

TYPICALITY RATING OF AN AGENT'S FEATURES INFERRED
FROM VERB-PREDICATE MEANING

UDK 81'23

DOI: 10.56246/18294480-2024.16-386

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The present article investigates how agentive verb-predicates that denote interaction between people are associated with certain personal characteristics. It applies the approach to the semantic role of an agent as a feature-based and prototypically structured concept that constitutes an implicational part of verb meaning. A dichotomous yes/no experiment with a stimuli sequence “Person X [verb] Person Y. Person X is [characteristics]?” demonstrated the ability of L 2 English speakers to draw judgement about the character of a person in action inferring from prototypicality of a certain characteristic from verb-predicate meaning. The frequency of positive or negative responses reveal the degree of typicality of agent’s characteristics and this typicality corresponds to the type of implication in terms of strong, weak or negative implicational semantic features in the structure of verb meaning. The study opens new perspectives for linguistic modeling of personality images and revealing biases from verb-predicate selections in event descriptions.

Keywords: *verb meaning, semantic role, agent, person’s characteristics, implicational semantic features, inference, typicality of a feature.*

Introduction

The key idea of cognitive linguistics is that meaning of words represents the way people perceive and process information from the outer world (Geeraerts, 2006¹). It is assumed that people work out attributions while observing somebody acting in a particular way in a certain event or situation (see an overview of research to the topic

¹Geeraerts, D. (2006). Cognitive linguistics: Basic readings. Vol. 34. Walter de Gruyter. P. 5.

in Hinton, 2015¹). Similar inference is done when the event or situation is verbalized, and the choice of words plays a crucial role in processing attributions about a person's character traits, intentions, motives, attitudes etc. The **aim** of the current study is to reveal typical associations of verbs that describe actions instigated by a person with words that denote person's characteristics. Its **relevance** is determined by anthropocentric approach that forms the framework of modern linguistics. The paper applies the findings and methodology of cognitive research line and presents new empirical evidence of the associative ties of verbs as well as inferences of verb meaning.

As the verb is a special part of speech that denotes events or situations in time-space continuum (Engelberg, 2004; Rappaport-Hovav, 2010; Кубрякова, 1997), it should store certain information about the characteristics of participants of a denoted event. In linguistic literature such participant is labeled as **an agent** (a type of deep case (Fillmore, 1968; Cook, 1989), a semantic or thematic role (Jackendoff, 1983; Rappaport Hovav, 2010).

Scholars argue whether a verb assigns the role to its subject argument (Fillmore, 1968; Aitchison, 2012²) or the semantic class of an argument modifies the verb meaning (Goldberg, 2013; Cheng, 2023). The so-called **agentive verbs** are distinguished as having an in-built agent role in their meaning. This incorporation correlates with referential properties of their subject nouns (Cruse, 1973³). Previous research provides evidence that the category of agent is a part of core knowledge (Carey, 2000; Hafri et al, 2018; Stickland, 2017;) and has a prototype structure (Dowty, 1991; McRae et al, 1997; Ferretti et al., 2001). Studying predicate semantics, D. Dowty describes a set of functional semantic features that build the category. Protoagent is active, volitional, autonomous, sentient, with energy and self-control. These features are part of meaning of agentive verbs. They are activated to draw "family resemblance" with the subject – a noun in corresponding syntactic position. For example, "*The door opens*" could be interpreted in terms of conceptual metaphor: the door is endowed with volition, self-control and power to initiate the action. K. McRae, T. R. Ferretti, L. Amyote and A. Hatherell reveal more specific features within an agent role in the verb meaning, such as *scary* for *frighten*, that contribute to

¹ Hinton, P. R. (2015). The perception of people: Integrating cognition and culture. New York, London: Routledge. P. 65-72.

² Aitchison, J. (2012). Words in the mind: An introduction to mental lexicon. Wiley-Blackwell. P.138-142.

