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Research article

Animacy variation in the IT-sphere technical terms in Russian speech: typology, peculiarities, and accompanying processes

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Abstract. Based on the vocabulary of the IT sphere, the study examines forms and constructions that are inconsistent in expressing the grammatical category of animacy in modern Russian speech. The relevance of the study is determined by insufficient research in grammatical variants whose differences are manifested only in the accusative case, causes and conditions for such variation in the names of humanoid devices (e.g. *создать робот / робота* ‘to make a robot’; *подключить голосовой помощник / голосового помощника* ‘to turn on the voice assistant’). The aim of the study is to identify the features of grammatical variation of technical terms regarding (in)animacy in the 2010s and 2020s, marked by the emergence of new cases of fluctuation in the accusative case. The material includes the Russian National Corpus and the electronic media bank “Integrum”. The author extracted contexts containing nouns with varying accusative case forms, including compound nominations such as *робот-водолаз* ‘robot-diver’. The methodology of the article includes morphological, semantic, and linguistic-cognitive analysis. The study is the first to present corpus data on the fluctuations in the accusative case of compound nouns whose components express animacy / inanimacy in different ways within the language system. As a result, two types of animacy-related variations, lexical-grammatical and grammatical, have been established; features of variation in technosphere nouns, including compound nouns which nominate human-like programs have been revealed; a hypothesis about (mutual) animacy / inanimacy agreement within compound substantives in the Russian language have been suggested for the first time in scientific literature. The author concludes that the grammatical category of animacy is still forming in the Russian language. The prospects for the research lie in examining the accusative case of new nominations featuring the first component *ИИ*- ‘AI’.

Conflict of interest. The author has no conflict of interest to declare.

Keywords: the Russian language, use of the term, grammatical variants, accusative case, compound nouns, agreement, nominations of humanoid devices, anthropomorphism

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Introduction

Language variability at all its levels and in all its subsystems is one of its ontological features; the concepts of language by W. von Humboldt, F. de Saussure, and others specifically noted this point. M.L. Kotin writes on this subject: “The fundamental mutability of any natural language is an axiom and cannot therefore depend on any external or internal factors other than the all-encompassing factor of time” (Kotin, 2018: 178). This means that the language system is altered not only by turbulent social upheavals, but also by more subtle processes of an internal, cognitive nature that are imperceptible to the naive native speaker. Such processes include, for example, changes in the form of a linguistic sign that are not directly, in a way obvious to the average native speaker, linked to its content. As a rule, these changes affect the language grammar system and manifest in various ways: this may involve, for example, a word or word form acquiring new grammatical features, or the variability of a linguistic unit with respect to a particular grammatical category. This study will focus on such category, animacy /inanimacy of Russian nouns.

Can the processes currently taking place within this category be considered **active**? We believe that the answer is yes, since the reaction to grammatical animacy/inanimacy (i.e., the ending in the accusative case) is ambiguous for some lexical units, which is accompanied by a truly “living” process of variation. To give a brief illustration, we present two quotes from media materials published on the same day, on February 10, 2026¹: *Голосовой помощник ЕДЦ (Единого диспетчерского центра. — Е.М.) усовершенствовали для консультаций москвичей по вопросам ЖКХ²(заголовок). ‘The voice assistant of the UDC (Unified Dispatch Center. — Е.М.) has been improved to provide consultations to Muscovites on housing and utilities issues (headline)’. — Ответив на вопросы, Аврора (голосовой помощник. — Е.М.) просит поставить ей оценку — эта опция поможет разработчикам сделать голосового помощника еще более эффективным³. (Новости). ‘— After answering questions, Aurora (voice assistant. — Е.М.) asks to be rated; this option will help developers make the voice assistant even more effective’. (News).*

As we can see, the same noun in the same accusative case is used both as an inanimate and as an animate noun.

The inflectional variation of this and other nouns discussed in this article supports A.B. Penkovsky’s thesis that the animacy category in modern Russian is still being formed (Penkovsky, 2004: 85). This is precisely why our study is **relevant**. It is relevant because of the insufficient study of the phenomenon of variation manifested in nouns, including compound nouns, in the accusative case; the lack of a typology of grammatical variants whose differences manifest in relation to animacy; and the absence of fundamental research on new instances of variation based on this feature.

¹ Retrieved by continuous sampling from the “Media Archive” service of the Integrum electronic archive of periodicals from Russia and the CIS countries, using the query “voice assistant”.

