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Research article

Image of a Cog: Preliminary Analysis of the Mechanism Metaphor Through the Conceptual Integration Theory

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Abstract. This study explores the metaphor of the mechanism, focusing particularly on its subordinate sub-metaphor of the cog and examining how this image conceptualizes roles and functions within complex systems. While earlier research has primarily applied Conceptual Metaphor Theory, this paper introduces a combined approach that integrates Conceptual Metaphor Theory with Conceptual Integration Theory to reveal emergent meanings that cannot be explained by direct source–target mappings. This approach provides a more dynamic model of how mechanical and abstract input spaces interact to generate blended metaphorical structures.

The empirical basis consists of corpus data drawn from the Corpus of Contemporary American English and the Russian National Corpus, including twenty representative examples from diverse discourses. The analysis shows that the superordinate metaphor "a system is a mechanism" is pervasive in both languages, while the subordinate metaphor "an individual is a cog" dominates across institutional, political, and cultural contexts. However, evaluation patterns diverge: English examples often frame cogs as cooperative or indispensable elements contributing to systemic efficiency, whereas Russian discourse frequently foregrounds depersonalization, ideological control, and functional replaceability.

The findings demonstrate the adaptability of mechanistic metaphors and confirm the explanatory potential of Conceptual Integration Theory for identifying emergent meanings. These meanings – such as the loss of individuality, functional determinism, and even pride in indispensability could not be fully analyzed by simple domain mapping as proposed by Conceptual Metaphor theory alone. The results contribute to cognitive linguistics, metaphor theory, and discourse studies, offering insights into how mechanical imagery shapes conceptualizations of agency, hierarchy, and systemic order in abstract frameworks.

Keywords: mechanism metaphor, conceptual integration theory, conceptual metaphor, cog metaphor, conceptual blending, cross-domain mapping, corpus-based analysis

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Исследовательская статья

Образ винтика: предварительный анализ метафоры механизма через призму теории концептуальной интеграции

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Аннотация. В данном исследовании рассматривается метафора механизма с особым вниманием к её субординатной форме – винтику и анализируется, как этот образ концептуализирует роли и функции в рамках сложных абстрактных систем. В то время как предыдущие исследования в основном опирались на теорию концептуальной метафоры, настоящая работа предлагает комбинированный подход, объединяющий теорию концептуальной метафоры и теорию концептуальной интеграции, что позволяет выявлять новые смысловые структуры, не объяснимые прямыми метафорическими проекциями между областью-источником и областью-целью. Такой подход обеспечивает более динамичную модель взаимодействия механических и абстрактных ментальных пространств при порождении интегрированных метафорических структур.

Эмпирическая база исследования основана на корпусных данных из Corpus of Contemporary American English и Национального корпуса русского языка, включая двадцать репрезентативных примеров из различных дискурсов. Анализ показывает, что суперординатная метафора «система – это механизм» широко распространена в обоих языках, тогда как субординатная метафора «человек – это винтик» преобладает в примерах, описывающих институциональные, политические и культурные системы. Однако различается коннотативная оценка: в английских примерах винтики часто концептуализируются как кооперативные или незаменимые элементы, способствующие эффективности системы, тогда как в русском дискурсе метафора нередко акцентирует обезличивание, идеологический контроль и функциональную заменимость.

Результаты анализа указывают на адаптивность механических метафор и подтверждают потенциал теории концептуальной интеграции для выявления новых смысловых структур. Порождение таких структур, как утрата индивидуальности, функциональная предопределённость и даже незаменимость как предмет гордости, невозможно объяснить только простыми метафорическими проекциями в рамках теории концептуальной метафоры. Полученные результаты вносят вклад в когнитивную лингвистику, теорию метафоры и исследование дискурса, показывая, как механические образы формируют концептуализацию ролей, иерархий и системных отношений в абстрактных структурах.

Ключевые слова: метафора механизма, теория концептуальной интеграции, концептуальная метафора, метафора винтика, концептуальное смешение, межпонятийная проекция, корпусный анализ

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Introduction

The need to systematize knowledge has always been an inherent part of human nature. It can be described from several perspectives: evolutionary, cognitive, cultural, and, of course, linguistic. The ability to generate thought patterns through interaction with the world and to categorize them according to a given system is a core feature of Homo sapiens cognition [25]. This ability is closely related to logic, "as it involves the maturation and refinement of mental processes such as perception, memory, problem-solving, and reasoning – fundamental components of logical thinking" [24, p. 236]. Logic, in turn, is deeply connected to the development of human civilization, the formation of governments, and scientific advancements, including the invention of machinery.

Since the Industrial Revolution, mechanisms have become an inseparable part of human life – at least in many advanced countries [19]. Unsurprisingly, this phenomenon has found its way into the vocabularies of numerous languages. The metaphor of mechanism, for instance, pervades a wide range of conceptual domains: biology (e.g., *defense mechanism, evolutionary mechanism*) [20], politics (e.g., *political mechanism, communist military machine, social engineering*) [12], [15], philosophy (e.g., *philosophy machine, philosophy of mechanisms*) [21], [23], linguistics (e.g., *grammar mechanics, mechanisms of language learning*), and others.

As V. Glebkin notes, the origins of mechanisms as physical artifacts can be traced to Antiquity, particularly to the creation of siege machines [9, p. 52]. Over time, a semantic shift occurred: the word expanded from its original sense of "a military instrument" to encompass "a device for useful work" and, later, more abstract meanings such as *schema, plan, or creation*. It is important to emphasize, however, that the mechanism metaphor itself did not exist in Antiquity; rather, semantically related terms were used primarily in literal or metonymic senses.

This situation changed fundamentally in the Middle Ages. Mechanistic metaphors, which were initially applied to physical bodies, began to extend to abstract domains [1]. As P. Baryshnikov observes, the metaphorical shift from body to mind developed in parallel with advances in engineering and, later, computer science, profoundly influencing epistemological models in cognitive science. Drawing on the concept of semantic transfer, he demonstrates how mechanistic metaphors not only serve as descriptive tools but also structure theoretical approaches to consciousness and cognition [2].

In later periods, this metaphorical framework became closely linked to scientific terminology. Through repeated use, the mechanism metaphor became deeply entrenched in scientific discourse and began to influence the direction of research itself [11, p. 375]. This is evident in disciplines such as psychology, where one may speak of an "evolutionary psychological mechanism" – a phrase that is literally incongruous, since psychological concepts do not evolve in a biological sense, and, of course, they aren't mechanical things. However, such usage represents "what is at best a tenuous comparison between the characteristics and operations of two fundamentally distinct ontological realms" [8, p. 53]. Nevertheless, the metaphor remains one of the most effective tools available for describing complex and abstract psychological constructs [17], [18], [23].

A.-S. Barwich and M. J. Rodriguez's research shows how the mechanistic metaphor has become firmly embedded in biological discourse, particularly in molecular biology and neuroscience. Its lineage can be traced from Enlightenment mechanistic philosophy through 20th-century cybernetics, and the authors show how terms such as *molecular machinery, genetic code,* and *cellular factory* frame biological systems as engineered mechanisms [3], [22].

The phenomenon described above aligns with Conceptual Metaphor Theory (CMT), which posits that abstract concepts are understood and structured through mappings onto typically more concrete domains in both language and thought [14]. Metaphor, quintessentially, reflects the idea "that to better understand or know something, it helps to look at that something in consideration with something else" [6, p. 181]. For instance, the conceptual metaphor THEORIES ARE BUILDINGS is reflected in expressions such as *the foundation of the theory, to buttress the theory, the framework of the theory, and to demolish a*

theory [13, p. 61]. In these examples, people conceptualize complex scientific knowledge through the concrete domain of construction, because the latter (the source domain) is more tangible and experientially grounded than the former (the target domain) [Ibid., p. 19].

This is why the metaphor of mechanism serves as a powerful tool for structuring abstract domains. It allows speakers to grasp complex, intangible systems – such as the human mind, society, language or nature – through the more concrete and familiar framework of machines. Moreover, the mechanism metaphor enables the conceptualization of the components within these abstract systems as specific parts of a machine [4].

However, it should be noted that the mappings involved in conceptual metaphor are often only partial, and this partiality can result in the emergence of new meanings that are not found in either domain alone [16]. For example, the metaphorical expression THIS SURGEON IS A BUTCHER generates the emergent meaning of an incompetent or violent surgeon [10]. Yet it is important to recognize that a typical butcher (the source domain) is neither incompetent nor violent; in fact, butchery is an elaborate craft requiring years of training and practice. So, what is being mapped in this metaphor that makes it so striking?