³ Cruse, D. A. (1973). Some thoughts on agentivity. In: Journal of Linguistics, 9(1). P. 12. 11-23

identifying more or less prototypical role fillers, for example, *a monster* is more typical as an agent for *frighten* than *a baby* (McRae, 1997¹).

Our study continues this line of research and aims to find out how strongly certain personality characteristics are associated with an agent performing certain action. Twenty agentive verbs were selected as a material for experimental survey. Most verbs reflect conventionalized socio-cultural patterns of judging a person's character by a type of action, e. g. *A person who welcomes another person is (typically) hospitable*. It should be specifically noted, that characterizing features of an agent are part of implicative meaning of a verb, thus their activation in context is probabilistic rather than obligatory.

Method

A hundred graduate students of the English language department in Minsk State Linguistic University took part in a survey organized on psytoolkit.org (Stoet, 2017). All students were tested to have B2 level of English competence. The survey additionally contained a question "What best describes your level of English" to self-assess language competence choosing from the following options:

- I'm fluent in English (able to express any idea without difficulty);
- I'm proficient in English (able to explain how this language works to other people);
- I'm good at English (able to keep conversation without much difficulty);
- I'm a basic user (able to communicate on everyday topics);
- I'm still learning to speak English.

Of all the respondents 72 people were chosen for further task, including those who marked fluency of English (15 respondents), proficiency (29 respondents) and the ability to keep conversation without much difficulty (28 respondents).

The task was designed as dichotomous yes/no questions: "*Read the 2 statements: the first describes an action with two people involved, the second gives characteristics of a person. Choose "YES" if the characteristic is CORRECT for a person in action. Choose "NO" if the characteristic is WRONG. The time is restricted, so give a quick answer, or the screen changes for the next question.*" The time restriction was 7000 ms. The first three questions were used for training and were not included in data for analysis.

The statements were modeled as "Person X [verb] Person Y. Person X is [characteristics]". Thus, a verb in the basic SPO construction is contextualized in its agentive and interpersonal variant of meaning. Characteristics were represented by

¹ McRae, K., Ferretti, T. R. & Amyote, L. (1997). Thematic roles as verb-specific concepts. *Language and cognitive processes*, 12 (2/3). P. 149-154.

adjectives describing personal features. As the agent is represented only as a category name (person), the information about his characteristics should be inferred from the verb meaning. The choice of characteristics was made based on the componential analysis of verb meaning in dictionary entries and on the researcher's intuition. A certain number of adjectives were chosen as the opposite characteristics to check whether the verb meaning could affect agent's characterization in a way of denying certain features.

Results and discussion

Generally, the respondents coped to answer questions within the time limit: no more than 3 blank answers were left for a number of questions; the average time was 4770 ms. ranging from mean 5920 to 3953 ms. per question. Certain verb – characteristics pairs had a substantial dominance of either positive or negative response while others didn't show any relevant "yes/no" percentage difference (see Table).

Table. The frequency of responses and time reactions to verb - characteristics stimuli.

Nº	Verb	Characteristics	Positive response	Negative response	Average time of reaction
1.	thank	Polite	98 %	2 %	4021
2.	welcome	Hospitable	93 %	7 %	4455
3.	attack	Aggressive	90 %	10 %	4200
4.	educate	knowledgeable	89 %	11 %	4611
5.	abuse	Cruel	88 %	12 %	5810
6.	help	Kind	87 %	13 %	4376
7.	save	Brave	86 %	14 %	5920
8.	threaten	Hostile	82 %	18 %	4567
9.	serve	Subordinate	51 %	49 %	5902
10.	protect	Strong	66 %	34 %	4679
11.	control	strong-willed	65 %	35 %	4890
12.	praise	Respectful	64 %	36 %	4356
13.	criticize	Unfriendly	37 %	63 %	5657
14.	lead	Subordinate	23 %	77 %	4826
15.	defend	Aggressive	21 %	79 %	4534
16.	fight	Weak	14 %	86 %	4877
17.	warn	Aggressive	13 %	87 %	4625
18.	steal	Honest	8 %	92 %	4547
19.	teach	Stupid	5 %	95 %	4611
20.	understand	Stupid	0	100 %	3953

