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Information mediation as an epistemic strategy against environmental denialism

Mediação da informação como estratégia epistêmica contra o negacionismo ambiental


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ABSTRACT

Introduction: Denialism, traditionally used to invalidate the existence of certain groups, reaches a new level in terms of its destructive power: the creation of narratives capable of affecting all of humanity. **Objective:** To theoretically ground information mediation as an epistemic framework for confronting information denial, based on the proposition of an analytical model that contrasts the dynamics of mediating actions with denialist practices in the context of environmental information. **Methodology:** This descriptive study, conducted using the comparative method, selected non-random samples related to environmental issues, more specifically on the topics of dengue—which, although interdisciplinarily linked to the health field, is also addressed within the environmental domain—and wildfires, given the record of approximately two hundred billion square meters affected by fire in Brazil in 2024. **Results:** It was observed that denialist movements aim to impose a sense of individualism on society, a foundational parameter of domination, in addition to being based on partial or completely false data. In contrast, mediating actions sought to guarantee and promote human dignity, strengthen relationships and community ties, as well as emphasize the need for action on environmental issues, supported by scientific knowledge and competent institutions. **Conclusion:** The denialist practices studied propagate individual solutions without proper professional guidance, disqualify the scientific production process, and promote individualistic practices; they attempt to downplay the severity of existing problems through false comparisons; present false or non-existent

data (thereby undermining the use of reliable information sources); as well as create a sense of urgency aimed at generating despair, in an attempt to impose ideas through fear. In this sense, the informational agent, as a catalyst for the appropriation of environmental information, is both observable and necessary, since its presence or absence in crisis scenarios can directly influence the impact on relations involving environmental information.

KEYWORDS: Information mediation. Environmental information. Information denialism.

RESUMO

Introdução: O negacionismo utilizado tradicionalmente para desvalidar a existência de determinados grupos atinge um novo patamar no que diz respeito ao seu poder destrutivo, à subcriação de narrativas capazes de afetar toda a humanidade. **Objetivo:** Ancorar teoricamente a mediação da informação como um arcabouço epistêmico para o enfrentamento da negação da informação. A partir da proposição de modelo analítico que contraste a dinâmica das ações mediadoras com as práticas negacionistas no contexto da informação ambiental. **Metodologia:** Esta pesquisa do tipo descritivo, realizada por meio do método comparativo, selecionou amostras não aleatórias referentes à temática ambiental, mais especificamente nos assuntos: dengue — que, embora esteja ligada de modo interdisciplinar à área da saúde, também é objeto da temática ambiental; queimadas — visto o recorde de cerca de duzentos bilhões de metros quadrados afetados pelo fogo no Brasil em 2024. **Resultados:** Foi possível observar que as movimentações negacionistas almejam impor um senso de individualismo na sociedade, um parâmetro básico de dominação, além de se embasarem em dados parciais ou totalmente falsos. Em contrapartida, as ações mediadoras buscaram garantir e propiciar dignidade à vida humana, fortalecimento de relações e coletividade, assim como a necessidade de ações na temática ambiental, amparadas por meio do conhecimento científico e instituições competentes. **Conclusão:** As práticas negacionistas estudadas, propagam soluções individuais, sem o devido acompanhamento profissional, desqualificando o rito de produção científica e propagando práticas individualistas; tentativas de diminuir a gravidade das problemáticas existentes por meio de falsos comparativos; o apontamento de dados falsos ou inexistentes (desvalidado a utilização de fontes confiáveis de informação); assim como o despertar de um senso de urgência, visando a construção do desespero, na tentativa da imposição de ideias por meio do medo. Neste sentido, o agente informacional, como catalisador da apropriação da informação no senso ambiental, é algo observável e necessário, pois sua presença ou ausência em cenários de crise pode influenciar o impacto direto nas relações envolvendo a informação ambiental.

PALAVRAS-CHAVE: Mediação da informação. Informação ambiental. Negacionismo informacional.

1 INTRODUCTION

We can say that the existence of denialism in today's society is undeniable; moreover, it can be traced throughout human history: *Malleus Maleficarum Maleficat & earum haeresim, ut framea potentissima conterens*[1] (Cambraia, 2021), *The Trial of Galileo Galilei*[2] (Museo Galileo, 2015) and *Human Immunodeficiency Viruses (HIV) / Acquired Immunodeficiency Syndrome (AIDS) in South Africa*[3] (Park, 2012), are just a few examples of how denial—more specifically, of basic rights such as life and sentience—is used strategically to achieve specific goals. It can alter our understanding of reality, but not change reality itself.

The term "sub-creativity," borrowed from the writings of J. R. R. Tolkien, warrants further explanation here. Describing the inability to create or develop something grounded in prior existence (Tolkien, 1951), "sub-creation" is a fundamental

[1] The Witches' Hammer, which destroys witches and their heresy like a double-edged sword.
[2] The trial of Galileo Galilei.
[3] Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome in South Africa.

component of the logic of domination through ignorance. In this logic, denial targets the weaknesses of the "I" and the "we." The researcher, especially the scientist, relies on reality and cannot transcend it; this is their limit. As such, they can develop a study that is evaluated by experts in their field and that contributes to a collective body of knowledge. The denialist, on the other hand, does not create. In fact, they corrupt and "sub-create" by merely denying what was previously created.

The idea that the Earth is the center of the universe is an excellent example of denialist "sub-creation"; there is no scientific evidence, studies, or proof (i.e., no collective or partial consensus). Na realidade, no entanto, é possível questionar, observar e provar o oposto (Hubble, 1929). Denialists reject this evidence, these observations, and this established body of knowledge. Consequently, they reject reality itself.

