and the set of all documents 'pertaining to road transport'.

We are dealing with the relationship of negative coordination where the complex anaphoric expression imposes onto the documents that the description contained in the argument of one of its c-components should fulfill a negative requirement. We understand this requirement to be one that excludes from a set of documents one of its non-empty subsets.

Negative requirements can be coordinated in a positive or negative manner. It can happen that a negative requirement is limited by another requirement of the same kind, in particular by the requirement that removes a non-empty subset of documents from the action of the exclusion.

5.10. With the automated resolution of such complex first-order anaphoric expressions, where there are negative requirements, some losses can be incurred due to the documents thus excluded from the references of these expressions possibly — on top of referring to such topics whose exclusion was intended — referring to other topics which, unlike the former,

can be relevant in the light of the current need for information, felt by the users of the system. This is, however, caused by the fact that in the systems whose functioning consists of searching for documents, the smallest portion of the information that can be provided by the system and at the same time the smallest portion of the information that can be excluded from the set of documents attained by way of a given search operation, is the portion constituting the whole document. Concerning positive requirements, the undesirable consequence of this fact is that search precision is diminishing. Such loss, however, is by no means as painful as those that can result from the fact that the documents subject to the aforementioned exclusion refer to topics that are relevant to users. This fact can sometimes be a reason for a substantial decrease in the completeness of a search. Such losses, however, can happen only when the negative requirements are expressed by S-type anaphoric expressions (4.2. and 4.7.).

5.11. The term 'direct c-component' of a complex anaphoric expression is understood to be such a c-component of this kind of expression which is not a c-component of any of its c-components (cf. 5.3.). A question arises of what criteria are authoritative enough to establish whether a given anaphoric expression Za^1 is simply a c-component of another complex anaphoric expression Za^2, which is a direct component part of a complex anaphoric expression Zza, or the expression Za^1 has the status of a direct c-component of the complex anaphoric expression Zza.

Consider the following example:

Example 11:

"#89. When no tariffs are in force, RULES CONCERNING RAIL TRANSPORT THAT ARE INCLUDED IN THE PRECEDING CHAPTER, CLAUSES 16 AND 17 OF THIS CODE AND ALSO THE REGULATIONS PERTAINING TO PAYMENT IN FOREIGN CURRENCIES SHALL APPLY."

Let us call the anaphoric expression included in example 11 Zza-11. Reading the example no. 11 we are inclined to treat the phrase "clauses 16 and 17" as representing the argument of the anaphoric expression that imposes on the documents-candidates to the status of the referents of a complex anaphoric expression Zza-11 an independent requirement, that is, a requirement that guarantees the documents to the status of the referents of the expression. According to this, we are not inclined to treat the phrase as one representing the anaphoric expression that is a c-component of any of the direct c-components of the anaphoric expression Zza-11. Let us, however, ponder the question of why the phrase should be treated like this. We claim

that such treatment is justified by the fact that if Zza-11 has its model in the (real or hypothetical) file A, then the anaphoric expression whose argument is represented by the phrase mentioned independently continues (that is without any contribution from the c-components of the anaphoric expression Zza-11) the sub-model of the expression in the file.

5.12. It has already been said (5.9.) that the information concerning the nature of the relationship that may bind the c-components of the complex anaphoric expression is usually found in some characteristic phrases placed between the phrases that represent in the surface structure the arguments of the c-components. The role performed by such phrases will be compared to the role played in the traditional propositional calculus by some logical constants. This, however, does not always occur. In particular, it may happen that the relationships in question are expressed otherwise. The diversity of linguistics means that what the legislator may use for this purpose depends on the peculiarities of the languages used in the texts. In primary legislation texts written in Polish, the most economical way of expressing the relationships of independence (cf. 5.5.) is placing the phrases that represent the arguments of two or more independent c-components of the complex anaphoric expression directly one after another and separating them with a comma. This is illustrated by the solution presented in example 11. In this example, this was what was done to the phrases: "RULES CONCERNING RAIL TRANSPORT THAT ARE INCLUDED IN THE PRECEDING CHAPTER, CLAUSES 16 AND 17 OF THIS CODE." However, the phrase "the regulations pertaining to payment in foreign currencies" was appended to the preceding phrases by inserting between this one and the preceding phrases the phrase "an also," that is by the application of a method that has been applied before.

6. THE LANGUAGE OF SEMANTIC REPRESENTATION OF ANAPHORIC EXPRESSIONS (JRS)

6.1. A JRS PASSAGE — THE EXCERPT USED IN THE CONSTRUC-TION OF FORMULAS representing elementary anaphoric expressions — was presented in 4. It is easy to notice that the construction of the RS formula representing the elementary anaphoric expression is about filling, in a way that is compatible with the IS rules, all the terminals of the data structure herein called the 'ladder'. In JRS, complex anaphoric expressions are represented by expressions we have called complex RS formulas, that is, by such RS formulas that contain as their components other (elementary or complex) RS formulas interconnected by the following symbols: $\vee$, $\wedge$,

and ˜. The semantic role of these symbols is about supplying information concerning the relationships obtaining between the requirements expressed by some c-components of the complex anaphoric expressions. In particular, the relationship of independence (cf. 5.5.) is represented in JRS by the symbol ∨, the relation of positive coordination (cf. 5.7.) by the symbol ∧, and the relation of negative coordination (5.9) by the symbols ∧ and ˜ used in a way transcribed by the syntax of the language. This can be represented using Backus-Naur notation as follows:

<number> : : = 0 | 1
<elementary formula> : : = <number> . . . .<number>
                    8
<formula> : : = <elementary formula> |
    (<formula> ∨ <formula>) |
    (<formula> ∧ <formula>) |
    (<formula> ∧ (˜<formula>)) |
    ((˜<formula>) ∧ <formula>)

6.2. These are 11 elementary and complex examples of RS formulas representing specific anaphoric expressions, and in particular the expressions included in the above examples 1 to 11 (cf. 2.8, 4.5, 5.4, and 5.11.):

1. 11010100 (if the document given in example 1 is not a document that forms part of the Civil Code)

2. 11011010 (if the document given in example 2 is a document that forms part of the Penal Code)

3. 10011001

4. 01111001

5. 00100100 (if the document given in example 5 is not a document that forms part of the Civil Code)

6. 10111001

7. (11010100 ∨ 00101000) (if the document given in example 7 is not a document that forms part of the Civil Code)

8. (11111001 ∧ 00101000) (if chapter 6 precedes clause 44)

9. (10011001 ∨ (11111010 ∧ 00101000)) (if clause 42 precedes chapter 9)

10. $(10111001 \wedge (\tilde{\ }00101000))$

11. $((00100000 \wedge 10111001) \vee 11111001) \vee 00100000)$

6.3. It needs to be reminded that the role of RS formulas in the operation of the automated resolution of anaphoric expressions is about controlling the selection of the procedures of searching for the referents of the expressions of the kind currently being analyzed. These procedures have been described in detail in the third part of our report, dedicated to implementation issues.

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WAYS OF FORMULATING DIRECTIVES

Directive discourse has become an object of interest for philosophy of language, logical semiotics and linguistics only in the past few decades. Recent years have brought a blurring of the once distinct boundaries between these domains, which manifested themselves in their different ranges of problems, methods and outcomes.

The boundaries of directive discourse are rather vague. Its scope encompasses the following types of utterances: norm, principle, rule, order, encouragement, wish, suggestion, proposition, request, plea, advice, warning, recommendation, guideline, hint, and admonishment. The set presented above is most probably incomplete. Furthermore, the scopes of some of these utterance types either intersect or overlap, so our listing cannot be treated as a classification of directives (Opałek 1974: 134). One should also note the fundamental ambiguity of the majority of the enumerated terms, which consists in the fact that they either refer to an utterance (that is, a notation or a sequence of sounds) or to the act of using an utterance. For the benefit of this article, it will be more convenient to treat directives as utterances, not acts.

Directive discourse encompasses utterances with varied syntactic, semantic and pragmatic characteristics. As a result, the attempts to define the term "directive" in a reporting or even regulative manner encounter significant difficulties. The establishment of precise boundaries of directive discourse is not necessary for the purpose of the present article. We shall analyze only such utterances which are considered to be directives in accordance with all the semantic intuitions. Particular attention shall be paid to utterances

whose use constitutes the act of giving an order (command) or making a request.

Directives can take on various grammatical forms:

(1) *I order you to close the window.* (performative)

(2) *Close the window!* (imperative)

(3) *You should close the window.* (modal)

(4) *I want you to close the window.* (declarative)

(5) *Can you close the window?* (interrogative)

(6) *You will close the window.* (prognostic)

This catalogue is not complete. Directives can also have other grammatical forms, which shall not be analyzed here. (Opałek 1974: 50).

The performative and imperative forms of directives are significantly different from other types. The grammatical form of such utterances as (1) and (2) determines the fact that they are directives – using them constitutes the act of giving an order (making a request). Thus, utterances which take on this form can unambiguously be referred to as directives. However, modal, declarative, interrogative and prognostic utterances are not unambiguously directive, because using them can constitute the act of either making an observation, asking a question or formulating a prediction. The ambiguity of the utterance (3) is a result of the lexical ambiguity of the modal verb *should*. The utterance (3) can be called a directive only if we can ascribe a deontic meaning to this verb. The ambiguity of the declarative, interrogative and prognostic forms of this utterance do not stem from the lexical ambiguity of their components. The present article shall analyze only these types of utterances.

Metaethical and legal-theoretical reflections on the structure of directives focus on utterances which have unambiguously directive forms. It is usually observed that utterances with other forms can become directives only in certain contexts, so they should be analyzed within the domain of language pragmatics.

This point of view is by no means satisfactory. If one considers the significant dependence of speech acts on context, it becomes clear that virtually every utterance can be used to make numerous speech acts, including an order, a request or a command (Downes 1977: 94). Let us consider the following utterance:

(7) *It has gotten cold.*

In some contexts, using this utterance constitutes an observation, in some – a warning and in others – an order or a command. In the two latter contexts, the utterance (7) can be used for issuing various orders, including,

for instance: *bring me a sweater, close the window, turn on the heating.* The relation between the utterance (7) and the speech acts performed through its use cannot be explained systematically, that is, by referring to the rules of language, because: (a) this utterance can be used to perform various speech acts in different situational contexts, (b) even if this utterance is used to issue an order (command), then the content of this order is not determined by the linguistic meaning of (7). It is the knowledge of the context within which (7) has been used that allows one to interpret the utterance. Due to the existence of an infinite number of possible situational contexts, it is not possible to formulate a set of rules which would allow one to determine *ex ante* which speech act shall be performed through the use of (7) in any situational context.

Utterances with prognostic, declarative and interrogative forms present an entirely different issue. Let us consider, for instance, the utterance (5). It is not unambiguously directive in character, because it can be used to either issue an order (make a request) or ask a question. However, unlike the utterance (7), one must notice that whenever the utterance (5) is used to issue an order, the contents of that order are determined by the linguistic meaning of (5). Thus, (5) can only be used to formulate a directive inducing the addresee of the utterance to close the window. The contents of the directive formulated by the utterance (5) are independent from the situational context (which, however, does indicate the window in question and the recipient of the directive). This observation refers to all utterances with forms similar to (4), (5) and (6). The fact that these utterances can be used to formulate directives, the content of which is determined by their linguistic meaning, demands further explanation.

One might wonder if this explanation should refer to grammar (that is syntax and semantics) or pragmatics. The answer to this question largely depends on the boundary drawn between grammar and pragmatics. It is commonly believed that the issues connected with speech acts belong within the domain of pragmatics. The popular formulation by Stalnaker (1972: 283) states that "pragmatics is the *study of* acts of speech and the contexts in which they are performed." This observation proves beyond doubt that the issue analyzed here is strictly pragmatic in character, since the concept of directives is described by referring to the concept of a speech act and the directive interpretation of utterances with declarative, interrogative and prognostic forms is dependent on context.

