Pro-Des. Forms and processes of scientific writing, production and dissemination of design

Pro-Des. Forme e processi di scrittura, produzione e . disseminazione scientifica del design

scientific production

publishing ecosystem

innovation in form and process

responsible evaluation

plurality in publications

produzione scientifica ecosistema editoriale innovazione di forme e processi

valutazione responsabile pluralità di forme editoriali

The aim of the group is to study, research and experiment with and thus orientate the complex phenomenon of scientific writing ("writings") and publishing (scientific production) of design, from cultural, institutional, interdisciplinary and technological perspectives. Due to the digital transformation and the emergence of the open access paradigm, as well as the plurality of research forms and expected impacts, the scenario of scientific production is undergoing radical questioning, and various attempts to revise and change its methods and processes (Cope, Phillips, 2014; Bienfield, 2014; Aalbersberg et al., 2012). The very concept of contemporary "scholarly publication" encompasses, in addition to traditional forms (articles), emerging types of non-text-only research products (dynamic and collaborative digital ecosystems of augmented, updatable and reusable content over time) that are qualitatively accredited. The group promotes investigation in the following areas: a) innovative forms, formats and processes of publication; b) responsible models of quality and impact assessment; c) plurality in design publication.

ABSTRACT

Obiettivo del gruppo è studiare, ricercare e sperimentare e quindi orientare il fenomeno complesso della scrittura ("scritture") e pubblicazione scientifica (produzione scientifica) del design, dal punto di vista culturale, istituzionale, interdisciplinare e tecnologico. A causa della trasformazione digitale e dell'affermazione del paradigma dell'open access, nonché della pluralità delle forme della ricerca e degli impatti attesi, lo scenario della produzione scientifica sta subendo una radicale messa in discussione, e vari tentativi di revisione e cambiamento dei suoi metodi e processi. Il concetto stesso di "pubblicazione scientifica" contemporanea comprende, oltre a forme tradizionali (articoli), tipologie emergenti di prodotti di ricerca non solo testuali (ecosistemi digitali dinamici e collaborativi di contenuti aumentati, aggiornabili e riusabili nel tempo) accreditati qualitativamente.

Il gruppo promuove l'indagine nei seguenti ambiti:

- forme, formati e processi innovativi di pubblicazione;
- modelli responsabili di valutazione della qualità e dell'impatto;
- pluralità nella pubblicazione del design.

Gli obiettivi sono:

- ricerca, sperimentazione e confronto sul tema (risultati attesi: casi studio; call per una rubrica dedicata su una rivista scientifica; seminari);
- formazione di giovani ricercatori (lezioni e workshop nei programmi dottorali nazionali);
- networking (rete di relazioni internazionali con gli stakeholders del sistema);
- dialogo con strutture di valutazione e accreditamento (modelli complementari di revisione e valutazione).

Come esito del primo anno di attività sono previsti un vademecum di servizio a tutta la comunità e la restituzione dei temi di ricerca tramite pubblicazione innovativa.

POSITION PAPER

Introduction

In the last century, we have assisted a relevant epistemological change in knowledge production and in the way of thinking and organising knowledge. With the arising of the digital age, Carayannis and Campbell (2006) claimed the coexistence and co-development of diverse knowledge modes in an interconnected and networked perspective. In this context, human cognitive capacity is expanded by technological means because cognition is off-loaded into the environment and artefacts, and the individual dimension of knowledge merges on collective intelligence, that is, the capacity of human communities to cooperate intellectually, enhanced by digital networks (Levy, in Peters, 2015).

Publication is central to the making of science, but at the same time has become the measure by which researchers are evaluated for tenures, promotions, and grants (Fyfe, 2019). Most of the features we associate with the modern scientific journal – including originality of research, self-authorship, refereeing procedures, and standardized rhetoric and structure – were nineteenth-century developments, while big profits, the use of English as the international language of science, and the emergence of professional bodies for managing editors and publishers are largely twentieth-century phenomena (Moxham & Fyfe, 2018).

It is worth noting that the scientific publishing landscape is changing (Chiriboga, 2019). For the past 10 years scientific journals have been under continuous discussion (Cope & Phillips, 2014; Bienfield, 2014), also regarding the university press (Pochoda, 2010), the revision of editorial practices (Horbach & Halffman, 2020), and various attempts at profound change (Aalbersberg et al., 2012). Many open access publishing platforms

and infrastructures have been established and have gained scientific recognition and reliability (Open Research Europe, 2021).

Nonetheless, the process of scholarly publishing has remained remarkably stable, and the key functions are the same ones that have accompanied scientific publishing since the 17th century (EC, 2019). While different publishing infrastructures and platforms have been founded, the traditional article, as the main expression of scientific publishing, still predominates in academic journals. While some innovative features have been added, they show hesitancy in adapting and properly serving the needs of the new forms of knowledge.

On the other side, the establishment of the open access paradigm in the mid 2000s began to transform scientific production, affecting its distribution and right of access.

Many scholars talk about the need to think of scholarly knowledge as an ecosystem (Altman & Cohen, 2022), proposing a holistic and integrated approach to scholarly communication (Birdsall et al., 2005). Scholarly discourse, which was once restricted to printed texts, is now being produced in a variety of formats, including short videos, information visualisations, networked writing, and works that cannot exist in print (McPherson, 2010). These "Scholarly information infrastructure" (Borgman, 2009) and information architectures lead to new practices (Burdik & Wills, 2011) in which the design of digital tools is an intellectual responsibility, not a technical task (Drucker, 2009).