According to Conceptual Integration Theory (CIT), developed by G. Fauconnier and M. Turner, new metaphorical meanings emerge through the interaction of input spaces (i.e., source and target domains), which are selectively projected into a blended space, giving rise to emergent structure that is not directly present in either input [7].

Let us examine this example in more detail. The surgeon input space (target domain) includes precise incisions, use of scalpels, anesthesia, living patients, healing, and a controlled, sterile environment. The butcher input space (source domain) includes rough cutting, use of cleavers, slaughter of animals, dead meat, and a messy, unclean environment. These two spaces are partially projected into a generic space containing shared structure: a person who cuts bodies, the use of tools (scalpel/cleaver), anatomical knowledge, and a purpose for cutting.

From this generic structure, a blended space emerges: a surgeon imagined as a butcher — someone who lacks care or precision and causes harm rather than healing. This emergent meaning does not exist in either domain independently but arises from the specific configuration of mappings and compressions in the blend [5].

A particularly salient example of the mechanism metaphor is the expression *a cog in a wheel* (Russ. *винтик*), which is often used to describe a person's role within a larger system, such as an organization, institution, or political structure. While the phrase draws from mechanical vocabulary, its metaphorical meaning goes far beyond its literal components. This metaphor can be fruitfully analyzed within the framework of Conceptual Integration Theory, where it functions as a double-scope blend, integrating elements from two distinct input spaces: mechanical systems and social systems.

This paper, therefore, addresses the relation between the superordinate metaphor of mechanism and the subordinate metaphor of cog, on the one hand, and the ambiguity of emergent meaning, on the other. The aim is to sketch an empirical picture of the mechanism metaphor across English and Russian, pointing the way to further research on the multivalence of this metaphor across languages and cultural contexts.

Methodology and Data

By combining the strengths of Conceptual Metaphor Theory (CMT) and Conceptual Integration Theory (CIT), this research adopts a mixed-methods approach to more effectively address the research questions. To systematize the analysis of conceptual metaphors within the framework of CIT, the study introduces a formalized metalanguage consisting of five core components: S-space (source-domain input space), T-space (target-domain input space), G-space (generic space), B-space (blended space), and Emergent Structure. This format mirrors the key stages of conceptual blending, enabling consistent and concise representation of metaphorical mappings and the novel meanings they generate.

For each analyzed metaphor, the S-space identifies salient features of the source domain, while the T-space outlines the corresponding elements of the target domain. The G-space captures their structural

similarities, forming a shared conceptual scaffold. These inputs are selectively projected into the B-space, where conceptual integration yields a new, hybrid structure. The Emergent Structure refers to the meaning that arises from the blend – one that is not fully present in either input space on its own. This metalanguage facilitates cross-linguistic comparison and helps trace the conceptual mechanisms underlying metaphor use in English and Russian.

The data for analysis were drawn from the two largest and most representative corpora available for each language. Out of a hundred ten most prominent English examples containing the lemma cog were extracted from the Corpus of Contemporary American English (COCA), and out of one hundred ten most prominent Russian examples containing the lemma *винтик* were taken from the Russian National Corpus (RNC). It is important to note that this study does not aim to identify statistical differences between the two languages, but rather to sketch a qualitative conceptual map of the metaphor of mechanism as it appears in both linguistic and cultural contexts.

The analytical procedure followed a four-step algorithm:

1. Excerption of relevant metaphorical expressions from the corpora;
2. Identification of the superordinate metaphor and its subordinate instantiation in each example;
3. Construction and description of the conceptual blend using the metalanguage;
4. Interpretation of the results in terms of emergent meaning and cross-linguistic conceptual patterns.

Results

Example (1) illustrates the metaphor A SPORT TEAM IS A MECHANISM with the subordinate metaphor A PLAYER IS A COG:

(1) …the Sounders have some crucial players weakened by injury and *another important cog suspended,* and that the Sounders now have two straight losses to the Galaxy.[1]

Blend structure: S-space [cogs are essential, interdependent parts of a machine] + T-space [players are essential, interdependent members of a team] → G-space [coordinated components in a system; the failure of one impairs the whole] → B-space [player = cog; team = machine; suspension = malfunction] → Emergent Structure [the team's failure is conceptualized as a mechanical breakdown involving loss of coordination and systemic inefficiency].