In this sense, subcreation can be understood as a mechanism that validates the propagation of discourse through manipulation (Breton, 1999). This contrasts with the conception of information outlined in the framework of information mediation, in which informational satisfaction is fostered through relationships that promote critical thinking development (Almeida Júnior, 2015; 2020).

With this in mind, the following question arises: What could counter the latent logic of information denial? At first glance, the answer seems obvious: truth. However, the real world is more complex. Amid debates about counterinformation (Almeida Júnior, 2025), fake news (Cisne, 2023), disinformation (Moura, Furtado, & Belluzzo, 2019), misinformation (Vignoli, Rabello, & Almeida, 2021), and post-truth (Bauman, 2001), the existence of truth and information itself is being questioned. This necessitates a school of thought capable of combating denialism. For this reason, the school of information mediation was chosen as a means of combating informational denialism.

The main factor justifying this study is its context. We live in dark times in which denialism is used as a tool to achieve cruel objectives, observable across various issues. For instance, the current Argentine government enacted Resolution 187/2025 through the National Agency for Persons with Disabilities (Agencia Nacional de Discapacidad - ANDIS). Under this resolution, people with disabilities are being reclassified using scientifically controversial and outdated methods. The new model introduces the category "Mental Retardation" for individuals with intellectual disabilities, comprising the following subcategories:

> According to the CI, the groups are: 0–30 (**idiot**): has not passed the glossic stage, cannot read or write, does not understand money, is not toilet-trained, cannot take care of basic needs, cannot survive on their own; 30–50 (**imbecile**): cannot read or write, can take care of basic needs, can perform rudimentary tasks; 50–60 (**profound mental retardation**): can only sign their name, has a simple vocabulary, does not handle money, can perform rudimentary tasks; 60–70 (**moderate intellectual disability**): reads, writes, performs simple calculations, understands money, and can perform tasks requiring minimal intellectual effort; 70–90 (**mild intellectual disability**): attended elementary school and sometimes middle school, and can perform more complex tasks. Those with IQs close to normal are considered borderline cases (Argentina, 2025a, p. 37, emphasis added).

Although the agency stated in a note that it has no discriminatory intentions, it should be noted that intention and consequence are not necessarily linked. For example, firing a gun in a random direction, resulting in the bullet striking an individual, and then claiming there was no intention to cause harm does not undo the resulting harm. In this sense, institutions dedicated to building society through knowledge, such

as universities, journals, research centers, and specialized publishers, play a fundamental role in this struggle. This justifies the development of studies aimed at this endeavor.

The general objective of this study is to theoretically ground information mediation as an epistemic framework for confronting information denial. This objective is based on the proposal of an analytical model contrasting the dynamics of mediation with denialist practices in the context of environmental information. To achieve this, the following steps were taken: a. Conceptualizing and defining information denial in the environmental domain to identify procedures that prevent the appropriation of information, as envisioned in information mediation. b. Identifying and categorizing the central characteristics of denialist and mediating practices in relation to the expected characteristics of technicality, timeliness, and intelligibility in environmental information. c. Conducting a comparative analysis using non-random samples of actions related to dengue and wildfires to show how mediation enhances human dignity through information. In contrast, the denial of information disrupts the informational relationship in favor of individualistic narratives through denialist sub-creation. d. Understanding the role of informational agents (human or institutional) as catalysts for the appropriation of environmental information and their direct impact on communities and decision-making in crisis scenarios.

2 DENIAL OF INFORMATION

In French, the term "*négationnisme*" (Larousse, 2025) refers to the denial of the Nazi Holocaust and the genocide of other ethnic groups. In Italian, *negazionismo* (Treccani, 2025) describes an anti-historical and anti-scientific movement. In Portuguese, negacionismo (Houaiss, 2025b) refers to contesting factual events due to frustration, discouragement, fundamentalism, and so on. In Spanish, negacionismo (Real Academia Española, 2025) consists of denying certain relevant historical and/or natural realities and facts.

Semantically, denialism undermines the structure of collective, historical, and institutionalized social knowledge, as well as intellectual norms, practices, and their institutions (Galinon, 2025)—that is, scientific knowledge, though these parameters also encompass philosophical, artistic, and other forms of knowledge. The greatest victims of denialist movements are traditionally historically marginalized and vulnerable social groups, such as women (United Nations Educational, Scientific and Cultural Organization, 2023), Indigenous peoples (Faria, Costa, & Osoegawa, 2022), people with disabilities (Strobel, 2009), the Romani people (Kapralski, 2021), older adults (Lima-Costa, Macinko, & Mambrini, 2022), and children (Falcão *et al.*, 2024), as well as those close to them. These groups typically lack resources and protective mechanisms. These groups are often already marginalized in the societies in which they live.

Furthermore, denialist movements target groups to which the denialist usually does not belong; that is, from an individualistic perspective, there may be a rational basis for these individuals' actions. However, one model of denialist movement runs counter to this logic: environmental denialism, since it has the potential to affect more than just specific groups[4], being capable of destabilizing all of humanity and destroying the planet itself—consider the ecosystem that we, as humanity, need to exist, for the

[4] It is worth noting that economically vulnerable people, who are usually also found in peripheral regions, are more severely affected.

beautiful blue Earth, as seen by Soviet cosmonaut Yuri Alekseyevich Gagarin[5] (1934–1968) in 1961 (Muzey Gagarin[6], 2025), will have enough time to heal and continue to exist for billions of years.