The discussed issue takes on a different character when the differentiation between grammar and pragmatics is viewed as a correlation of the differen-

tiation between linguistic competence and linguistic performance. In this view, grammar shapes the linguistic competence of its native speaker, that is, it recreates the rules which generate only the sentences of this language. The linguistic competence of a native speaker is the knowledge which enables him to formulate and interpret an infinite number of sentences in this language and to recognize numerous syntactic and semantic properties of utterances, particularly to recognize ungrammatical sentences and utterances, unambiguous and ambiguous utterances, internally contradictory sentences, sentences whose meaning can be inferred from each other, etc. Grammar is supposed to explain these reactions of the native speaker by recreating the rules which cause them. Pragmatics, on the other hand, refers to linguistic performance, that is, the actual behavior of specific language users in specific situational contexts. Linguistic performance can diverge significantly from linguistic competence. These discrepancies can occur if, for instance, language users sometimes assign a meaning to certain utterances which is different from their grammatical meaning, either they accept ungrammatical utterances or they refuse to accept utterances generated by means of grammatical rules. Such reactions from specific language users are caused by various cultural and situational factors, as well as certain psychological limitations (limited memory, errors, etc.). As a result, the actual behavior of language users does not lead to an ideal realization of their language competence. Grammar omits these factors and refers to an idealisation concept of a native speaker of a language.

Since grammar shapes the language competence of native speakers, then the role of situational context in formulating and interpreting utterances is excluded from its scope of interests. However, one might ask if this places the issue of speech acts entirely outside of the domain of grammar.

The type of speech act performed through the use of a specific utterance depends both on the linguistic meaning of this utterance and numerous situational factors. The linguistic competence of a native speaker consists, among others, of the knowledge that the utterance (2) *Close the window!* can be used to issue an order, whereas the utterance

(8) *John closed the window*

can be used to make an observation, regardless of the situational context within which these two utterances are spoken. Since grammar is supposed to shape the language competence of the native speaker, then it ought to consider the relations between certain forms of utterances and speech acts conducted through their use. Thus, grammar should explain to what degree the syntactic and semantic structure of the utterance determines its

illocutionary force (Katz 1977: 9). The illocutionary force of an utterance is its capability of producing a speech act of a specific type (Austin 1962: 93). This scope of problems connected with speech acts belongs in the domain of grammar.

It is not true that making a directive interpretation of such utterances as (4), (5) and (6) dependent on context, indicates an undeniably pragmatic character of the above-mentioned issue. The fact that the utterance (5) (for instance) is understood in certain contexts as a directive and in others as a question can be treated as a purely grammatical phenomenon. One might say that the utterance (5) is grammatically ambiguous.

Thus, there are two possible explanations for the fact that utterances with declarative, interrogative and prognostic forms are in certain contexts interpreted as directives: (a) explanations based on the assumption that these utterances are grammatically ambiguous and the context selects one of their grammatical meanings, (b) explanations based on the assumption that these utterances are grammatically unambiguous (that is, for instance (5) is a question) and the context changes their meaning.

Each of these explanations is based on a differentiation between the utterance's grammatical and pragmatic meaning. Grammatical meaning is considered to be a type of meaning which is attributed to the utterance regardless of the situational context in which it has been used. Pragmatic meaning is a type of meaning ascribed to the utterance within a specific situational context, in which it has been used. The pragmatic meaning of an utterance can be different from its grammatical meaning. The purpose of pragmatics is to explain the mechanisms responsible for the fact that in certain contexts, utterances receive meanings which differ from their grammatical meaning.

In other words, the grammatical meaning of an utterance is a meaning ascribed to it by the native speaker of the language when he does not possess any information about the context within which it has been spoken. Such a situation is referred to as zero context (Katz 1977: 15). The concept of zero context, similarly to the concept of a native speaker, is idealistic in character.

Explanations concerning the first discussed type are based on the assumption that utterances such as (4), (5) and (6) are ambiguous within the zero context. This assumption requires one to recreate the grammatical rules which ascribe double meaning to these utterances.

One of the tasks of pragmatics is to answer the question, which properties of contexts are responsible for attributing these utterances with the meaning

of directives, claims, questions or predictions as pragmatic types of meanings. According to this approach, the pragmatic meaning of each of these utterances is an actualization of one of its grammatical meanings.

The second type of explanation is based on the assumption that such utterances as (4), (5) and (6) are unambiguous in zero contexts (thus, for instance, the utterance (5) is a question). In certain non-zero contexts, their pragmatic meaning differs from the grammatical meaning; in particular – they are attributed with the meaning of directives. Therefore, it is the context that changes the meaning of these utterances. Such an assumption requires reproducing the pragmatic mechanisms responsible for this change in meaning.

It appears that a convincing explanation of any of the alternative answers to the question whether such utterances as (4), (5) and (6) are unambiguous or ambiguous in zero contexts is highly difficult. These obstacles are a result of the idealistic character of the concept of zero context and the concept of a native speaker. In order to answer this question, one would have to analyze the meaning of these utterances within a pure zero-context, that is, free oneself from all the convictions concerning the circumstances accompanying verbal communication. It would be difficult to conduct such a mental experiment, if only because the differentiation between language competence and paralinguistic knowledge is vague, since we are not fully aware which of our convictions originated in our knowledge of the language and which have an objective (extralinguistic) character. It would appear therefore that in order to eliminate the controversy between the discussed types of explanation, one shouldn't really examine the validity of assumptions they are based on, but ought to analyze the validity of their consequences. Of particular importance here is the question, which of these explanations allows one to predict various linguistic facts in a more successful manner.

Explanation of the first discussed type can be described as grammatical conceptions and explanations of the second type – as pragmatic conceptions. The analysis conducted below encompasses conceptions selected from among those which have already been published in the literature. This analysis does not claim to be complete. It is not conducted to delve deeply into one or another conceptions, but to demonstrate the general properties of grammatical and pragmatic conceptions.

There are two types of grammatical conceptions. According to the first type, the ambiguity of utterances with declarative, interrogative and pro-gnostic form is a regular grammatical ambiguity. According to the second conceptions, the ambiguity of these utterances is a result of the idiomatic

character of their certain components. Katz and Postal (1964: 74) analysed such utterances as (6) *You will close the window.* They assume that the utterance (6) is grammatically ambiguous. In one of its meanings it constitutes a paraphrase (2) *Close the window*, therefore it has a directive meaning; in the second meaning, the utterance (6) is a prognostic sentence. The ambiguity of (6) is not a consequence of the ambiguity of any morpheme present in the surface structure. Katz and Postal explain this ambiguity by assuming that (6) is derived from two different deep structures, one of which is identical to the deep structure (2). It is represented by the following phrase marker:
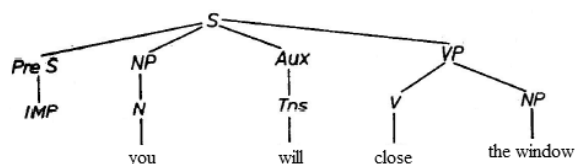
Thus, the deep structure of directives contains an abstract morpheme *IMP*, which is not realized in the surface structure. This morpheme cannot be identified with any lexical unit.

According to Katz and Postal, the placement of the morpheme *IMP* within the deep structure of directives allows one to explain numerous linguistic phenomena. These explanations refer to certain selection limitations which exclude various types of verbs, adverbs, etc from occurring together with the said morpheme. For instance, the ungrammatical character of the directive:

(9) *Be able to *swim!*

is a result of selection limitations, which exclude the morpheme *IMP* from occurring together with the so called *stative verbs* (verbs which denote states independent from human will). Discussing other selection limitations allows one to explain the unambiguous character of such utterances as:

(10) *You will probably close the window,*

and especially the fact that this utterance does not have a directive meaning. The same limitation explains the ungrammatical character of the utterance

(11) **Probably close the window!*

Placement of the morpheme *Fut* within the deep structure allows one to explain the ungrammatical character of such utterances as

(12) **Close the window yesterday!*

And the unambiguous character of such utterances as:

(13) *You closed the window yesterday.*

Thus, one may conclude that Katz and Postal treat the ambiguity of (6) as a regular grammatical ambiguity.

The conception of Katz and Postal refers directly to utterances with prognostic forms. Attempts to broaden its scope to include the declarative and interrogative form encounter significant technical difficulties. It is quite easy to reconstruct the transformations leading from the deep structure presented on the diagram on page 96 to the surface structure of the utterance (6). However, one encounters significant difficulties when trying to reconstruct the transformational rules which derived from this structure utterances such as (4) and (5). This is caused chiefly by the fact that these utterances contain lexical units (*I want, you can*) which have not been introduced by the deep structure. One might wonder if the ambiguity of declarative and interrogative utterances also has a grammatical character. (Downes 1977: 77)

Regardless of this technical difficulty, the claim that the ambiguous character of prognostic utterances is a regular grammatical phenomenon leads to predictions which are contrary to linguistic facts. Thus, according to the discussed concept, the utterance

(14) *You will marry and have three children*

should be grammatically ambiguous. In one of its meanings, similarly to (6), this utterance should constitute a prognostic sentence, and in the second – a directive synonymous to (15):

(15) *Get married and have three children!*

However, in reality, the utterance (14) is unambiguous and it is unlikely anyone would attribute it with the meaning of (15). The concept created by Katz and Postal does not provide an explanation why utterances such as (14) are not ambiguous like the utterance (6). This proves that the ambiguity of prognostic utterances cannot be treated as a regular grammatical occurrence.

According to the second type of grammatical conceptions, the ambiguity of such utterances as (4), (5) and (6) is a result of the idiomatic character of some of its components. This is particularly true with reference to interrogative utterances. The idiomatic character is ascribed to the phrase *can you,* which occurs in such utterances. One ought to mention here that we are referring to a particular kind of idiomatic character. Idioms are usually defined as a structure consisting of at least two words, whose meaning cannot be inferred from the meaning of its individual components (Urbańczyk 1978: 123). It has been emphasized that in many regards, idioms require the same treatment as lexical units. However, the phrase *can you (*considered to be

an idiom) is not a lexical unit. Its idiomatic character manifests only at the level of the sentence, therefore we are dealing here with syntactic, not lexical idiomaticity.

The thesis concerning the idiomatic character of the phrase *can you* is defended by the following arguments (Bogusławski 1979: 312). First, if one were to substitute the verb *can* with any of its synonyms, it would cause the utterance (5) to lose its directive character. For instance:

(16) *Are you able to close the window? (do you have the ability to)*

is not interpreted as a directive. The impossibility to substitute certain words with their synonyms is one of the characteristic features of idiomatic constructions. Second, an interrogative utterance can have a directive meaning only when the verb *can* is accompanied by the noun in second person singular or plural. Other forms cause the utterance to unambiguously become a question, for instance:

(17) *Can he close the window?*

(18) *Can we close the window?*

Third, it has been claimed that interrogative utterances take on the meaning of directives only when they are spoken without an interrogative intonation and the word *can* is not emphasized, or even only when they have the same intonation as directive utterances (Green 1973: 67).

The first argument undoubtedly carries the most significance. In order to examine it thoroughly, one ought to first answer the question, whether such expressions as *have the ability*, or *be able to* are exact synonyms of the word *can*. This issue shall be discussed below.

The second argument is not convincing. The fact that interrogative utterances are interpreted as directives only when the verb *can* is accompanied by a noun in the second person, is a result of the pragmatic properties of directives. One does consider directives whose addressee is a listener (recipient of the utterance), and the listener is addressed in the second person. For instance, the following utterance could also be a directive:

(19) *Can the gentleman close the window?*

Here, the verb *can* is accompanied by a noun in the third person.

There are further arguments against attributing an idiomatic character to the phrase *can you*. If the phrase is treated like an idiom, then it is claimed that two dofferent meanings are attributed to it: a literal and idiomatic meaning. When the phrase occurs in an utterance in its idiomatic meaning, it is not entitled to its literal meaning. This point of view would entail that if the utterance (5) is a directive (if the phrase *can you* is idiomatic), then it is not a question. Such a consequence is contrary to the observation that the

utterance (5) behaves like a question even if it occurs in a directive meaning – it allows for (and sometimes even demands) a literal answer (Searle 1976: 970):

(20) *Of course (Unfortunately, he can't)*

Furthermore, if the phrase *can you* were an idiom, then every utterance containing it would be potentially ambiguous. This is contrary to the observation that certain utterances containing this phrase are never interpreted as directives, for instance:

(21) *Can you learn infinitesimal calculus within a week?*

It seems that the concept which tries to explain the directive character of an interrogative utterance by treating the phrase *can you* as an idiom is not able to account for the differences between (5) and (21). In order to account for these differences, one has to refer to pragmatic issues, for instance to the fact that an affirmative answer to the utterance (5) interpreted as a question, is obvious in the majority of contexts. One might also add that there is one more fact which speaks against treating the phrase *can you* as an idiom – a literal translation of the utterance (5) into a majority of other languages retains its directive character. Idioms, on the other hand, are usually untranslatable.

