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ETHICS AND DEONTOLOGY OF SCIENTIFIC RESEARCH IN TRANSLATION STUDIES IN THE CONTEXT OF ICT

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The article examines how artificial intelligence and ICT tools transform research workflows, specialized literature analysis, as well as the processing of data used in scientific communication. We set the aim to assess the benefits, limitations, risks, ethical and deontological issues, impact of using AI on academic integrity, and emerging roles and applications in scientific research in translation studies.

Keywords: *Artificial Intelligence (AI), Information and Communication Technologies (ICT), academic integrity, translation studies, digital research tools, open access, open science, Ethics and Deontology of Research*

ETICA ŞI DEONTOLOGIA CERCETĂRILOR ŞTIINŢIFICE ÎN TRADUCTOLOGIE ÎN CHEIA OFERTEI NTIC

Articolul examinează modul în care inteligența artificială și instrumentele NTIC transformă fluxurile de lucru în cercetare, analiza literaturii de specialitate, precum și în prelucrarea datelor cadrate cu procesul de comunicare științifică. Ne-am propus să evaluăm avantajele, limitările, riscurile, aspectele etice și deontologice, impactul implicării IA asupra integrității academice, precum și rolurile și aplicațiile emergente în cercetările științifice cu aplicare la traducere.

Cuvinte cheie: *Inteligență artificială (IA), Noi Tehnologii Informaționale și de Comunicare (NTIC), integritate academică, traducere, instrumente digitale de cercetare, acces deschis, știință deschisă, etica și deontologia cercetării*

Introduction

Unlike the 20th-century society, the third millennium is becoming increasingly anthropocentric, increasingly immersing the representatives of the world of academia into the orbit of scientific research with a clearly defined interdisciplinary dimension, thus

highlighting the fact that we are living in an age of scientific synthesis. At the same time, the introduction and massive application of new technologies is becoming largely important due to the fact that the 21st century imposes a variety of requirements on professionals who are to carry out their work in an emerging dimension, that is, we are witnessing a shift from a technology built on the principle of "from knowledge to skills" to the one based on the laws of cognitive activity and acmeology-centered learning.

In its essence, acmeology (from the Greek *acme* – peak, zenith, maturity, and *logos* – word, meaning, attribute) is an interdisciplinary science that fits perfectly into the "algorithmization of the contemporary society's challenges" [1, p. 7] and which is not accidental, being supported "by capitalizing on the interdisciplinary and multidisciplinary paradigm" [1, p. 11-12]. Moreover, acmeology examines the frameworks, mechanisms, and conditions that enable individuals to reach the highest levels of personal development, competence, and maturity.

In the field of translator training, both in its professional and its scientific research dimensions, acmeology contributes to preparing individuals for a successful career on the labor market as well as for research activities in translation studies and intercultural communication. Both professional training and research in translation studies are integral components of a coherent system, supported by a set of mechanisms that actively ensure its functioning. The system is dynamic and capable of transformation, adaptation, and response to various events; in other words, it is able to self-organize and evolve [2, p. 34]. At the same time, we can mention several key components of this system that constantly adapt to the system's operation conditions. We refer, in particular, to translator ethics and deontology, namely, the elements that originate deep in the history of this human activity.

However, in recent years, this system has been noticeably disrupted by factors created through human intelligence that now function outside the system as well, namely, new information and communication technologies and, in particular, Artificial Intelligence, deeply infiltrated in the extensive digital environment. Many researchers attribute both robustness and reliability to AI, while attempting to comply with the ethical norms of their respective fields. Meanwhile, such interferences raise a number of questions regarding the ethics and deontology of translations broadly supported by digital tools, as well as regarding the methodological foundations offered for translation studies research using (New)ICTs.