² Moskva 24. Retrieved 10 March 2026, from <https://www.m24.ru/news/10022026/872195>

³ Gudok. Retrieved 10 March 2026, from <https://gudok.ru/newspaper/?ID=1743070>

Meanwhile, the formation of the grammatical classes of animate and inanimate nouns presented, for example, in (Krysko, 1994) attests to the unique specificity of this category, a fact also noted in the works of foreign Russianists (Fraser, Corbett, 1995; Timberlake, 2004; Swart, Lamers, Lestrade, 2008). The following points are particularly important for our study: 1) Originally, differences in the accusative case reflected the social roles and social status of living entities (the accusative was formed as the genitive for masculine nouns denoting socially active persons (*prince, governor*); 2) The division of nouns into animate and inanimate, which does not mirror physical reality with its “living – nonliving” dichotomy, is ambiguous, conditioned by the national-cultural specificity of public consciousness⁴. In the 2010s and 2020s, the spontaneous attribution of grammatical animacy features to the names of inanimate objects (*сделать голосового помощника giving a voice to an assistant, создать бота creating a bot*) is comparable to deviation from common sense that have long been documented by grammatical science (Russian Grammar..., 1980: 463–464) and are evidently created by a linguo-cognitive mechanism with the function of interpreting reality through language at its deepest level.

The aim of this study is to identify the characteristics of noun variation in animacy in the 2010s and 2020s, using the rapidly developing vocabulary of the IT sector as a case study.

Methods and Materials

The methodology for analyzing the language material includes morphological, semantic, and linguistic-cognitive analysis. The sources of material were the Russian National Corpus (main and newspaper subcorpora; 1985–2021) and the “Integrum” electronic archive of periodicals from Russia and CIS countries (the “Media Archive” service; 2021–2026). Contexts containing nouns with varying accusative forms, including compound terms such as “*robot-diver*”, were extracted using object-based search and continuous sampling methods, respectively. The set of units queried in the case of object-based search was formed through participatory observation of the growth of terms denoting high-tech humanoid programs and devices in the Russian language.

Results

The following results were obtained during the study:

1. The vocabulary and structural diversity of technicisms varying in terms of animacy, designations of high-tech software tools and devices which perform human functions or imitate them, were determined. The vocabulary included single-word terms such as *robot, bot* and their derivatives, compound words with an uninflected first component (*AI-, online-*, etc.) and a second component denoting a person (), compound terms with base nouns such as *translator, helper, assistant, editor*, etc., compound nouns with the first component “robot-”.

2. The thesis regarding the open nature of the group is substantiated, driven by such factors as the creation of new technical terms based on existing ones when

⁴ For example, мертвец ‘dead person’ и покойник ‘dead person’ are animate.

there is a need for further modification (*текстовый редактор* ‘text editor’, *онлайн-редактор* ‘online editor’, *нейросеть-редактор* ‘neural network editor’, *ИИ-редактор* ‘AI editor’); the presence of formal variants of the term (*онлайн-переводчик* — *online переводчик* ‘online translator’); an increase in the number of new terms with the first component ИИ- / AI- based on proper nouns.

3. A connection has been established between the variation of the term in the accusative case and its type: secondary (*помощник* ‘assistant’, *ассистент* ‘assistant’, *редактор* ‘editor’, etc., as program names) and primary (*бот* ‘bot’, *чат-бот* ‘chatbot’, etc., based on the meaning ‘program’): the presence or absence of a formal-semantic connection between the varying unit and an animate personal noun determines the specific variation, including its preservation (for primary nominations) or elimination (for secondary ones).

4. Based on a quantitative analysis of the accusative forms of animate and inanimate nouns (hereinafter referred to as Acc. ANIM and Acc. INANIM), a near-100% predominance of the inanimate variant has been established in secondary IT-related terms that entered the Russian language in the late 20th century (*мастер подсказок* ‘prompt master’, *переводчик* ‘translator’, *почтовый клиент* ‘email client’), while the phenomenon itself remains active in newly emerging terms of this type (*ИИ-редактор* ‘AI editor’, *ИИ-переводчик* ‘AI translator’, *ИИ-помощник* ‘AI assistant’, etc.).

5. The systematic variation in primary technical terms (*робот* ‘robot’, *бот* ‘bot’) with Acc. ANIM predominance has been identified; the variation is conditioned by the presence of the ‘human-like’ seme.

6. Based on compound nouns containing the component “*робот-* ‘robot-’,” a correlation was established between the speaker’s preference for the case forms Acc. ANIM and Acc. INANIM and the grammatical animacy/inanimacy of the second component (e.g., *осмотреть робот-вертолет и роботов-разведчиков* ‘inspect the robot helicopter and robot scouts’).

7. The principle of agreement in animacy/inanimacy between the components of compound nouns (*создать робот-водолаз, робот-дезинфектор; создать робота-водолаза, робота-дезинфектора* ‘create a robot-diver, a robot-disinfector’) has been established, a phenomenon previously unrecorded in Russian grammars.

8. The main types of grammatical variation in animacy in nouns have been identified: grammatical (variation within the same meaning: *создать бот/бота* ‘create a bot’) and lexical-grammatical variation (variation among different lexical-semantic variants of a polysemous word: *выучиться на редактора – использовать текстовый редактор* ‘to learn to become an editor – to use a text editor’).