The above observations reveal certain common limitations of all the grammatical (intralingual) attempts to explain the directive character of such utterances as (4), (5) and (6). The first limitation consists in the fact that these attempts refer only to one of all the discussed forms of directives. When one tries to transfer them to other forms of directives, one encounters significant obstacles (for instance the following question: which component of the prognostic utterance can be called an idiom?). As a result, these explanations seem to have been compiled *ad hoc*.

The second of the above mentioned limitations lies in the fact that treating the ambiguity of a declarative, interrogative and prognostic utterance as grammatical ambiguity leads to one inevitable consequence: when these utterances express the meaning of directives, then they cannot also function as, respectively, a declaration, a question or a prognosis. This consequence is contrary to the observation that, for instance, the utterance (5) functions simultaneously as a directive and a question.

The third limitation of the discussed concepts is that they are not able to account for the fact that the ambiguity of such utterances as (4), (5) and (6) is not only a result of their syntax and lexical content, but also some of their pragmatic properties. To prove it, one need only indicate the above mentioned differentiation between (5) and (21) as well as (6) and (14).

Limitations connected with the attempts to find a grammatical (intra-lingual) explanation for the directive character of declarative, interrogative and prognostic utterances induce one to search for an adequate explanation in the domain of pragmatics of language. The most desirable solution here would be an explanation free from the errors present in *ad hoc* explanations, that is, an explanation that refers to more general theories concerning verbal communication.

It seems that a convenient theoretical base for such an explanation might be found in the theory of the so-called conversational implicature, formulated by H. P. Grice (1975: 41). Its main objective was to explain the pragmatic mechanisms which allow the speaker to transmit and the listener to receive information which does not fall into the scope of the linguistic meaning of the given utterance. Thus, in ordinary contexts, the utterance:

(22) *Yesterday I tried to communicate with John.*

implies that

(23) *Yesterday I did not communicate with John,*

despite the fact that (23) cannot be analytically inferred from (22).

Grice's theory is founded on the assertion that a conversation is not based on exchanging disconnected and independent information, but must exhibit a certain level of cooperation between the interlocutors. This cooperation is manifested by the fact that the participants of the conversation adhere to certain rules. These rules were formulated by Grice in the form of the following conversation maxims:

Maxim of quantity:

1) Make your contribution as informative as is required for the current purposes of the exchange,

2) Do not make your contribution more informative than is required.

Maxim of quality:

3) Do not say what you believe to be false,

4) Do not say that for which you lack adequate evidence.

Maxim of relation:

5) Be relevant.

Maxim of manner:

6) Avoid obscurity of expression.

Grice does not claim that the participants of every conversation always adhere to these maxims. He also does not treat the maxims as recommendations for the way a conversation should be conducted. He is of the opinion that the interpretation of utterances formulated during a conversation is based on the assumption that the interlocutors do adhere to these maxims.

Referring to this assumption allows the recipient to capture not only the information which is included within the literal meaning of the utterance but also the information which is implied. Grice defines the concept of conversational implicature in the following way: Someone who says that p implies q can be said to imply q conversationally, if: (1) it can be assumed that he adheres to conversational maxims, (2) it can be assumed that he is aware of the fact that q is necessary in order for his saying that p was not contrary to the above assumption, (3) the speaker knows (and expects that the listener knows that the speaker knows) that the assumption mentioned in point 2 is indispensable (Grice 1975: 47).

This definition can be illustrated with the following example. The purpose of the conversation between A and B is to plan a trip together. A knows that B wants to see person C during their trip. A asks: *Where does C live? B* answers: *Somewhere on the coast.* B's utterance violates the maxim of quantity, because it contains too little information for the successful fulfillment of the purpose of the conversation. A, assuming that B does not want to wilfully violate the conversational maxims, explains the violation of the maxim of quantity by assuming that B does not know the city where C lives. Thus, when B says *C lives somewhere on the coast*, B implies conversationally: *I do not know which city C lives in.*

This example demonstrates that conversational implicatures of an utterance are not a part of its linguistic meaning. Furthermore, conversational implicatures are strongly dependent on the purpose of the conversation and the actual situation within which it is conducted.

In the above example, the utterance of person B would not have the indicated implicature if the purpose of the conversation was different. As it would seem, the assumption that the interlocutors adhere to the conversational maxims is a result of a more general assumption concerning the interpretation of all the cultural activities; namely the assumption that subjects conducting these activities are behaving rationally.

Grice's reconstruction of conversational maxims is based upon the assumption that the purpose of a conversation is the most effective exchange of information. Such a description seems too narrow, because it does not include other possible purposes of conversation (Larkin and O'Malley 1976: 117; Martinich 1980: 215), Thus, the maxim of relation with reference to questions asked during the conversation shall most probably take on the following form: (5a) Ask relevant questions, that is: do not ask questions, to which you know the answer, or questions to which answers do not help realize the purpose of the conversation.

Let us note, that in ordinary contexts, making utterances such as (4) *I want you to close the window,* (5) *Can you close the window?*, (6) *You will close the window* is incompatible with the assumption that the speaker adheres to the conversational maxims. Thus, making the utterance (5) violates the maxim of relation, because it is obvious in ordinary contexts that the listener can conduct the activity mentioned in the question. Utterance (4) is similarly irrelevant when the topic of the conversation is not the actual psychological experiences of the speaker. The utterance (6) violates the maxim of quality within contexts where the speaker does not have any grounds to predict the future behavior of the speaker. The incompatibility of these utterances with the conversational maxims occurs within a certain class of contexts. However, there are also situational contexts within which these utterances do not violate conversational maxim (for instance the utterance (5) spoken by a doctor examining a patient's physical ability to move).

According to Grice, the incompatibility of utterances with conversational maxims in a certain context is a signal that the speaker intends to communicate a certain conversational implicature. However, there is a question – how are the conversational implicatures of the utterances (4), (5) and (6) to be recreated and especially, why do these utterances imply directives.

The claim that the participants of a conversation adhere to conversational maxims is the result of a more general assumption that the interlocutors behave in a rational manner. In order to answer the above question, one needs to re-create the conditions of rationality for such speech acts as an order, request or command (directive speech acts). A full reconstruction of the conditions of rationality for speech acts is a very complex task (Searle 1969: 73; Ziembiński 1977: 127). Without attempting a full reconstruction, one might assume that if the person conducting such a speech act aims to cause a specific behaviour from the recipient, then such an act is rational if:

1) The speaker wants the recipient to behave in a way specified by the directive,

2) The speaker believes that the recipient can act in such a way,

3) The speaker believes that under normal circumstances (if the speech act was not conducted) the recipient would not behave in such a way.

It is easy to notice the fundamental similarity between the above conditions for the rationality of speech acts and declarative, interrogative and prognostic utterances (Gordon, Lakoff 1975: 83). Thus, the utterance (4) in particular is an observation that the first condition has been fulfilled, the utterance (5) is a question, whether the second condition has been fulfilled and the utterance (6) is a prognostic sentence contrary to the third condition.

This similarity results in the following generalization: a directive can be communicated as a conversational implicature through stating that the first condition for the rationality of directive speech acts has been fulfilled, or through asking whether the second condition has been fulfilled, or though formulating a prognostic sentence contrary to the third condition.

However, this generalization alone does not explain why the utterances (4), (5) and (6) have conversational implicatures which are directives. Such an explanation can be twofold. First, it can be based on the claim that language has certain rules of conversational implicature, whose status is similar to that of grammatical rules. Second, one may reconstruct the reasoning which leads the recipient of utterances such as (4), (5) and (6) to interpret them as directives.

An example of the first type of explanation is the concept formulated by Gordon and Lakoff (1975: 83). They claim that language is governed by certain rules of conversational implicature (conversational postulates):

I: *A* claims that *A* wants *B* to do *d** → *A* requests (orders) *B* to do *d*.

II: *A* asks whether *B* could do *d** → *A* requests (orders) *B* to do *d*.

The list of these conversational postulates can be enhanced by referring to other conditions for the rationality of directive speech acts. Gordon and Lakoff claim that a directive is communicated by uttering the sentence (4) and (5) as a conversational implicature only when the speaker does not intend to communicate the literal meaning of these utterances and when the listener can assign to the speaker the lack of such intention. This "weakening" of connection between the predecessors and successors of the conversational postulates is indicated by the star placed after the predecessors.

If assigning a certain intention to the speaker depends on the situational context, within which the utterance has been made, then the utterance has specific conversational implicatures only within this context (or within contexts belonging to a certain class). According to Gordon and Lakoff, taking into account this dependence between contexts and conversational implicatures allows one to identify the relation of conversational implicature with the relation of logical entailment and to formulate the following definition:

L implies *P* conversationally within the context *Con*1 when and only if *P* is inferable from *L* within the context Con_1 based on the conversational postulates.

Gordon and Lakoff claim that conversational postulates are grammatical rules if they govern the distribution of morphemes. The possibility of certain utterances to be transformed is dependent not only on their literal meaning,

but also on what these utterances imply conversationally. Thus, expressions such as *please* or *if you would be so kind* might be added to the utterance (5) if the said utterance conversationally implies a directive. The utterance:

(5a) *Would you be so kind as to close the window?*

interpreted literally is ungrammatical.

It is easy to notice that identifying conversational postulates with grammatical rules leads to serious consequences with regard to determining mutual relations between pragmatics and grammar. However, this issue shall not be discussed in the present work.

The conception of Gordon and Lakoff, which claims that language possesses a number of rules for conversational implicatures raises certain many reservations. The first of them refers to identifying the relation of conversational implicature with the relation of logical entailment. This certainly cannot be the relation of logical entailment occurring, for instance, between a question and a directive. Thus, Gordon and Lakoff probably claim that when a certain person has asked a question by using a declarative sentence, they must have done so in order to express a directive within a certain class of contexts based on conversational postulates. However, even this claim causes certain reservations. Entailment could occur only if saying the utterance (5) within contexts of a certain class always led to the production of a directive. Even if one disregards the difficulties connected with further clarification of the class of contexts within which (5) conversationally implies a directive, one might note that there is no context which would force one to understand the utterance (5) as a directive. In other words, there is no context within which (5) would have to be uttered only with the intention of communicating a directive (Morgan 1977: 277). One might only observe that in certain contexts it is more probable than in others that (5) was uttered as a directive. Therefore, one must draw the following conclusion: based on conversational postulates, it cannot be entailed logically that a person who uttered (5) within a specific context has necessarily communicated a directive.

Furthermore, there are reservations concerning the claim made by Gordon and Lakoff that a directive as a conversational implicature is communicated only when the speaker does not intend to communicate the literal meaning of the utterance (4), (5) or (6). That is not the case, according to them, that when we formulate the utterance (5), we simultaneously communicate a question and a directive. This assumption does not allow one to explain the above mentioned differences between (5) and (2) – such as the fact that (5), unlike (2), demands an answer and therefore behaves like a

question.

It seems that these shortcomings of the concept created by Grice and Lakoff are the result of their "paragrammatical" approach to the rules of conversational implicature. According to their view, conversational implicatures are automatically inferred from the given utterance within a specific context based on conversational postulates. This assumption is contrary to the observation that the relationship between an utterance and its conversational implicatures is much more looser and contexts do not determine specific implicatures. This loose relationship makes it impossible to speak of any rules for conversational implicatures.

The explanation why such utterances as (4), (5) and (6) have directive implicatures should therefore be based on a reconstruction of the reasoning which leads the recipient of these utterances to understand them exactly this way (Searle 1975: 73). One might immediately assume that the casual character of the relationship between the utterance and its implicature is a result of the fact that such reasoning is not deductive.

The first stage of such reasoning was presented above. It ends with a conclusion that attributing utterances (4), (5) and (6) with meaning which does not exceed their literal meaning is (within the given context) contrary to the assumption that the speaker adheres to the conversational maxims. In order to uphold the latter claim, one ought to assume that the speaker intends to communicate a certain conversational implicature. Further stages of this reasoning must be individualized for each utterance separately.