The distribution of positive and negative responses shows the degree of typicality of a certain characteristic for the agent in a certain action. This typicality could be interpreted in correlation with the stochastic model of meaning by M. V. Nikitin (1988). He distinguishes **the intensional**, or obligatory semantic features that make up the meaningful core of the meaning; and **the implicational**, or “meanings induced by the intensional due to the implicational connections of features”¹. Within the latter one, M. V. Nikitin singles out a tough implicational (obligatory and necessary implication that is 100 % actualized in each word use), a strong implicational (a high degree of probability of a feature), a weak implicational (the presence or absence of a feature is equally likely) and a neg-implicational (the absence of a feature is highly probable). The results of the survey correlate with three types of implicational features:

- strong implicational: agent’s characteristics having more than 80 % of positive answers (lines 1-8 in the Table);
- weak implicational: agent’s characteristics are in the range of less than 80 % of either positive or negative responses (lines 9-15 in the Table);
- neg-implicational: the characteristics is given more than 80 % negative response (lines 16-20 in the Table).

In particular, strong implication was revealed in pairs that are connected with social codes of behavior like *thank*, *welcome*, *help*. Negative traits of character are viewed as typical for an agent of verbs *attack*, *abuse*, *threaten*. The meaningful difference between *threaten* and *warn* is that the feature “aggressive” is part of a strong implicational for the former and part of a neg-implicational for the latter. Aggressiveness is also perceived as unlikely for the agent of the verb *defend*. For its synonym *protect* the characteristic of “being strong” is more likely, as well as “strong-willed” for the verb *control*, both are included in weak implicational.

Attitudinal characteristics “respectful” for *praise* and “unfriendly” for *criticize* are also part of a weak implicational in each corresponding verb meaning. “Being weak” is highly unlikely for a person who *fights* and “honest” – for a person who *steals* (both of the mentioned characteristics are neg-implicational). A rather unexpected result of strong implication demonstrated the pair “save – brave”, as we hypothesized this feature to be part of a weak implicational. Probably the rhyming forms of words contributed to the strength of association.

Status characteristic “subordinate” is viewed as neither typical nor unlikely for agentive verbs *lead* and *serve*. Intellectual ability of an agent is a highly relevant

¹ Никитин, М. В. (1988) Основы лингвистической теории значения. Москва: Высшая школа. С. 164.

characteristic for verbs *educate*, *teach*, *understand*: while “knowledgeable” is part of strong implicational for *educate*, “stupid” is a neg-implicational feature for *teach* and *understand*. The typicality of intellectual features for verbs of profession *teach* and *educate* is partly justified by the fact that the respondents are students specializing in teaching English, so they have a positive image of a teacher that coincides with their self-image.

The results of the survey correlate in many ways with the experimental study of thematic roles as verb-specific concepts (McRae et al. 1997). While the previous research has provided empirical proof that “the thematic role knowledge is linguistically relevant in the sense that it is computed and used immediately and automatically in on-line language processing”¹, our work demonstrates that for L2 speakers it is computed immediately as well and used to draw judgment about the character of a person in action. K. McRae et al. collected lists of features to represent agent and patient roles for their selection of verbs in a 45-minute experiment session with native English-speaking students, while we focused on evaluating a particular feature in terms of its typicality, the time limit being a necessary condition to activate implicit association.

To conclude, the study of specified features of an agent as part of implicational verb meaning opens new perspectives for language analysis, in particular, modeling personality images and revealing biases from verb-predicate selections from event descriptions (for example, the choice between *defend* and *attack* or *warn* and *threaten* in texts about a particular person involved in physical or verbal hostility). Considerably, more surveys will need to be done to determine the typicality of particular characteristics of agents for particular verbs (the list of verbs being expanded). In particular, directed association tests that collect first associations within the time limit and experiments with a set-up scale for typicality judgments about characteristics of an agent will complement the current survey results.

