



Uniting Fields of Knowledge: The Role of Interdisciplinary Journals in Science

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Abstract

As Frank (2024) praised in his speech *Josha* with its interdisciplinary, open access and editorial review system, takes up a very unique space in today's scientific landscape. This article examines the scientific journals which have had or have a similar editorial approach when it comes to the communication and production of science. The most important journals with a similar editorial guideline are *Isis*, *Daedalus* and *Studium Generale*. Despite originating in different historical contexts, all share a commitment to fostering dialogue between scientific fields. The article also explores shifts in the meaning of science and its production, in order to contextualize the appearance and importance of these journals. Ultimately, the study argues that interdisciplinary journals continue to arise in response to the evolving intellectual landscape, challenging academic structures and fostering holistic scientific discourse.



Introduction

In October 2024, Joachim Frank, winner of the Chemistry Nobel Prize, praised the visionary presence of *Joshua* in the scientific landscape. He stated that the interdisciplinary vision of the journal was much needed in our time when scientific production is becoming overspecialized among the experts and oversimplified among the average readers. In his opinion, the existence of a forum that unites different scientific fields is important since science has always been, and has to be, a continuous exchange of interdisciplinary ideas. Nowadays, *Joshua* stands in a very unique place with its interdisciplinary editorial policy and open-access approach. Joachim Frank highlighted that *Joshua* is not alone, but there is a group of journals that follow a similar philosophy, like *Daedalus*, *Studium Generale*, and – we add – *Isis*. All of these journals have shared and share an interdisciplinary or multidisciplinary vision when it comes to how to approach scientific works and the job of an editorial team in managing scientific publications (Frank, 2024).

The aim of this article is to compare the different editorial visions of these four scientific journals: *Isis*, *Daedalus*, *Studium Generale*, and *Joshua*. All of these journals, even though they were launched in very different historical circumstances, have a holistic approach to science, advocating for a dynamic exchange of ideas between different scientific fields. In this article, the similarities among their visions are investigated, as well as how the scientific context of their age influenced each of them.

Interdisciplinary Journals Over Time

In 1816, the first volume of *Isis* was published by Lorenz Oken and Friedrich Arnold Brockhaus. The journal was intended to be an encyclopedic journal that would gather all the knowledge of the kingdom or kingdoms of the Geist in order to show its evolution (Oken, 1817, p. 2). Diminishing the role of editorial reviewers was very important in order to reduce the subjectivity and power of the editors. Oken wanted to create a forum for knowledge that challenged established thinking patterns and institutional control. He also thought it was important to be aware of the lack of objectivity in editorial teams, and he tried to limit the interference of editors as much as possible in the selection of what should be published or not. One of his biggest motivations was the belief that every new idea moves the Geist forward. He was a big defender of freedom and academic discussion, creating a space where everything could be published since he believed this is what moves humanity



forward. Since the aim was the evolution of the Geist, he advocated for an interdisciplinary approach, understanding the holistic character of science and leaving space for an active interchange between different fields (Oken, 1817, pp. 1-8).

Studium Generale is another example of an interdisciplinary journal. It was created in 1947 in post-war Germany with the aim of uniting all the branches of learning with their respective methods and research agendas. The editors, 24 in total, were invited from different academic fields, each of them contributing to their specific area. Different concepts were approached from all the fields, resulting in a broad interdisciplinary forum. This seems to be the same idea that determined *Isis* and, later on, *Joshua*. The need for unifying knowledge under a humanist vision has determined German thought, and it can be seen very clearly through these three examples (Whyte, 1952, pp. 101-103). Frank (2024) opined that it made him feel like being part of something special, avant-garde, which is going to unify knowledge and provide solutions to all kinds of complex problems.

Daedalus was founded in 1955 by the American Academy of Arts and Sciences (1780) which was determined by the philosophical values of the Enlightenment. This founding principle still determines the way in which they seek the truth through science. Today, it works as a quarterly journal that publishes in a thematic order. Their philosophy is that, in order to gain understanding, one has to have a holistic approach, seeing all the parts together without getting lost in the details of one aspect of a question. For this reason, *Daedalus* follows a multidisciplinary approach, where one can find all the parts of a whole in one space. The journal became Open Access in 2020, after the appearance of OA platforms in 2002, reflecting a common tendency towards the democratization of knowledge. This decision significantly increased their readership. This was an important step, as *Daedalus* became not only a forum where every scientific field could be represented but also accessible to every reader (American Academy of Arts & Sciences, n.d.).

