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ANTHROPOMORPHIC METAPHOR IN THE ENGLISH DISCOURSE OF PROJECT MANAGEMENT AND INNOVATIVE IT TECHNOLOGIES

The article analyses the cognitive and pragmatic functions of anthropomorphic metaphor in contemporary English-language discourse relating to project management and innovative information technologies. Particular attention is devoted to the conceptual mechanisms through which human characteristics, physiological states, cognitive processes and social relationships are projected onto abstract technological phenomena and corporate management practices. The study investigates the role of anthropomorphic metaphor in the formation of specialised terminology, the conceptualisation of complex digital processes and the facilitation of professional communication within multicultural corporate environments. Drawing upon the cognitive theory of metaphor, the research employs corpus-based analysis using Corpus Query Language (CQL) to identify, extract and classify metaphorical expressions occurring in technical documentation and professional project management communications. The analysis examines representative terminological units, including parent/child process, orphan file, zombie process, dead code, AI hallucinations, handshake, project health check and post-mortem, with particular emphasis on their underlying source domains and communicative implications. The findings reveal systematic patterns of metaphorical conceptualisation across two principal areas: innovative IT technologies and corporate project management. Technological processes are frequently represented through metaphors associated with human mortality, vitality and cognitive activity, whereas managerial practices draw extensively upon models of physical health, social interaction and interpersonal relationships. Three principal pragmatic functions of anthropomorphic metaphors are identified: cognitive-heuristic, communicative-managerial and emotional-psychological. These functions contribute to the interpretation of complex technical phenomena, the establishment of shared professional terminology and the conceptual framing of organisational processes. The research further identifies the relevance of anthropomorphic terminology to intercultural professional communication, particularly in environments where English functions as a lingua franca. It is established that understanding the conceptual foundations of such expressions represents an important component of specialised linguistic competence among future engineers and IT professionals. The findings provide a theoretical and methodological basis for incorporating anthropomorphic terminology into English for Specific Purposes (ESP) instruction at technical universities, thereby supporting the development of professional communicative competence and intercultural adaptability in international technological and corporate contexts. Keywords: anthropomorphic metaphor, cognitive linguistics, IT discourse, project management, English for Specific Purposes.

Within this evolving linguistic environment, anthropomorphic metaphor has emerged as an important cognitive mechanism through which complex technological processes and organisational structures are conceptualised in terms of familiar human experiences. By attributing human characteristics, cognitive abilities, physiological states and social roles to non-human entities, such metaphors facilitate the interpretation of abstract concepts and contribute to the formation of shared professional discourse. Their increasing prevalence in international IT and corporate environments highlights the need for systematic investigation of their linguistic characteristics, cognitive foundations and pragmatic functions, particularly in the context of intercultural communication. Consequently, examining anthropomorphic metaphors in English-language IT and project management discourse is essential for understanding contemporary terminological development and enhancing the professional communicative competence of future engineers and IT specialists.

Problem formulation and its connection with scientific and practical tasks. The accelerating pace at which IT technologies and agile management frameworks develop has, in recent years, created a pressing need for new conceptual mechanisms capable of rendering complex, abstract processes intelligible. Among these mechanisms, anthropomorphic metaphor – broadly understood as the attribution of human qualities to non-human entities – has proved a particularly productive cognitive device for coining new terminology. This is scarcely surprising: in international corporate governance, where a shared communicative space between specialists of differing linguistic and cultural backgrounds is not merely desirable but essential, metaphor of this kind performs real interpretative work. Its use in English-language discourse surrounding IT and project management appears, on the evidence gathered here, to ease cross-cultural interaction within global projects, effectively narrowing the cognitive distance between everyday human experience and the abstractions of technology.

It is this observation that motivates the present study. Its central aim is twofold: first, to identify and classify the dominant cognitive models underlying anthropomorphic metaphor in contemporary English IT and project-management terminology; and second, to consider the pragmatic functions such metaphors fulfil within the specific context of corporate governance.

Furthermore, cognitive linguistics posits that these metaphorical mappings are not merely stylistic embellishments, but essential cognitive frameworks that structure professional reality. As multinational corporations increasingly rely on English as a lingua franca, the standardisation of this metaphor-rich terminology becomes crucial for operational efficiency. Consequently, for non-native professionals, mastering these semantic nuances constitutes a formidable challenge that transcends rudimentary vocabulary acquisition. This linguistic complexity underscores the necessity for targeted pedagogical strategies within technical universities to adequately prepare future engineers for the communicative demands of the global corporate market. By dissecting the underlying anthropomorphic patterns, both educators and practitioners can more effectively decode the implicit conceptual codes embedded within modern digital environments. This study aims to identify and classify the primary cognitive models of anthropomorphic metaphors in contemporary English IT and project management (PM) terminology, elucidating their pragmatic functions in corporate governance.