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**ԲԱՅ ՍՏՈՐՈԳՅԱԼԻ ԻՄԱՍՏԻՑ ԲԽՈՂ ԱԳԵՆՏԻ
ԱՌԱՆՁՆԱՀԱՏԿՈՒԹՅՈՒՆՆԵՐԻ ԳՆԱՀԱՏՈՒՄ**

ԲԵԿՐԵԵՎԱ ՅՈՒԼԻԱ

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Հոդվածում դիտարկվում է, թե ինչպես են ագենտիվ բայ ստորոգյալները, որոնք ցույց են տալիս մարդկանց միջև փոխազդեցություն, կապված որոշակի անհատական հատկությունների հետ: Հատկանշվում է ագենտի իմաստային դերը որպես հատկանիշի վրա հիմնված և նախատիպային կառուցվածքային հատկանիշների ամբողջականություն, որը կազմում է բայի իմաստի իմպլիկատիվ մասը: X դեմքը [բայ], Y դեմքը. X դեմքը [հատկանիշն] է» Այո / Ոչ պատասխան ենթադրող արտահայտությունները բացահայտում են պատասխանողների, անգլերենը որպես օտար լեզու սովորողների կարողությունը՝ դատողություն անել գործողության մեջ մարդու բնավորության վերաբերյալ՝ որոշակի բնութագրի նախատիպականությունը բխեցնելով բայ ստորոգյալի իմաստից: Դրական կամ բացասական պատասխանների հաճախականությունը ցույց է տալիս ագենտի բնութագրերի բնորոշության աստիճանը, և այս բնորոշությունը համապատասխանում է իմպլիկացիայի տեսակին՝ բայի իմաստի կառուցվածքում ուժեղ, թույլ կամ բացասական իմպլիկատիվ իմաստային առանձնահատկությունների առումով: Ուսումնասիրությունը նոր հեռանկարներ է բացում անհատական պատկերների լեզվական մոդելավորման և իրադարձությունների նկարագրություններում բայ ստորոգյալների ընտրության տարբերությունները պարզելու համար:

Բանալի բառեր՝ բայի իմաստը, իմաստային դերը, ագենտ, անձի բնութագրերը, իմպլիկատիվ իմաստային հատկանիշները, եզրակացություն, հատկանիշի բնորոշությունը:

ОЦЕНКА ТИПИЧНОСТИ ПРИЗНАКОВ АГЕНСА, ВЫВОДИМЫХ ИЗ ЗНАЧЕНИЯ ГЛАГОЛ-ПРЕДИКАТА

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В настоящей статье рассматривается, как агентивные глаголы-предикаты, обозначающие взаимодействие между людьми, проявляют ассоциативную связь с определенными личностными характеристиками. Исследование развивает подход к семантической роли агенса как прототипически структурированной совокупности признаков, составляющих имплицативную часть значения глагола. Эксперимент со стимульными фразами «Person X [verb] Person Y. Person X is [characteristics]?», предполагающий выбор ответа «да/нет», продемонстрировал способность респондентов, владеющих английским языком как иностранным, инферировать прототипичность определенной характеристики по значению глагола-предиката. Частота положительных или отрицательных ответов раскрывает степень типичности характеристик агенса, и эта типичность соответствует типу импликации, а именно, относится ли данная характеристика к сильному, слабому или отрицательному импликационалу в глагольном значении. Исследование открывает новые перспективы для лингвистического моделирования образов личности и выявления случаев необъективности и манипуляции мнением, связанных с выбором глагола-сказуемого в описаниях событий.

Ключевые слова: значение глагола, семантическая роль, агенс, характеристики личности, имплицативные семантические признаки, инференция, типичность признака.

Հոդվածը ներկայացվել է խմբագրական խորհուրդ 06.09.2023թ.:

Հոդվածը գրախոսվել է 23.09.2023թ.:

Ընդունվել է տպագրության 17.05.2024թ.: