

## The Rhetoric of Technology. An Overview of Problems and a Proposal for Use of Rhetorical Tools

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### ABSTRACT

Can technology be perceived as rhetoric? This question is the starting point for further considerations, especially when, to put it imprecisely, technologies speak for us: interfaces, chatbots, algorithms. Are we truly at a stage where a kind of rhetoric of automation and digital persuasion has emerged? The problem boils down to how we understand the concepts of “technology,” “rhetoric,” and “digital persuasion.” Are these real terms (in the logical sense) or merely metaphors? What, then, is the role and significance of “technology” in today’s society? Can we truly speak of a change in communication—human-machine, or rather: human-AI tools? This is especially true given that the usefulness of AI tools in solving certain problems, such as machine learning, translation, and the deciphering of partially destroyed texts, such as the Herculaneum or Dead Sea Scrolls, is unquestionable. This study will attempt to answer these questions.

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### From The Author

This article is a continuation of the considerations I presented in “*Rhetoric in Science and Technology Studies: In Defense of Classical Rhetoric. Against Posthumanist Rhetoric*” [1]. Its aim was to defend classical rhetoric as a useful tool in constructing discourse in the fields of science and technology. However, I did not include research that examines these issues from other perspectives. The first is the issue related to *Writing in the Disciplines*, *Writing Across the Curriculum*, and *STEM* programs conducted at Western universities and schools, among others. General information, along with extensive literature, can be found on the *WID Program website* (2026-02-25). The second are the issues raised by Kristen Intemann *Science communication and public trust in science*, Peter Weingart, Marina Joubert, and Karien Connaway in their study “*Taking Stock and Re-Examining the Role of Science Communication*”, and Isabel Mendoza in her article “*Taking Stock and Re-Examining the Role of Science Communication*” [2-4]. These include issues such as public engagement with science and the role of rhetoric (Weingart, Joubert, Connaway, 2021), and rebuilding trust between science and society [4]. Finally, Kristen Intemann stated unequivocally:

[...] *the goals of science communication must be balanced in a way that protects public trust in scientists and scientific institutions that are (i) epistemically competent, (ii) morally trustworthy, and (iii) acting in the public interest* [4].

Therefore, one can argue that without achieving the goals identified by Intemann, communication in the field of technology will be flawed or ineffective.

These articles not only point to the role of rhetoric in communication but also identify important issues, such as: primarily rebuilding trust in science and scientists, as well as in those who refer to research results in science and technology, and increasing public engagement, including through the use of the internet and AI tools. My interest, therefore, is to demonstrate the role of rhetoric and how it is understood in these processes.

### Introduction: Rhetoric and Technology

The issue of the relationship, or rather the application, of rhetoric in technology and science more broadly touches on several key issues. First, what is its role in relation to science and technology in the preparation of texts in these fields? Second, what is its role in social communication when both scientists and technology specialists want to popularize their research results? Third, how does this popularizing information influence the communicative “behavior” of politicians, businesspeople, and the so-called general audience? The following discussion will attempt to describe and analyze these issues.

I will begin by pointing out that the problem of perceiving the relationship between rhetoric and technology, and science more broadly, is the subject of studies such as Jacques Ellul’s “*The Technological Society*,” Aldous Huxley’s “*Zeit der Oligarchen: Über Wissenschaft, Freiheit und Frieden*,” and *Rhetorics and Technologies*, edited by Stuart A. Selber. Carolyn R. Miller, *The State of Rhetoric of Science and Technology*, ed. Alan G. Gross,

Laura J. Gurak, or Richard McKeon's *The Use of Rhetoric in a Technological Age*, also in Friederike Herrmann's *Technisches Schreiben* [5-10]. Thus, these issues have been the subject of research for many years. *Attention is drawn to issues such as: technology as an inevitable aspect of the rhetorical situation and a powerful force in writing and communication* [7]. *The ubiquity of the internet and digital technologies has changed the venues of rhetorical discourse and research, as well as the methods of conducting such analyses. This special issue examines the state of rhetoric in science and technology at the beginning of the 21st century* [8].

