


EDITORIAL

Arguments from authority and fallacy *ad verecundiam*: perspectives on the construction and socialization of science

Argumentos de autoridad y falacias *ad verecundiam*: perspectivas en la construcción y socialización de la ciencia

Argumentos de autoridade e falácias *ad verecundiam*: perspectivas sobre a construção e socialização da ciência

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Logic as a philosophical discipline underwent a radical change from the argumentative perspective of the new rhetoric. This approach, although it had already been approached theoretically and epistemologically, did not take off until the publication of the text *The New Rhetoric*, by Chaïm Perelman and Lucie Olbrechts-Tyteca.⁽¹⁾

This led to the division of logic into two areas: formal logic and informal logic. The former, with a longer tradition, was aimed at demonstrating from the approach of controlled language in relation to mathematical logic and set theory, rules of inference, classification and grouping. The latter was oriented towards argumentation and the construction of discourse from natural or common language. This disciplinary division did not imply a difference between the two areas, but rather that they complement each other: an argument in natural language can be interpreted and analyzed by formal logic and a logical text can be presented in common language.

The New Rhetoric focuses on how to persuade an audience to accept a thesis or a conclusion. Perelman⁽¹⁾ argues that persuasion depends not only on logic and evidence but also on the audience and how the arguments are presented, which may be linking, associational or dissociative. Arguments of linkage or association are classified into four: quasi-logical, arguments based on the structure of reality, relations establishing the structure of reality, and authoritative.

Quasi-logical arguments are those that are not based on formal logic or empirical evidence, but rely on emotional persuasion and rhetoric. They are used to convince an audience through emotion, experience, and personal beliefs.⁽¹⁾ Although they do not follow the rules of formal logic, they can be very effective in persuading. They are common in speech and commercial advertising, so they can be misleading and manipulative. The typologies of this type of argument are: 1) Analogy (compares different situations under the same rules), 2) *Ad hominem* (attacks the person rather than the argument or the position being defended) and 3) Emotional (does not focus on reason but on generating empathy with the audience from emotions).

Arguments based on the structure of reality usually appeal to empirical observation and logic to establish conclusions about the nature of reality. Three typologies prevail; 1) Analogy (it takes as a principle that two different things have a similar structure, so that information about one of them can be used to infer conclusions about the other). 2) Cause (it is based on the idea that every effect has a cause, so that the cause of a phenomenon can be inferred from the observation of its effects). 3) Example (it is used to illustrate and clarify complex ideas through the presentation of specific cases. Through specific examples, a more general conclusion about the structure of reality can be inferred).

The arguments establishing the structure of reality are those that seek to establish the existence of patterns and regularities in observable phenomena. These arguments are based on the idea that the structure of reality is coherent and consistent and that this coherence can be inferred through empirical observation and logic. The types of arguments that ground the structure of reality are: 1) Factual (they are supported by scientific methods with empirical applicability that can be contrastable, such as experience, observation, data analysis and testable evidence). 2) Value-based (seeks to establish the existence of patterns and regularities in the values and principles that govern human behavior, from which, more general conclusions about the structure of reality can be inferred). 3) Political (seeks to establish the existence of patterns and regularities in power relations and political decisions, from which more general conclusions about the structure of reality can be inferred).

Finally, arguments from authority are based on the idea that an authoritative source is specialized and has reliable knowledge about a particular subject. This type of argument seeks to establish the validity of a claim or conclusion through the citation of a recognized source of authority. For example, in science, arguments from authority are used by citing the publications and works of recognized scientists in a particular discipline to support a claim or conclusion.⁽²⁾ Three types of arguments from authority are distinguished:

- a) Argument of authority by specialized knowledge: based on the idea that a person or group of persons possesses deep and specialized knowledge on a specific subject, which allows them to have a more complete and accurate perspective on the subject in question. It seeks to support an assertion or conclusion through the citation of experts or professionals in a specific discipline.
- b) Argument of authority by character or moral integrity: it takes as a principle that a person or group of people is reliable and trustworthy due to their character or moral integrity. This type of argument seeks to support an assertion or conclusion through the citation of experts or leaders recognized for their character and ethics.