Utterance (4) constitutes a confirmation of the fulfilment of one of the conditions for the rationality of directive speech acts. The situational context allows one to assume that other conditions have also been fulfilled (i.e. the listener can perform the action of closing the window and it is known that he would not have done it without some sort of intervention from the speaker). Within this context, the validity of the claim that the speaker adheres to conversational maxims requires one to assume that it was his intention to communicate a directive and the direct function of (4) is to induce the listener to fulfill one of the conditions for rationality.

In the contexts within which an affirmative answer to (5) is obvious both for the recipient and the speaker, the function of this utterance is to direct the recipient's attention towards fulfilment of the second condition of the rationality of directive speech acts. If these contexts lead the recipient to believe that other conditions have been fulfilled as well, then he shall uphold the assumption that the speaker is adhering to the conversational maxims and accept that the speaker intends to communicate a directive as

a conversational implicature. Attributing a different intention to the speaker would force the recipient to abandon this assumption.

Similarly, the utterance (6) conversationally implicates a directive only in contexts within which it is obvious for the recipient that the speaker does not have any premises to predict the future behavior of the recipient.

Thus, such contexts fulfill the third condition for the rationality of directive speech acts. If the context allows one to suppose that other conditions have also been fulfilled, then the listener will uphold the assumption that the speaker adheres to the conversational maxims and intends to communicate a directive.

The entailment processes which lead to attributing proper conversational implicatures to utterances such as (4), (5) and (6) are highly complex. The premises for these processes include: the assumption that the speaker is adhering to the conversational maxims, claims concerning the situational context and the resulting suppositions about the intentions of the speaker as well as observations of whether the conditions for the rationality of directive speech acts have been fulfilled (Searle 1975: 63). One ought to note here that the conclusions from these types of entailment processes cannot be accepted with absolute confidence, both because the premises of these entailments (for instance the suppositions about the speaker's intentions) also cannot be accepted with absolute confidence and because the entailment processes are not deductive with regard to their structure. Therefore, contrary to the opinion of Gordon and Lakoff (1975: 83), the conversational implicature of an utterance is not a logical consequence of this utterance based on a certain set of rules. Recreating a conversational implicature involves reconstructing the presumable intentions of the speaker. Furthermore, it is not the case that the recipient of such utterances as (4), (5) and (6) in fact conducts the reasoning processes outlined above. The conversational implicatures are attributed to these utterances in a rather automatic manner, without the need for reflexion. The above could be explained in the following way: the assumption that the speaker adheres to the conversational maxims does not allow one to ascribe to him the intention of communicating only the literal sense of the utterance (4), (5) or (6) within ordinary contexts. Only particular contexts provide a signal that the intention of the speaker does not exceed the scope of the literal meaning of the utterance. As a result, the reconstruction of reasoning processes conducted here cannot aspire to be psychologically realistic.

According to the outline presented here, unlike in the concept created by Gordon and Lakoff, conversational implicature is a piece of information

attached to other information included within the linguistic meaning of the given utterance and not a piece of information which substituted the meaning of this utterance. Therefore, a person making the utterance (5) within an appropriate situational context is not only communicating a directive (as a conversational implicature), but is also asking a question. This approach allows one to explain, why (5) retains certain properties of a question, even when it is uttered with the intention of communicating a directive.

However, the approach presented here faces one significant difficulty. The pragmatic character of this approach consisting in the fact that the explanation of the directive interpretation of a declarative, interrogative or prognostic utterance refers to conversational maxims, conditions for the rationality of speech acts and situational contexts leads to the conclusion that the conversational implicatures of an utterance are independent of its syntactic form and lexical content. In particular, two synonymous utterances ought to have identical conversational implicatures (Green 1973: 72). It appears, however, that this consequence of the approach presented here is contrary to observation. Let us now consider the utterances:

(5) *Can you close the window?*

(16) *Are you able to (capable of) close the window?*

The verb *can* is lexically ambiguous. In the utterance (5) it carries the meaning "be able to." As a result, (5) and (16) are synonymous linguistically. However, in ordinary contexts only the utterance (5) receives the directive as a conversational implicature. Furthermore, the following utterance is unacceptable:

(16a) *Are you able to be so kind as to close the window?,

although the utterance

(5a) *Could you be so kind as to close the window?*

is fully acceptable.

The latter observation induces one to conclude that the distribution of such expressions as *be so kind* can be explained only by referring to the pragmatic properties of the utterance with particular attention given to the polite character of these expressions (Leech 1977: 142). It is particularly inadmissible if using this type of expression would be considered a test of the directive character of the utterance, because e.g. the following utterance is absolutely unacceptable:

(24) *Attention, if you would be so kind!

The difference between (5) and (16) does not consist in the fact that (5) implies conversationally a directive in every context, whereas (16) does not imply it in any context. This difference consists solely in the fact that

the directive as a conversational implicature is ascribed to the utterance (5) rather automatically without the need for reflexion. Only certain situational contexts provide a signal that the utterance (5) ought to be attributed solely with its literal meaning. However, this presumed directiveness does not concern (16). One needs to reflect before one ascribes any conversational implicature to this particular utterance. If the recipient is not in possession of the appropriate information concerning the situational context (for instance, does not know if all the conditions for the rationality of directive speech acts have been fulfilled), then he shall be inclined to attribute the utterance (16) only with its literal meaning. Therefore, the difference between (5) and (16) manifests itself only when we are analysing these utterances regardless of their situational context. Within a specific situational context, they possess identical conversational implicatures (i.e. whether both imply a directive, or none of them implies it.)

One further difficulty faced by the approach outlined here refers to the conditions for the acceptability of conjunction. It has been claimed that conjunction of a question and a statement is linguistically unacceptable, for instance:

(25) *Will you watch a TV programme and I will read a book?*

However, the conjunction of a directive and a statement is acceptable under certain circumstances.

(26) Watch television, and I will read a book.

The statement that the utterance (5) is a question from the grammatical point of view would entail that the conjunction of (5) with any statement should be unacceptable. However, the utterance:

(27) Can you close the window and I will turn on the heating?

appears to be grammatical.

This argument is based on weak intuitions concerning the grammaticality of such utterances as (25). Even if one considers this utterance as ungrammatical, then the grammaticality of the utterance (27) only proves that the ability of an utterance to enter into conjunction with other utterances is dependent not only on its linguistic meaning but also on the conversational implicatures which apply to this utterance within the given situational context; thus – it is dependent also on pragmatic factors.

It would appear that the issue of a conjunction's cohesiveness should be approached in the same way as the issue of the cohesiveness of a multisentence text; and – it is widely known that the cohesiveness of a multisentence text is determined pragmatically to a great extent.

The conducted review of possible explanations as to why utterances

with the declarative, interrogative and prognostic form are understood as directives leads one to conclude that a satisfactory solution of this issue ought to refer to language pragmatics.

One ought to emphasize here that contrary to the openly expressed or silently accepted conviction that pragmatic phenomena are irregular and coincidental, it can still be claimed that they are governed by important principles. Further exploration of the issues concerned with conversational implicature and speech acts shall most likely allow us to explain many phenomena, which have hitherto remained somewhat of a mystery within the domain of grammar.

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Jerzy Pogonowski
ON THE CONCEPT OF A LINGUISTIC RELATION

The article will focus on the concept of a linguistic relation. It will discuss characteristic features of this concept, as well as the classification of linguistic relations. In the latter section, it will consider the feasibility of a comprehensive presentation of a language system as a set of units and linguistic relations.

1. Linguistic relations will be treated extensionally, i.e. as defined by objects between which they occur. In other words, linguistic relations will be analysed as subsets of Cartesian products of the appropriate sets of objects, that is as sets of pairs, triplets, quadruples, etc. of linguistic objects. Thus, the concept of a linguistic relation is closely linked to the concept of a linguistic unit, and so it is the latter that needs to be discussed at this point.

Linguistic units are determined (introduced) with respect to various criteria. Accordingly, we are dealing with various types of linguistic units. Linguistic units are defined with respect to various aspects of the structure of language. Hence there are units of the expression plane (e.g. sounds, phones, phonemes, morphs, words, spoken words, written words, phrases, sentences, texts), units of the content plane (e.g. concepts, judgements, meanings, elements of meanings, extensions, intensions, senses), concrete units (i.e. tokens), such as e.g. sounds, morphs, utterances, and abstract units (i.e. types), such as phones, phonemes, syntactic categories, morphemes, etc.

Abstract linguistic units may be constructed by means of the resources of formal logic, as for instance, sets of concrete units. This is the case of

e.g. phones treated as sets of homophonic sounds; similarly, phonemes may be defined as specific sets of phones. Also, abstract units may be treated as indefinable or derived from other sciences (e.g. concepts, some acoustic units, etc.).

By concrete linguistic units we understand primarily segments of the utterance, that is spatio-temporally distinct sections of speech, that is sounds, syllables, morphs, concrete words, phrases, sentences, texts, etc. It must be emphasized that concrete linguistic units, arrived at by segmentation of the utterance, are generally not given directly — already their definition assumes the existence of some theoretical apparatus, both strictly linguistic and derived from other sciences. This is clearly seen in the case of utterances (1)—(4), cited below after (Chomsky and Miller 1963):

(1) *The good candy came anyway.*

(2) *The good can decay many ways.*

(3) *Gal, amant de la Reine alla (tour magnanime).*

(4) *Galamment de l'arene á la Tour Magne, à Nîmes.*

Linguistic units are interconnected by various relationships; thus, we speak of the homophony of sounds, the synonymy of words, agreement between clauses of a sentence, etc. as relations (connections) between relevant units. It must be remembered, however, that neither are the linguistic units primary with respect to the relevant linguistic relations, nor the other way round (at least in the case of concrete linguistic units and relations, that is ones arrived at by the segmentation of an utterance). There exists a mutual connection between them: singling out linguistic units presupposes the existence of definite relations between them and vice versa: linguistic relations occur always between definite units. This relationship has been pointed out by Saussure and Hjelmslev; its existence is assumed by contemporary theories of language as well.

Extensional treatment of linguistic relations follows, in a sense, the principle of not multiplying entities beyond necessity: instead of using two indefinable terms, linguistic unit and linguistic relation, we treat linguistic relations as set-theoretical constructs defined by linguistic units. A concrete example is the simplest method of explaining the issue. Let us consider a set of sounds (in a given language) and the relation of homophony between sounds. This relation occurs between distinct sounds, and thus it always connects two objects within the universe of sounds under consideration. This relation is, therefore, wholly and unequivocally defined by giving a catalogue of all pairs of sounds between which it occurs. Thus, the relation of homophony may be identified with the set of all pairs of homophonous

sounds. This set is a certain subset of the binary Cartesian product of the set of sounds, i.e. the set of all ordered pairs of sounds. Thus, in the end, the relation of homophony is a certain subset of the binary Cartesian product of the set of sounds.

Two-argument relations, that is relations between two linguistic objects (like the relation of homophony discussed above), are the most often occurring linguistic relations. Apart from them, in the study of language we also encounter relationships that link more than two objects (e.g. the three-argument relation of the degree of synonymy: word X is closer in meaning to word Y than to word Z). Also the properties (features) of linguistic objects may be examined as relations of a kind, i.e. one-argument relations. This involves an extensional treatment of properties: a given property is identified with the set of all objects that possess this property (e.g. the property of being a noun is identified with the set of all nouns). Subsets of a given universe, which are delineated by given properties, are known as one-argument relations in that universe.

2. Linguistic relations can be grouped into definite types both with respect to their general properties and with respect to the type of objects between which they occur. A large group of linguistic relations are various SIMILARITIES and EQUIVALENCES, i.e. relations which rely on non-distinguishability of units with respect to the selected set of features, e.g. the relation of homophony. Another group of linguistic relations are ORDERINGS of various sorts, from the simplest, like the linear ordering of the segments of utterance in time, to the more complex, like the hierarchic ordering of words with respect to hyponymy or the tree ordering of syntactic units in sentences. An important role in the structure of language is played also by the comparison of units with respect to their distribution in appropriate environments (contexts), for instance homodistribution (occurrence in exactly the same contexts) or complementary distribution (absence of common contexts). Relations based on distribution combined with relations based on meaning give various types of OPPOSITIONS as a result.