Discussion

Composition and Structure of Varying Technical Terms

Thus, the nouns observed, which vary in the accusative case, form a homogeneous thematic group: these are names of technical devices (options, programs) which perform human functions, imitate human activity, both mental

(онлайн-переводчик ‘online translator’) and physical (робот-санер ‘mine-clearing robot’). However, from the perspective of name **creation**, technicisms differ fundamentally: some are **secondary** names created through metaphorical transfer based on function (this is how many *terms* came into use: дворники ‘windshield wipers’; истребитель ‘jet fighter’, разведчик ‘reconnaissance aircraft’, бомбардировщик ‘bomber’ referring to aircraft; регистратор ‘recorder’, навигатор ‘navigator’ for car devices; аудиогид audio guide, etc.). Modern techno sphere includes навигатор ‘navigator (for a website)’, мастер ‘master (of prompts)’, редактор ‘(text) editor’, переводчик ‘translator’, компилятор ‘compiler’ ‘a program that translates from one machine language to another,’ and similar terms with their primary meaning referring to a person.

The second group, no less representative in terms of quantity, consists of **primary** terms: робот ‘robot’, бот ‘bot’, чат-бот ‘chatbot’, спам-бот ‘spam bot’, etc. They were borrowed into the Russian language; they lack the “background” of an original animate lexical-semantic variant (LSV) which the terms in the first group possess. The presence or absence of this semantic feature influences the grammatical behavior of the terms, as we demonstrate below.

The terms in the thematic group under study are also heterogeneous **in structure**. Technical terms consist of:

- one-word terms: робот ‘robot’, бот ‘bot’, навигатор ‘navigator’;
- compound nouns: робот-водолаз ‘robot-diver’, бот-программа ‘bot-program’, нейросеть-портретист ‘neural network-portraitist’;
- compound words with an uninflected first component, including abbreviations: чат-бот ‘chatbot’, спам-бот ‘spam bot’, нанобот ‘nanobot’, ИИ-редактор ‘AI editor’, онлайн-переводчик ‘online translator’;
- established noun phrases of various structural types: цифровой двойник ‘digital twin’, цифровой полицейский ‘digital police officer’, голосовой ассистент ‘voice assistant’; мастер подсказок ‘hint master’, редактор изображения ‘image editor’, etc.

One-word terms have a high derivational productivity in both groups. When an object becomes relevant and demanded (e.g., machine text translation and its editing), the same base noun is used for naming its modifications. This forms a word family with its head and compound terms that vary in structure and lexical content. In this case, the noun realizes both its left and right valencies. See, for example: редактор ‘editor’ — текстовый редактор ‘text editor’, фоторедактор ‘photo editor’, онлайн-редактор ‘online editor’, нейросеть-редактор ‘neural network editor’, AI-редактор ‘AI editor’ < of images, notes, content, resumes, wallpapers, letters>, редактор исходного кода ‘source code editor’, etc.

Since the creation of techno sphere terms, as we see, follows a nested principle, we cannot precisely determine the quantitative composition of technicisms that vary in animacy. Furthermore, it is important for our study that the same technicism can have different literary variants: AI-редактор-ИИ-редактор ‘AI editor’; онлайн-переводчик — online переводчик ‘online translator’; Google ассистент — гугл ассистент ‘Google Assistant’; почтовый клиент — мейл-клиент — клиент электронной почты ‘email client’; голосовой помощник — голосовой ассистент

‘voice assistant’ and elliptical variants: *ассистент*, *помощник* ‘assistant’), etc. In other words, this results in an extensive group of potential variants regarding animacy. Further evidence of this is the growing number of terms based on personal nouns using the prepositional prefix *III-* / *AI-*. Here are the data from dictionaries (New..., 2015; 2016; 2017; 2021) and other media sources excluding variants with *AI-*: *III-агент* <*ассистент* ‘assistant’, *врач* ‘doctor’, *дегустатор* ‘taster’, *dietitian* ‘диетолог’, *дизайнер* ‘designer’, *доктор* ‘physician’, performer ‘исполнитель’, *кардиолог* ‘cardiologist’, *коллега* ‘colleague’, *композитор* ‘composer’, *конструктор* ‘engineer’, *консультант* ‘consultant’, *копирайтер* ‘copywriter’, *(топ-)менеджер* ‘(top-)manager’, *микробиолог* ‘microbiologist’, *модератор* ‘moderator’, *надсмотрщик* ‘overseer’, *оракул* ‘oracle’, *партнер* ‘partner’, *продавец* ‘salesperson’, *поверенный* ‘attorney’, *повар* ‘chef’, *помощник* ‘assistant’, *психолог* ‘psychologist’, *работник* ‘worker’, *(фото)редактор* ‘(photo)editor’, *рекрутер* ‘recruiter’, *репетитор* ‘tutor’, *родитель* ‘parent’, *секретарь* ‘secretary’, *селекционер* ‘breeder’, *советник* ‘advisor’, *стилист* ‘stylist’, *сценарист* ‘screenwriter’, *судья* ‘judge’, *терапевт* ‘therapist’, *хранитель* ‘custodian’, *шеф* ‘boss’, *юрис* ‘lawyer’>.