Ethics and Deontology in Translation Studies and Practice

It is well known that ethics shapes people's actions and behavior, and its role is considered from an intellectual perspective. Ethical norms are aligned with the domain in which concrete actions are carried out, and the ethics applied to scientific research varies from one discipline to another. All ethical elements follow the evolution of societies and the specific approaches characteristic of their respective historical periods. The evolution of humanity across time and space has generated significant intellectual and cultural diversification in modern societies, as well as a rise in the exchanges between different civilizations, contributing to a substantial renewal of contemporary reflections on deontology and ethics.

It is often asserted that "Deontologists (from the Greek term *deon*, meaning duty) believe there are certain moral duties or universal moral laws everyone is subject to," and that if it were possible to program such laws into computers, "we could ensure that the computer network would be a force for good" [3, p. 243]. Yet this idea of deontologism is criticized for its attempt to impose universal deontological norms on computers, similar to the way they do on human beings [3, p. 245]. Furthermore, from a deontological perspective, "what seems simple in the practical realm of history becomes devilishly complex in the theoretical realm of history" [3, p. 245].

Throughout the history of translation and, later, of Translation Studies, questions of deontology and ethics were often raised indirectly, through didactic reflections on the need for a thorough command of the languages involved in translation, on methods of translation, on observing quality standards, and on avoiding certain types of translation errors, among other aspects.

The treatise on qualitative translation written by the Italian humanist Leonardo Bruni, *De interpretatione recta* [4], was likely composed between 1420 and 1426 and forms part of debates among Italian humanists concerning a new discipline gradually taking shape at that time - translation. Bruni's primary aim, however, was to provide methodological support for this emerging fundamental discipline of translation within classical studies. The scholar paid great importance to the possession of an excellent general cultural background, which was expected of anyone translating ancient texts. *De interpretatione recta* stands among the earliest modern treatises devoted specifically to translation, and reflects the humanist movement's efforts to recover the aesthetic, rhetorical, and legal models of classical translation, that is, a recovery of Antiquity itself, a task rendered particularly complex by the temporal distance separating the world of Antiquity from that of the Renaissance.

Within the methodological dichotomy that has always dominated the field of translation, namely *literal versus free translation*, Bruni gravitated between spirit and letter, arguing that the choice of method is far from simple for several reasons. In his view, the translator must ask why the author says what he says, and why he says it in that particular way. The translator must investigate the historical conditions in which the text was produced; in other words, it is not enough to understand a text, in order to translate it, one must understand an era and a mindset.

In broad terms, Bruni approached questions of fidelity and clarity with scholarly rigor, arguing that translation should be structured around three fundamental criteria: an aesthetic criterion (preserving the beauty of the original), a linguistic criterion (writing in a language modeled on that of the best authors), and a hermeneutic criterion (rendering the author in such a way that the translation seems to be the original). Bruni sets out his views on the translator's activity in the preface to his translation of *Nicomachean Ethics*, identifying a series of errors made by his predecessors. Therefore, he criticizes earlier translations and enumerates the main causes of poor-quality translation work, such as the translator's misunderstanding of what must be translated, an incorrect rendering of the original text, or a failure to preserve the harmony and elegance of the original.

Bruni stands among the first theorists of translation to insist on a strong command of languages, an idea later taken up by the French translator Étienne Dolet, the most dynamic representative of the intellectual Renaissance in France.

In the history of translation and translation studies, the period around the year of 1530 is regarded as the "age of translation treatises" [5, p. 78]. Martin Luther wrote his *An Open Letter to Translating* (1530), along with other texts on translation, all shaped by the notion of communication and adaptation for communicative purposes. These works focus particularly on the methods of sacred translation, setting out "the principles of a 'refined' translation based on dynamic and pragmatic equivalences and on the respect for the target language" [5, p. 78], while demanding solid linguistic knowledge and a thorough understanding of the source text.

In his turn, Étienne Dolet wrote La *Manière de bien traduire d'une langue à l'autre* ("The Way to Translate Well From One Language into Another") (1540), setting out five principles that must be observed in order to produce a good translation: 1. The translator must perfectly *understand* the "meaning and subject matter" of the author being translated. 2. The translator must have an excellent command of both working languages, the source language and the target language. 3. The translator enjoys freedom in choosing how to translate and must not be constrained to reproduce the source text literally. 4. The translator must avoid neologisms and borrowings, and shall conform to common usage. 5. The translator must follow the example of orators and know rhetoric, so that his text may delight both the mind and the ear [5, p. 84-86]. These principles have not lost their relevance today and can be found, albeit under different formulations, in contemporary ethical and deontological codes for translators and interpreters.