The division of linguistic relations into syntagmatic and paradigmatic is very widespread in linguistics. Yet these terms, albeit very frequently used, are often imprecisely described. Let us, therefore, focus on a relatively accurate definition of the syntagmatic and paradigmatic relations.

SYNTAGMATIC relations link linguistic units into larger segments, hierarchically higher than those units. In other words, linguistic units linked by a syntagmatic relation create a hierarchically higher unit, of which they are components. All linear relations, based on the succession of units in

the speech flow, the relations of parataxis and hypotaxis, agreement, text cohesion, etc. are examples of syntagmatic relations.

With respect to the types of units between which they occur, syntagmatic relations can be divided into CONCRETE and ABSTRACT ones. Syntagmatic relations that link concrete linguistic units (that is segments of an utterance) into hierarchically higher concrete units are concrete syntagmatic relations; other syntagmatic relations are abstract relations. The succession of sounds in the speech process, which binds those sounds into larger segments, is an example of a concrete syntagmatic relation. The relations of parataxis and hypotaxis, which bind words into phrases, may serve as examples of abstract syntagmatic relations.

Concrete syntagmatic relations provide a basis for the stratification of the universe of all the concrete linguistic units into STRATA. Each linguistic stratum is delineated by a group of syntagmatic relations that unite concrete linguistic units of one type into hierarchically higher units. In other words, units of a linguistic stratum are segments composed of units of a hierarchically lower stratum, linked by concrete syntagmatic relations. Essentially, hierarchic segmentation of an utterance into concrete linguistic units is based on the consideration of concrete syntagmatic relations between those units. The universe of concrete linguistic units is thus split into the strata of sounds, concrete syllables, morphs, concrete spoken words, concrete written words, concrete phrases, etc. It needs to be noted that concrete syntagmatic relations always occur between units belonging to the same linguistic stratum. Some additional observations on the mathematic model of the universe of concrete linguistic units divided into strata by syntagmatic relations can be found in (Pogonowski 1981: ch. 7).

Isolating those linguistic strata gives a foundation for defining PARADIGMATIC relations. Similarly to syntagmatic relations, paradigmatic relations are also divided into CONCRETE and ABSTRACT ones. Concrete paradigmatic relations are those relations between units belonging to one linguistic stratum which are not syntagmatic relations. Concrete paradigmatic relations, in turn, may be divided into two types. The first type encompasses those relations which make it possible to form abstract units from concrete units (e.g. the relation of homophony between sounds, whose equivalence classes constitute abstract units, i.e. phones). The second type encompasses other paradigmatic relations, for instance various oppositions or the facultative variation of sounds.

Concrete paradigmatic relations of the first type make it possible to construct ABSTRACT LINGUISTIC STRATA, that is sets of abstract units

rendered by concrete units belonging to one linguistic stratum. Abstract linguistic strata are, for example, the phone stratum, the morpheme stratum, the word stratum, the sentence stratum, etc.

Abstract units belonging to one linguistic stratum also stand in (abstract) syntagmatic and paradigmatic relations. Abstract syntagmatic relations link units of one abstract stratum into segments which are units of a hierarchically higher abstract stratum, whereas abstract paradigmatic relations are those relations between units of one abstract linguistic stratum which are not abstract syntagmatic relations. It is worth noting that two types can also be distinguished among the abstract paradigmatic relations: relations of the first type, which make it possible to form new abstract units (e.g. the relation of homophonemity between phones, whose equivalence classes are phonemes), and the remaining abstract paradigmatic relations (e.g. complementary distribution of phones).

Apart from syntagmatic and paradigmatic relations, the structure of language is constituted by other relations (thus, syntagmatic and paradigmatic relations do not exhaust the entire spectrum of linguistic relations). The above definitions indicate that such relations (being neither syntagmatic nor paradigmatic) always occur between units belonging to different linguistic strata. It makes sense, therefore, to call them INTERSTRATAL relations. An example of an interstratal relation is a three-argument relationship between phonemes, phonemic environments, and phones, which occurs when a given phoneme is realised as a given phone in the appropriate phonemic environment (for instance, in the Polish language the phoneme [n] in the environment before [k] is realized as the phone [ŋ]).

If we consider relations between segments of an utterance and objects like situational contexts, language users, etc. as linguistic relations, they will also be interstratal relations of a kind. In this case, sets of situational contexts, language users, etc. will be abstract linguistic strata.

The above classification of linguistic relations is summarised in the following table.

	relations defined between units of the same linguistic stratum			relations between units belonging to different linguistic strata (interstratal)
	syntagmatic (binding linguistic units into larger segments)	paradigmatic (the remaining, i.e. non-syntagmatic relations defined between units of a linguistic stratum)		
		of the 1st type (creating abstract units)	of the 2nd type (the remaining ones. i.e. those, which do not belong to the 1st type)	
concrete (binding segments of an utterance)	e.g. the succession of sounds in the speech process	e.g. homophony	e.g. facultative variation of sounds	e.g. the mereological relation of being a part
abstract (between abstract units)	e.g. agreement, text cohesion	e.g. homophonemity between phones	e.g. hyponymy	e.g. realization of a phoneme as a given phone in the appropriate environment

The entire body of linguistic units and linguistic relations creates the LANGUAGE SYSTEM. In the following section of this article, we will discuss the feasibility of a comprehensive presentation of a language system. This presentation will be demonstrated in the simplest manner possible, that is by means of the elementary resources of formal logic. We assume that the Reader is familiar with the basic knowledge regarding set and relational calculus. We shall use the standard set-theoretical notation.

3. The discussed feasibility of presenting the language system as the body of linguistic units and relations makes use of the concept of a GENERAL SYSTEM, introduced in (Pogonowski 1979: part 3). To define this concept, it is necessary to recall the construction of the class V_X over the atom set X (cf. e.g. Shoenfield 1967: ch. 9.1, Barwise 1975: 42). This construction makes use of transfinite induction:

$$V_X^0 = X$$
$$V_X^{a+1} = P(X \cup V_X^a)$$
$$V_X^\lambda = \bigcup_{a\in\lambda} V_X^a \text{ for the limit ordinal numbers } \lambda$$
$$V_X = \bigcup_{a\in On} V_X^a$$

(symbol P signifies the operation of the power set, that is the operation of creating a family of all subsets, while On is the class of all ordinal numbers).

Set X is any set; its elements may be atoms (i.e. objects which are not sets) or other sets. The class V_X therefore equals the totality of sets which can be constructed with family X as the point of departure.

DEFINITION 1. Let $\mho$ be any family of sets and let $U = \bigcup \mho$. We say that Σ is a GENERAL SYSTEM GENERATED by $\mho$ if $\Sigma = (\mho, C)$, where $C \subseteq V_U$. Family $\mho$ is the family of LEVELS of system Σ, set U is the set of OBJECTS of system Σ, while family C is the SIGNATURE of Σ.

The intuitive sense of the concept of the general system $\Sigma_0 = (\mho, C)$ is as follows: signature C is the family of relationships between the objects of U grouped into levels of U. It follows from the definition that the signature of the general system may contain relations between objects of that system, relations between sets of objects, relations between relations, etc. This is a consequence of the extensional approach — the signature of the general system may contain any set-theoretical construct obtained from the objects of that system.

Due to its high level of generalisation, the concept of a general system has a very wide range of applications. For instance, all relational structures, many-sorted structures (e.g. vector spaces, abstract automata), structures with an infinite number of relations (e.g. topological spaces), etc. are all general systems as understood in Def. 1. Formal languages, as set-theoretical constructs over a suitable alphabet, can also be represented as general systems. Of course, by adding various conditions to the definition of a general system, we can obtain many types of more concrete systems. Without delving into this issue, let us only point out the feasibility of applying the concept of a general system in linguistics in order to present the language system as a general system as understood in Def. 1.

The simplest method of presenting the language system as a certain general system is to assume all its linguistic strata to be its levels, and all linguistic relations as its signature. Then, of course, precisely all linguistic units will be objects of our general system.

Let us introduce another useful concept linked with the concept of the general system.

DEFINITION 2. Let $\Sigma = (\mho, C)$ be a general system generated by $\mho$. Let $\mho^*$ signify the family of all finite Cartesian products of the sets from $\mho$. Let us define the function $c_\Sigma : \mho^* \to P(C)$ by $c_\Sigma(K) C \cap P(K)$ for any $K \in \mho^*$. The function c_Σ is called the RELATIONAL CHARACTERISTICS of

system Σ.

Note that the set of values of the relational characteristics of a given general system is composed of all relations between objects of that system.

Let us return to the language system treated as the general system $\Sigma_0 = (\mho_0, C_0)$, that is, let us interpret $\mho_0$ as a set of all linguistic strata and as the family of all linguistic relations. Let e.g. $\mho_0 = \{U_i : i \in I\}$, where I is the appropriate set of indices. Then $\bigcup_{i \in I} U_i$ is the set of all linguistic units. For any set X, let X^n be the n-th Cartesian power of X. Let us consider the following structure for any linguistic stratum U:

$$(5)\ (U_i, \bigcup_n c_{\Sigma_0}(U_i^n))$$

The relational structure (5) is a sub-system of a language system composed of a set of linguistic units belonging to stratum U_i and all linguistic relations defined between units of this stratum. Let us note that the set $\bigcup_n c_{\Sigma_0}(U_i^n)$ contains exclusively syntagmatic and paradigmatic relations. In particular, is the set of all one-argument linguistic relations defined on U_i, $c_{\Sigma_0}(U_i \times U_i)$ is a set of all two-argument relations defined on U_i , etc. In the form of structure (5), it is possible to represent, for instance, the set of all phones with the relations between phones (homodistribution, facultative variation, complementary distribution, etc.) or the set of all words with the relations of hyponymy, synonymy, antonymy, semantic fields, etc.

If U_i and U_j are two different linguistic strata, then $c_{\Sigma_0}(U_i \times U_j)$ is the set of all (two-argument) linguistic relations between units of the stratum U_i and units of the stratum U_j. For instance, if U_i is the phone stratum, and U_j is the phoneme stratum, then $c_{\Sigma_0}(U_i \times U_j)$ contains all relations between phones and phonemes.

It is easy to notice that the family:

$$(6) \bigcup_{i \in I} \bigcup_n c_{\Sigma_0}(U_i^n)$$

is the set of all syntagmatic and paradigmatic linguistic relations. All interstratal relations create the following set:

$$(7)\ \bigcup_{K \in \mho_0^+} c_{\Sigma_0}(K)$$

where $\mho_0^+$ denotes the family of all Cartesian products of linguistic strata

which are not Cartesian powers of some linguistic stratum, that is:

$$(8)\ \mho_0^+ = \mho_0^* - \bigcup_{i \in I} \bigcup_n U_i^n$$

Of course, sets (6) and (7) give in sum the signature C_0:

$$(9)\ C_0 = \bigcup_{i \in I} \bigcup_n c_{\Sigma_0}(U_i^n) \cup \bigcup_{K \in \mho_0^+} c_{\Sigma_0}(K)$$

Finally, let us note that the following equality holds in the interpretation accepted here:

$$(10)\ C_0 = \bigcup_{K \in \mho_0*} c_{\Sigma_0}(K)$$

(this form of equality not necessarily holds for every general system).

Properties of the language system treated as a general system may be examined with the aid of the resources of formal logic. In particular, by means of the system-theory apparatus, it is possible to describe various issues regarding, for instance, sub-systems of the language system, morphisms between those sub-systems, further classifications of linguistic relations with respect to their general characteristics, etc. Finally, let us observe that the approach described in this section of the study is quite universal — other possible representations of the language system can all be described in the form of appropriate general systems.

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Alicja Nagórko
ON THE FOUNDATIONS OF SEMANTIC CLASSIFICATION OF ADJECTIVES

In terms of meaning, words classified as adjectives name characteristics of denotata or relations existing between them.

Being names of characteristics and relations, adjectives (a) belong to the abstract class (it is impossible to indicate objects they refer to in the extralinguistic reality), (b) are syntactically and semantically dependent: as modifiers of nouns they only gain meaning in connection with the modified noun, (c) can be predicative complements. These semantic and syntactic features of adjectives raise interest of contemporary linguistics in this word class.

A lasting and continuously argued issue is the semantic classification of adjectives. In my article, I would like to address some aspects of this classification.

Qualitative and Relative Adjectives

This classification is almost commonly accepted in Polish linguistics (cf. Szupryczyńska 1980) In Western literature, an increasingly frequent claim is made that relative adjectives express only syntactic relations between the modified noun and the derivation root (Marchand 1966; Sussex 1974; Babby 1975; Neubauer 1977) and thus belong to the transformational element and not to the semantic representation. In other words, relative adjectives in

their traditional understanding[1] exist only in the surface structure. This claim is particularly well illustrated by the German linguistic material, where relative nouns are replaced by numerous nominal compounds such as *Präsidentenpalsat, Holztisch, Adjektivendung* etc.

F. Neubauer (1977: 35) cites an example showing various transformational possibilities for one starting entity: using a derivational morpheme (if there is a noun on the surface) or not (a purely syntactic transformation):

Bischof   Residenz

1. *die Residenz des Bischofs*

2. *die bischöfliche Residenz.*

Similar examples, in which an adjective performs a purely syntactic function, may also easily be found in Polish, e. g. *państwo buforowe – państwo-bufor [a buffer state], szofer murzyński – szofer-Murzyn [a Negro chauffeur]* (Kurkowska 1954: 74), *żądania robotnicze – żądania robotników [labourers' demands]* (Grzegorczykowa 1972: 142). Of course not all relations expressed with adjectives can be transformed similarly. Adjective structures are very often a product of great condensation of content, cf. *książeczka samochodowa [car savings passbook]* (Satkiewicz 1971: 86).

Regardless of this, it seems an acceptable claim that the division into relative and qualitative adjectives does not belong to the syntactic level of language but rather, so to say, to the word formation level. This division should be given up in the case of primary adjectives. The meaning function of an adjective is to name a quality. Such a solution seems to be in accord with the feelings of many researchers, who, while using the traditional division into qualitative and relative adjectives, indicate the fuzziness of the boundary between the two classes, cf. *szkolny budynek [a school building]* and *szkolny sposób mówienia [a bookish manner of speaking]* (Grzegorczykowa 1975: 16).

Relative and Absolute Adjectives

In contemporary semantics, another classification of adjectives is considered fundamental. It turns out that from the semantic point of view,

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[1]Another, syntactic meaning of the term "relative" is excluded as one having nothing to do with semantics. In this sense, "relative" means "having case government," see Behagel 1923: 32.

adjectives traditionally described as qualitative, such as *long – short*, are in fact relative adjectives. This was pointed out – following Sapir – by Fillmore in his paper *Entailment rules in a semantic theory* (1965, cf. the critic by Fillmore in Bartsch, Vennemann 1972: 59-60).

In the sentence

(1) *John is taller than Bill*

both arguments of the relation named by the adjective are given in the surface structure. However, also a sentence with an adjective in the positive form:

(2a) *John is tall*

should be, as Fillmore argues, semantically interpreted:

(2b) *John is taller than average.*

Hence, when writing of relative nouns, the author means their relativisation in relation to the norm. The reference point for the "average" with which we compare an object need not be indicated explicitly, as in the case of the comparative, but this is also possible (cf. *He's tall for a pygmy*). The norm is basically established every time anew by the speaker and the listener, depending on the context. Therefore, these adjectives are not absolute but context-dependent (whether linguistic or extralinguisic context is in question).

The division into relative adjectives (such as *big – small, heavy – light, long – short, expensive – cheap, thick – thin* etc.) and absolute adjectives (e. g. *carnivorous, sick, red, alive* etc.) was introduced by Jerrold J. Katz (1967; 1972). The difference between relative and absolute adjectives is particularly visible in the case of inference from sentences with the comparative. Here is an example by Katz: the sentence

(3a) *The mountain is higher than the building*

does not entail that

(3b) *The mountain is high*

whereas from the sentence

(4a) *The tablecloth is more spotted than the place mat*

we can draw the correct conclusion:

(4b) *The tablecloth is spotted*[2]

The adjective *high* is relative and the adjective *spotted* is absolute. The difference between the two types of adjectives manifests itself in yet another way in the following example:

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[2]An example of (un)acceptability of a similar inference is given by Apresjan (1968) for adjectives *big* and *red*. Adjectives of the same type as *big* are described by Apresjan as "nepredel'nye", ones of the same type as *red* – as "predel'nye". Cf. Laskowski 1977.

(5) *A small elephant is big.*

Sentence (5) is definitely not contradictory. It means that an elephant which is *small* for an elephant, is all the same *big* in the animal world. A sentence containing an absolute adjective and its antonym in places of *small* and *big* respectively will turn out to be contradictory:

(6) *A carnivorous (sick, dead) elephant is herbivorous (healthy, alive).*

An elephant (an animal) cannot be *carnivorous* and *herbivorous, sick* and *healthy, alive* and *dead* at the same time.

Relative adjectives are similarly understood by other authors, cf. Bierwisch 1967; Bartsch, Vennemann 1972; Eisenberg 1976.

This understanding of the term "relative" is based on the notion of norm. In the discussion of the topic, the existence of two fundamentally different categories of normative adjective has been revealed: the issue of norm is to be handled differently in the case of parametric (descriptive) adjectives and in the case of evaluative adjectives. Let us elaborate shortly on this point.

According to Bierwisch (1967), for parametric adjectives like *long – short*, the comparative norm is located in the middle of the (numerical) scale between its end points (+Pol) and (-Pol). In his later work, Bierwisch (1971: 238) replaces the scale with a given comparative object *Z*.

J. Katz (1967: 186) postulates that the reference point for generic sentences to be the category to which the compared object belongs, i.e. its *genus proximum*. This would be, for example, the category *buildings* for *skyscrapers*, the category *insects* for *fleas* etc. Examples:

(7) *Skyscrapers are tall for buildings*

(8) *Fleas are little for insects* (Katz 1972: 256).

In non-generic sentences, the object class indicated by the subject of the sentence remains in the reference point, e. g.:

(9a) *This ship is long*

(9b) *This ship is long for a ship* (among ships).

In the case of evaluative adjectives, the point is not to find a compared object or an appropriate scale, but to make a reference to the world of values common for the given linguistic community. Wierzbicka (1972: 84) writes: "[...] the speaker has to treat the addressee as someone who shares with him the same norm [...] in order to be able to meaningfully use the word *good.*"

According to Bierwisch (1967: 12):

The situation is quite different for *gut/schlecht*, as Mrs. Anna Wierzbicka has brought to my attention. *Die Zigarette ist gut* does not mean that the cigarette is better than the average, but that it fits the expected standard, just as *Die Zigarette ist schlecht* does not mean it is less good than the average, but that it

does not fit the standard. What is going on here may be paraphrased as follows: The scale established by such pairs as *gut/schlecht, schön/häßlich, gesund/krank* is not divided into two parts by the average point, but the norm is one of its end points.

As can be seen, the norm for evaluative adjectives according to Bierwisch lies on one of the poles of a pair of antonyms, more specifically: on the positive pole.

This leads to a conclusion formulated by Wierzbicka (1972), Wunderlich (1973), Eisenberg (1976): evaluative adjectives are absolute. The reference scale is not conditioned by the context but given by the adjective itself. This is why the meanings of evaluative adjective are not context-dependent.

According to Eisenberg (1976: 122), the sentences

(10a) *Joseph ist gesund*

and

(10b) *Joseph ist krank*

do not mean that Joseph is more or less healthy than the average. They only say that in the first case, the condition of Joseph corresponds with the norm, while in the second one – it does not.[3]

Absolute adjectives are similarly understood by Wierzbicka (1971b: 41) "Evaluations like *good* and *bad* are – from a semantic point of view – absolute: they do not signify *better than. . . , worse than. . . ,* they signify *we would want it, we would not want it.*"[4]

One would, of course, like the evaluative adjectives to have absolute meaning. Is it so indeed? If we consider the sentence

(11) *John is better than Peter but they are both bad*

acceptable, we should question the claim about the absolute character of adjectives such as *good.* In any case, the adjective *good* passes the relativity test above: as sentence (11) shows, from the sentence *John is better than Peter,* it does not follow that *John is good.*

What is, then, the place of evaluative adjectives? It seems that a more fitting frame for them is created by the division into gradable and non-gradable adjectives. Let us therefore analyse the criterion of gradability.

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[3]The fuzziness of the division into relative and absolute adjectives is demonstrated by numerous inconsistencies in the interpretation of particular examples by different authors. Neubauer classifies the mentioned pair *ill – healthy* as descriptive, along with the lexemes like *long – short.* According to Renata Bartsch and Theo Vennemann, the adjectives *beautiful* and *intelligent* are relative, even though Eisenberg classifies them as absolute – there are plenty of similar examples.

[4]Such a semantic definition of the adjective *good* was criticised as not everything we *want* is *good* (cf. Bartsch, Vennemann 1973: 58).

## Semantically Gradable and Non-gradable Adjectives

Sapir (1944: 123), who was the first one to handle semantic classification of adjectives, saw gradability as a universal category exceeding the frames of this word class.: "[. . .] every quantifiable, whether existent (say *house*) or occurrent (say *run*) is intrinsically gradable." Bierwisch (1967) introduces the constituent Deg(ree) as a part of the structure of the spatial adjectives he described. Lyons (1969: 465) distinguishes between antonymy and complementarity, saying about the first that "[. . .]words such as *big* and *small*, or *good* and *bad*, do not refer to independent 'opposite' qualities, but are merely lexical devices for grading as 'more than' or 'less than' with respect to some implicit norm."[5]

This does not apply to such complementary adjectives as *male – female, alive – dead*. Hence the ability to enter antonymic relations is a feature of gradable adjectives, while non-gradable adjectives enter complementary relations.

Grzegorczykowa (1975), in her discussion of adverbial modifiers of adjectives, claims that non-gradable adjectives take only modifiers of completeness such as *absolutely, nearly* but cannot be connected with gradual modifiers, cf. **very naked, *too whole, *slightly empty*. Wierzbicka (1969: 90) writes about these adjectives that they contain an element of negation in their meanings (*This drawer is empty = There are no thins in this drawer*, cf. Janus 1977: 49). This would explain their semantic non-gradability.

Neubauer (1977) considers the opposition gradable – non-gradable (*graduierbare – nichtgraduierbare Adjektive*) superior in his classification of qualitative adjectives. He distinguishes three classes of gradable adjectives: descriptive (like *big – small*), emotional (like *happy – unhappy*) and evaluative (like *good – bad*). Emotional adjectives are distinguished among the gradable adjectives in that in their description there is no need to refer to a norm. Neubauer claims that lexemes such as *cheerful – sad, happy – unhappy* are rather names of states than characteristics and would probably better fit according to a classification of verbs. Descriptive adjectives are different form evaluative ones in that they refer to objectively measurable qualities whose values may be indicated by units of an appropriate scale. Keeping the rule of dichotomy, the classification by Neubauer looks as follows:

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[5]Contemporary semanticists are not inclined to define the adjectives *good* and *bad* by the comparative.
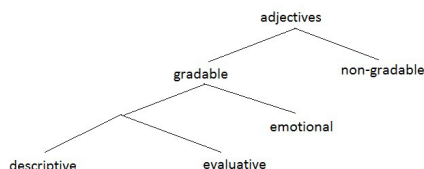
Neubauer's division into descriptive and evaluative adjectives corresponds to the observation by Wierzbicka (1971: 131), who claims: "[...] in the case of the relations of quantity and possibility, the comparative is primary, the positive secondary; in case of evaluations [underlined by A. N.], opinions, feelings, attitudes – the positive is primary, the comparative secondary".

Thus we receive two groups among the gradable adjectives: a) adjectives where the comparative is primary, such as *long – short,* b) adjectives where the positive is primary, such as *good – bad.* As the quotation above shows, according to Wierzbicka, type b) also includes the emotional adjectives, which in Neubauer's classification constitute a separate group hardly fitting the frames of adjective classification.

The problem of internal classification of gradable adjectives is indeed handled in different ways by different authors. In fact, the boundary of semantic gradability itself, and therefore the division of adjectives into gradable and non-gradable, is demarcated in various ways.

Particularly controversial are such meaning classes as names of colours and tastes (or wider: names of secondary qualities). According to Wierzbicka (1971: 131): "in the case of secondary qualities, the positive is primary, while the comparative, despite being more complex than the positive, is not explicated directly by the positive, but by some other comparative." The author defines this group of adjectives through comparison (the *sweet* taste – to sugar, *salty* – to salt etc.).

It can be easily noticed that colour names have similar explications in dictionaries: *red* is compared to the colour of blood, *black* – to coal and soot, *white* – to milk etc.

An interesting characteristic of colour names noted by Apresjan (1968: 37) and Laskowski (1977) is that the comparative does not denote the whole spectrum of a given colour but only its extreme point. The sentences

(12) *A is redder than B*

(13) *This paper is whiter than that one*

refer to two *red*, *white* etc. objects, contrary to the comparatives such as *longer*, which may refer to *long* as well as *short* objects. This would suggest the binary character of the meanings of adjectives such as *red.*

Neubauer (1977: 247) notes that in German, some colour names are gradable (*Omo wäscht weißer als Persil*) and others are not (*rot, blau, grün*). He suggests to classify them separately.

It may be impossible to demarcate a clear boundary between gradable and non-gradable adjectives. Without doubt, the gradable adjectives, and descriptive adjectives among them, do not constitute a homogenous category.

Descriptive adjectives are usually classified based on the psychological criterion of apperception, i.e. divided into sensations that are sight-related, hearing-related, tactile etc. (Neubauer 197; Szramm 1979). A desired classification should pay more attention to the linguistic features of the given category, such as lexical connectability (cf. *pale, rubicund, stale*), grammatical connectability (object-related vs. act-related characteristics, cf. *long pencil, long walk*), potentiality and actuality in the meanings of such lexemes a *clean, sober, healthy, bad. . .)* etc. The semantics of this word class requires further fundamental research. A starting point of this research should be the semantic gradability of the adjectives.

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Alicja Helman
CONCERNING THE CINEMATIC METAPHOR CONTROVERSY

The title of this paper already presupposes that we have as good as settled for a more general idea that film is essentially a linguistic phenomenon, which would also mean that such a thing as cinematic metaphor indeed exists. However, as we know, the dispute as to whether film has a linguistic or similar nature continues, and there is anything but solid agreement as what to make of the art in question. This also concerns the metaphor. We can easily point at visual or audio-visual structures resembling poetic metaphors, we can even interpret them correctly, but the general design of such metaphors remains elusive. There is even much controversy whether they are rightly called cinematic metaphors, with some calling for an entirely different approach.

Many theorists before me have tacitly assumed that some sort of audio-visual language in fact exists. With their backs so secured, they could go into details or embark on empirical studies while postponing essential questions which, they believed, film theory was not yet ready to face.

With that in mind, I would like to focus here on specific cinematic syntagmatic units commonly referred to as metaphors. Film theory has long treated them as visual representations of verbal metaphors, although it seems such expressions are quite rare and appear predominantly in silent movies. Such a metaphor stands out, striking the viewer with its stark otherness, forcing interpretation in a way different from the usual shot-by-shot reading. There are two reasons for metaphors being such a rarity. First, even when theorists decide to apply rhetoric vocabulary to cinematic experience, they

conclude that directors mainly use synecdoche and metonymy. Metaphor is not a film-specific formula and, if at all, rarely occurs in the movies. Jean Mitry insists that there is no such thing as cinematic metaphor, claiming that its classic examples provided by other theorists are nothing else but metonymies (Mitry 1997). Second, if we want to find a metaphor in cinematic texts, but at the same time eschew the effort to build a general theory of visual metaphor, we are forced to conclude that such expressions must be either extremely simple, primitive even, or remain a conundrum, utterly and completely unintelligible to the viewer, regardless how film-conscious, in theory or technique, they might be.

This narrow understanding of cinematic metaphor was suggested by Russian formalists who were inspired by the silent, primarily Soviet, cinema, as well as some early metaphors occurring in French and American films. It was later substantially widened, but also blurred, to the extent that it ultimately became imprecise, vague, and unfit for analytic purposes. Contemporary film theory has refined and fine-tuned its discussion on metaphor, but failed to come up with tools for clear distinction of metaphors present in contemporary cinematic texts. For this reason, theorists still prefer to discuss metaphor along the lines proposed by Eisenstein. The current broad understanding of metaphor is indebted to Jakobson who conceived metaphor and metonymy as basic rhetoric models of film (Jakobson 1981). His findings were further explored in contemporary semiotic thought, particularly by Christian Metz who advanced Jakobson's analysis by differentiating metaphors and metonymies within syntagmatic and paradigmatic structures (Metz 1986).[1]

Metaphors in a narrow sense of the term, originating in silent cinema, were analysed on a number of occasions, mostly to illustrate notions broader than metaphor itself. Being simple and primitive, and thus easier to dissect and classify, metaphors could be used to develop a basic prototype for the category spacious enough to accommodate expressions other than themselves. With the advent of silent movie metaphors, the emerging language of cinema was beginning to take new shape, departing from the forms established in the first twenty years of the medium. In a wider sense, this process heralded a new poetic language pursued in the movies. Film theory recurrently envisaged cinema as prose or poetry, either conceptually rooted in literary tradition, or developing prose or poetry of an entirely new variety. Mostly, however, theorists followed classical rhetoric conception of metaphor as a

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[1]For historical research on metaphor and latest developments in film theory, see Godzic 1978 and 1980.

trope or figure of speech, finding elsewhere — not so much in the hypothetical cinematic language, but in specific works — other rhetoric tropes, such as synecdoche, litotes, hyperbole, etc.

It comes as no surprise that this understanding of cinematic metaphor corresponds with linguistic and literary theories that stress its deviatory character, a disruption in an otherwise correct language. Cohen argues that all figures of speech, not least the metaphor, operate on two planes in a two-pronged procedure: they disrupt the norm, destroying the coherence of an expression on the syntagmatic plane, followed by its restoration on the semantic plane through reconstruction of figural sense derived from the meaning proper (Cohen 1982). Todorov refuses to place these deviatory expressions against the "zero level" of literal speech, interpreting them rather as a result of the violation of linguistic rules (Todorov 1967).

Teresa Dobrzyńska suggests that

"contemporary arguments embracing the rhetoric thinking in envisaging metaphor as a deviation strongly emphasise the incoherence of metaphorical expression, incompatibility of the elements involved (. . .) Theoretical implication of this stance would mean that metaphor is a syntactic problem (. . .) Metaphor is understood here as an infringement of rules governing meaningful connection of words, therefore it must be viewed as a violation of grammar" (Dobrzyńska 1980: 150).

It would seem that such a deviant conception of metaphor complicates things further, as it introduces some highly confusing concepts like linguistic norm, syntax, or grammar. We can easily demonstrate, however, that film-makers — who do not think in verbal language, nor care for descriptive tools — indeed used metaphors to disrupt the existing norms and break free from overfamiliar measures to succeed in sharing meanings or unsettle the rules of storytelling. It is a wholly different matter whether these ventures legitimize comparisons with linguistic metaphors occurring in verbal language. That said, first cinematic metaphors, along with theoretical descriptive attempts, were clearly inspired by the rhetoric model. We will now try to understand what was, could, should, or perhaps in any case could not be the result of those endeavours.

To provide substance for our considerations, we shall start with an example borrowed from "The Kid," Chaplin's movie from 1921. In the opening sequence, introducing the background of the story, the viewer learns that a painter leaves his model and a lover, never to think of her again. The girl, now alone, penniless, and with no shoulder to cry on, decides to give

birth to the bastard child. Confused and clueless as to her future, she leaves the hospital. Between two takes depicting the women carrying the child there is a third one, showing Christ carrying his cross up the Golgotha.

The question here is why, and under what circumstances, is one able to read correctly the design of the director, who, to justify the girl's decision to abandon her child in the car, wants the viewer to consider the plight awaiting the unwed mother. First, however, we must consider the peculiar nature of the shot, which seems to violate the rules of cinematic storytelling.

Now, the basic rule informing the understanding of the viewer is that the diegesis holds the images together. The world presented in the feature film forms a spatiotemporal framework inhabited by the characters. A sequence of images lending the background to the story may actually be incoherent (specific takes may be taken in various spatiotemporal setups), but the illusion of coherence must be secured. Although the world on the screen must not necessarily be like ours, it must be arranged according to explicitly or implicitly clear rules.

The takes narrating the fate of the girl are interrupted with imagery foreign to the spatiotemporal setting of the story. It even seems that the director wants us to treat the Christ scene as foreign to the narrative proper. It is impossible to interpret it as a statue, on which the heroin might have laid her eyes, or as a recalled painting possibly seen somewhere else. The transition is sudden and unexpected, the image of Christ violently disrupting the initial coherence of the scene depicting the girl leaving the hospital. The viewer is forced to wonder about the origins of the image. Considering that silent cinematography of the day frequently used montage cuts to mark transition to another spatiotemporal framework, parallel plots, etc., Chaplin had to come up with something unconventional. It had to be blunt and strong enough to make it clear that the image on the screen is out of place, devoid of narrative function or familiar means of articulation. In my view, the non-diegetic nature of the intruding image serves as a platform for pragmatic instruction, described by Aleksandra Okopień-Sławińska in the following way:

"Each metaphorical expression contains in its modal frame an implied pragmatic instruction that always interacts with other elements within the frame. I imagine it goes something like that: this unusual (metaphorical) manner of speaking is not unintended — I want you to discover what I mean by it." (Okopień-Sławińska 1980: 26)

Perhaps the sole fact that the image is of a non-diegetic nature is enough to deliver the message, but it is additionally reinforced by almost snapshot-

like exposure, resembling a flash of illumination, as well as a montage cut, which is even more unusual here, as Chaplin rarely resorts to such measures to charge the scene with expressivity. Montage cuts traditionally take the viewer to another spatiotemporal setup within the diegetic framework, but in this particular scene it serves to take the image out of it. The image of Christ struggling up Golgotha has neither spatiotemporal nor cause-effect connection with the shots depicting the women.

If this non-diegetic image of Christ was to be examined on its own, it would fit the definition of symbol offered by Mieczysław Wallis in his phrase "symbolic sign" (in which the symbol is represented by an iconic sign, Wallis 1977). In itself, the shot is nothing but the familiar Christian symbol. Its singularity is only exposed when injected between two syntactically consistent frames. The whole expression becomes now a simile: an abandoned and unwed mother will suffer like Christ carrying his cross up the slope of Golgotha. Popular definitions of metaphor define it as a shortened simile, therefore it would be perhaps a misuse to call this particular expression a metaphor. Note, however, that it was only recently that film theory (Metz 1986) begun discerning between metaphor and simile, with the former traditionally denoting both single-element utterances resembling the actual metaphor and more complex similes.

My comments are not limited to expressions that fit literary conception of metaphor, since these multi-element (mostly three-shot) structures have qualities typical to certain cinematic structures. Prior to any discussions on how to name the phenomenon in question I would first like to focus on its description.

Similarly to Chaplin's example, one can characterise famous harps and balalaikas in Eisenstein's "October." Sessions of the Congress of Soviets (speeches of the opposition, to be more precise) were intercut with close-ups of hands touching the strings of harps and balalaikas. Distortion of diegesis is here even stronger, as non-diegetic shots consist of close-ups that resist spatial identification, contrary to Chaplin's film where the long shot creates an entirely "different space." Eisenstein upped the ante. The shot strikes the viewer as an obvious mistake, a dissonance, nonsense even. This must prompt the question: musical instruments in the deliberative hall? Who is playing, and why? It just doesn't click with the diegetic setup. But since Eisenstein opted for a close-up lacking any spatiotemporal reference, thus violating the plot linearity and derailing spatiotemporal coherence, extraction of this shot from its diegetic framework is more difficult than in the Chaplin example, ultimately delivering a more powerful and jarring violation of the

editing rules. Pragmatic instruction for this non-diegetic shot is additionally enhanced by a mixture of a montage cut, field size, and shot duration.

Eisenstein also uses non-diegetic elements inside the otherwise diegetic shots. This is the case with one scene from "Old and new:" old women are shown in a chimneyless hut, excruciatingly hard work and squalor having erased from their faces both gender and age. In the interior there is also a portrait of the Mona Lisa, a symbol of enigmatic femininity. There is nothing in the diegetic setup that would render plausible the presence of the Mona Lisa, original or copy, in the hut. As such, it is a hint left by the author, containing pragmatic instruction to focus not on possible interpretations of poverty-stricken rural Russia, but on the plight of women, who, with their men killed in the war, are left to starve and work their fingers to the bone, not even remotely resembling beings destined to be loved.