So we study not so much the quantitative composition of the varying units as their qualitative characteristics, primarily the presence or absence of a formal-semantic connection with an animate noun, the name of a person.

Secondary (metaphorical) technical terms: a shift toward inanimate nouns

In the 1990s, such nominations entered the Russian language through the calquing of English IT terms and formed the computer lexicon. Semantically, they are linked by the same generic meaning ‘computer program’ and by personification as the general principle underlying the naming. Since the expression is based on a personal noun with agent as its primary meaning, the internal form of the secondary terms is metaphorical. This raises the question: how do technical terms respond to animacy, an inherent feature of the noun which served as the basis for the transfer? The following headline, for example, provides a reason for such a question: *Яндекс запустил AI-редактор и AI-помощников для рекламодателей и рекламных площадок* ‘Yandex has launched an AI editor (Acc. INANIM) and AI assistants (Acc. ANIM) for advertisers and advertising platforms’⁵.

Here are the names of computer programs or software tools from this perspective: *мастер* (подсказок) ‘wizard (for tips)’, *почтовый клиент* ‘email client’, *переводчик* ‘translator’, *редактор* ‘editor’.

Мастер ‘Wizard’ (for tips, diagrams, functions, web pages, templates, conversions, summary pages). The most common term among users is “tip wizard” (a series of successive dialog boxes guiding the user through a task step by step). Accusative forms of this term are found only in the “Media Archive”: out of 13 instances, 11 are Acc. INANIM (84.6%), and two are Acc. ANIM. Cf.: *Часто организации просто нужен чистый III.., а не GPT, который превращает его в новейший мастер подсказок* ‘Often, an organization simply needs pure AI...

⁵ Trushering. Retrieved 6 March 2026, from <https://truesharing.ru/news/60787/>

rather than GPT, which turns it into the latest wizard⁶. — Система позволяет: добавлять новые роли и кабинеты, менять бизнес-логику проекта, ... настраивать **мастера подсказок** ‘The system allows you to add new roles and offices, change the project’s business logic, ...configure **the wizard**’⁷.

Почтовый клиент ‘email client’ is a program that performs various functions related to composing, sending, and storing messages, etc. Among the eight cases in the RNC, six are Acc. INANIM (98%), two are Acc. ANIM. Cf.: ...пользователи iOS 14 заметили, что, если сменить **почтовый клиент**, но оставить главным Safari, ссылки в этом браузере... будут по-прежнему открываться в собственной «Почте» Apple ‘...iOS 14 users have noticed that if they change **their email client** but keep Safari as their default browser, links in that browser... will still open in Apple’s own “Mail” app’⁸. — ...следующие поколения смартфонов компании не будут иметь доступ к сервисам Google, включая магазин приложений Google Play, браузер Chrome, **почтового клиента Gmail** ‘...the company’s next generations of smartphones will not have access to Google services, including the Google Play app store, the Chrome browser, and the Gmail email client’⁹.

Переводчик ‘translator’. This technical term is the base word for an extensive set of compound terms: онлайн-переводчик / online переводчик ‘online translator’, ЯндексПереводчик ‘Yandex Translator’, GoogleПереводчик ‘Google Translate’, SkypeПереводчик ‘Skype Translator’, бот-переводчик ‘translation bot’, поисковик-переводчик ‘search engine translator’, etc. In the RNC, we conducted a search based on the source noun. We found 60 instances of this technical term in the accusative case; of these, 59 were in Acc. INANIM (98%), and one was in the Acc. ANIM. Compare: **Переводчик**, который распознает речь и сам произносит переведенную на другой язык фразу, всего пару десятков лет назад можно было увидеть только в фантастическом фильме ‘**A translator** that recognizes speech and pronounces the phrase translated into another language itself — just a couple of decades ago, such a thing could only be seen in a science fiction movie’¹⁰. — Для перевода книги специалисты предложили использовать один из алгоритмов Яндекс. **Переводчика**, который применяется для обработки больших текстов ‘To translate the book, experts suggested using one of Yandex.**Translate**’s algorithms, which is used for processing large texts’¹¹.