Returning to the ultimate goal of the denialist movement—manipulation—namely:

> [...] presents three major possible variations: transforming the true into the false—and vice versa—in one way or another; framing the facts in such a way that reality is deliberately distorted; and masking part of the facts in such a way as to conceal the consequences of accepting a given framework (Breton, 1999, p. 82).

Today, there is no other plausible scientific explanation for climate change other than human interference; however, denial tends to distort reality, attributing the consequences of these changes to other factors, such as the High-Frequency Active Auroral Research Program[7] (HAARP) and the floods in Rio Grande do Sul in 2024 (Granchi, 2024; Marengo *et al*, 2024); volcanoes being responsible for global warming (Gerlach, 2011); and the Milankovitch cycles[8] in relation to the amount of solar radiation reaching the planet (Buis, 2020).

2.1 Environmental Kobayashi Maru

Introduced in the feature film *Star Trek II: The Wrath of Khan* (*Star Trek II: The Wrath of Khan*, 1982) and popularized in other space opera works set in the same universe created by Gene Roddenberry (Freitas, 2009), *Kobayashi Maru* was adopted in this study to highlight the climatic context. It is used *a priori* to describe a no-win situation in which, regardless of all possible scenarios, all parties involved lose.

According to Bevacqua, Schleussner, and Zscheischler (2025, p. 1, our translation[9]), the "[...] global average surface air temperature reached 1.43 °C above the preindustrial level [...]," a period dating from 1850–1900. Moreover, many of the resulting impacts may even be irreversible, as stated by Prof. Debra Roberts, *PhD* in *Urban Biogeography* and Co-Chair of the Intergovernmental Panel on Climate Change (IPCC)—Intergovernmental Panel on Climate Change, Working Group II: Impacts, Adaptation, and Vulnerability—in a statement published by the British Broadcasting Corporation (BBC):

> Our report clearly indicates that the places where people live and work may cease to exist, that the ecosystems and species we have all grown up with—and which are central to our cultures and influence our languages—may disappear (Roberts, 2022, cited in McGrath, 2022);

Data compiled by the World Meteorological Organization (2025) show a rise in global temperatures:

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[5] Name in the original language / Russian: *Ю́рий Алексе́евич Гага́рин (Yuri Alekseyevich Gagarin)*.

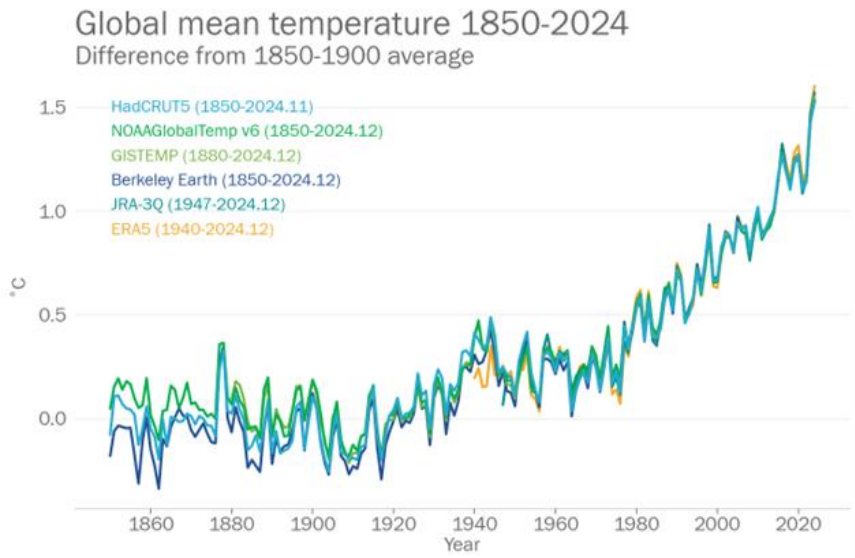
[6] Name in the original language / Russian: *Объединённый мемориальный музей-заповедник Ю. А. Гагарина* (Yuri Gagarin United Memorial Museum-Reserve).

[7] Programa de Investigação de Aurora Ativa de Alta Frequência.

[8] A set of mathematical models describing variations in Earth's orbit developed by mathematician and geophysicist *Milutin Milankovitch* (*Милутин Миланковић* [1879–1958]), Britannica (2025).

[9] Text in the original language / English: "[...] *global mean surface air temperature reached 1.43°C above pre-industrial level* [...]".

Figure 1. Global average temperature, 1850–2024: deviation from the 1850–1900 average



Source: Organisation Météorologique Mondiale (2025).
Description: Features a line graph in the center (six lines), with each line representing a different dataset and its respective collection dates: HadCRUT5 (1850 to November 2024), NOAAGlobalTemp (1850 to December 2024), GISTEMP (1880 to December 2024), Berkeley Earth (1850 to December 2024), JRA-3Q (1947 to December 2024), and ERA5 (1940 to December 2024). The vertical axis on the left is in degrees Celsius, with a scale ranging from 0.0° to 1.5°, the latter being the highest value on the graph. Below are the highlighted years of data collection (1860 to 2020). Although the lines differ, they exhibit similar fluctuations, notably a sharp rise to 0.5° in 1940, gradually climbing to 1.5° by the year 2020.