Relation, described above as syntagmatic, is here realised through the arrangement of objects within the shot. A non-diegetic symbol (Mona Lisa) is juxtaposed with objects and figures belonging to the presented world.

Talkies expanded this structure vertically, infusing the visual imagery with non-diegetic verbal or musical elements. The non-diegetic status of music is hardly new, since it emerges from the common practice of illustrating the screening with a fairly random score, with only vague reference to the visual imagery. The same goes for verbal expression. Take the voiceover, for example, which is sometimes used as the standard solution, as in a documentary or newsreel. In such a case, i.e. when the non-diegetic effect lacks the desired disrupting force, the effect must be achieved through intensified alienation, distortion, or other means singular enough to unsettle the diegesis. Film theory never applies the notion of metaphor to vertical structures,[2] instead terming it, somewhat deceivingly, "counterpoint." It seems, however, that it wouldn't be that difficult to discover that the counterpoint implements similar patterns to those typically applied in the image language.

Let's consider Fritz Lang's "Hangmen also die!," with the score of Hans Eisler. Heydrich lies on his deathbed in the hospital, the rhythm of the music is set by the dripping blood administered for transfusion. The underlying idea was to strip the moment of pathos and drama invariably

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[2]This approach was first proposed in a master's thesis' written at the University of Silesia by Halina Kręt — Analiza metafor filmowych w utworach Andrzeja Wajdy ("Analysis of cinematic metaphors in the films of Andrzej Wajda") and Grzegorz Kielar — Próba metafory filmowej ("An attempt at the theory of cinematic metaphor"). Both papers are held in the Archive of the Institute for Polish Literature and Culture, University of Silesia.

associated with death. Hence the music, not only non-diegetic, but also wholly incompatible with the developments on the screen. The musical phrase is elegant to the point of being over-the-top, with dissonances in higher registers. Pragmatic instruction seeks to divert the viewer's attention from the death itself, urging us to focus on who in fact dies: not a hero, but a scoundrel.

Even more estranging is the score written by Dmitri Shostakovich for Yutkevich's "Golden Mountains," where the factory sequence is accompanied by a magnificent waltz.

As we can see, expression structured in a sequence of shots may as well be contained in one shot, or even emerge through interplay between the image and sound. This can happen if the essence of the structure is secured, this being the non-diegetic nature of the symbolic element falling out from the context. Christ struggling up Golgotha does not belong to the represented reality of the contemporary American city, musical instruments do not appear in the deliberative hall, the Mona Lisa's portrait will never hang in the hut of a pauper, a waltz cannot be played in a factory. Therefore, their presence must have a specific motive, as yet unexplored by the public in the twenties. Metaphoric elements signify and evoke something else from what they actually represent. Arrangement of shots, internal composition of elements within one shot, or juxtaposition of image and sound all serve the purpose of building a concept that has no imaginary equivalent.

This conclusion directly leads to the well-known argument made by Eikhenbaum who insisted on close links between "cine-metaphor" and verbal metaphor:

"The cine-metaphor is feasible only on the condition that it is supported by a verbal metaphor. The spectator can only understand it in circumstances where there is a corresponding metaphorical expression in his stock of language [. . .] The cine-metaphor is a sort of visual realisation of a verbal metaphor. It is natural that only current verbal metaphors can serve as material for cine-metaphors — the spectator quickly grasps them just because they are familiar to him and are therefore easily guessed at as being metaphors. Thus, for example, the word 'fall' is used in language metaphorically to mean a road to ruin; hence the metaphor proved feasible in The Big Wheel: in the inn where the sailor Shorin finds himself a billiard table is shown — and the billiard falls into the pocket. The totally episodic nature of this scene makes the spectator understand that its sense is not part of the story, but part of the commentary: it is the start of the 'fall' of the hero." (Eikhenbaum 1982: 30)

At the time he wrote the essay in 1926, Eikhenbaum was quite sure that, given the abundance of expressive measures, like different angles, lighting, etc., film metaphor had a bright future ahead of it, and envisaged it as an autonomous cinematic device in the making.

Looking back on his linguistic experiments in the silent cinema, Eisenstein judged structures used in "October" as naïve and coarse. That said, he still considered them metaphors, at one point noting only their primitivism, a necessary feature given their pioneering role in a development of cinematic language. Much like Eikhenbaum, he explores relations between visual and cinematic metaphors, and although he generally seems to be more insightful in his inquiries, they nevertheless shared certain ideas. For instance, commenting on "Battleship Potemkin," Eisenstein describes a metaphor which he designed in a purely verbal fashion: "In Potemkin three separate close-ups of three different marble lions in different attitudes were merged into one roaring lion and, moreover, in another film-dimension — an embodiment of a metaphor: 'The very stones roar!'" (Eisenstein 1949: 253).

Let's revisit the examples above. Are each of them a visualization of specific verbal metaphor, simple enough to be verbalised by the viewer?

The sequence from "The Kid" visualizes Golgotha to evoke a metaphor of trial and tribulation, but it would be equally acceptable to say that it lends visual expression to the phrase "bear one's cross," taken to be a metaphor of a terrible plight. Instrumental metaphors are explained in the script to "October:" "the orators of the petty-bourgeois party poured forth like balalaikas" (Eisenstein 1974: 51). Authors of "Hangmen also die!" also remarked that the scene was composed with the phrase auf den letzten Loch pfeifen in mind.

But if the metaphor is not embedded in the everyday language of the given culture (in the Chaplin example), or the authors themselves do not give us a clue, is it legitimate to argue that there are intersubjective grounds for such direct reading of specific structures, as encouraged by "the very stones roar!"? Let us dwell on this example for a while.

Galvano Della Volpe uses the lion scene in "Battleship Potemkin" to expose the inadequacy occurring between verbal description and imagery. He describes the feeling

"of being at loss of words that must appear banal ('lion—revolutionary,' etc.) when one is confronted with these three brilliant shots of the stone lion (sleeping, awaken, roaring), unmatched (visual) expressivity of which must remain a mystery that cannot be exhibited in words" (Della Volpe 1968).

Nothing along the lines of "the very stones roar" but rather "lion-revolutionary," with a hint of other possibilities for verbal interpretation of the scene.

Let's return to Eisenstein's comments. Instrumental metaphors are explained as follows: "Harps (...) were shown as an imaginist symbol of the mellifluent speech of Menshevik opportunism at the Congress. The balalaikas were not shown as balalaikas, but as an image of the tiresome strumming of these empty speeches in the face of the gathering storm of historical events" (Eisenstein 1949: 245).

As we can see, orators may as much "pour forth" as there is "tiresome strumming of empty speeches" — we can thus imagine that visual metaphor is not entirely discharged in a single verbal expression; one could easily invent a couple more, or even list all the possible readings, and still be left with the impression that one cannot grasp the meaning entirely.

There is obviously no direct cross-translatability of image and words, as much is conceded even by authors arguing that visual metaphors must be sourced from verbal metaphors.

Linguistic studies and the rhetoric prowess of Eisenstein may have led some commentators to suspect that his cinematic structures were often based on creative techniques pursued in Antiquity — using word as a primary substance further moulded into the imagery — but one may assume that usually it was the other way round. Glimpses into the creative processes, including those of cinema, invite the conclusion that artists think about the material of their craft. As a concept, syntagmatic relation between the three lions was probably invented prior to its verbal transcription.

Out of the three metaphors — Golgotha, instruments, and lions — the first two seem rather crude and superficial, whereas the third shines on its own. But in verbal translation they will not differ in structure or value. It would then be wrong to say that visual metaphor draws its vividness and force from verbal metaphor, after which it is said to be fashioned. By visual transformation it immediately takes off as a wholly independent being, now freed from its verbal fundaments which only ignite the metaphorical process.

Conversely, we would tend to agree that each visual metaphor — shrewd or failed, banal or original — can only be translated into the worn out verbal metaphor, or at least this seems to be the case for expressions discussed in this paper. In this sense, visual metaphor is inextricably tied to its verbal counterpart.

Let's now try to reiterate the metaphorical process step by step,

acting on the Eikhenbaum's assumption that it's initiated by a verbal metaphor, which is visualised and re-verbalised by the spectator. Naturally, if it was not for the image's potential to transcend semantic field of the verbal metaphor, such theoretical considerations would be futile, resembling a play with images or a visual riddle. But this is not the case and even the simplest verbal metaphor, when visualized, produces an abundance of additional meanings, along with those not originally intended by the creator, meanings that Ronald Barthes called the third meaning of cinema (Barthes 1977). Even if the verbal metaphor supplies the primary substance, the visual medium causes an expansion of the semantic field. To reverse this process would mean ruining what has just been gained. Ambiguity introduced by visual language is not designed to narrow down possible meanings to the single optimal metaphoric expression; instead, it's is a sort of a hint, a vague suggestion of the idea informing the interpretive process that is not meant to reach some definite point. When asked for clarification what they meant or what they wanted to express, the regular answer of visual artists would be that if they could have put it into words, a picture or a movie would not come into being in the first place.

To understand the triple-lion syntagm, we do not necessarily need to be enlightened with "the very stones roar" or "lion-revolutionary," and in "The Kid" we do not have to discuss which meaning, "Golgotha" or "bear one's cross," is the more fitting one, although there are some conditions to be met for those images to be comprehensible.

Above, we have briefly touched on the idea that silent cinema metaphors violate linguistic rules, or, more precisely, rules of cinematic storytelling, and the very fact that distortion draws attention to the semantic side of the issue.

To this one can reply that psycho- and socio-anthropological research has established that even viewers with little cinematic experience are capable of identifying cinematic techniques, and if these have so far been unknown to them, it is not long before they grasp the idea. What is difficult and unfamiliar is not related to cinema itself (represented here by a peculiar syntax of moving pictures) - the real challenge is to grasp social and cultural phenomena foreign to the given culture. Anthropologists argue that African societies may not understand certain themes or ideas and not because they are inaccessibly structured, but that the system of values or motives driving the characters are unreadable (Morin 2005).

A prerequisite for understanding the three-lion syntagm is to live in a culture that developed connotations of the animal in question. An Inuit will

find it unintelligible, much like an African would be confused with allusions to multiple varieties of snow, each given a separate name in cultures of the North. The simple and primitive syntagm from "The Kid" is viewed as such only in the society that operates with Christian iconography, for all the others it is meaningless and passes unnoticed.

The expressions discussed here are deeply embedded in the linguistic and cultural tradition of Western societies. For that reason, use of those expressions and development of cinematic language along these lines has never raised questions regarding their universal accessibility and intelligibility. Maybe this just means that we have mastered imaginative language, read and speak it effortlessly, but the language itself remains a mystery to us.

We are left with one more problem of a terminological nature. Should we firmly stand by the term "metaphor," however objectionable and controversial it may be, or try to give it a more adequate name?

As we have seen, expressive measures discussed here can be at times safely called metaphors (as in "Potemkin," which, by the by, lacks non-diegetic components), while elsewhere "symbol" or "simile" seems to be more fitting (note, however, that all those figures were sometimes described as metonymies or synecdoches). This would mean that visual expressions, even though resembling rhetorical figures, are in essence distinct phenomena that should have their own classification based on their core structural qualities, rather than similarity to verbal expressions. Therefore, although sparking lively controversies (Henderson 1980), the method used by Metz to describe and classify narrative syntagmas in film seems in the end of the day more appealing, at least as a general idea or a guiding principle. That said, Metz's idea of grand syntagmatic completely ignores the problem that ultimately interests me most. Namely, what is the connection between the given structure and meaning to be discovered on the receiving end. Metz focuses on narrative, whereas my main interest would center around rules of cinematic syntax.

All the expressions discussed in this paper are similar in that they produce relations that emerge after the injection of a non-diegetic agent to the story. This distorts the narrative and signifies the specific manner of reading prescribed by the author, one that transcends the storyline and invites associations of a general nature. However, before the phenomenon can be given a proper name of its own, the theory of film syntax must be developed to the point of being able to incorporate this phenomenon into a wider theoretical framework, and to create comprehensive typology of expressions specific to cinema.

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