The widespread adoption of artificial intelligence technologies in the 2020s made the term “ИИ-переводчик ‘AI translator’” common. Accusative forms were found only in the “Media Archive” (the search covered the date range March 2, 2025 – March 2, 2026). Among the 163 instances of the term in Accusative case,

⁶ Kolibri. Retrieved 21 March 2026, from <https://www.techradar.com/pro/a-pragmatic-approach-to-generative-ai>

⁷ VC.ru. Retrieved 22 March 2026, from <https://vc.ru/services/963867-sozдание-marketpleisatovarov-gotovoe-reshenie-dlya-tovarnoi-ploshadki-falcon-marketplace>

⁸ Vesti.ru. Retrieved 18 March 2026, from <https://www.vesti.ru/article/2460325>

⁹ lenta.ru. Retrieved 19 March 2026, from https://lenta.ru/news/2019/05/19/google_huawei/

¹⁰ Труд-7. Retrieved 19 March 2026, from https://search.integrum.ru/ArtefactDocument.aspx?sourceId=179&url=tru_D20080811_N147_L2008081018421395_A01a.txt

¹¹ Vesti.ru. Retrieved 19 March 2026, from <https://www.vesti.ru/article/2493898?ysclid=ms53ua4b7f127762817>

156 were in the Acc. INANIM (95.7%), and seven cases, Acc. ANIM: *Языкового барьера больше не существует»: Ватикан запустил **ИИ-переводчик** для папских месс* “The language barrier no longer exists”: The Vatican has launched an **AI translator** for papal masses¹². — *ИИ-переводчика для тюркских языков создали в Казахстане* ‘An **AI translator** for Turkic languages was created in Kazakhstan’¹³.

Редактор ‘editor’, or *текстовый редактор* ‘text editor’, *редактор исходного кода* ‘source code editor’ is a program designed to create text files and transform their content. Accusative forms found in the RNC; all 30 word forms are in Acc. INANIM (100%): *Для начала сделайте так, чтобы на экране было как можно больше белого цвета (например, запустите **текстовый редактор Word**)* ‘To begin with, make sure there is as much white space as possible on the screen (for example, open the Word text editor)’¹⁴.

However, the term “*ИИ-редактор* ‘AI editor’” is used in the Accusative case (search conducted in the “Media Archive”) in a different way. Among the word forms found (a total of 84 for the time period 03/02/2025 – 03/02/2026) 80 instances used the Acc. INANIM (95.2%), and 4, Acc. ANIM, including: “*Если ты работаешь с контентом — можно встроить **ИИ-редактора** прямо в чат*” ‘If you work with content, you can integrate an **AI editor** directly into the chat’¹⁵.

Are there similar fluctuations in the graphic version of this category, *AI-редактор* ‘the AI editor’? A search in the “Media Archive” yielded the following results (same time period): among 136 instances in the Accusative case, 126 are non-animate (92.6%), 10 were animate: *Clickout Media увольняет сотрудников и переходит на **AI-редакторов*** ‘Clickout Media is laying off employees and switching to **AI editors**’¹⁶.

The data clearly shows a **shift of secondary nominations toward inanimate status**; the process of establishing the word as inanimate has been fully completed for the computer technical term *навигатор* ‘navigator’ and the compound term *текстовый редактор* ‘text editor’ – no Acc. ANIM variants were found. The degree of fluctuation regarding INANIMATE / ANIMATE forms depends on the duration of the use of the term. Technical terms which appeared in the 21st century, in the period of intensive development in the AI sphere, are more variable than their predecessors. Our earlier research on terms such as *голосовой помощник* / *ассистент* ‘voice assistant’, *ИИ-помощник* ‘AI assistant’, *виртуальный помощник* / *ассистент* ‘virtual assistant’, *гугл* / *Google ассистент* ‘Google Assistant’ and similar terms confirms this observation (Marinova, 2024; Variability..., 2025a). Perhaps the anthropomorphism of the object is important here; applications and programs based on artificial intelligence now “speak,” “advise,” and “reason”;

¹² St Tatiana’s Day. Retrieved 25 March 2026, from <https://dzen.ru/a/aZ7hOgWwsDIXbSew>

¹³ Greater Asia. Retrieved 25 March 2026, from <https://bigasia.ru/ii-perevodchika-dlya-tyurkskikh-yazykov-sozdali-v-kazahstane>

¹⁴ Komsomolskaya Pravda. Retrieved 21 March 2026, from <https://www.kp.ru/daily/22616/11663/?ysclid=ms53wca0fd881813671>

¹⁵ VC.ru. Retrieved 25 March 2026, from https://vc.ru/top_rating/2323946-luchshie-ii-dlya-sozdaniya-botov-onlajn-bez-programmirovaniya

¹⁶ Rutab.net. Retrieved 17 March 2026, from <https://rutab.net/b/hardware/2026/02/17/clickout-media-uvolnyaet-sotrudnikov-i-perehodit-na-ai-redaktorov.html>

the neural network option is even called “deep thinking”; cf. also the AI-sphere terms “computer vision” and “digital voice”. That is why AI tools are referred to as *human-like technology*. Users seem to have more reason to personify them, especially since some even have personal names, and unconsciously opt for animacy, particularly if the term is new, unestablished, and includes a noun that was not previously used as a technical term: *Подключи Секретаря* ‘Connect the Secretary’ (MTS advertisement). The newer the word is, the stronger is the morphological inertia, which, however, gives way to linguistic regularity, the loss of animacy by proper nouns in a figurative sense¹⁷, provided the term has firmly entered common usage. Some secondary terms in the IT sphere have definitively or almost definitively shifted into the category of inanimate nouns, but this does not mean that there will be no variation in new, analogous terms.