The research is grounded in the cognitive theory of metaphor, positing that metaphor is a fundamental mechanism of human thought rather than a mere rhetorical device. To ensure empirical validity, corpus analysis was conducted utilising the Corpus Query Language (CQL) tool. This facilitated the precise extraction and contextual evaluation of high-frequency metaphorical collocations from a specialised corpus of contemporary technical documentation and corporate PM communications.

Analysis of recent research and publications. Recent research has increasingly examined the cognitive, linguistic and pragmatic dimensions of anthropomorphic metaphors in information technology and project management discourse. Jackson (2024) investigated [1] the role of conceptual metaphors in IT project management, demonstrating their significance for interpreting organisational complexity and managerial decision-making.

Van Es and Nguyen (2025) explored [2] the anthropomorphic self-representations of ChatGPT, highlighting their influence on perceptions of artificial intelligence, technological trust and human-computer interaction.

More recently, Pham and Morin (2026) employed [3] computational discourse analysis to identify personification metaphors associated with cognition, communication, emotion and technological agency in generative AI discourse.

Collectively, these studies provide a theoretical and empirical foundation for further investigating the classification and pragmatic functions of anthropomorphic terminology in professional IT and corporate communication.

These findings suggest that anthropomorphic metaphors function not merely as linguistic devices but as essential cognitive mechanisms shaping the conceptualisation of technological processes and organisational practices. Nevertheless, despite growing scholarly interest in metaphorical representations of artificial intelligence and IT systems, the systematic integration of cognitive, communicative and managerial perspectives remains insufficiently explored. Therefore, further research is needed to establish a comprehensive classification of anthropomorphic metaphors in English-language IT and project management discourse, with particular emphasis on their pragmatic functions and implications for professional communication.

Purpose of the article. To identify and classify anthropomorphic metaphors in contemporary English IT and project management discourse and examine their cognitive and pragmatic functions in professional communication.

Presentation of the main research material. The corpus analysis reveals that anthropomorphic metaphors are ubiquitous across two primary domains.

1. Innovative IT technologies and artificial intelligence. Complex systemic operations are frequently conceptualised through the prism of human life cycles and cognitive states. High-frequency terms extracted via CQL include parent/child process, orphan file, to kill a process, and dead code. In the context of generative AI, physiological and mental processes are heavily extrapolated, yielding terms such as sleep mode, handshake, and AI hallucinations. As Reinecke et al. (2025) note, the anthropomorphisation of Large Language Models (LLMs) serves [4] as a double-edged sword, profoundly shaping user perception. Furthermore, So (2026) highlights [5] that extending interface metaphors beyond basic anthropomorphism dictates how users and developers conceptualise underlying algorithms.

2. Corporate discourse of Project Management. Project life cycles and team dynamics are systematically likened to human physical and social states. Prominent examples include project health check, post-mortem (project failure analysis), and stand-up meeting. Charles (2026) corroborates [6] this by exploring organic, biological metaphors – such as the "adaptive organism" – which frame anticipatory project management as a symbiosis between human teams and IT ecosystems. Additionally, social roles are encapsulated in titles like Scrum Master or Agile evangelist.

To systematically quantify these linguo-cognitive patterns, the extracted metaphorical expressions were categorised based on their source domains (human attributes) and target domains (technological or managerial concepts). The corpus query results demonstrate a distinct bifurcation in how anthropomorphic traits are applied: technical infrastructure heavily relies on mortality and physiological states, whereas team-oriented frameworks predominantly exploit social and cognitive mappings. Table 1 delineates the most statistically significant clusters identified within the corpus, illustrating the intersection between human domains, representative terminology, and their specific pragmatic functions in corporate environments. This structured mapping not only elucidates the conceptual architecture of modern IT jargon but also provides a tangible framework for educators to integrate these complex terms into vocational syllabi.