Later, the French writer Joachim du Bellay published the manifesto *Défense et illustration de la langue française* ("The Defence and Enrichment of the French Language," 1549), in which the process of translation is presented "within his broader conception of linguistic and cultural policy" [5, p. 88].

In his treatise *Essay on the Principles of Translation* (1791), Alexander Fraser Tytler analysed the three principles governing literature and poetry translation, and offered reflections on translation that, in his view, should contribute to improving its quality. The scholar stressed the need to respect the fidelity to meaning, the fidelity to the author's spirit and style, and the readability of the translated text, natural and fluent, as if it were an original [6, Chapter I, p. 9]. Therefore, drawing on translational experience, Tytler, similar to his predecessors and successors, helped to lay the foundations of the ethical dimension of translation.

Without delving further into the history of translation, and following the aforementioned information, we note that translation, being placed within the language and bringing into focus the issue of respecting the addressee and, even more so, the issue of alterity, raises numerous significant ethical questions, more precisely the questions pertaining to "the ethics of translating alterity" [7, p. 35]. Eugeniu Coseriu operates with the triad of primary universals *creativity–semanticity–alterity* [8, p. 10], emphasizing that "Language is always directed toward the other, even as a primary linguistic creation. Meanings and signs are not created 'just to be' (as in art), they are created in order to be there for others as well; even more: as already belonging to others (since they are always created within a given language)" [8, p. 51].

Applied to translation, this implies the need to adopt the ethical principle of "oneself as another" (*soi-même comme un autre*) [9; 10, p. 151]; in other words, the relation-

ship with an 'other' requires the respectful engagement with the languages and cultures involved in the process. It is no coincidence that François Ost underlines that "*La difficulté est immense, dans ces conditions, de considérer l'autre à la fois dans la commune humanité qu'il partage avec moi et dans sa différence spécifique*" [10, p. 151], meaning that it takes considerable effort to recognize as one's own something that fundamentally belongs to another. From this perspective, translation theories could be regarded as operating under the sign of the ethics of translation; however, translation does not always correspond to an irenic space of sharing with the Other. The scholarly research on the role of ethics in translation outlines three forms of ethical functioning: one pertaining to language and dialogism, another arising from the activity of the translator as a subject, and a third defined by a specific culture. All three forms are centered on alterity, yet with distinct philosophical and pragmatic implications.

In her work dedicated to ethics and ontology in translation, Mirela-Cristina Pop notes that this concept is not currently systematized in translation research [7, p. 5]: "The term *ethics* is encountered most frequently in the studies on the ethics of translation, while the term *deontology* is reserved for the principles and norms included in the codes of ethics and professional conduct drafted by professional translators' associations, or in deontological codes applied by certain actors in the translation market to guide the professional behavior of employees or collaborators" [Ibidem]. The researcher further defines three types of ethics and deontology in translation, understood from three perspectives:

"1. the ethics and deontology of translation, in relation to the principles, values, norms, and translation practices shared by the members of the epistemic community;

2. the ethics and deontology of the translator, in relation to values, attitudes (behaviors), and professional virtues (qualities);

3. the ethics and deontology of the profession, in relation to the socio-cultural principles, values, norms, and practices established and shared by the members of a social group, namely the socio-professional community of translators." [7, p. 39].

A brief review of the contents of several deontological and ethical codes adopted by translators' associations or unions from different economic, social, and cultural contexts reveals a shared concern for maintaining a high standard of correctness in translation and interpreting work. These documents, while structured in various ways, emphasize the principles, values, norms, and practices shared by the members of the professional community, adjusted to the social realities within which translators and interpreters carry out their activities, including their relationship with the members of the society and with the clients who commission their translation services.