The works of Ellul and Huxley point to fundamental changes in the relationship between audience and authorship in the field of technology and rhetoric [11,6].

Also significant is Per Hetland's work, *Rethinking the Social Contract between Science and Society: Steps to an Ecology of Science Communication*, in which he discusses the following issues [12]:

*Three key questions guide this thesis. First, how is public communication of science and technology (PCST) organized into different models of expert–public interaction? Second, how do different models of science and technology popularization frame science and technology narratives? Third, building on the first two questions, what are the implications of these models for the social contract between science and society?* (ibidem).

These issues concerning communication in technology and science, although they do not address rhetoric as a tool for creating communication texts, have become, as I will demonstrate later, crucial for building healthy relationships between science, technology, and society.

Jean François Lyotard's "*The Postmodern Condition: A Report on the State of Knowledge*" forced us to rethink our approach to both science and technology [13]. Finally, Richard McKeon outlined what rhetoric should be like if it wants *to remain productive in the age of technology* [9].

Of importance are also review works, such as Petra Foretová's on hypertexts and Stanislav Hubik's on the transformations that have occurred in media philosophy, including the development of the media [14]. under the influence of new techniques [15].

The emergence of AI and the tools it provides has introduced additional issues, such as technology as rhetorical action, technology as argument, Digital Rhetoric, the transformation of classical rhetorical canons, and rhetoric and AI (*Review from AI Technology and Rhetoric 2026*).

However, there is still the issue of the significance and application of both scientific research results and technological solutions, or rather, technology in practice, and their significance for society. The way these issues are conveyed, that is, communication, especially with non-experts, is fundamental to social life.

This initial listing of issues indicates that we need to look at the relationship between rhetoric, technology, and science from a new perspective. We should also consider whether classical rhetoric has actually been replaced by new rhetoric, as Richard McKeon suggested [9]. However, to these issues, I would also add issues related to *Writing in the Disciplines, Writing Across the Curriculum*, and *STEM* programs offered at Western universities

and schools, among others. General information, along with extensive literature, can be found on the WID Program website (2026-02-25), as it concerns methods of communication in various environments and with various audiences. I partially presented these problems in *Rhetoric – Education – Innovation: Some Discussion Remarks*, but I applied it to the Polish perspective, emphasizing the role and significance of the WAC program [1].

### **Statement of the Problem: Human-Machine Communication, Resp. Technology and AI**

The issues presented above, particularly the review of AI (*Review of AI Technology and Rhetoric 2026*), as well as information regarding the WID program (*WID Program, 2026*), have shown that the application of rhetoric in a completely new environment must also change [16,9,1]. Rhetoric becomes a set of instructions for preparing any text depending on the circumstances; this issue was already addressed by Sonja K. Foss in her concise study "*Rhetorical Criticism as the Asking of a Question*" [17]. Peter Weingart, Marina Joubert, and Karien Connaway explored additional issues related to the title in their study, "*Public Engagement with Science—Origins, Motives, and Impact in Academic Literature and Science Policy*" [3]. They noted that:

*"Public engagement with science" has become a buzzword, reflecting concerns about the widening gap between science and society and efforts to bridge it. This study provides a comprehensive analysis of the development of the rhetoric of "engagement" in relevant academic literature on science communication and in science policy documents. Through a content analysis of articles published in three leading science communication journals and a selection of science policy documents from the United Kingdom, the United States, the European Union, and South Africa, the study examines the diversity of motives underlying this rhetoric and its impact on science policy. An analysis of journals devoted to science communication reveals an increasingly vague and inclusive definition of "engagement" and the "audience" addressed to it, as well as a diverse range of motives driving this rhetoric* (ibid.).

