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## A SEMANTIC SCALE OF GRADABLE ANTONYMY PAIRS

**Summary.** The significance of the present study lies in the systemic analysis (etymological, semantic, distributional and conceptual) of gradable antonymy represented by the pair 'rich → poor' / 'poor → rich'. Two separate scales 'rich → poor' and 'poor → rich' as well as the common one 'rich → poor' are modeled. The permutations and shifts in the scales witness to the changes in the values expressed by antonyms.

**Key words:** antonym, gradable antonym, scalar methods, relative value.

**Introduction.** Human thinking and language are closely related, and the significance of antonymy (from Greek 'opposite' + 'name') in human thinking is inevitably reflected in human language. Traditional definitions of antonymy only concentrate on the oppositeness of meaning in the language system. The word "antonymy" was coined by C.J. Smith as an opposite of "synonymy". Since 1867, lots of efforts have been taken to define antonymy, but the problem is that the definition of antonymy tends to illustration rather than description [25; 20, p. 52–53]. For example, if we would like to tell others what antonymy is, to give some examples like *old/young, tall/short, open/close, bad/good*, etc. will be more effective than to give a definition. However, finding a definition which could account for every example of antonymy is difficult, even problematic John Lyons defines "antonym" as the words which are opposite in meaning and "antonymy" as the oppositeness between words [17]. For example, "buy" and "sell" is a pair of antonyms and the relation between these two words is termed as antonymy [see the opposite opinion: 18, p. 19–24]. George Leech [13] puts forward the definition of antonym and antonymy in *Semantics* that the opposite meaning relation between the words is antonymy and word of opposite meaning is antonym. For J. Lyons [17], meaning is a system of relations between words. Some traditional definitions are as follows: word of opposite meaning [12]; word of opposite sense [23]; words that are opposite [23]. Their definitions are only rough ideas and over ambiguous. Primarily, they don't explain the ways of oppositeness very concretely. There are generally three kinds of sense relations, that is, sameness relation, oppositeness relation and inclusiveness relation. Antonymy is the name for oppositeness relation. And there are three main types of antonymy, that is, gradable antonymy, complementary antonymy, and converse antonymy [7, p. 164–168].

The end-goal of the present paper is a semantic scaling of antonyms using the principle of downgrading of each constituent of the antonymic pair 'rich → poor' for a further scaling of both constituents. Our methodology is based on the assumption that opposites co-occur within a sentence or discourse and referring to various values of two units on the same scale. The hypothesis suggested here is that semantic components of the antonym pair can build up one common scale from the top to the bottom through the medium point. Two approaches to the semantic study of the scale are initiated (1) from the top to the bottom – decreasing the volume of the value and (2) from the bottom to the top – increasing the volume of the value.

Hence, the traditional opposites represent two states of the subject. The algorithm of linguistic methods: etymological, semantic (definitional, componential and domain modeling), distributional and conceptual is employed to define a complex character of 'gradable' antonyms. The object of the research is antonymy pair 'rich → poor' or 'poor → rich' which is referred to the traditional gradable subgroup retrieved from the encyclopedic dictionaries. The antonymy pairs of the referred type belong to the gradable antonyms characterized by three differential features: (1) they are gradable; (2) they are graded against different norms; and (3) one member of a pair, usually the term for the higher degree, serves as the cover term [7, p. 164; 1, p. 135–137].

**State of the purpose.** There is a relation among a word and the other words in semantics. It is called meaning relation. Basically, the principle of meaning relation consists of four major fields, such as synonymy, antonymy, polisemy, and hyponymy [4, p. 156; 19]. Antonymy, oppositeness of meaning, has long been regarded as one of the most important semantic relations [2, p. 134–135]. Derek Gross et al. argue that antonymy and synonymy are different [6]: synonymy is "a relation between lexical concepts" when antonymy is "a relation between words, not concepts". John Justeson and Slava Katz also refer to antonymy as a lexical relation, "specific to words rather than concepts" [10]. Antonyms need to have "oppositeness of meaning", but they also need to have a strong, well-established lexical relationship with one another. J. Lyons classifies opposition into three categories: antonymy, complementarity and converseness [4, p. 165] in his *Semantics and Introduction to Theoretical Linguistics* [16; 17]. D. Cruse thinks the same way in his *Lexical Semantics* [3]. So the term "antonym" only refers to the set of gradable opposites, which are mostly adjectives, for gradable antonyms reflect one distinguishing semantic feature: polar oppositeness. The study of antonymy attracts the attention of scholars representing different schools who address the issues of the nature and the structure of antonymy and as a category in language [14, p. 483–501; 2, p. 86, 22, 15; 1, p. 60]. Antonymy is unique among lexical semantic relations in that it requires one-to-one relations, rather than one-to-many or many-to-many.