For example, the International Federation of Translators (FIT) Charter, drafted in French and English, [11], is structured into five sections: the first sets out the general rights of translators; the second addresses translators' rights; the third discusses the social and economic situation of translators; the fourth describes translators' associations and unions; and the fifth clarifies the relationship between national organizations and the international federation of translators. These sections are incorporated, albeit differently, into the deontological or ethical codes of professional translators' associations in various countries, with adaptations to their respective socio-economic contexts or to the specific types of translation performed by each organization.

The Association of Professional Translators of Moldova (ATP) has also adopted a "Translator's Deontological Code," structured in modules focused mainly on the purpose and scope of translation work, on translators' duties, and on integrity standards: "Through this Code, ATP aims to highlight the social function of translation, to improve the social conditions and environment in which translators practice their profession, while clarifying their professional and ethical-moral rights and obligations" [12].

It is not surprising that these documents place particular emphasis on the need for a high level of linguistic proficiency in the working languages (a condition "inherited" from the pedagogical and methodological practice of earlier centuries), as a prerequisite for producing quality translations. For example: "ARTLIT members undertake the following obligations in the exercise of their profession as literary translators, namely: Translate exclusively from/into languages they master at an appropriate level; Follow all stages of quality assurance when producing translations (terminological research, drafting, stylistic adjustment, self-revision, final check before delivery)" [13].

In the "Deontological Code of Members of U.N.T.A.R." it is stipulated that "The exercise of the profession of sworn translator and interpreter supposes impartiality and neutrality. Authorized translators and interpreters are required to perform their duties conscientiously and professionally by providing authorized translation and interpreting services of impeccable quality, both in terms of linguistic expression and in terms of specialized terminology. Authorized translators and interpreters are obliged to adhere to confidentiality norms even after the completion of their services." [14].

On the other hand, an online search focused on ethical and deontological codes for translators and interpreters does not, in general, reveal explicit references to the conditions for using ICT in their professional activity. However, on the official website of the European Union, in the section dedicated to the Translation Centre for the Bodies of the European Union (CdT), under "Translation Services," we do find translation services supported by automation. These include **machine translation services**: "This is a **fully automated service for document translation**, using a combination of the Centre's translation memories and custom machine translation engines, without any human quality control and without any preparation of the source documents for the technical processing or formatting," as well as **the service of light post-editing of machine translation output**: "This is a translation service in which **human editors improve the result of machine translation output**. The service includes editing, modifying and/or correcting machine translations when the final text is not intended for publication and its primary purpose is the 'per se conveying' of information, i.e. communicating the essential meaning without necessarily producing a perfect target-language style. The result is a comprehensible text in which no important information has been accidentally omitted and no incorrect information has been added." [15]. We thus note the continued necessity of the human translator to ensure translation quality.

We Do Not Oppose Human Intelligence and Artificial Intelligence in Scientific Communication. Scientific communication always centers on a researching subject and an object (topic) of investigation. Scientific communication is characterized by a specific style that "confers a text its own identity and is established through the very process of selecting words from the paradigms of the language and through the discursive modali-

ties that orient the creation of meaning" [16, p. 23]. However, the subject–topic dyad is easily transformed into a triad once new technologies, particularly AI-enhanced ones, are introduced into the research process.

At present, there is still no clear definition of AI, and the field appears as a nebulous space within which various orientations, strategies, and interests coexist. Nevertheless, certain key ideas regarding AI seem to take shape in the form of a philosophy of knowledge (already discernible in philosophical thought since Aristotle) and continuously enriched at the pace of technical and scientific transformations across historical epochs. Today, when AI has become extremely powerful, efforts are being made to assess its role in different domains and fields. We seek to understand, in particular, how it functions, the usefulness of its support in scientific research, the limits and risks it generates, and the degree of credibility associated with the research methods employed, the extraction, collection and quality of the AI-generated responses based on informational, analytical, or experimental content, all of which being part of a broader ensemble of digital processes and systems.