The authors also point to changes in the audience and its relationship to power and society more broadly, which influences the perception of the role of rhetoric:

*Concepts, metaphors, and more generally rhetoric, serve many actors and their interests. They mediate between various institutions, can legitimize or delegitimize positions of power, and signal social change. The rhetoric of "engagement in science" is no exception* (ibid.).

I draw attention to the concepts appearing in the cited article, such as "*public engagement in science*," and the simultaneous emergence of a "*gap between science and society*." Hence, it is necessary to analyze the role of rhetoric as a communication tool; Hence, the importance of considering the expanding audience impacted by rhetoric (understood as a tool for persuasion, but adapted to the circumstances) is crucial. These issues were discussed more broadly by, among others, Maria Załęska in *Knowledge, Society, Discourse, and Rhetoric* and Jared Colton and Steve Holmes in their study *Rhetoric, Technology, and the Virtues* [18,19]. It is worth pointing out a comment made by Sonja K. Foss:

*Rhetorical theory has come a long way from theorizing designed to help litigants in ancient Greece and Rome. Rhetorical theory now addresses all aspects of the rhetorical situation — exigence, audience, and rhetor—as well as the larger contexts in which*

**any given rhetorical act occurs.** *Rhetorical theory cannot be divorced from questions about human agency, the role of symbols in the creation of the human world, and the power of audiences to construct that world* [20].

It reminds us of human agency in every context-dependent rhetorical action. However, the most comprehensive account of the changes brought about in our lives by networks is presented in the book *Society and the Internet: How Networks of Information and Communication are Changing Our Lives*, published in Oxford in 2019, edited by Mark Graham and William H. Dutton [21]. The editors pose the question and identify the research problem:

*How is society shaped by the spread and growing role of the Internet in government, politics, business and industry, and everyday life? This collection addresses this question through an inspiring set of readings based on theoretical perspectives and empirical research. It brings together research examining the significant cultural, economic, political, and other societal roles of the Internet in the 21st century. [...] In short, the technology and Internet research communities are in a position never before possible to grapple with how information and social networks are transforming our lives. This book draws on theory-informed analysis and empirical research to address this issue across multiple technologies, in multiple social and cultural contexts worldwide, and across major areas of use and application, from everyday issues to those of public policy and regulation* [21].

### Example Analysis

The literature cited so far provides many examples. In my study “Rhetoric in Science and Technology Studies: In Defense of Classical Rhetoric. Against Posthumanist Rhetoric”, I added several others [1]. I will now turn to Stanisław Lem’s *Summa Technologiae* and two editions of *Filozofia przypadku*, and again to Kenneth Gatland’s *The Illustrated Encyclopedia of Space Technology* in the Russian translation *Kosmiceskaja technika* [22,23]. All of them meet the conditions and limitations previously indicated. However, they must be confronted with, among other things, with the research results of Mark Graham and William H. Dutton, as their study slightly changes my earlier conclusions, especially regarding the role of rhetoric [1,24]. It should be perceived, as Quintilian, among others, suggested, *as a study of the stages of shaping any text and the text’s dependence on the circumstances that dictate its formation* [25-30]. In this situation, “technology” is a concept used both as an argument in the text, and its presentation or discussion is supposed to be devoid of all emotion [1,22,23,31]. Aristotle reminds us that in such situations we should use a style appropriate for the exact sciences, meaning one devoid of emotion, and the examples provided fully confirm this [31]. This resonates well with Father Dariusz Radziechowski’s remark, “*Zapomniany kurs „metodologii ogólnej” (The Forgotten Course of “General Methodology”)*” [32]:

*As for the philosopher’s will, it must—according to Bocheński—be right and strong. A philosopher therefore requires a right will to seek and teach truth itself (a philosopher cannot be confused with a sophist!), as well as a strong will to renounce and work constantly* (ibidem, 236).

In reference to Stanisław Lem, one can use the term “warning forecast”, or an indication of the necessary changes that the development of cybernetic technologies brings to humanities research [22]. Kenneth Gatland’s work is simply a presentation of the current state of space technology, enriched with illustrations, or rather, descriptions of technology. Similarly, Stanisław

Lem’s work, “*Po powodu problem wnezemnych civilizationz” (The Problems of Extraterrestrial Civilizations)*, concerns the search for extraterrestrial civilizations along with remarks on the technologies used in this search [22]. However, as research by, among others, Mark Graham and William H. Dutton shows, wherever information regarding “technology” is used online, such a restriction, especially when this information is used by governments, politicians, or businesses, is practically impossible due to the role such information plays in shaping and changing our lives [8,24]. This is also confirmed by Kristen Intemann’s aforementioned article, “*Science communication and public trust in science*”, whose unequivocal conclusion I will remind you of [2]:

[...] *the goals of science communication must be balanced in a way that protects public trust in scientists and scientific institutions that are (i) epistemically competent, (ii) morally trustworthy, and (iii) acting in the public interest* [2].

Therefore, one can argue that without achieving the goals indicated by Intemann, communication in the fields of technology and science will be flawed or ineffective.

I would like to point out that communication is understood in the following way, among others, in the article by Sujay Rao Mandavilli, *Reconceiving science communication for the twenty-first century and beyond: A holistic, integrated, transdisciplinary and cross-cultural approach*:

*Communication is another name for the process of exchanging information, ideas, feelings, or meaning between two or more individuals or groups, creating mutual understanding through verbal actions, written communications such as letters and emails, and non-verbal signals such as body language and gestures* [33].

This term is, as will become clear later, close to the meaning of rhetoric that I use in this text.

### Discussion

The problems previously highlighted by Jacques Ellul, Aldous Huxley, and Stanisław Hubik, Maria Załęska, and Kristen Intemann force us to ask whether rhetoric is actually useful in discourse on the connections between technology and social life and its, i.e., rhetoric’s, role in that discourse [2,5,6,15,18]. Following Wayne C. Booth and other researchers, I assume that rhetoric, understood as **a good tool for shaping communication in every situation, including in the human-machine relationship, or human-technology relationship, is still useful and “productive”** [34,35]. This last work is particularly important, as it demonstrates the “productivity” of rhetoric with new tools used in the creation and analysis of texts. Kathleen E. Welch takes a similar position in her study “*Electric Rhetoric: Classical Rhetoric, Oralism, and a New Literacy*,” which cites, among others, the works of Aristotle, Laura Gurak, Richard McKeon, Quintilian, and Perelman [36]. However, it is also worth noting the results presented by Isabel Mendoza in her article “*Taking Stock and Re-Examining the Role of Science Communication*”, whose conclusion is unequivocal: “*The pandemic has sparked a renewed call to rebuild trust between science and society, and the task of researchers, educators, and policymakers worldwide is to seize this opportunity to rebuild that trust*” (ibidem; emphasis – JZL) [4]. Therefore, rhetoric’s role in such a process will be unpaid [37-39]. Especially since, as Massimiano Bucchi emphasized in the editorial opening the issue of the journal “Public Understanding of Science” titled “Credibility, expertise and the challenges of science communication 2.0”: *The*

*issue of credibility and reliability of information is obviously crucial for scientific communication and public understanding of science* (ibidem, 890) [40].