There are three characteristics of gradable antonymy: gradability, a peculiar binarity of antonymy means that some of the 'best' examples of the relation are those that either belong to semantic sets that naturally have only two members (e.g.: *female – male*, the only sexes for which English has well-known names [4, p. 164]) or are the polar categories of something (e.g.: *head – foot, start – finish*) that can be described in terms of a scalar dimension (e.g.: *short – tall, early – late*). The antonyms expressed by adjectives or adverbs may have comparative and superlative degrees. Sometimes the intermediate degrees may be lexicalized, for example, the term for the size which is neither big nor small is *medium*. Second, this antonymy is graded against different norms. In our daily life, words like *male/female, dead/alive, husband/wife* are also considered as antonym pairs, for these words are also opposite in meaning. There-

fore, the other two categories, complementarity and converseness [18, p. 19–24], are included in the field of antonymy only in a broad sense. According to F. Palmer, the core of antonymy is the oppositeness of meaning, whether it is in gradable or complementary or relational, even in a multiple form [21]. At present the concept of scalarity appears in studies devoted to highly varied phenomena such as quantification, gradation, comparison and intensification. It presupposes mostly the existence of a value-scale on which the properties are actualized in the contexts. Scalar approaches to the semantics of gradation are generally based on the conception of degrees as either points or intervals.

**Investigation.** In the first part we will give a systemic analysis of the first constituent rich of the ‘rich→poor’. Etymologically the Modern English adjective *rich* goes back to Common Germanic, see: Gothic *reiks* ← Common Germanic loan ← Celtic *rix*; Old English *rice* “powerful, mighty, exalted, noble, reat” – characteristics of persons; Old Frisian *rike*, *rik* (cf.: Modern Frisian *ryk*, *rik*-, *rijck*), Modern Dutch *rijke*, *rijck*; Old Saxon *riki* (cf.: Modern Low German *rike*); Old High German *rihi*, *rihe* (cf.: Modern German *reich*); Old Norwegian *rikr* (cf.: Modern Norwegian and Modern Swedish *rik*, Danish *rig*), Goth. *Reiks* is believed to represent an early Teutonic adoption of Celtic *rīx* = L. *rēx* ‘king’ (OED). In Modern English the use of the adjectival lexeme *rich* may have been reinforced by French. *riche*, cf.: Spanish *rico* and Italian *ricco* ← Latin *rex* “king”, which is of Teutonic origin. Consequently the Northern Germanic form *rike* was ousted by the Romance form *riche*. The first use of the lexeme *rich* is registered in the written record of 900, wherein the component of abundant wealth is actualized ‘*rice men, frencisce men*’.

We shall start with the definitional analysis of the adjectival lexeme *rich*, as an attribute to the nominations of wealthy (materially or financially) it differentiates the following constituents: *having large possessions or abundant means; wealthy, opulent wealthy, powerful, strong; wealthy in, having abundance of, amply provided with, some form of property or valuable possessions; valuable; of great worth or value; of non-material things; choice; good of its kind; plentiful, abundant, ample*. Cf.: the dominant component represented in other dictionary entries – *having abundant possessions and especially material wealth* [Cambridge English; Random House]; *having wealth or great possession, valuable possessions* (Collins); *wealthy* (Random House). A word or lexeme presents a complex semantic structure [cf.: ‘a loaded’ lexeme: 4, p. 169]. A lexeme is built up of smaller components of meaning which are combined differently to form a different lexeme. The componential analysis [4, p. 270] based on the results of the definitional analysis reveals the following units in the lexical meaning of the adjective *rich*: *abundant possession, material wealth, valuable possessions; high quality; impressive; deep in colour; highly productive; abundant content; entertaining; pure* (Merriam Webster; Collins Cobuild). All semantic components in the word lexical meaning are not equally important. One of them is the dominant organizing around itself all others, which may be more or less important for the meaning of a lexeme in the given context [20, p. 43–44]. The componential structure of the lexeme is not rigid, it undergoes various shifts caused by (1) the author’s intention, (2) the lexeme distribution in the sentence and (3) discourse register. The definition of antonym as a word that expresses a meaning opposed to the meaning of another word, in this case the two words are antonyms preconditioning the existence of a subject possessing an opposite characteristic, and (3) the type of discourse. The semantic features explain how the members of the

set are related to one another and can be used to differentiate them from one another [4, p. 165]. From this set we select “abundant possession, material wealth.” This feature can locate the lexeme *rich* onto the first place of the semantic scale which can be based on the downgrading principle, for instance: *rich* (extremely → rich (moderately) → rich (modest), wherein top, medium and initial points. The given scale stresses three phases of richness reflecting man’s attitude to the state of richness from the owner’s and observer’s angles and both of them are vague or approximate. The fact is that no semantics can fully describe the word meaning without touching upon its pragmatic feature in context. Besides, the opinions of both speakers living in different culture and different language must be taken into consideration as a very crucial matter to avoid misperception and misunderstanding – human thinking and language are closely related, and the significance of antonymy in human thinking is inevitably reflected in human language [2, p. 134–135].

The distributional analysis reveals that the lexeme *rich* combines with other constituents in the sentence – as a prepositional adjunct of NP, i.e. NP ← Adj (rich) + N (human-being) and a nominal predicative: NP (human-being) + V(link) + AP (rich). The first constraint on verbalizing the dominant component of the lexical meaning *poor* is the lexeme distribution. The other constraint is the discourse register – economic state of a human being, character’s profile, company’s description, CV, etc. The subject ‘human being’ can be represented by other human-being nominations, for instance, *men, king, bishop, lord, queen, son*, etc. There is a semantically specific marker in the preposition to the adjective *rich* in the sentence pattern, for instance: *extremely, abundantly, magnificently, highly*, etc. strengthening or lessening the economic state of human-being. The exact volume measuring instrument like US dollar is used in economics, taxation and world rating of rich people, the blank points between the tree major points can be filled in from a semantic domain by units used in various professional discourse registers. If we continue the scale downwards we evidently approach the point ‘*poor*’ (poverty). Paradigmatic relations, for the most part, reflect the way infinitely and continuously varied experienced reality is apprehended and controlled through being categorized, subcategorized and graded along specific dimensions of variation. They represent systems of choices a speaker faces when encoding his/her message, while syntagmatic aspects of lexical meaning, on the other hand, serve discourse cohesion, adding necessary informational redundancy to the message, at the same time controlling the semantic contribution of individual utterance elements [6, p. 86; 8, p. 232–254].

The semantic domain may represent a conceptual system of “rich” and the adjectival lexeme *rich* actualizes the concept *rich*. As for the synonyms of *rich* sharing the common component can build up a semantic domain to verbalize the conceptual system of *rich*, for instance: *wealthy, opulent, affluent, well-off, well-stocked, full, productive, a rich supply of fresh, clean water, full-bodied, heavy, sweet, fruitful, productive, fertile, abounding, full, resonant, full, deep, vivid, strong, deep, an attractive, glossy rich red color, costly, fine, expensive, funny, amusing*, etc. Again for the present research we extract the units denoting ‘abundant property volume’. The scale value can be possibly relevant primarily to the grammatical meaning of the adjectives and adverbs, for instance, *rich – richer – richest*, therefore, it may be considered a grammatical feature. As one can see this scaling is a syntagmatic feature which helps model the semantic scalar. We suggest that graduality is rather a semantic variation of the content value of the nominations, in our case. This is the

way from intuitive modeling semantic subgroups, groups, fields to constructing semantically measured subgroups, groups, fields registered in discourse. It is a crucial difference between lexical-grammatical scalarity and semantic graduality in cognitive semantics.

In the second part of this paper we will analyse the etymology, meaning, distribution and the ways scaling the adjectival lexeme *poor*, a traditional antonym of *poor*. The etymology of the adjective *poor* has revealed the following shifts: the Modern English *poor* developed from Middle English *pov(e)re, pouere, poure* which came from Old French *povre, -ere, poure*. See: Modern French *pauvre, dial. paure, pouvre, poure*; Italian *povero*; Spanish, Portuguese *pobre* originally Latin *pauper* → Late Latin *pauper-us*. The first use of the lexeme *poor* 'needy' opposing 'rich' registered in 1300. It also actualized the component of 'spiritual wealth' 1438.

As for the definition of the adjective *poor* it includes the following interpretations: *lacking material possessions* [Merriam Webster], *lacking money* [McMillan] *absence of property or money* [Cambridge], *humble or low rank, weak health, lean or feeble condition from ill feeding, scanty, insufficient, inadequate, supply* [McMillan]. We have selected mainly the adjectival lexeme *poor* characterizing a human-being "–" *material wealth*. It is defined in the dictionary entry as "having few, or no, material possessions; wanting means to procure the comforts, or the necessities, of life; needy, naked, bare, indigent, destitute; spec. (esp. in legal use) so destitute as to be dependent upon gifts or allowances for subsistence, late, deceased.

The following components are revealed in the lexical meaning of the adjective *poor* in the process of the componential analysis [14, p. 20]: *impecunious, petty, lacking, inadequate, barely, meager, insufficient, scanty, etc.* If we put the component *inadequate material possessions* on to the top of the semantic scale then the component *lack of material possession* will occupy the bottom point and the component *modest material possession* can occupy the middle point, see: extremely poor → moderately poor → very poor. The given scale stresses the three phases of poverty reflecting the owner's attitude to his/her state of poverty likewise those of *rich* and the observer's angle to the subject's state of poverty and one can see that both of them are vague or approximate [cf.: 8, p. 232–254]. In general discourse the measure of poverty is vague, while in the professional one, for example in economy, taxation the US dollar can be employed as a measuring of the value volume of the lexical meaning. The semantic scale is based on the value downgrading or value lessening, wherein the opposites are considered to be traditional antonyms.

The distributional analysis of the lexeme "poor" is concerned its combinability with other constituents in the sentence – as a prepositional adjunct of NP, i.e. NP ← Adj (poor) + N (human-being) and a nominal predicative: NP (human-being) + V (link) + AP (poor) The first constraint on verbalizing the given component of the lexical meaning *poor* is the distribution like: NP ← A(rich) + N (human-being). The other one is the discourse register – economic state of a human being, character's profile, company's description, CV, etc. There is a semantically specific marker used in the preposition to the adjective *poor* in the sentence pattern, for instance: *exciting, small, little, pretty, very, etc.* strengthening or lessening the economic state of human-being. Lexical semantic relations in the structuralist framework are of two fundamental types: they are either paradigmatic or syntagmatic relations. A paradigmatic relation is one in which the related words constitute a set of potentially substitutable expressions, including antonymy, synonymy, and hyponymy [20, p. 42, 101–102]. A paradigmatic approach to lexical

relations [17] is the one focusing on the semantic properties that define such sets. A syntagmatic (or contextual/use) approach describes the meaning of a word as it is used across contexts [5; 24]. Hence, the syntagmatic aspects of lexical meaning, on the other hand, serve discourse cohesion, adding necessary informational redundancy to the message, at the same time controlling the semantic contribution of individual utterance elements [5]. Michael N. Jones et al. admit that paradigmatic similarity between two words emphasizes their synonymy or substitutability (or oppositeness), whereas syntagmatic similarity emphasizes associative or event relations [9, p. 250].