- c) Argument of authority by consensus: it is based on the opinion of the majority or position of a group of experts or leaders in a given field as the most accurate or correct. This type of argument seeks to support an assertion or conclusion through the citation of experts or leaders who share a common opinion on a given subject.

On the other hand, there are dissociation arguments, which are a form of reasoning that consists of separating an idea or event from its consequences or implications. It is argued that an action or situation should not be judged in terms of the consequences that derive from it but in terms of its own nature or intention. It is about disproving or raising different criteria according to three aspects: 1) Dissociation of fact (refers to the separation between a fact and its interpretation), 2) Dissociation of value (refers to the separation of a value from a concrete action) and 3) Dissociation of place (refers to the separation of a place and its inherent characteristics).

The above arguments are effective in persuading the audience, but they can be fallacious tools to manipulate. Fallacies are errors in reasoning, that can be used intentionally or unintentionally, to persuade others of a position or argument, regardless of whether that argument is valid or not. They are common in public discourse and can be difficult to detect. Among these types of arguments, there are two, which coincide with the names of fallacies, *ad hominem* and *ad verecundiam*.

The speaker with rhetorical mastery and with the intention of manipulating the audience can direct the speech to erroneous ideas about a particular domain of knowledge.⁽³⁾ However, the audience plays a major role with its hermeneutic understanding: the greater the interpretative capacity, the less likely it is to be manipulated or deceived. This reinforces the need to evaluate carefully the arguments presented and the capacity for critical and reflective awareness.

In the arguments of authority with the same denomination within the typologies of fallacies, appeal is made to the criteria or image of a person with authority. This can range from a public figure to a public official, teacher, researcher or other characteristic that contributes to support certain ideas or criteria.

An example of *ad verecundiam* or authority fallacy could be the acceptance of statements or facts in scientific communication that are not verifiable. This occurs in statements such as: if it is published, it must be true, this author affirms it, and it is in the articles of the issue of x journal.

Arguments of authority are an indispensable part of scientific communication as an indispensable requirement in the construction of knowledge. Citations constitute arguments of authority from other people to support one's own opinions and criteria. In the sciences, the greater the number of citations of a work, the greater the impact; it is assumed that the researcher has greater authority due to the implicit recognition granted by the scientific community that cites his work.

From the sociology of knowledge, Pierre Bourdieu contributes to this explanation from the *Theory of the Scientific Field*.^(4,5) The authors (researchers) who have achieved the greatest number of citations are those who have the greatest capital of authority without institutionalization having recognized them through prizes and distinctions. It is the recognition of their professional peers that makes their work visible and prestigious, which places them in a position of power.



Citation as scientific capital is directly related to authority capital. Relationships between arguments are identifiable through references.⁽⁶⁾ Citations legitimize and recognize the work of other researchers, considered even as the basic unit of the reward system.⁽⁷⁾

As for the legitimizing function, it allows the use of the prestige of someone with authority in the field to protect the ideas introduced; an externality that is linked to the dynamics of the field. In another sense, to assume these ideas would be fallacious, since the number of citations received is not directly proportional to an impact or recognition. There are behaviors within the field of science that contribute to this reflection: self-citations and their approach.

Self-citation is a behavior in which the researcher cites his or her own published work as a way of generating impact; this phenomenon is known as citation farms. Citation farms, also known as impact farms, are a common practice in science in which researchers focus on self-citation and professional peer-to-peer citation.⁽⁸⁾ The goal is to increase their number of citations and their reputation in the scientific community. Although, this practice can be beneficial in terms of visibility and recognition, it has also been criticized for fostering an unhealthy culture of competition in academia and for generating a distortion in the valuation of scientific work.

Citation farms can be useful for researchers looking to further their career and improve their academic profile. Publishing in high-impact journals can increase the visibility of a study and lead to more citations that, in turn, can increase prestige and funding for future research. In addition, authors of articles published in high impact journals may receive more invitations to participate in international conferences and collaborations, which may expand their network and offer new opportunities for their career.