Primary technical terms and their derivatives: variation as the norm

The above-mentioned is not relevant for the words *робот* ‘robot’, *бот* ‘bot’, and their derivatives with regard to the category of animacy.

The word *робот* ‘robot’, which was first recorded in 1929, according to the RNC, is unanimously classified by lexicographers as an animate noun. For several decades, the word was used in a technical sense as a futurologeme, a term denoting a fictional object possible in the future. The human-like nature of this object as its mandatory, essential feature placed the term in the group of nouns from the same semantic field of ‘human-like’ objects: doll, mannequin, snowman, etc.

The corpus shows that as early as 1932, the word was also used to refer to inanimate objects. Discrepancies with the codified norm were noted by V.A. Itskovich (Itskovich, 1982: 79), who wrote that the reason for the use of the word as an inanimate noun is its meaning in which it corresponds to an automatic mechanism with program control. Our study of two subcorpora of the RNC did not confirm this assumption: the word can be used both as animate and inanimate noun in the same meaning, in relation to the same referent: *Уникальный медицинский робот презентовали в Екатеринбурге. Экзоатлет ставит на ноги пациентов с серьезными травмами позвоночника* ‘A unique medical **robot** was presented in Yekaterinburg. Exo-athlete helps patients with serious spinal injuries get back on their feet ...’¹⁸ — cf. headline: *A unique medical robot was presented in the capital of the Urals* (ibid.); *Уникального медицинского робота презентовали в столице Урала* (там же); *Отмечается, что роботы планируется начать внедрять к 2024 году* ‘It is noted that **robots** will be introduced by 2024’¹⁹ — cf. headline: *Южная Корея планирует начать внедрять боевых роботов в 2024 году* ‘South Korea plans to begin introducing combat **robots** in 2024’ (ibid.).

Thus, the word *робот* ‘robot’ has been varying for nearly a century, with this variation becoming more active since 2016 (Variability..., 2025a: 108). This is due

¹⁷ The trend was noted in (Buslaev, 1959: 409; Lazutkina, 2014: 228; Rosenthal, 1989: 194; Rusakova, 2007: 126).

¹⁸ Vesti.ru. Retrieved 16 March 2026, from <https://news.rambler.ru/other/33017806-unikalnogo-meditsinskogo-robota-prezentovali-v-stolitse-urala>

¹⁹ Kommersant. Retrieved 23 March 2026, from <https://www.kommersant.ru/doc/3966698>

to the fact that the word has finally ceased to be a futurologeme and has definitively shifted into the category of technical terms. An appeal to common sense prompts speakers to use the inanimate variant breaking the norm. Another reason is the noun derivational activity and productivity; it becomes a stable component of appositive phrases such as *робот-санер* ‘robot-sapper’, *робот-водолаз* ‘robot-diver’, many of which enter the language as fixed terms. In our study, we treat them as compound nouns (CNs). The RNC contains 78 CNs with the component *робот* ‘robot’; only those occurring in the Accusative case were counted. And this is yet another group of terms subject to variation in animacy. See, for example, the variants of CNs in the same text: *Естественная информационная технология имитации символического мышления человека является теоретической базой, позволяющей создавать разумные роботы-антропиды с символическим мышлением... <...> Это позволяет на ее основе создавать разумных роботов-антропидов* ‘Natural information technology for simulating human symbolic thinking is the theoretical basis for **creating** intelligent **humanoid robots** with symbolic thinking... <...> This allows for the creation of intelligent **humanoid robots** based on it’²⁰.

Our material shows that the components in the CNs agree with each other regarding (in)animate status²¹. Both components are used either as INANIMATE (regardless of whether the second component is animate or inanimate in the language system): *привезли робот-водолаз* ‘they brought **a diving robot**’, *отправили робот-санер* ‘sent **a sapper robot**’; *разработали робот-дезинфектор* ‘developed **a disinfection robot**’; *смонтировали робот-манипулятор* ‘assembled **a robotic manipulator**’, or as ANIMATE: *осмотрели роботов-санеров* ‘inspected **the sapper robots**’; *заказ на роботов-дезинфекторов* ‘an order for **disinfection robots**’; [гостями из будущего] называют *роботов-манипуляторов* ‘[guests from the future] are called **robotic manipulators**’. Cf.: *Пожарная команда японского города Йокогама получила новый робот-спасатель* ‘The fire department of the Japanese city of Yokohama received a new **rescue robot**’²². — *Китайцы создали робота-спасателя* ‘The Chinese have created **a rescue robot**’²³. Denotative inanimate status competes with syntactic animate status, and both components are involved in this.