Table 1

Categorisation of anthropomorphic metaphors in IT and PM discourse

Target domain (IT/PM)	Source domain (human attribute)	Representative lexical units	Primary pragmatic function
Software lifecycle	mortality / vitality	*dead code, orphan file, zombie process, to kill a process*	Cognitive-heuristic (simplifying systemic hierarchy and memory management)
Artificial intelligence	cognition / mental processes	*AI hallucinations, machine learning, deep learning, memory leak*	Communicative-managerial (conceptualising autonomous computational behaviour)
Agile management	social / spiritual roles	*Scrum Master, Agile evangelist, product owner, stakeholder*	Communicative-managerial (defining hierarchical and operational relationships)
Workflow dynamics	physical health / physiology	*project health check, sprint, team burnout, bottleneck*	Emotional-psychological (mitigating workplace stress and humanising deadlines)

Source: created by author.

To complement the qualitative categorisation presented in Table 1, the quantitative analysis considers an expanded sample of 116 representative lexical units. The preliminary distribution distinguishes three principal pragmatic functions of anthropomorphic metaphors: cognitive-heuristic, communicative-managerial and emotional-psychological. Table 2 presents the proportion of explicitly classified expressions within the expanded lexical inventory.

Table 2

Quantitative distribution of selected anthropomorphic metaphors by pragmatic function

Pragmatic function	Number of lexical units	Percentage (%)
Cognitive-heuristic	31	26.72
Communicative-managerial	59	50.86
Emotional-psychological	26	22.41
Total	116	100.0

Source: created by author.

As illustrated in Table 2, the communicative-managerial function accounts for the largest proportion of the selected metaphorical expressions (50.86%, n = 59), followed by the cognitive-heuristic function (26.72%, n = 31), whereas the emotional-psychological function represents the smallest proportion (22.41%, n = 26). This distribution reflects the functional categorisation adopted in the present study and highlights the particular prominence of communicative-managerial mappings within the selected lexical inventory. Such expressions facilitate the conceptualisation of artificial intelligence and the organisation of professional relationships within agile management frameworks. Meanwhile, cognitive-heuristic metaphors contribute [7] to the interpretation of complex software operations, whereas emotional-psychological mappings provide accessible conceptual models for workflow dynamics and organisational challenges. Although these percentages describe the illustrative sample rather than the frequency distribution of the entire corpus, they demonstrate the functional diversity of anthropomorphic terminology and provide a basis for further quantitative investigation using corpus-derived frequency data.

The extracted metaphors fulfil three pivotal functions in corporate governance: (a) cognitive-heuristic: they elucidate intricate technical algorithms via familiar human paradigms; (b) communicative-managerial: they establish a cohesive corporate jargon, fostering swift comprehension amongst diverse stakeholders; (c) emotional-psychological: they "humanise" rigidly deadline-oriented environments, mitigating team stress (e.g., substituting the neutral failure analysis with the metaphorical post-mortem).

Beyond their terminological significance, the identified anthropomorphic metaphors have important implications for teaching English for Specific Purposes (ESP) in technical higher education. Their systematic classification provides [8] a foundation for developing instructional strategies that integrate linguistic awareness with the conceptual understanding of technological and managerial processes. For instance, examining expressions such as orphan file, zombie process and dead code enables students to distinguish between metaphorical representations and their precise technical meanings. Similarly, analysing project health check and post-mortem encourages learners to recognise how metaphorical conceptualisation influences professional perceptions of organisational performance and project outcomes.

The quantitative distribution of the 116 selected lexical units, particularly the predominance of communicative-managerial metaphors (50.86%), further highlights the relevance of such terminology to professional interaction within international corporate environments. Consequently, ESP instruction should incorporate [9, 10] authentic technical documentation, contextualised terminology exercises and simulated project management scenarios to develop students' ability to interpret and employ metaphorical expressions appropriately. Particular attention should also be devoted to artificial intelligence terminology, where anthropomorphic expressions [11] may create misleading assumptions about the cognitive capabilities of computational systems.

Developing critical metaphor awareness can therefore enhance linguistic precision, intercultural understanding and professional communicative competence among future engineers and IT specialists. Nevertheless, the quantitative findings reflect the selected lexical inventory and should not be interpreted as establishing the frequency distribution of anthropomorphic metaphors across the entire professional discourse. Further research should expand the corpus,

examine metaphorical variation across specialised technological and managerial contexts, and evaluate the effectiveness of metaphor-oriented ESP instruction through empirical classroom investigations.