In this context, the need to publish becomes imperative from a “publish or perish” perspective. In order to remain in these external rankings, institutions establish scientific development policies that force researchers and teachers to publish or socialize their studies in mainstream journals: Web of Science (WoS) and Scopus, in the main quartiles and in English. This normalizes the devaluation of local and regional knowledge, which has a negative impact on positioning in terms of external rankings. This is because when publishing in foreign language journals on topics of local interest, these contributions will hardly be cited because of the little interest they represent for that scientific community.

Self-citation is not necessarily a negative phenomenon as long as it is done in a justified and controlled manner, but excessive self-citation is a distorted reflection of the author's achievements in relation to his or her scientific community. Authoritative arguments are not infallible since the cited authority may be wrong or biased. Therefore, it is necessary to critically evaluate the cited source of authority to determine its relevance and reliability in relation to the claim or conclusion one wishes to support.

The fact that a statement within a contribution or manuscript passes a positive opinion as part of peer review, although this is the most effective method within scientific evaluation, does not mean that it is entirely true. In many cases, a published work is cited for aspects with which another researcher agrees, but in others, it is cited to refute those ideas.



The approach in citations can be acceptance or rejection, the latter are negative citations and do not give prestige to the researcher, but there is no way to quantify them as such. In the Humanities and Social Sciences, there are divergent criteria between schools, theories and paradigms. This happens essentially between dominant and emerging approaches, where researchers who defend one or the other positions cite others negatively because the contribution of their work lies in showing the strength of some paradigms over others or the ineffectiveness of conceptions, theories and epistemological assumptions.

REFERENCES

1. Perelman C, OlbrechtsL. Tratado de la Argumentación. La nueva Retórica [Internet]. Madrid: Editorial Gredos; 1989. [cited 6 Apr 2022]. Available in: https://eva.fder.udelar.edu.uy/pluginfile.php/122123/mod_resource/content/1/Perelman_Ch_-_Tratado_de_la_Argumentacion_Retorica_o_ratoria_.pdf
2. Paz Enrique LE, Caramés López M. Concepciones para el análisis de campos científicos. Telos [Internet]. 2020 [cited 6 Apr 2022]; 22(1):106-124. DOI: <https://doi.org/10.36390/telos221.08>
3. Orihuela Rosas B. E. El paso de la retórica a la neoretórica de Chaïm Perelman como teoría de la argumentación jurídica. Rev Col San Luis [Internet]. 2021 [cited 6 Apr 2022]; 11(22):1-24. DOI: <https://doi.org/10.21696/rcsl112220211236>
4. Bourdieu P. Le champ scientifique. Actes de la recherche en sciences sociales [Internet]. 1976 [cited 6 Apr 2022]; 2(2):88-104. Available in: https://www.persee.fr/doc/arss_0335-5322_1976_num_2_2_3454
5. Bourdieu P. El campo científico. Redes [Internet]. 1994 [cited 6 Apr 2022]; 1(2):129-160. Disponible en: <https://ridaa.unq.edu.ar/bitstream/handle/20.500.11807/317/07R1994v1n2.pdf?sequence=1&isAllowed=y>
6. Crisci J. V., Katinas, L. Las citas bibliográficas en la evaluación de la actividad científica: significado, consecuencias y un marco conceptual alternativo. Bol Soc Argent Bot [Internet]. 2020 [cited 6 Apr 2022]; 55(3):1-10. DOI: <https://doi.org/10.31055/1851.2372.v55.n3.28723>
7. Elhassan MM, Monge-Nájera J, Ho YS. Bibliometría de publicaciones científicas sudanesas: temas, instituciones, colaboración, citas y recomendaciones. Rev Biol Trop [Internet]. 2022 [cited 6 Apr 2022]; 70(1):30-40. DOI: <http://dx.doi.org/10.15517/rev.biol.trop.v70i1.47392>
8. Canova Barrios CJ. Aspectos éticos en la publicación de manuscritos científicos: una revisión de la literatura. Salud Cienc Tecnol [Internet]. 2023 [cited 6 Apr 2022]; 2(1):1-12. Disponible en: <https://revista.saludcyt.ar/ojs/index.php/sct/article/view/81>

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