One can also observe certain preferences in the choice of the Accusative case form by both components, depending on whether **the second noun** is animate or inanimate. If the compound is formed according to the principle “*robot + animate noun*,” the Acc. ANIM is more frequently chosen (82.6%). Conversely, if the compound is formed according to the principle “*robot + inanimate noun*,” the speaker prefers Acc. INANIM (64.2%). Cf.: *Во время посещения испытательного полигона в Красноармейске глава правительства осмотрел роботов-*

²⁰ Informacionny`e tehnologii. Retrieved 28 March 2026, from <https://cyberleninka.ru/article/n/umnye-kognitivnye-mobilnye-sotsialnye-roboty-dlya-razvitiya-regionalnogo-servisa>

²¹ The report on this topic was presented by the author of the article at the IX International Scientific Symposium on Russian Grammar on September 24, 2025 at Irkutsk State University.

²² Nauka i zhizn. Retrieved 28 March 2026, from <https://www.nkj.ru/archive/articles/15885/>

²³ Vesti.ru. Retrieved 27 March 2026, from <https://www.vesti.ru/article/2366110?ysclid=m-s54o72784401102056>

разведчиков, роботов-санеров и робот-вертолет ‘During his visit to the test site in Krasnoarmeysk, the head of government inspected **reconnaissance robots, sapper robots, and a robotic helicopter**’²⁴.

However, the overall picture is very varied; in most cases, it is not individual nouns, such as *робот-спасатель* ‘rescue robot’, that vary, but rather the constructions themselves. Thus, the terms *робот-тренажер* ‘training robot’ and *робот-водолаз* ‘diving robot’ appeared in the Accusative case only once: the former as an animate noun, the latter as an inanimate one. The heterogeneity of the material does not yet allow for the derivation of strict patterns, so the situation must be assessed in general. The most telling cases here are those where a particular compound with the second inanimate component takes an animate form. In our view, this is due to the established norm that *робот* ‘robot’ is an animate noun. At the same time, it has long been variable in practice. Consequently, the variability of the compound with the first component *робот-* ‘robot-’ is quite acceptable and does not contradict the language system; this property, variable accusative, is like a built-in function of the word *робот* ‘robot’.

The stable mechanism of **agreement between components based on the grammatical feature of (in)animate status** is of particular importance. Some scientists believe that the phrase “*приглашаю предприятия-экспортеры к сотрудничеству* ‘I invite **exporting companies** to cooperate’ prefers “the animate noun *экспортер* ‘exporter’ and the grammatical correlation of Accusative with the Genitive *приглашаю предприятия-экспортеров*” (Konyushkevich, 2024: 105). However, in actual speech we have not encountered such **mismatched** designations²⁵. Other technical terms (*представить бота-переводчика* ‘present a translation bot’, *внедрить поисковик-переводчик* ‘implement a translation search engine’) and compound nouns with the second component *-робот* ‘-robot’ (*доставить танк-робот* ‘deliver a robot tank’, *создать доктора-робота* ‘create a robot doctor’, *создать говорящие куклы-роботы* ‘create talking robot dolls’) cannot have non-agreed in animacy/inanimacy Accusative forms.

Let us turn to the closest relative of the word *робот* ‘robot’, the technical term *бот* ‘bot’. We have already mentioned its variability, as well as the variability of the word *чатбот* ‘chatbot’ and similar terms (Marinova, 2024; Variability..., 2025a; Variation..., 2025b); see also (Telpov, 2024). Corpus data and additional research (social media parsing, surveys) show consistent variation in the words *бот* ‘bot’ and *чатбот* ‘chatbot’ in both singular and plural forms, with a slight predominance of the Acc.ANIM for the word *бот* ‘bot’ (73%) and a slight predominance of the Acc. INANIM for the word *чатбот* ‘chatbot’ (56%) (Marinova, 2025b: 291–292). In our view, *бот* ‘bot’ and its derivatives also fit organically into the group of nouns with the seme ‘human-like’; this human-likeness for a bot, as with voice assistants, is associated with text generation, speech production, and the ability to communicate verbally.

²⁴ lenta.ru. Retrieved 28 March 2026, from <https://lenta.ru/news/2015/01/20/putinandrobot/>

²⁵ There were no cases of inconsistency when searching for some of the CNs mentioned in (Konyushkevich, 2024: 105). See also about CNs in business media discourse (*визит в страны-партнеры* ‘visits to partner countries’, *страны-изгои* ‘rogue countries’, etc.) (Butorina, 2024: 22–23).

Concluding our overview of primary technical terms, we would like to emphasize once again that their variation is permitted and even encouraged by the language system itself, in contrast to the variation found in secondary terms, which the system seeks to eliminate. The varying units of both groups are **similar** in the nature of their variation: it is manifested within the same lexical meaning of a technical term, i.e. it does not depend on semantics. The same is in the words *персонаж* ‘character’, *лицо* ‘person’, *микроб* ‘microbe’, *кукла* ‘doll’, etc.). In such cases, variation is driven by deep cognitive mechanisms of understanding the object denoted by the word, based on the degree of its similarity to a human, a living being. We propose to consider this type of grammatical variation **as strictly grammatical** and to distinguish it from another type, lexical-grammatical variation, which is found in different grammatical forms of a polysemous noun. In our material, such nouns are secondary nominations. For example, the word *редактор* ‘editor’ in modern Russian is polysemantic: it denotes both a person and a device. The animacy of the word in its first meaning and its inanimacy in the second is an example of lexical-grammatical variation: the feature “animacy/inanimacy” is defined by semantics. However, the variation of the technical term *ИИ-редактор* ‘AI editor’ in its animacy is a strictly grammatical phenomenon.