The compilation presents six datasets, namely:

a) HadCRUT5 – Hadley Centre/Climatic Research Unit Temperature, which tracks the *Global Surface Temperature* (GST) combined with the *Sea Surface Temperature* (SST). It is developed by the Climatic Research Unit (University of East Anglia and National Centre for Atmospheric Science, NCAS) and the Hadley Centre (Met Office)[10], and covers the entire globe (Climatic Research Unit, 2024). Both institutions are located in England;

b) NOAAGlobalTemp – Merged Land Ocean Global Surface Temperature Analysis, formerly MLOST, combines datasets on sea surface temperature and land surface temperature (National Centers for Environmental Information, 2025). It aids in climate monitoring. The data are collected by the U.S. government agency National Oceanic and Atmospheric Administration (NOAA);

c) The Goddard Institute for Space Studies Surface Temperature Analysis (GISTEMP) of the National Aeronautics and Space Administration—internationally known as NASA—provides an estimate of global surface temperature variation, published monthly (National Aeronautics and Space Administration, 2025);

d) Berkeley Earth, operated by the nonprofit institution of the same name located in California, provides time series of oceanic and terrestrial data, with its methodology peer-reviewed (Berkeley Earth, 2025). The institution's data collection and/or analysis methodology is not the subject of this research, but for those interested in the mathematical structure of the methodology, a published study can be found in the references (Rohde *et al*., 2013);

[10] The data on sea surface temperature were developed exclusively by the Hadley Centre.

e) Kishōchō dai 3-ji chōki sai kaiseki (気象庁第３次長期再解析, JRA-3Q), in English, the Japan Meteorological Agency's Third Long-Term Reanalysis, combines climate research, seasonal forecasts, analyses of extreme weather conditions, and climate monitoring to produce homogeneous, high-quality data over a long period (Kishōchō, 2022);

f) ERA5, the fifth generation of the reanalysis conducted by the European Centre for Medium-Range Weather Forecasts (ECMWF), which comprises 23 member states: Austria, Belgium, Croatia, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Serbia, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom (European Centre for Medium-Range Weather Forecasts, 2025).

The degradation of biotic and abiotic elements are just a few of the domino-effect consequences that can impact the ecosystem and, as a result, humanity itself (rising sea levels and coastal flooding [Déguénon *et al*., 2023] and even mental illness [Cianconi *et al*., 2022]). To cite further examples, we can mention the more than 200 animal species that have suffered local extinctions as a direct consequence of human-induced climate change (Román-Palacios; Wiens, 2020); the decline in plant populations (Panetta; Stanton; Harte, 2018)—that is, the destruction of fauna and flora—as well as the melting of northern ice, which contrasts with the deep blue of the Atlantic Ocean that surrounds Greenland, and the white deserts of Antarctica, located at the southernmost tip of the globe (European Space Agency, 2023).

3 (ENVIRONMENTAL) INFORMATION MEDIATION

Continuing the discussion on the denial of information—this time through its antagonistic counterpart, information mediation. This concept was introduced into Information Science at the turn of the last century and is perpetuated by its updated definition:

> […] any act of interference—carried out within a process by an information professional and in the context of information systems—whether direct or indirect; conscious or unconscious; singular or plural, individual or collective—aimed at appropriating information that partially and momentarily satisfies an informational need, thereby generating conflicts and new informational needs (Almeida Júnior, 2015, p. 25).

Broadly speaking, information mediation has the potential to promote processes related to what we call a construct. However, before delving into this aspect, it is worth noting that, although we have an established concept, it is the result of prior reflection and research. One such insight is that mediation arises from relationships—with others, with reading, and with the world—that is, a process of construction through relationships (Almeida Júnior, 2020). This is a collective, rather than individual, construction process.

When an individual externalizes information, it is imbued with meanings, experiences, and absences, even unintentionally. When this information is appropriated by another individual, it will inevitably undergo the same process. It will be absorbed and/or rejected, in whole or in part, as the uniqueness of the new individual is imbued with their own desires, intentions, experiences, and meanings. In other words, it becomes new information. The person responsible for interpreting information overflowing with various meanings is the one who most recently experienced it (Almeida Júnior, 2020).

Therefore, our object of study, as it relates to the school of mediation, is not information but proto-information, or quasi-information (Almeida Júnior, 2009). According to the author, this is due to its ephemeral nature and the fact that it is realized in the relationship between the individual and the medium. In this sense, the potential of information lies in the relationship between the individual and the place where proto-information resides.

In light of this, the constituent elements of mediation begin to take on clear contours. The information professional, or mediator, is part of a complex network of relationships and is grounded in information and the production of knowledge (Pinheiro, 2010). Their work with protoinformation does not concern the protoinformation itself but rather facilitates the relationship between individuals and protoinformation. In other words, they ensure this relationship enables the emergence of information and fosters individuals grounded in knowledge who are capable of perpetuating questions, insights, conflicts, and solutions. These individuals develop new relationships with the infinite world in terms of possibilities and eventualities.

The informational infrastructure—libraries, museums, archives, publishing houses, and networks of relationships—is responsible for facilitating the assimilation processes that result in information. It is worth noting that action is regarded as a fundamental element in mediation.

> […] is not a moment, but a process. It involves not only the user and the librarian, but also the "producer" of information (or "proto-information," as I prefer to call it), the media with which the librarian works, the informational equipment (whether physical or not), the time during which the entire process takes place (not a specific moment), and the information itself (Almeida Júnior, 2013).

Since this study focuses on professional librarians and the field of library science, we must broaden certain concepts. In the context of mediation, the user—traditionally the library's audience—is not limited to this group, nor are the librarian and the professional mediator. However, what interests us a priori is its counterpoint to transience. In this sense, information subsequently takes place within the individual, creating new relationships and reflections.