Joshua also was one of the first in its time to have an open-access and interdisciplinary vision. It was created to be a multidisciplinary, multilingual, open-access, nonprofit electronic journal. The aim was to create a space where different scientific fields would come into contact with each other and exchange their knowledge. It is also very important for the editorial team to democratize knowledge, recognizing that important research can come from anyone and any part of the world. The editorial board aims to ensure the freedom of the writers,



recognizing the subjectivity and partisanship that can be exercised by editorial teams, following the example of *I/sis*. This way, different researchers can publish without having to go through strict academic review processes, which are often resistant to new ideas and emerging talents. It is also important that the editorial board reserves the right of copyright to the author, which gives the freedom to the author to publish their article in other places too. This is important since the aim is not profiting from knowledge but its communication and the reinforcement of a conversation between different scientific fields (Mertelsmann, 2014).

These journals are an expression of the recurring need in humans to converge different scientific fields and create interdisciplinary and multidisciplinary forums to provide space for interaction among different types of knowledge. This becomes an increasingly urgent need in today's scientific world, where we see a high degree of specialization obstruct conversation among researchers and their readers. This is a very unfortunate development since science and knowledge are complex and interconnected.

Shifting in the Meaning and Production of Science

This article covered a long timeline, during which the concept of science itself has also changed and evolved. Science, its methods, and its aims have been long deconstructed in postmodern thought. The scientific relativism of Feyerabend, Kuhn's reading of scientific revolution, Foucault's philosophy, the postcolonial critique of Roy Macleod, or the feminist critique of Sandra Harding have questioned the traditional view of scientific production. These works illuminated the relationship between power structures and science and its function inside society as an institution of legitimization and control (Nieto, 1995). The postcolonial and gender critiques of scientific institutions and narratives make it impossible to approach science as Oken did in the 19th century. Editorials now have to be conscious that they have an active role in the communication of knowledge and that they are themselves constructing a narrative. Because of this, the democratization principle of *Josha* and *Daedalus* becomes relevant, as it is clear that we have to begin to do and communicate science in a different dynamic.

Apart from the reshaping and questioning of the concept of science, which, of course, ushered editorials to create a different approach to who and what they publish, great changes in the economic structure also occurred, which completely transformed how science is produced. In the 20th century science became fully



embedded into the capitalistic production structure in the way that it is today. This led to cognitive capitalism, where information, knowledge, and science became a leading product (Elizondo, 2021, p. 39). In a world where scientific writing has become a product, the production of knowledge itself has been completely changed. There is increasing pressure to produce quickly while satisfying the needs of customers and editorial teams. At the same time, the competitive nature of the market and the massification of scientific products make a fluid conversation between different academic fields and an interdisciplinary approach very difficult (Hernández García, 2022). This means that now we are overwhelmed with an amount of scientific production that is nearly impossible to assimilate. Editorials have to face the challenge of selecting from the large amount of information the content they want to promote.

These narratives also determine what is considered science and how much value is placed on different scientific fields. Since the humanities and arts produce less capital, they have often been overlooked and undervalued (Hernández, 2022, p. 633). The concept of interdisciplinary journals is particularly interesting because they place all scientific fields on an equal footing, providing the same amount of space and respect to each. While specialized journals, like *Science* or *Nature*, are essential for the evolution of a specific subject, we must not forget the interconnected nature of knowledge. It is crucial to foster a constant dialogue between different disciplines, giving each the same scientific value and respect.

Another important factor that changed how science was communicated was the appearance of Open Access platforms in 2002. This led to a certain democratization of scientific platforms, as they were less controlled by institutions that until then “curated” knowledge. This made possible a significant increase in the number of publications and, naturally, an increase in the consumption of scientific research (Elizondo, 2021, p.39). *Josha* is one of the first online initiatives that appeared as a consequence of Open Access, recognizing the great opportunity for scientists.

The Recurring Idea of an Interdisciplinary Journal

All in all, we can see how the idea of a journal where different scientific fields and works can enter an interdisciplinary debate, learning from each other and advocating together for the creation of knowledge, is an idea that keeps coming back in our history. It is interesting to keep in mind Whyte’s opinion that it is also characteristic of German philosophical thought to have a humanistic approach to



knowledge, with three of the journals we examined being German. Still, all the journals reflect their own historical moment. *Daedalus* did the longest journey from its beginning, being created in the academic environment of the fifties to becoming now one of the most important interdisciplinary open-access platforms. *Isis* reflects how knowledge in its time was created influenced by the post-Hegelian philosophy which had the aim of liberating the Geist through a holistic approach to knowledge. *Studium Generale*, by publishing from an interdisciplinary view was, in some sense, a rebellion against established patterns of thought. Of course, *Josha* is also very important since it emerged as a direct response in 2014 to the current state of the intellectual landscape. The editorial choice to create an open-access platform, which makes it possible for different scientific fields to enter a dialogue without the usual peer review, is a direct response to the new era and creates a new type of producing, communicating, and consuming knowledge. Each of the journals responded with this interdisciplinary and holistic philosophy to the need for a change in their own historical time. Behind these lines lies a need to challenge established academic structures and to converge in one big publishing model to offer a forum for different patterns of thought in order to find knowledge.



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