At present, translators increasingly make use of the possibilities offered by new information technologies, and AI is becoming ever more visible along this professional and research path in the field of translation, regardless of type or genre. For instance, specialized languages and the terminologies found in such texts are subject to advanced research based on extensive corpora, followed by analysis and synthesis involving ICT processing, while literary texts produced by translators are subjected to comparative analyses with versions generated by AI algorithms.

Under these new conditions of scientific activity, we are tempted to seek at least a partial answer to the question of how technological innovations influence both theoretical and practical approaches within research, including in the field of translation studies. It is important to understand how these technologies are able to support or compensate for certain shortcomings that may arise from the activity of the human subject involved in scientific research. Technologies assist people in direct accordance with the expectations formulated by people themselves, that is, with their ability to clearly articulate what they expect from this innovative toolkit. At the same time, a reasonable question emerges concerning the extent to which researchers are entitled to appropriate the results offered by these technological (re)sources. It is for this very reason a clarification is required, with regard to the ethical dimension of such collaboration in scientific research, and it seems that, for various reasons, no clear answer has yet taken shape or been provided. Among the arguments to be considered is the fact that we are dealing with intelligent querying based on advanced processing of a large mass of data composed of texts, terms, graphs, statistics, and more, all made possible by open access to hypertexts of varying size depending on the researcher's field of interest. The results of these searches serve as sources of scientific reflection, undoubtedly beneficial to research, and apparently without any ethical drawbacks. ICT tools prove the capacity to "think" and help humans think, while remaining ethically neutral, particularly when the bodies, institutions, and content-producing entities that respond to research needs in various fields provide open access intended for a broad spectrum of users. Matters become even clearer when the regulating institutions in the field develop and comply with corpora that include charters,

guidelines, ethical and deontological codes, regulations, and legal provisions correlated with the ethical and deontological dimensions of their professional activity, while sharing best practices and forms of good conduct intended for the scientific community. Nonetheless, we understand that such normative corpora tend to have a recommendatory rather than a restrictive or prohibitive character in relation to scientific research supported by new technologies. We may therefore conclude that ethics and deontology constitute only a relative, complementary set of norms operating within the space of scientific research, one which itself lacks a regulatory framework adapted to these new modalities of activity.

The common ground shared by the human and technological actors involved in scientific communication is intelligence: it is neither an object, nor a phenomenon, nor a process, nor a function. It is a norm of subjective behavior that highlights the individual and their world, manifesting in various situations insofar as cognitive competencies allow. The human subject shares certain competencies with AI, but the latter does not function as a mere copy of human intelligence; rather, AI passes through cumulative componential transformations, sometimes managing to produce responses that are clearer or better organized than those produces by the human researcher. There is no impermeable boundary between products generated by human intelligence and those generated by AI; rather, there is a continuum formed by the increasingly advanced capabilities of AI and the unpredictable creativity of human intelligence.

(New)ICT Offer in Scientific Communication and Translation Studies.

Given the aforementioned definitions, we note that the term ICT comprises a wide range of digital tools and platforms, from the internet and social networks to digital libraries, online archives, preprint platforms and multimedia platforms, as well as advanced data-analysis tools. In particular, Artificial Intelligence (AI) algorithms and tools, machine learning techniques, and automatic text-processing systems have become prominent, enabling the analysis and interpretation of large volumes of scientific data. Such advanced digital tools allow researchers to rapidly explore specialized literature, to visualize and process complex data pertaining to communication and translation studies, and to collaborate and disseminate rapidly research outputs online.

The term "ICT" was initially defined as "the new forms of communication of the 1990s: the Internet, CD-ROMs, educational software" [17, p. 53]. The integration of AI into research accelerates and streamlines scientific processes, enabling the analysis of large data sets and the automation of repetitive tasks, "with the potential to accelerate the pace of scientific discovery and improve the quality of research outcomes" [18]. In fact, the rise of the AI era coincided with the launch of *ChatGPT* and the rapid emergence of *Generative Artificial Intelligence* through chatbot interfaces, although such tools had been used by researchers before, such as automated translation applications or various bibliographic search engines powered by AI models.