Fragment (2) reflects the superordinate metaphor THE POETRY WORLD IS A MACHINE, with the subordinate metaphor A POETRY STYLE IS A COG:

(2) It sounds as if Thomas's poetry, for Parker, has become something *of a rusty cog in the well-oiled contemporary-poetry machine*.[2]

Blend structure: S-space [well-oiled machine implies smooth operation, coordinated parts, and up-to-date components; rusty cog implies dysfunction and obsolescence] + T-space [the contemporary poetry scene functions with evolving norms; Thomas's poetry is viewed as outdated; Parker is a critic] → G-space [a system composed of interdependent parts whose efficiency depends on condition and compatibility] → B-space [contemporary poetry = well-oiled machine; Thomas's poetry = rusty cog; Parker's judgment = mechanical assessment of systemic fitness] → Emergent Structure [Thomas's poetry is construed as misaligned with the current literary paradigm; there is a demand for stylistic conformity and functional integration within the modern poetry].

Example (3) illustrates the superordinate metaphor A GOVERNMENT PROGRAM IS A MECHANISM with the subordinate metaphor A GOVERNMENT OFFICIAL IS A COG:

(3) She came to Diaz, *a key cog in Hennepin County's program* to help residents facing forfeiture.[3]

Blend structure: S-space [a key cog is an essential gear enabling coordinated function within a mechanism] + T-space [a government program is an institutional system; Diaz is a crucial operative within it] → G-space [a system composed of interdependent functional components; some parts are more central than

[1] COCA: 2012, BLOG, sounderatheart.com
[2] COCA: 2015, MAG, The Atlantic.
[3] COCA: 2019, NEWS, Minneapolis Star Tribune.

others] → B-space [government program = mechanism; official = key cog within that system] → Emergent Structure [Diaz is conceptualized as a reliable and essential operative whose effectiveness is integral to the program's success; although important, he is not portrayed as a leader but as a vital part of a larger coordinated system].

Fragment (4) illustrates the superordinate metaphor A POLITICAL REGIME IS A MECHANISM and its subordinate metaphor AN INDIVIDUAL IS A COG:

(4) The novel is the story of Fan, a young woman from the Chinese labor colony of B-Mor, built on what used to be Baltimore. Fan begins the narrative *as a cog in the wheel of corporate imperialism, her life regulated and controlled by the powerful and controlled by the powerful Charters*.[4]

Blend structure: S-space [a cog is a small, regulated, and replaceable component of a larger mechanism] + T-space [a global socio-political system marked by control, labor hierarchy, and limited individual agency] → G-space [a minor agent enables the operation of a larger, impersonal system but lacks autonomy or significance] → B-space [Fan = replaceable cog; corporate imperialism = machine; Charters = operators] → Emergent Structure [Fan is dehumanized and conceptualized as a functional tool within an oppressive structure; her individuality is erased, and her role is predetermined by political elites].

Example (5) illustrates the metaphor POLITICAL DISCOURSE IS A MACHINE with the subordinate metaphor THE SPEAKER IS A COG:

(5) And I speak here from personal experience as a small, but r*elatively well-placed cog in this whole process*. I've literally never seen anything like it in national security debates. Petraeus developed *a well-oiled machine* that was uniquely capable in driving the public debate, co-opting potential allies, and marginalizing those of us who tried to raise concerns.[5]

Blend structure: S-space [a cog is a small but strategically placed component in a highly efficient mechanism] + T-space [the speaker is a participant within the national security system; Petraeus is positioned as the architect of its discursive dominance] → G-space [a system composed of functionally coordinated components; some are more central than others; systemic efficiency can suppress alternative input] → B-space [the speaker = well-placed cog; national security discourse = well-oiled machine; Petraeus = engineer/inventor guiding its output] → Emergent Structure [the speaker is positioned as an informed yet powerless insider; public discourse is framed as an engineered, tightly controlled system rather than an open, democratic process].

Example (6), similarly to Example (4), illustrates the superordinate metaphor CORPORATE SYSTEM IS A MECHANISM with the subordinate metaphor AN INDIVIDUAL IS A COG:

(6) Better they should all just learn their place in life, and settle for being *a mindless cog in the corporate machinery* to make more money for people like Romney.[6]

Blend structure: S-space [a cog is a small, dependent part of a larger machine] + T-space [the corporation generates profit for elites; the worker has minimal power or autonomy] → G-space [a hierarchical system with dominant controllers and essential but powerless workers] → B-space [corporation = profit-maximizing machine; worker = mindless, replaceable cog] → Emergent Structure [individuals under corporate capitalism are dehumanized and instrumentalized, valued only for their productive function].