Regarding mediation in an environmental context, it is important to note that environmental information possesses specific characteristics (Machado, 2006; Martins, 2025; Santos & Woida, 2025).

a) technicality;
b) timeliness;
c) intelligibility.

Technicality refers to the need for interdisciplinary development of technical documents, such as reports, official correspondence, administrative proceedings, expert opinions, and preliminary studies.), that highlight the discussion surrounding the environmental issue at hand. In legal terms, the latter refers to:

> Environmental quality; policies, plans, and programs that could potentially cause environmental impact; results of monitoring and audits of pollution control systems and potentially polluting activities, as well as plans and actions for the restoration of degraded areas; accidents, environmental hazards, or emergencies; liquid and gaseous effluent emissions and solid waste generation; toxic and hazardous substances; biological diversity; genetically modified organisms (Brazil, 2003, Art. 2, I–VIII).

The term "environment," from the Latin ambĭens and ēntis meaning "to go

around, to surround, to encircle" (Houaiss, 2025a), broadly refers to the situations, causal relationships, and contexts within the surrounding space—a space in which we observe the biotic and abiotic elements that sustain life on the planet. Although the environment has traditionally been the subject of study in the natural sciences, such as biology, physics, geology, and chemistry, it has also become the focus of other fields. It can be discussed in the humanities and social sciences in relation to environmentally vulnerable groups, ethnic and religious culture, anthropological and ecological behaviors, and more.

In terms of timeliness, this refers to the need for applicability in a timely manner, or convenience. When addressing environmental issues, the focus is on resolving the impacts of environmental problems in a timely manner.

In this sense, discussions about past events are irrelevant. While we can debate the impacts and outcomes of the last ice age, which occurred around 30,000 years ago (Barrell *et al.*, 2013), environmental information is not within the scope of proposing solutions to this issue since it occurred too late to implement actions, such as raising awareness, remediation, or environmental restoration.

Intelligibility, in turn, is the capacity to be understood, preferably by the majority of individuals. To this end, we can cite plain language, given Brazil's illiteracy rate of approximately 7%, according to the Brazilian Institute of Geography and Statistics (2025). We can adapt content into accessible formats for people with disabilities (Silva, 2025) and implement information mediation processes.

Mediation contrasts sharply with the mathematical communication model proposed by Shannon (1948). However, mediation goes beyond this model because it embraces the principle of intelligibility. Indeed, the school of information mediation and the principle of intelligibility share the ultimate goal of appropriation, which inevitably requires comprehension.

4 METHODOLOGY

In terms of characterizing this research, we can liken its nature to a basic framework. Its development fosters theoretical construction and strengthens discussions related to the field of information science, specifically the school of information mediation, as well as debates involving denialist movements, particularly regarding environmental information.

In terms of methodology, the research is classified as qualitative because this approach can capture psychological data that is repressed or difficult to articulate, such as attitudes, motives, assumptions, and frames of reference (Haguette, 1995, p. 64). (Haguette, 1995, p. 64 For example, denialist actions have intentions that cannot always be discussed in purely quantitative terms, requiring a deeper exploration of their motivations.

We can classify its typology as descriptive because it observes, records, and describes facts arising from informational actions through the mediating structure and its antagonistic counterpart, denial. The comparative method was chosen for the anima scientica, or the scientific spirit of the study (Collier, 1992; Gil, 2008). It is being used to establish a factual basis for discussions regarding the mediation and denial of information, which is necessary for drawing inferences on the subject.

Four non-random samples related to environmental issues were selected. Two of these samples are intrinsically linked to the principles of information mediation, while the other two are associated with denialist movements. These are:

a) Dengue: Although dengue falls within the realm of public health, the disease,

transmitted by the *Aedes aegypti* mosquito[11], exhibits seasonal patterns associated with the hottest and rainiest months and proliferates due to a lack of awareness regarding environmental issues (Pan American Health Organization, 2025). Dengue was selected a priori due to the urgency of the current situation; in 2024, Brazil reported over 6.4 million dengue cases and 5,900 dengue-related deaths (Ministry of Health, 2025).

(b) Wildfires: In 2024, an estimated twenty million hectares (approximately two hundred billion square meters) of land in Brazil was deforested by fire (MapBiomas, 2024), with the states of Mato Grosso and Pará being the most directly affected. Given the record-level destruction of Brazil's biomes, which may be linked to the annihilation of Brazilian fauna and flora and the impairment of human dignity (through air and water pollution, both of which are essential to human existence), it was deemed appropriate to select this topic as the focus of this study.

Regarding the non-random samples, the Ministry of Health and the Brazilian Army developed them (along with the actions these institutions carried out), given their competence and capacity to do so. Regarding the Ministry, Law No. 8,800/1990 establishes the conditions for promoting, protecting, and restoring health, as well as organizing and operating the corresponding services. This law ensures the Ministry's legal authority in Brazil regarding the dengue-related issues studied here. Regarding the Brazilian Army, Complementary Laws No. 97/1999 and No. 117/2004 highlight the Army's active role alongside the other branches of the Armed Forces (the Navy and Air Force). Specifically, these laws highlight the Army's involvement in preventive and repressive actions against cross-border and environmental crimes.

The analyzed actions were identified through publications made available on the official communication platforms of the Ministry of Health[12] and the Ministry of Defense[13]. The campaign, called "Brazil United Against Dengue," began in 2008 under the leadership of Minister of Health José Gomes Temporão (Oswaldo Cruz Institute, 2008) and continues to the present day. It serves as the primary documentary source for this analysis.