Thus, the present study confirms the thesis that the presence of sign variants in the linguistic system creates “a basis for the dynamic manifestation of typological tendencies” (Isakova, 2022: 7), especially when it is variation in homogeneous in some respect linguistic material. IT technical terms which design humanoid programs and devices represent the same group in the contemporary synchronic landscape. Its open nature with unstable boundaries between varying units and units with established grammatical behavior corresponds to the nature of the grammatical category of animacy in the Russian language, gradual, continuous, and lacking clear internal boundaries (Krysko, 1994; Rusakova, 2007: 137; Swart, Lamers, Lestrade, 2008: 135).

Conclusion

The expansion of the group of terms for high-tech products directly depends on technological development. The dominance of the techno sphere and its rapid development toward a “seamless” connection with the natural physical world and with humans, toward becoming more like them, is forming a class of potential variants based on the ANIMATE/INANIMATE criterion. It defies quantification. However, typological trends are already becoming apparent.

Grammatical variation in Accusative case **is temporary** with respect to a single secondary (metaphorical) nomination and **permanent** with respect to this type of nomination as a whole, due to the open boundaries and the effect of morphological inertia on its new members (*подключить ИИ-помощника, секретаря, connecting an AI assistant, secretary, etc.*). The trend toward the gradual elimination of variation and the drift toward the inanimate nature of technical terms, which emerged in previous periods of language development, persist. Furthermore, a concomitant process here is the enrichment of the semantic structure of personal nouns with a new meaning (‘about the device’); in this sense, one can speak **of regular polysemy based on agentives** (*-editor, translator,*

assistant, etc.) and the subsequent lexical-grammatical variation of the two forms of a polysemous word; in the meaning ‘person’, it is as an animate noun and in the meaning ‘device’, an inanimate noun).

As for primary nominations and their derivatives (*robot*, *rescue robot*, *bot*, *chatbot*, etc.), the variation in the accusative case for them is, figuratively speaking, like a setting or built-in function for a technical device, determined by the deep processes of human thought as one comprehends the new reality of the technosphere as anthropomorphic and unconsciously embodies one’s ideas about it in language.

Prospects for further research lie in the study of accusative case forms of new terms with the prefix *III-/AI-* and a personal noun.

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Научная статья

Вариантность техницизмов IT-сферы по одушевленности в русской речи: типология, особенности, сопутствующие процессы

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Аннотация. На материале лексики IT-сферы рассмотрены формы и конструкции, проявляющие в современной русской речи непоследовательность в отношении грамматической категории одушевленности. Актуальность исследования определяется

недостаточной изученностью вопросов о типах грамматических вариантов, различия которых проявляются только в винительном падеже, и причинах и условиях варьирования названий человекоподобных устройств (*создать робот / робота; подключить голосовой помощник / голосового помощника*). Цель исследования — установить особенности грамматической вариантности техницизмов в отношении (не)одушевленности в 2010-е–2020-е гг., отмеченные появлением новых случаев колебаний в форме винительного падежа. Источники материала — Национальный корпус русского языка и электронный архив периодических изданий России и стран СНГ «Интегрум», откуда соответственно методом объектного поиска и сплошной выборкой извлекали контексты с варьирующимися в форме винительного падежа существительными, включая сложносоставные номинации типа *робот-водолаз*. Методика исследования языкового материала включает морфологический, семантический, лингвокогнитивный анализ. Впервые приведены корпусные данные о колебаниях в форме винительного падежа сложносоставных существительных, компоненты которых в системе языка по-разному относятся к одушевленности / неодушевленности. В результате установлены два типа вариантности в отношении одушевленности: лексико-грамматическая и собственно грамматическая; выявлены особенности варьирования существительных техносферы, в т.ч. сложносоставных, являющихся номинациями человекоподобных программ; высказано предположение о наличии в русском языке в сложносоставных субстантивах (взаимо)согласования по одушевленности / неодушевленности, ранее не отмечаемого в научной литературе. Сделан вывод о том, что формирование грамматической категории одушевленности в русском языке продолжается по настоящее время. Перспективы исследования видятся в изучении форм винительного падежа новых номинаций с первым компонентом *III-* (например, *III-редактор*).

Ключевые слова: русский язык, употребление термина, грамматические варианты, винительный падеж, сложносоставные существительные, согласование, номинации человекоподобных устройств, антропоморфизм

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