Fragment (7) reflects the superordinate metaphor MEDIA IS A MACHINE with the subordinate metaphor A JOURNALIST IS A COG:

(7) Anyway, Halperin is just *another cog in the progressive media machine* that will stop at nothing to reelect the President.[7]

Blend structure: S-space [a cog is one of many coordinated parts in a single-purpose machine] + T-space [progressive media pursues an ideological goal; journalists advance this agenda] → G-space [a system of interdependent components aligned toward a central objective] → B-space [media = unrelent-

[4] COCA: 2018, ACAD Studies in the Novel.
[5] COCA: 2012, BLOG, balloon-juice.com
[6] COCA: 2012, WEB, crooksandliars.com
[7] COCA: 2012, BLOG, pjmedia.com

ing ideological machine; journalist = replaceable operative] → Emergent Structure [reduces Halperin to a non-autonomous functionary; frames media as propaganda apparatus, evoking manipulation and systemic bias].

Example (8) illustrates the superordinate metaphor A RESTAURANT IS A MECHANISM with the subordinate metaphor A CHEF IS A MAIN COG:

(8) And is unwilling to accept any help. I was doing it since the day you was born. *I'm the main cog in this restaurant.* I always have been, I always will be.[8]

Blend structure: S-space [a main cog is an essential component in a mechanism] + T-space [a chef is the central figure in a restaurant's operation] → G-space [the functioning of the entire system depends on its key element] → B-space [restaurant = mechanism; chef = main cog] → Emergent Structure [the chef is framed as irreplaceable due to skill, experience, and responsibility; adds an emotional dimension of pride and personal investment to the mechanical metaphor].

Fragment (9) reflects the superordinate metaphor BOOK PRODUCTION IS A MECHANISM with the subordinate metaphor A WRITER IS A COG:

(9) With a hard-working crew of editors back home – and a publisher awaiting their work – *I am but a happy cog in a wonderful guidebook-creating wheel.* And if I miss a deadline, it'll mess up a lot of people.[9]

Blend structure: S-space [a cog is necessary for the mechanism; if it stops, the system is disrupted] + T-space [a writer is part of a coordinated publishing team; essential but interdependent] → G-space [complex processes rely on synchronized components; failure of one hinders the whole] → B-space [book production = mechanism; writer = cog; missed deadline = cog malfunction] → Emergent Structure [all team members are essential; the metaphor frames the writer's role positively, emphasizing cooperation and shared responsibility].

Example (10) reflects the superordinate metaphor A MIND IS A MECHANISM with the subordinate metaphor MENTAL FUNCTION IS A COG:

(10) *It was like a tiny cog had been removed from her brain, and all the gears were still working,* but a slight wobble was slowly and inevitably stripping the teeth until one day… the Rube Goldberg device that was her mind would fall apart.[10]

Blend structure: S-space [a cog is small but essential; its removal causes gradual system failure] + T-space [the mind relies on all functions; even minor ones are crucial for stability] → G-space [the continuous functioning of the whole system depends on the integrity of all its constituents even small ones] → B-space [mind = mechanism; mental function = cog; missing cog = slow breakdown] → Emergent Structure [minor unseen defects in mental processes can lead to eventual collapse; breakdown may occur suddenly after gradual decline].

Fragment (11) illustrates the superordinate metaphor BUREAUCRATIC SYSTEM IS A MACHINE with the subordinate metaphor A BUREAUCRAT IS A COG:

(11) Мёртвый и теперь уже безмолвный, безликий, бесконфликтный, он превратился *в идеальный винтик той бюрократической машины,* что создал Сталин к концу 1940-х годов.[11]

Blend structure: S-space [a cog is a small, replaceable component of a machine] + T-space [the bureaucratic system depends on unquestioning obedience of its members] → G-space [systems require components that function without deviation] → B-space [bureaucratic system = machine; bureaucrat = cog; obedient bureaucrat = ideal cog] → Emergent Structure [mechanization strips individuality; the Soviet bureaucratic regime valued compliant, dehumanized functionaries].