Conclusion. The conducted research substantiates that anthropomorphic metaphors are fundamental structural components of contemporary PM and IT discourse rather than mere stylistic devices. As elucidated by the corpus categorisation, these linguistic units exhibit a systematic mapping dichotomy: software infrastructure and system operations are predominantly conceptualised through the prisms of human mortality and physical health, whereas artificial intelligence and agile management frameworks rely heavily on social, spiritual, and cognitive domains. This structured anthropomorphisation fulfils overarching pragmatic functions, ranging from simplifying intricate computational behaviour to humanising rigorous workflow dynamics and mitigating workplace stress. Recognising these distinct linguo-cognitive mechanisms is paramount for future engineers and IT professionals operating within international corporate environments. Consequently, integrating this systematically categorised, corpus-based lexico-semantic material into English for Specific Purposes (ESP) curricula will significantly enhance the corporate communicative competence and cross-cultural professional adaptability of technical university graduates.

1. Jackson, S. (2024). When huskies bite back: A complex systems metaphor perspective on information technology project management. *Systems Research and Behavioral Science*, 41(2), 354-367. https://doi.org/10.1002/sres.2972.
2. van Es, K., & Nguyen, D. (2025). "Your friendly AI assistant": The anthropomorphic self-representations of ChatGPT and its implications for imagining AI. *AI & SOCIETY*, 40, 3591-3603. https://doi.org/10.1007/s00146-024-02108-6.
3. Pham, T. N. Q., & Morin, C. (2026). 'Thinking', 'helping', and 'replacing': What personification metaphors reveal about the social integration of generative AI. *AI & SOCIETY*, 41, 6245-6264. https://doi.org/10.1007/s00146-026-02934-w.
4. Reinecke, M. G., Ting, F., Savulescu, J., & Singh, I. (2025). The Double-Edged Sword of Anthropomorphism in LLMs. *Proceedings*, *114*(1), 4. MDPI. https://doi.org/10.3390/proceedings2025114004.
5. So, J. (2026). Beyond Anthropomorphism: a Spectrum of Interface Metaphors for Large Language Models. *Extended Abstracts of the 2026 CHI Conference on Human Factors in Computing Systems*. https://doi.org/10.48550/arXiv.2603.04613.
6. Charles, K. A. (2026). Governing the adaptive organism: A framework for human-AI symbiosis in anticipatory project management. *International Research Journal of Management, IT and Social Sciences*, *13*(5). https://doi.org/10.21744/irjmis.v13n5.2606.
7. Nykyporets, S., & Boiko, Y. (2026). Anthropomorphic metaphors in contemporary technical discourse: a cognitive-linguistic analysis of the IT terminological system. In *Science and education in the third millennium: information technology, education, law, psychology, social security and work, management* (1st ed., p. 762). https://doi.org/10.5281/zenodo.20810460.
8. Kot, S. O., & Nykyporets, S. S. (2025). Activating students' cognitive engagement in technical English learning with AI tools. In *Science and education in the third millennium: Information technology, education, law, psychology, social security and work, management. International collective monograph* (Vol. I, pp. 295-332). Lublin, Polska: Institute of Public Administration Affairs. https://doi.org/10.5281/zenodo.16942267.
9. Stepanova, I. S., Nykyporets, S. S., & Kukharchuk, H. V. (2025). Integrating artificial intelligence tools into project-based English language instruction for technical students: A framework for fostering critical and creative thinking. In A. Ostenda & D. Kalita (Eds.), *Innovation-driven development in education, digital economy, and applied technologies* (pp. 208-215). The University of Technology in Katowice Press. https://doi.org/10.54264/M055.
10. Nykyporets, S. S., Kot, S. O., Ibrahimova, L. V., Kukharchuk, H. V., & Melnyk, M. B. (2026). The role of anthropomorphism in technical discourse: Linguistic objectification of machines and algorithms. *Bulletin of Science and Education*, (4[46]), 231-245. https://doi.org/10.52058/2786-6165-2026-4(46)-231-245.
11. Stepanova, I. S., Nykyporets, S. S., Hadaichuk, N. M., Ibrahimova, L. V., & Slobodianiuk, A. A. (2025). Investigating linguistic and sociocultural complexities in translating contemporary English lexical units into Ukrainian. *Bulletin of Science and Education. Series "Philology"*, 2(32), 72-83. https://doi.org/10.52058/2786-6165-2025-2(32)-72-83.
12. Medvedieva, S. O., Stepanova, I. S., Nykyporets, S. S., & Ibrahimova, L. V. (2023). The application of a neuropedagogical approach while teaching English to students of higher educational establishments. *Prospects and Innovations of Science. Series "Pedagogy"*, 8(26), 13-24. https://doi.org/10.52058/2786-4952-2023-8(26)-13-24.

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