The retrieved components represented by lexemes with the common component can organize the semantic domain which may verbalize a conceptual system. According to semantic field (or semantic domain) theory [4, p. 157], lexemes sharing a common feature are classified into a system which semantic features explain how the members of the set are related to one another and can be used to differentiate them from one another. This part of investigation is focused on the lexeme *poor* expressing various degrees of *material possession*, from *absolute want to straitened circumstances* or *limited means relatively to station*. The semantic domain of *poor* includes all the adjectival lexemes sharing the referred component, for instance: *meager, inferior, humble, lean, unproductive, unfavorable, impoverished, average, limited* [Thesaurus]. Again we select adjectives with the common component *inadequate possession* which may represent the conceptual system of *poor* (*inadequate material possessions*). We must admit that a pragmatic component of 'poor' is traditionally *honest*, for instance, '*poor, but honest cobbler's son*', '*poor but honest parents*', '*poor-but-honest*', etc., while this component is not frequent marks the lexeme *rich*. The semantic structure of a lexeme is treated as a system of components. Additionally the constituents of the 'rich → poor' or 'poor → rich' can be treated as multiple antonyms which have more than one opposition. It means that if the quality of one downward on the scale is lessened, then it follows that the other upwards on the scale is necessarily increased [3]. The correlations reveal different phases of the economic state of the subject. The values represented by adjectival lexemes *rich* and *poor* are relative – the principles of rating mainly depend on the rating company, cf. Forbes: the World's billionaires, where the 'winners' and 'losers' are presented, for instance Bill Gates (\$86 B) is on the top of the scale and may be considered the highest value of the lexeme *rich* but Zjyou Yifeng (\$1 B) is the "poorest" on the bottom of the *rich* scale, though he may be on the top of the "poor" scale, i.e. *permutation* may be considered a differential marker of the general semantic 'rich → poor' / 'poor → rich' scale making the values relative. Therefore economists use GDP per capita as the standard method of measuring how wealthy (Qatar, Luxembourg, Singapore) or poor a given country (Nigeria, CAR and Eritrea) is compared to others countries. There is one more instrument of measuring the economic status of the citizen, cf.: the UK Living Wage is £8.45 an hour and the US Living Wage is \$15.84 per hour, but the Democratic Republic of Congo daily living wage is \$3 dollars.

The earliest cognitive studies are restricted to oppositeness in adjectives, and centre on the relation between gradability and different logical types of oppositeness [2, p. 135–137]. Building on the structuralist work on antonymy, Cruse and Togia [3] provide the first attempt to develop a Cognitive model [12; 11] for scalar antonyms such as rich → poor. In order to be able to account for antonyms within the Cognitive framework, they invoke a number of theoretical notions used in Cognitive Linguistics.

**Conclusions.** Antonyms are exceedingly valuable in defining the exact meaning of a given word and its synonyms. From the linguistic point of view, one of the main concerns of studying antonymy is to determine the boundaries of antonymy value and its permutations and shifts in the domain using a scalar analysis. To classify antonyms on the semantic scale requires a corpus analysis based on various professional discourses, though there is always the speaker's intentional meaning which is hardly possible to reveal with the exact measuring.

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#### Михайленко В. В. Семантична шкала градації антонімічних пар

**Анотація.** Значущість цього дослідження полягає у системному аналізі (етимологічному, семантичному, дистрибутивному і концептуальному) градуваної антонімії, представленою парами 'rich → poor' / 'poor → rich'. Змодельовано окремі семантичні шкали 'rich → poor' і 'poor → rich', а також одна спільна 'rich → poor'.

**Ключові слова:** антонім, класифікація, градація, скалярність, відносна цінність.

#### Михайленко В. В. Семантическая шкала градации антонимических пар

**Аннотация.** Значимость данного исследования заключается в системном анализе (этимологическом, семантическом, дистрибутивном и концептуальном) градуированной антонимии, представленной парами 'rich → poor' / 'poor → rich'. Смоделировано две отдельные семантические шкалы 'rich → poor' и 'poor → rich', а также одна общая 'rich → poor'.

**Ключевые слова:** антоним, классификация, градация, скалярность, относительная ценность.