Fragment (12) reflects the superordinate metaphor THE GLOBAL FOOD CONSUMPTION SYSTEM IS A MECHANISM and its subordinate metaphor A CONSUMER IS A COG:

[8] COCA: 2011, TV, Kitchen Nightmares.
[9] COCA: 2012, BLOG, blog.ricksteves.com.
[10] COCA: 2011, FIC, Bk: ChasingMoon.
[11] RNC: 2020, А. Волков. Лишь мёртвых любят награды…

(12) Как с правильной едой: в принципе можно ведь питаться сосисками и пиццей, запивая всё это колой, но гораздо интереснее потреблять хорошую еду, возрождать или создавать традиции, понимать, *что ты не винтик в глобальной системе потребления,* а ответственный гражданин.[12]

Blend structure: S-space [cogs are small, replaceable components of a machine, functioning without autonomy] + T-space [consumers are participants in the global food market, whose actions sustain the system] → G-space [a large system is composed of numerous interdependent yet replaceable parts] → B-space [global consumption system = mechanism; consumer = cog; traditional-food consumer = autonomous participant] → Emergent Structure [contrasts passive, thoughtless fast-food consumption with active, tradition-preserving citizenship; frames mindful eating as resistance to depersonalizing global mechanisms].

Example (13) illustrates the superordinate metaphor EVOLUTION IS A MECHANISM with the subordinate metaphor EVOLUTIONAL PROCESSES ARE COGS AND GEARS:

(13) Мы хотим *развинтить эволюционный механизм на все его шестерёнки и винтики,* изучить их, понять, как они соединяются, а потом свинтить обратно и убедиться, что он по-прежнему тикает.[13]

Blend structure: S-space [a mechanism is composed of interlocking cogs and gears that can be disassembled, studied, and reassembled to restore function] + T-space [biological evolution is a complex system of interrelated processes] → G-space [a complex system can be understood by analyzing and reassembling its components] → B-space [evolution = mechanism; evolutionary processes = cogs and gears; scientific research = disassembly and reassembly] → Emergent Structure [frames the study of evolution as mechanical engineering, implying it is fully analyzable, reconstructable, and subject to human control].

Example (14) illustrates the superordinate metaphor FAMILY BUSINESS IS A MECHANISM with the subordinate metaphor A FAMILY MEMBER IS A COG:

(14) Молодой Андраник тяготел к технике, в частности автомобильной. И уже в 1930 году был *не последним винтиком в шофёрской семь*е.[14]

Blend structure: S-space [a cog is a component in a single-purpose machine] + T-space [a family member follows the family business] → G-space [a system consists of parts that follow its purpose] → B-space [family business = mechanism; family member = cog] → Emergent Structure [frames mechanization of the human role, emphasizing precision, coordination, and purpose-driven contribution].

Example (15) illustrates the superordinate metaphor SOCIAL INSTITUTIONS ARE MECHANISMS with the subordinate metaphor CIVIL SERVANTS ARE COGS:

(15) Кажется, что социальные институты неэффективны, эгоизм и близорукость *превращают работников государства в беспомощные винтики или бесчувственных тупиц.*[15]

Blend structure: S-space [cogs are small, dependent components of a larger mechanism; if the mechanism is inefficient, the cogs' work is also ineffective] + T-space [civil servants operate within social institutions; entrenched bureaucracy and routine work erode autonomy and sensitivity] → G-space [in an inefficient system, its individual components also lose functionality] → B-space [social institutions = mechanisms; civil servants = cogs] → Emergent Structure [mechanization is framed as loss of autonomy and emotional flattening].

Example (16) reflects the superordinate metaphor SOVIET LITERARY ENVIRONMENT IS A MECHANISM and its subordinate metaphor A WRITER IS A COG:

(16) Он оставался пусть *не маленьким, но только винтиком общепролетарского писательского дела*.[16]

Blend structure: S-space [A cog is a part of a larger mechanism; its size does not determine the overall functioning of the mechanism] + T-space [the Soviet literary environment includes both prominent and

[12] RNC: 2015, Д. Михайлин. Односолодовая водка.
[13] RNC: 2014, А. Марков, Е. Наймарк. Эволюция. Классические идеи в свете новых открытий.
[14] RNC: 2014, В. Назаров. Прошедшие войну.
[15] RNC: 2014, А. Быстрицкий. Сериальная истерия.
[16] RNC: 2003, Г. Фукс. Двое в барабане.

minor writers] → G-space [a system is composed of elements of varying size and importance, but all are subordinate to the system's operation] → B-space [Soviet literary environment = mechanism; writer = cog] → Emergent Structure [Frames the author's work as subordinate to the collective proletarian literary enterprise, emphasizing systemic control over individual significance].