The initiative carried out by the Brazilian Army does not have a specific name, but rather consists of a series of operations conducted by the armed forces, such as Operation Pantanal II and Operation Tocantins. The environment is a fundamental right of every Brazilian, and its connection to human dignity is indisputable. Its protection is non-negotiable (Brazil, 1988; Barreto, 2020). Efforts to combat forest fires in Brazil gained momentum with Operations Verde Brasil I and II in 2019 (Nascimento *et al.*, 2021). As the number of illegal fires increased, new operations became necessary. To this end, we used the Brazilian Army's website to retrieve publications related to the most recent operations.

To compare denialist discourse on the topics under study, we selected detailed samples from institutions with expertise in addressing these issues. The Sírio-Libanês Hospital, considered one of the world's best for at least five consecutive years (Brazilian Federation of Hospitals, 2025), compiled the primary denialist narratives currently being propagated regarding the disease transmitted by the *Aedes aegypti*

[11] The vector was first scientifically described in 1762, when it was named Culex aegypti. Culex means 'mosquito' and aegypti means 'Egyptian'; thus, 'Egyptian mosquito.' The genus Aedes was not described until 1818. It was soon found that the species aegypti, described years earlier, exhibits morphological and biological characteristics similar to those of species in the genus Aedes, rather than the genus Culex. Consequently, the name 'Aedes aegypti' was established (Oswaldo Cruz Institute, 2025)."

[12] Ministry of Health website: https://www.gov.br/saude/pt-br.

[13] The Ministry of Defense website is https://www.gov.br/defesa/pt-br/.

mosquito on one of its main communication channels (website[14]). Regarding wildfires, publications from Fakebook.eco[15] were retrieved. This platform is a joint initiative of the Climate Observatory and civil society organizations such as Greenpeace and Clima Info (TV Cultura, 2020). It seeks to debunk denialist narratives spread online, particularly those related to environmental issues.

The comparative method enables the study of two or more realities by highlighting their differences and similarities (Collier, 1992; Gil, 2008). This clarifies "the more general determinants that govern social phenomena" (Schneider & Schimitt, 1998, p. 49). The aim of this study was to identify characteristics that constitute an action as either a mediating factor or a denialist practice. The characteristics defined in this study as fundamental for identifying information related to the environmental sphere in a mediating sense for comparing denialist discourses are:

Chart 1. Characteristics for identifying mediating factors in the context of environmental information

Information professional	A qualified individual—that is, one with the skills, aptitude, or expertise to develop an initiative on a specific topic (in this study, environmental) in the technological, operational, scientific, or mixed domains.
Information resources	Institutions that are duly qualified and competent to create, carry out, and even oversee the initiatives developed. Similarly, this includes their communication channels—whether analog or digital—used during the information process, such as official publication platforms administered by a competent body about the relevant topics.
Intentionality of discourse	Although it involves a certain degree of complexity, understanding the intent behind what is being said is of utmost importance. For in the mediation of information, the development (through appropriation) of an individual's critical thinking is contrary to the logic of manipulation present in denialist discourses.
Technicality	Grounded in technical documents such as reports, official records, administrative proceedings, expert analyses, preliminary studies, etc. In the mediation of information, these documents are referred to as proto-information. A form of quasi-information, used to construct information, shaped through appropriation.
Timeliness	The ability to solve problems arising from environmental issues in a timely manner—that is, phenomena currently occurring and their possible theoretical and pragmatic solutions.
Intelligibility	The ability to be understood (comprehensibility) by most people. This facilitates the appropriation of information without compromising its scientific character (through in-depth studies that underpin that output).

Source: Prepared by the authors (2025).

Description: The chart presents six essential elements for the mediation of environmental information: the information professional, who is trained to work with technical, scientific, or operational knowledge; informational resources, which include institutions and media outlets responsible for creating, disseminating, and monitoring actions; the intentionality of discourse, which highlights the importance of critically understanding messages to avoid manipulation; technicality, based on technical documents and studies (proto-information) that underpin the

[14] Sírio-Libanês Hospital website: https://hospitalsiriolibanes.org.br/.
[15] Fakebook.eco website: https://fakebook.eco.br/.

construction of knowledge; timeliness, which refers to the ability to act at the right moment in the face of current environmental problems; and intelligibility, which ensures that information is clear and accessible to the public without losing its scientific rigor.

Given this, the three characteristics present in the context of environmental information — aligned with certain elements within the field of information mediation — can provide insights for elucidating denialist practices. They can also serve as tools to combat them, since it is only by identifying them that we can understand them.

5 RESULTS

The data collected for this study were compiled intending to illustrating the proposed content as a basis for discussion. It is worth noting that the chart presented (a representation of the collected data) is a process of representing information; in this sense, it constitutes a reduction of information (Novellino, 1996), since it would be impractical and even undesirable to reproduce the analyzed materials in their entirety (an exact copy of the content present in the sample). This reduction can be seen in Chart 2 below:

Chart 2. Comparative overview of denialist movements and mediation efforts (both in the environmental sphere)