Today, ICT tools based on AI are widely used in scientific research for documenting and annotating literature, planning research and study workflows, analysing and synthesizing scholarly sources and specialised literature, collecting and processing relevant data, drafting scientific and academic texts, and enhancing dissemination and interna-

tional visibility. This system comprises, but is not limited to, (Open Access) repositories and archives, electronic scientific journals banks, collaborative work networks (*GitHub, Discord, Slack*), specialized platforms (*Hugging Face*, online interactive learning platform), modern AI-based tools, big-data processing systems, online academic networks, automated peer-review tools, *ChatGPT* (OpenAI) conversational agent based on a *Large Language Model* (LLM) as well as other LLM-based chatbots (*Google Gemini, DeepSeek, Claude, Grok*). The main features offered by the AI powered conversational agents range from general purpose, to handle open-ended user input across a wide range of topics (LLM only), to task oriented, goal-directed interactions such as customer support, reservation handling, or IT service desk operations (LLM, rules, and *Application Programming Interface*-API), to providing accurate factual, domain-expert specialised knowledge (LLM and retrieval function - *Retrieval-Augmented Generation* (RAG) agents) which combine LLM-based natural language generation with external knowledge sources, to multilingual and cross lingual outputs, providing translation, terminology management, localization, or cross-linguistic mediation, to autonomous multi-step planning (shift from purely conversational roles to semi-autonomous problem-solving), and finally to adaptive teaching (physical robots, virtual avatars, or immersive environments) for pedagogical use.

Therefore, the AI-based ICT are widely used in scientific research, from the research planning stage, literature annotation and synthesis, to data collection and processing, as well as during the dissemination stage, such as participation in an on-line format to various hybrid mode conferences and workshops, publishing scientific results, works and papers in Open Access scientific journals, blogs, and specialised web pages. In this way, ICT ensures the rapid dissemination and international visibility of scholarly knowledge, expanding access to newly published materials. As research in the field highlights, the efficiency of scientific communication lies in "the system's ability to facilitate the generation of relevant research problems as well as their resolution," that is, in achieving maximal visibility and accessibility on a global scale [19, p. 13].

In the paragraphs that follow, we examine the applicability of AI tools across several domains and research workflows, including the design and development of data-collection instruments; the identification, analysis, and synthesis of theoretical and empirical findings; the processing and interpretation of qualitative and quantitative data; and the assessment of the reliability of the resulting outcomes. We also consider the relationship between AI and creativity, reasoning, and critical thinking; the role of AI in translation studies research; and the ethical challenges associated with its use, as it introduces a series of ethical and epistemological questions, particularly regarding authorship and responsibility, as the boundary between the researcher's contribution and that of the AI becomes blurred or unclear when the researcher provides only the items/initial data to be aggregated and the AI constructs the research instrument or generates the output on that basis [20].

Using extensive sets of textual data, AI tools are used by scholars in various stages of research design, in order to draft initial survey items from conceptual domains, to refine problematic or ambiguous items, to propose scales and categorization schemas, to translate or adapt items for multilingual studies, to generate interview guides aligned

with the research questions, to convert theoretical constructs into measurable variables, and so on. These tools are particularly accurate in the development of data-collection instruments such as questionnaires, surveys or interview guides/protocols as they (methodologically) contribute to item wording generation, scale selection, bias and ambiguity reduction, survey logic and branching, as well as cross-cultural adaptation. The researchers are given the opportunity to choose from a variety of survey platforms, academic testing systems and LLM assistants that are AI-enhanced for greater results (AI assists in formulating questionnaire/survey items, checks logic and clarity, suggests scale types, and even detects bias), namely platforms like *SurveyMonkey*, *Microsoft Forms* (via Microsoft 365 Copilot/Bing Chat), *ChatGPT*, *Perplexity AI* (can synthesize literature and propose validated constructs for item design), etc. Moreover, studies in the applicability of AI in research point to the benefits of using ChatGPT in constructing questionnaires, items, or even entire scales, highlighting that AI-generated questionnaires may elicit more positive reactions than those generated by human intelligence [21].