Example (17) illustrates the superordinate metaphor A REAL-ESTATE FRAUD IS A MECHANISM with the subordinate metaphor A FRAUDSTER IS A COG:

(17) Как были эти риэлторские, а на самом деле – бандитские, конторы, так и будут. *Князев – только винтик механизма.* Это ты о чём? – не понял Андрей. Какого механизма? Да всего этого надувательства с квартирами! – объяснил Самойлов.[17]

Blend structure: S-space [a cog is a small, replaceable part of a larger mechanism] + T-space [a real-estate fraud is an ongoing criminal enterprise in which perpetrators are interchangeable] → G-space [a system operates through multiple replaceable components whose individual removal does not halt the whole] → B-space [real-estate fraud = mechanism; fraudster = cog] → Emergent Structure [frames the fraudster as an expendable operative within a sustained criminal scheme; the arrest of one participant will not disrupt the system].

Example (18) illustrates the superordinate metaphor A MILITARY ALLIANCE IS A MECHANISM with the subordinate metaphor A COUNTRY IS A COG:

(18) Другими словами, рамки проамериканской НАТО для Западной Европы уже стали концептуально тесными, чего не скажешь о большинстве государств Восточной Европы и Прибалтики, которые, напротив, пока нацелены на то, чтобы быть *маленькими винтиками натовского военного механизма*.[18]

Blend structure: S-space [a cog is a small, replaceable part of a larger mechanism] + T-space [a military alliance is a hierarchical system of member states with varying power] → G-space [a system comprises elements of unequal size and influence, yet all contribute to coordinated functioning] → B-space [military alliance = mechanism; country = cog] → Emergent Structure [frames smaller countries as voluntarily accepting a subordinate, function-specific role within NATO, portraying alignment with the alliance as deliberate integration into its machinery].

Example (19) the superordinate metaphor A SCHOOL IS A MECHANISM with the subordinate metaphor TEACHERS AND STUDENTS ARE COGS:

(19) Директору дана абсолютная власть формировать *из учителей и детей винтики,* покорные бесчеловечной системе.[19]

Blend structure: S-space [cogs are small, subordinate parts of a mechanism, functioning under central control] + T-space [teachers and students are core components of a school, working within a hierarchical educational system governed by a headmaster] → G-space [a centralized system with distinct roles, where individual parts operate under strict control] → B-space [school = mechanism; teachers and students = cogs; headmaster = operator] → Emergent Structure [frames the headmaster's authority as enabling the subjugation of teachers and students to an inhumane, depersonalized educational process].

Example (20) the superordinate metaphor THE UNIVERSE IS A MECHANISM with the subordinate metaphor PARTS OF UNIVERSE ARE COGS:

(20) И затем: было ничто. Стало что-то. Но ведь когда-нибудь всё вернётся к первому состоянию, снова станет ничем? *Как механизм испортится у моей машинки, так когда-нибудь и у вселенной сотрутся винтики.* Ничто – что-то – ничто. Всё стремится к первоначальному виду![20]

S-space [cogs are small components of a mechanism; over time they wear out, causing the whole mechanism to fail] + T-space [the universe is composed of interacting parts that may deteriorate over time] → G-space [a system's eventual failure results from the gradual degradation of its essential components] →

[17] RNC: 2000, А. Грачев. Ярый-3. Ордер на смерть.
[18] RNC: 2014, П. Быков, В. Максимов. От реверансов толку мало.
[19] RNC: 1989, С. Л. Рябцева. Дети восьмидесятых.
[20] RNC: 1914, А. И. Цветаева. Королевские размышления.

B-space [universe = mechanism; parts of universe = cogs] → Emergent Structure [frames the universe as a finite, deteriorating machine whose eventual breakdown returns it to its original state of nothingness].

Thus, the analysis of ten English and ten Russian examples shows that the superordinate metaphor A SYSTEM IS A MECHANISM can be represented with two subordinate metaphors such as AN INDIVIDUAL IS A COG and A FUNCTION IS A COG. The dominant subordinate metaphor in both languages is AN INDIVIDUAL IS A COG, present in the majority of examples.

Discussion

The results demonstrate that the mechanism metaphor functions as a powerful cognitive tool for conceptualizing social, cultural, natural, and even mental systems. It is used to express the relationship between a system and its parts, evoking an image of functional interdependence. Table 1 summarizes the distribution of metaphors by conceptual domain.

Table 1. Distribution of superordinate metaphors

Superordinate Metaphor	English	Russian
Organization is a mechanism	6	7
Mind is a mechanism	1	—
Cultural system is a mechanism	1	2
Natural process is a mechanism	2	1

Through CIT, all the analyzed examples exhibit double-scope blending, integrating elements from two distinct input spaces: mechanical systems (mechanism, machine, cogs, gears, operators, engineers) and social or abstract systems (institutions, mental processes, global networks). The emergent meaning in the blend creates an image that is absent from both input spaces. The notion of a cog in a mechanism typically suggests a dehumanized and replaceable component whose actions, thoughts, or goals are guided by the system or, at times, by its operator. None of these features are literal properties of either a cog or an individual in isolation. However, in some cases, the functionality and well-being of the entire mechanism depends on its components, as illustrated in examples (1), (2), (8), (9), (10), and (20).

Some examples construct a nuanced image of a cog within a mechanism. For instance, fragment (13) frames scientific inquiry as a process of disassembling and reassembling the evolutionary system to achieve understanding, while fragment (14) conceptualizes a cog as an agent engaged in purpose-driven contribution within a collaborative network. Thus, this ambivalence emphasizes the flexibility of metaphorical meaning and its sensitivity to pragmatic and ideological factors.

The analysis demonstrates that the metaphors of mechanisms are culturally adaptive. English examples often emphasize collaboration and systemic efficiency, sometimes casting subordinate roles in a positive light (e.g., main cog, happy cog). In contrast, Russian examples foreground bureaucratic control and ideological subordination, framing individuals as obedient functionaries (e.g., *винтик глобальной системы потребления, винтики натовского военного механизма*) – an image that resonates with supposedly Stalin's famous "people as cogs" toast (*люди-винтики*). A full diachronic analysis of Russian corpora would be necessary to explore this connection in depth.

Overall, the conceptual blends reveal several recurrent features of emergent structure:

1. Loss of individuality and replaceability (e.g., *a cog in corporate imperialism, винтик бюрократической машины*).
2. Functional determinism, where roles are strictly predefined by systemic logic.
3. Polarity of evaluation is ranging from negative (*mindless cog, лишь винтик*) to positive (*main cog, не последний винтик*), reflecting discourse-specific intentions.

Conclusion

This paper set out to examine the mechanism metaphor, with particular attention to the expression *a cog* and its Russian equivalent *винтик*, within the framework of Conceptual Integration Theory. By analyzing twenty corpus-based examples from English and Russian, the study has shown that the superordinate metaphor A SYSTEM IS A MECHANISM is deeply embedded in both linguistic and cultural contexts, allowing speakers to conceptualize complex and abstract systems through the imagery of concrete mechanical structures.

The analysis revealed that the most frequent subordinate metaphor in both corpora is AN INDIVIDUAL IS A COG, which frames human beings as functionally determined and often replaceable constituents of larger institutional, political, or social mechanisms. However, the evaluative polarity of this metaphor varies across languages and contexts. English examples frequently employ the image of a cog in positive or neutral connotations, emphasizing cooperation and systemic efficiency (e.g., *main cog, happy cog*). In contrast, Russian usage tends to foreground bureaucratic rigidity, ideological control, and dehumanization (e.g., *беспомощный винтик социального института, винтик общепролетарского писательского дела*).

Applying CIT proved crucial for uncovering the emergent meanings that arise from the interaction of mechanical and abstract input spaces. These meanings – such as the loss of individuality, functional determinism, and even pride in indispensability cannot be fully explained by simple domain mapping as proposed by CMT alone. The blends analyzed here highlight the flexibility and cultural adaptability of mechanistic metaphors, showing how they mediate attitudes toward power, agency, and systemic order.

Future research might explore the diachronic evolution of this metaphor in various discourses, as well as its interaction with alternative metaphorical models (e.g., ORGANISM or NETWORK). Extending the analysis to additional mechanistic terms, such as gear, wheel, or engine, would also deepen the understanding of how mechanical imagery continues to structure conceptualization across languages and cultures.

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