Information Mediation	Denial of Information
Dengue	
Brazil United Against Dengue — an initiative launched by the federal government (Ministry of Health, 2024).	Denialist rhetoric regarding dengue and environmental issues. Circulation of denialist claims compiled by the Sírio-Libanês Hospital (2024).
Highlights	
a) public participation in the fight against dengue, a constitutional provision (Article 225) regarding environmental issues—"Everyone has the right to an ecologically balanced environment, a common good of the people and essential to a healthy quality of life, imposing on the government and the community the duty to defend and preserve it for present and future generations" (Brazil, 1988); b) relationships (between individuals, between individuals and the community, between individuals and the State, between individuals and institutions, between individuals and the environment, etc.); c) the pursuit of specialized scientific care (doctors and health facilities) for proper treatment; d) monitoring reports; e) care (concern for the dignity of human life); f) preliminary information regarding environmental and health issues (previous studies conducted by experts and competent institutions); g) timely action (to prevent the spread of disease); h) a qualified and competent institution to carry out the action (Ministry of Health).	a) recommendations for inappropriate medications and treatments (Ivermectin cures dengue; citronella candles can replace insect repellent; air conditioners and fans repel mosquitoes), leading to self-medication, mistrust of healthcare professionals, and the spread of practices that are harmful to the environment, the mosquito, and the disease itself; b) anxiety (contracting dengue a second time will result in hemorrhagic dengue), causing a sense of despair and thus making individuals more vulnerable to false beliefs; c) a lack of scientific studies and a competent/specialized institutional framework to validate any of these claims (information typically spread through social media without any scientific rigor, unlike publications in academic journals or by academic publishers, public agencies, or health and environmental institutions); d) it promotes the idea of individualism, according to which each person can solve "their own" problem, thereby ignoring the broader scope of the situation, which is inherently collective.
Wildfires	
Combating Wildfires — an initiative carried out by the federal government (Brazilian Army,	Denialist rhetoric regarding wildfires in Brazil — presented by Fakebook.eco (2025), a platform

2024).	dedicated to combating environmental misinformation developed by a network of Brazilian civil society environmental organizations — the Climate Observatory and Greenpeace.
Highlights	
a) prioritizing action in the most affected states (locations) (Mato Grosso and Pará); b) timely response (to prevent further damage); c) a qualified and competent institution to carry out the response (the Armed Forces), Brazil (1988); d) actions aimed at safeguarding human life and biodiversity, search and rescue in hard-to-reach areas, and logistical support for firefighters and other specialized agencies.	a) an attempt to downplay the problem by citing misleading examples (wildfires in Australia are more intense than those in Brazil); even if this were true (which it is not—since most were not caused by land use or in populated areas), it does not reduce the urgency of the national situation regarding this issue; b) shifting blame (the false claim that it is impossible to identify those responsible for the fires); c) citing false data to justify the false need for fires (the fallacy that Brazil has the world's strictest environmental regulations; that only legal reserves exist in Brazil); d) attacks on environmental organizations; e) attributing blame to groups that lack the resources to defend themselves against denialist attacks (indigenous peoples).

Source: Prepared by the authors (2025).

Description: The chart contrasts the dissemination of information with the denial of information in two contexts—dengue and wildfires—showing how institutional actions and scientific discourse counteract misinformation. In the case of dengue, the government campaign "Brasil Unido Contra a Dengue" (Brazil United Against Dengue) stands out; it is based on collective participation, seeking medical care, the use of scientific studies, monitoring, and rapid action to contain the disease, while denialist discourses promote inappropriate treatments, generate fear and distrust of science, and encourage individual solutions without a scientific basis. In the case of wildfires, the "Combate Queimadas" initiative emphasizes action in critical areas, rapid response, institutional support from the Armed Forces, and the protection of life and biodiversity, while denialist narratives attempt to downplay the problem, distort data, deny responsibility, attack environmental organizations, and blame vulnerable groups. Thus, the chart highlights the conflict between reliable, collective, evidence-based information and denialist narratives that spread misinformation and hinder efforts to address environmental and public health issues.

It is worth noting that denialist movements tend to embrace and disseminate such discourse, particularly on social media. However, the study did not aim to identify these discourses. Instead, it relied on scientific institutions in the fields of environmental communication and health, which work to advance knowledge and combat denialism, as a source of reliable information. As for mediation-oriented actions, they were identified through government platforms, specifically the ministries responsible for the studied samples.

It was possible to identify elements belonging to the school of information mediation in the two actions used as samples. Before delving into this discussion, however, we must define what constitutes the school of information mediation. Traditionally, information theory—mediation discussed in terms of lines, disciplines, or paradigms—has a scientific-academic character, which can sometimes exclude other groups and individuals.

Nevertheless, anyone involved in processes that aim to develop an information- and knowledge-based society is part of this effort. Metaphorically speaking, a mayor who allocates funds to build an accessible ramp at a library, the urban planning specialist responsible for the project, and the operational team that will build the ramp are all part of the "school of mediation."

These individuals do not need to be familiar with the concept of mediation, nor

do they need to understand the nuances of academic discussions about developing a line of research. What is relevant to us is their attitude toward others. In this sense, anyone who seeks to strengthen relationships based on the appropriation of information is part of what we call mediation—an informational, social, and human approach.

In light of this, the Ministry of Health's initiative seeks to raise public awareness and foster collective participation in the fight against dengue. One of its focal points is environmental care, and it positions itself as a participant in this effort—a partnership between the state and citizens. This differs from many denialist approaches, which individualize the problem by framing it as a personal emergency and thereby distorting what is a collective issue.

Furthermore, the initiative specifies procedures for seeking expert guidance in cases of uncertainty or complications, i.e., professional scientific support for decision-making. It thus rejects mechanisms that can harm human health and dignity, which denialist movements vehemently embrace. Another point of differentiation lies in where these movements publish their content. They are usually disseminated through social media, which is not authorized to publish information of this importance. In contrast, the "Brazil United Against Dengue" initiative is published on the official platform of the Federative Republic of Brazil in plain language to maximize its reach. It explains the efforts and highlights the direct, in-person participation of health professionals from the Unified Health System (SUS) throughout the country. (mediated information).