Furthermore, identification, analysis, and synthesis of theoretical and empirical findings are increasingly supported by AI-based research tools which are helpful in the process of literature review, extraction, synthesis and integration. Specialized literature, data bases with open access provide the necessary context for semantic search engines like *elicit.com*, *scite.ai*, *perplexity.ai*, Research Rabbit the capacity to locate relevant publications by matching conceptual relationships between works, more than solely relying on keyword matching. Moreover, the AI-enhanced tools process analytical tasks, generate structured summaries, detect common citation contexts, outline methodologies, propose conceptual groupings, identify gaps, improve text coherence and review. However, we shall insist on the role of the human intelligence expertise for theoretical interpretation and contextual evaluation of research outputs, meaning that the role of AI proposed literature be solely accepted as a means to accelerate the researcher's review processes. Despite their potential, we have to admit that AI tools and generative AI systems used in research present several **limitations**, mainly they are prone to producing ***hallucinations***, identifying or citing inexistent scholarly articles, producing plausible-sounding however factually incorrect information, thus imposing a rigorous verification from the part of the researcher, otherwise diminishing the accuracy and trustworthiness of data extraction and research outcomes. The researchers have to verify the accuracy and AI generated sources, either via *GoogleScholar* or library catalogues, online genuine repositories, etc., if elements regarding the cited authors and article/journal/book titles differ, the citation may be an AI hallucination [22]. Another issues to be taken into consideration is the difficulty to trace how the sources were selected and consequently how the conclusions were drawn, meaning there is a lack of *research* ***transparency*** which is a fundamental feature of academic review and a key ethical principle. On the one hand, the use of AI-based tools cannot be categorically prohibited in research, given their advantages mentioned above. However, the researchers are expected, or even obliged, to disclose the use of AI in drafting, developing or synthesizing research outputs [23]. This disclosure shall enhance research integrity and authorship [24]. Transparency further requires specifying which parts or components of a work (text, analytical outputs, graphs or images) were generated by AI and which were developed by the human intelligence

[25], thereby enabling reviewers and readers to accurately evaluate the intellectual work involved. ***Authorship*** guidelines are changing daily, for example *Springer Nature* prohibits use of AI to generate images for manuscripts., and the texts generated by AI should be clearly stated, and the AI will not be considered an author [26]. While *Elsevier* allows the use of AI and AI-assisted writing, but the AI should not be listed as an author, as well as images and figures generated by AI are prohibited [27].

In this context, ***ethical*** and ***deontological*** issues arise. Excessive reliance on AI may undermine authorial responsibility, raising concerns about proper attribution and the potential risk of ***plagiarism***. According to the Committee on Publication Ethics (COPE) Council, Authorship requires human intellectual contribution and oversight. AI is only a tool; critical ideas, analyses, and conclusions must originate from humans [28].

Moreover, AI-enhanced tools may reproduce existing texts and formulations without proper citation, the risk of presenting non-original text is significant. In addition, ICT algorithms can inherit ***biases*** from their data, potentially producing discriminatory or erroneous outputs. For instance, a machine-translation model may amplify stereotypes if not properly calibrated. ***Integrity-related concerns*** call for strict academic policies, with universities encouraged to define clear rules and guidelines for the use of AI in order to ensure compliance with international standards of research ethics.