The problem therefore comes down to the question of the use of rhetoric, especially since it concerns issues such as: *technology as rhetorical action, technology as argument, Digital Rhetoric, and the transformation of classical canons of rhetoric* (Review from *AI Technology and Rhetoric* 2026). A rhetorical action is the deliberate shaping of a statement (oral or written) in order to persuade the recipient, influence their emotions, attitudes, or behaviors [27,38]. “Technology” thus becomes one of the arguments, or rather one of the methods of argumentation. It would thus expand the classic set of topoi and their role [41]. This would be consistent with the results of, among others, the work of Mark Graham and William H. Dutton, which showed how “technology” can be used, for example, to prove that it fulfills important cultural, economic, political, and other social roles of the Internet in the 21st century [21]. The question therefore arises whether communication should be focused solely on logos, or also on ethos and pathos. Plato clearly defined this problem in the *Gorgias*, when he pointed out that it is a choice between striving for truth (*logos*) and winning the audience’s applause by any means necessary (*ethos* and *pathos*) [42,43]. Therefore, rhetorical action should be limited (Review from AI, “Rhetorical Action,” 2026). At the same time, it is obvious that such limitation is almost impossible in practice. However, as Sonja K. Foss, among others, demonstrates, this can be achieved in the process of evaluating certain statements, and indirectly in their creation [1,17,20]. I would like to point out that the grounded theory suggested by Sonja K. Foss is presented in more detail in my article “*Entertainment Supersystems: Research Methodology and Methodology. A Proposal*” [17,44]. Such an overview is also included in the volume *Rhetoric and Rhetorical Criticism: A Rhetorical Compendium* edited by Walter Jost and Wendy Olmsted [45].

## Conclusions

Have the issues raised at the beginning of these considerations been resolved? Regarding the role of rhetoric in relation to science and technology, I believe that Whitehead’s rule should apply, as follows:

[Mathematics] *operates with properties and concepts that can be applied to objects as such, regardless of the feelings, impressions, or emotions we associate with them* [46].

Although this remark concerns mathematics, it quite obviously also applies to technology. Therefore, one could say that rhetoric is essential in communication [1,33]. However, when describing scientific and technological achievements, its role is quite limited in that the emphasis must be placed solely on logos [1].

Regarding the remaining two issues – the role of rhetoric in social communication in the popularization of research results, and the role of rhetoric when popularizing information influences, for example, politicians, businesspeople, and the general audience – it can be said that, as Kristen Intemann pointed out, the audience’s trust in the information provided by scientists, as well as in their competence and moral credibility, is crucial [2].

Rhetoric, therefore, has a dual purpose: in description, it must implement Whitehead’s principle (logos only), while in communication, *it is clearly dependent on feelings, impressions, or emotions*, i.e., *ethos* and *pathos*. This is indirectly based on the findings of Isabel Mendoza [4].

We are therefore faced with a problem already clearly defined by Plato in the *Gorgias*, when, through Socrates, he posed the question of whether we strive for truth or for its subordination to practical and demagogical goals, as pointed out by, among others, the scholars cited at the beginning, although they did not refer to Plato’s views, as well as Józef I.M. Bocheński OP [43]. This can probably be linked to the view that it is an *undeniable historical fact that the humanities were born in a rhetorical manger* [47]. This true statement, however, should be extended, as Aristotle suggested, to all sciences, including technological ones. However, we can also use the advice given by Christian Kock:

*Rhetoric takes a view of media and of public communication generally that we may call functionalist. Rhetoricians tend to think that we use public discourse to do certain things for us with words. Rhetoric is a practical subject, which also implies that it is normative: it will teach us, not only to do certain things with words, but also to do these things well with words. Because rhetoric is about doing things well with words, it is also central to it that we should always be very aware of what we are trying to do, for we can do many different things with words, and they need to be done with different words; in general rhetoric teaches us that the function a message is meant to serve very largely determines all the properties that the message should have, which again implies that messages meant to serve different functions will have very different properties* (Kock 2004, 103-110).

This approach proposes a functionalist approach to rhetoric. This is a significant challenge, but it is achievable. Kai-Fu Lee and Chen Qiufan offer some insight in their book *AI 2041: Ten Visions For Our Future* [48]. This issue, however, as they say, is material for another story [49-51].

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50. SEP Stanford Encyclopedia of Philosophy.
51. WAC Writing Across the Curriculum (Wikipedia entry).

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