The Brazilian Army's actions to combat wildfires, which reached record levels in 2024, are characterized by direct intensity. The land-based armed forces, which have been involved in dictatorial movements within the national historical context, are now playing an active role in line with their motto: "Strong Arm—Helping Hand." Despite valid criticism regarding the Army’s involvement in coup plots in Brazil, a new spirit is emerging through the force’s commitment to preserving national biodiversity, including both animal and plant life, and protecting vulnerable populations living near areas affected by illegal wildfires.

Firefighting efforts carried out supporting other brigades and agencies that specialize in environmental issues are an example of strengthened collaboration that benefits Civil Defense. It is important to emphasize that the environment is a collective good, and its preservation is in the national interest. However, denialist movements do not demonstrate this same commitment. Arguments that downplay these events foster a sense of urgency and indifference, thereby exacerbating the situation irresponsibly. This may be an attempt to validate and/or justify attacks on national assets for the benefit of a few.

The Army's prompt response to address the problem is noteworthy. Many of the fires have already occurred and continue to spread over time (MapBiomas, 2024). This makes it necessary to understand the causes and prevent the situation from worsening. In contrast, denialist movements have focused on attacking institutions and individuals dedicated to fighting the fires. Furthermore, these movements directly incriminate specific groups lacking the means to defend themselves, such as indigenous peoples, as if they were responsible for environmental degradation. This underscores the importance of expanding knowledge on this topic through further studies.

During the analysis, it became evident that the spread of denialist discourse undermines various factors established by the field of information science over the years. The recommendation of inappropriate treatments without specialized medical guidance or scientific accuracy constitutes a direct failure in informational intelligibility.

Using inadequate information sources may encourage self-medication and its health consequences and/or complications. It may also encourage environmental negligence, leading to the emergence of new vectors, or disease-transmitting species. Furthermore, this mindset promotes individualism, which runs counter to the relational conception of the relationship between people and the world espoused by the school of information mediation. This renders efforts to combat dengue ineffective given the disease's contagious nature—that is, it is a collective problem requiring a solution on the same scale.

Supporting civil defense and safeguarding biodiversity represents comprehensive information mediation, where professionals act in the interest of human dignity and life. The informational apparatus (the ground forces), whose role is to carry out preventive and repressive actions against environmental crimes, ensures the protection of the fundamental constitutional right to an ecologically balanced environment (Brazil, 1988, Art. 225). This right is essential to a healthy quality of life and the common good of the people—that is, everyone. This type of action indirectly fosters the development of relationships that structure society as a whole.

6 CONCLUSION

The general objective of the study was to theoretically ground information mediation as an epistemic framework for addressing information denial by proposing an analytical model that contrasts the dynamics of mediating actions with denialist practices in the context of environmental information. This objective was achieved through the specific objectives. The conceptualization and delineation of information denial in the environmental domain, aimed at identifying procedures that prevent the appropriation of information, was based on a contrast with the precepts established by the school of information mediation. Identifying and categorizing the central characteristics of denialist practices stems from a process referred to as "manipulation." This process is grounded in the pragmatism of denialist sub-creation, which involves denying reality and scientific and informational norms. This concept stands in opposition to information theory and mediation, which aim to facilitate the appropriation of information to promote human dignity and life within the context of environmental discourse.

The comparative analysis allowed for the identification of non-random samples of actions related to dengue and wildfires, in line with information mediation and environmental denialism. The analysis identified the following: mediating practices in the selection of qualified professionals to carry out the actions; advice on finding institutions and professionals capable of solving problems related to the themes addressed; Preliminary information, such as technical publications to support the publication process in communication centers and institutional decision-making

- Institutions as competent informational resources for carrying out the actions; The intentionality of the discourses present in the actions; The collective and relational construction of ideas surrounding these themes.

In contrast, the analysis revealed denialist practices such as searching for solutions without proper professional oversight, which undermines the scientific process and promotes individualistic practices. These practices include downplaying the severity of existing problems through false comparisons, citing false or nonexistent data, and instilling a sense of urgency to foster despair and impose ideas through fear. In this sense, the informational agent is both observable and necessary as a catalyst for the appropriation of information in the environmental context, since its presence or

absence in crisis scenarios can directly influence the dynamics of relationships involving environmental information.

Returning to the results and illustrating the aforementioned statements, disseminating ideas that promote self-medication for suspected dengue fever without specialized medical consultation can result in death. The denial of responsibility evident in the widespread illegal burning in Brazil (as reported by MapBiomas, 2024) constitutes a severe violation of the fundamental right to human dignity because these actions significantly impact the quality of life of Brazilians. In this context, attributing blame to people who lack the resources to defend themselves, such as suggesting that indigenous peoples are responsible for the fires, can foster more violent and segregationist thinking within society. It is understood that the field of information mediation possesses the elements necessary to design informational practices that uphold the scientific method of knowledge production and highlight the problematic characteristics inherent in the dissemination of denialist discourses.

Regarding the study's limitations, it is impossible to select completed actions as objects of study. The timeliness requirement inherent in environmental information necessitates understanding practices within a timeframe that allows for timely solutions. This criterion was used to exclude completed actions, even though they could have provided insights for the discussion.

For future studies, we propose expanding knowledge of denialist movements, such as the dissemination of denialist information and its impact on childhood vaccination rates. It should be noted that, although information science does not play a direct role in the aforementioned example, perhaps it should. Mediating practices are always necessary to combat denialist practices that aim to maintain domination through information, as these practices are constantly renewed, specifically in Brazil and Latin America.

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