Following the aforementioned, we note that AI cannot substitute human intelligence or scholarly expertise in formulating research hypotheses, critically evaluating and comparing theories within a field, designing the empirical component of a study, or interpreting and contextualizing results. While AI tools can generate new combinations of existing information, propose ideas, and model argumentative structures, such results derive from pattern recognition rather than autonomous insight or intentional meaning-generation. Therefore, AI can assist with more mechanical tasks, as a support to stimulate human creativity and research processes (generating keywords, offering alternative formulations, and suggesting potential research titles) it does not perform proper contextual evaluation or critical interpretation [29]. AI-generated text is shaped by ***algorithmic constraints***, often characterized by restricted syntactic complexity, limited use of subordinate structures, repetitive phrasing, and formulaic or stereotyped expressions. The creative, analytical, and interpretive dimensions of research therefore remain fundamentally human, being grounded in scientific and experiential knowledge, as well as awareness of social, cultural and ethical contexts.

In translation research, AI supports both the theoretical enquiry and empirical analysis through neural machine translation engines, terminology extractors for term collection and management (*TermXT* or ChatGPT-based generators), glossary and term banks generators, and corpus-processing tools enable researchers to investigate translation quality, error patterns, and post-editing dynamics. *Automated Terminology Extraction* (ATE) is a Natural Language Processing (NLP) task that identifies domain-specific terms and produces lists of candidate terms. Recent advances have focused on the use of large language models (LLMs) to improve ATE, enabling more efficient extraction of domain-specific terminology without extensive data annotation. These technologies also facilitate multilingual data collection and the compilation of specialized corpora, which are key to descriptive and corpus-based approaches.

Conclusions

In contrast to the researcher (human intelligence), who mobilizes competencies and accumulated experience and who operates with creative, flexible, and multidirectional thinking in order to achieve a final result, AI can, due to human-generated algorithms, solely solve concrete problems that are themselves defined by the human researcher. There is a continuous tendency to improve AI systems (including attempts to grant them maximum autonomy), and these systems are constantly striving to approximate human intelligence.

ICT (AI-enhanced) tools offer multiple benefits to the research system, by expanding access to information and facilitating large-scale collaboration. Online platforms allow scholars to consult extensive databases and disseminate research findings in a timely manner, thus promoting the principles of open science and free access to scholarly outputs. Moreover, preprint servers and electronic journals, provide unrestricted access to recent studies, enabling research results to circulate within specialized academic communities and among a broader interested public in a timely manner. This dissemination improves transparency and open peer review. At the same time, ICT tools increase research efficiency and visibility and contribute to the knowledge democratization. Therefore, the ongoing digitization of scholarly and academic publishing offers researchers multiple opportunities for interaction and rapid dissemination of scientific information and results.

Furthermore, ICT tools improve the research efficiency by enabling rapid data processing, analytical automation, and enhanced knowledge production. AI algorithms accelerate the handling of large datasets and extensive scientific literature, allowing researchers to generate quantitative analyses, extract terminology, identify trends, produce bibliographies, and generate summaries or syntheses much faster than traditional methods would. Machine Learning tools are often used to identify hidden patterns and correlations, support automated literature reviews, and process statistical data, thus improving data collection and manuscript preparation processes. In practice, AI now automates routine tasks such as title or abstract drafting, grammar correction, and text structuring, giving the researchers the possibility to focus more on conceptual creativity and interpretive work. At the same time, ICT fosters interdisciplinary collaboration and multiplatform dissemination, digital communication channels connect experts across geographic boundaries, strengthen international research teams, and enable scientific results to reach various audiences through open-access repositories, code-sharing platforms, and social media.

However, the integration of ICT into scientific and research communication generates a number of significant risks as well. Ethical issues also arise when AI-generated text is incorporated into research without proper attribution, potentially violating norms of authorship and academic integrity. Additionally, the digital divide persists, since access to advanced technologies is uneven across countries, institutions and regions. Concerns related to confidentiality and data protection further complicate the situation, as ICT tools frequently involve processing large quantities of personal or sensitive information. Finally, the quality and validity of AI-assisted outputs cannot be assumed by the re-

searcher, and therefore require careful human verification and methodological scrutiny. In conclusion, ICT offers powerful mechanisms to enhance access, speed, and collaboration in research, yet its use must be governed by responsibility and ethical awareness. Within the field of scientific translation, these tools improve information exchange and diffusion, but their use must remain consistent with the profession's ethical and deontological standards.

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