At the same time, many changes are permeating the design field, and in particular the ones related to the digital transformation, asking for deep knowledge dissemination, fostering new discourses and representations (i.e. "viscourses", Bonsiepe, 2007, p. 36). In the design domain, the reflection is monitoring trends in journal expansion, in the increase and acceleration of publishing, as well as improvements in the quality of publication (Cross, 2009; Atkinson, Valentine & Christer, 2021). Anyway, apart from more efficient editorial management systems, patterns of scientific publishing in design are remarkably stable (Gemser & De Bont, 2016) and the journals format, or the concept of publications, remains attached to the idea of traditional articles (Lupo, Gobbo & Lonardo, 2021). Finally, quality of perception, visual designs and reading experiences of design journals can be improved (Gemser et al., 2012; Barness & Papaelias, 2021).

In this context, we assume that scientific publication should enable the emergent diversity of knowledge (Boast et al., 2007).

We strongly believe that the design discipline can be a pivotal field for the experimentation and discussion of new publication formats for scientific research (Lupo, 2022; Radice, 2022). Therefore, we call for the awareness and responsibility of the whole design community.

This paper aims at positioning an open and programmatic agenda to discuss the scientific production and publication in design as a research area, providing best practices and envisioning new directions, methods, policies. This with the objective of fostering exchanges and

collaborations among scientific journals, academic institutions and open publication platforms.

The main questions are: how is scientific production and publication in design renewing and transforming to better respond and serve to the needs of the research community and have a real social, political and economic impact? How can design publication enable the emergent diversity of knowledge?

This position paper frames the research agenda in three streams:

Innovative forms of publication: Envisioning and supporting innovative (e.g. augmented, enriched, interactive, contributive and collectively-authored) forms of publication, as mixed media ecosystems of content, optional and complementary to traditional linear articles. Strengthening the impact by supporting the discoverability and re-usability of knowledge beyond mere citation and critically approaching AI and content creation.

Plurality of design publications: Promoting choral narratives on contemporary design, for instance representing the plurality of editorial platforms, journals, initiatives, and publications from different geographies outside the mainstream.

New models for quality and impact assessment: Reshaping the evaluation and quality assessment of new publication forms, basing it primarily on qualitative evaluation and responsible use of quantitative indicators and by conferring the same level of academic credibility and accreditation that traditional articles receive. Questioning about the concept of excellence, for a "reputation economy".

1. Innovative forms of publication

We are observing new trends in publishing (Kim et al., 2008) including new types of journal articles (visual essays, video articles, research articles) and elements (graphic abstract, interactive pdf, etc.) as new forms to promote articles and new emerging formats of academic publication, in relation to the legitimation of new typologies of publishable research products (e.g. OpenAireExplore research products categories: protocols, software, data set, models, etc.), mainly related to Life Sciences and STEM (Stern & O'Shea, 2019), and a few interesting examples from social science and humanities research. Elsevier is a pioneer in this as well, providing acknowledgement and recognition for some of the new typologies of research products, with new typologies of articles — e.g. Research Elements article; Visual Case discussion; Visual Essays; Video Articles. For this reason, the comprehensive term *scientific publication* encompasses, beyond scientific articles, all the various emerging typologies.

Moreover, new forms of writing have been accredited, ranging from midforms between the journal article and the monograph length (Newton, 2013) or micro articles to accelerate the publication of peer reviewed research results in concise form, or to publish interesting data that has not grown into a full piece of research, up to dynamic and contributive or collective authoring writing processes (Heller, The & Barting, 2014) and public response articles (such as riPOSTes, in Electronic Book Review journal).

In addition, scientific publications are attributed a more evolving nature and open-ended lifecycle, beyond mere updating, which rely on the scalability and connectedness of discrete units of content by the same author or other contributing authors.

We therefore claim and call for the necessity of envisioning and supporting innovative (e.g. augmented, enriched, interactive, contributive and collectively-authored) forms of publication that can go beyond the addition of supplemental material (such as visual material, graphic/video abstract, audio podcast, etc.), which have already been enabled by many publishers. We should welcome and facilitate the publication and scientific accreditation of new typologies of non-standard and not (only) textual research articles, while considering the possibility of further improving the user's reading experience, for example in regard to non-linear reading, by designing more hybrid content flows and the visualization and interaction of complex entities (Hohman et al., 2020). We envision publications as mixed media ecosystems of content, optional and complementary to traditional linear articles.

In this context a greater critical attention and awareness should be devoted to the most recent developments in AI-Artificial intelligence and its contribution to the processes of scientific writing and production of articles in an automated way (Marconi, 2022), ethically questioning the authenticity, reliability and quality of content and the attribution of publications to authors.

2. Plurality of design publications

In this framework of huge opportunities, biocultural diversity of knowledge seems to be disregarded.

The global knowledge ecosystem is affected by ethnocentrism and witnesses Western monopolies of knowledge that built hegemonic structures and narratives (Fiormonte, 2017). Graham et al. (2011) presented a series of maps showing the cultural and geographical biases of global knowledge in terms of both infrastructure and cultural discourse; some authors speak about "peripheries countries", and Western domination seems to be untouched (Kieńć, 2017).

Academic scholarship and publication too reflect these unequal geographies of knowledge: there is a linguistic bias in the global journal system (Larivière & Desrochers, 2015) and a clearly visible publishing oligopoly (Larivière, Haustein & Mongeon 2015) or capitalistic regime (Mirowski, 2018). Scientific publishing mirrors an unbalanced power of expression that raises questions about the visibility, diffusion, and consolidation of scientific thinking of a wider geographical spread, with

specific regard towards the non-homologation and the need for the legitimisation of rather different cultures of knowledge organisation, especially from the Global South (Comaroff & Comaroff, 2012; Chan, 2014).

Anyway, the developing geopolitical scenario is challenging the current knowledge and publishing monopolies (Fiormonte & Priego, 2016): Digital Humanities, for instance, started reacting to these unequal power relationships, questioning political representation and cultural diversity, encoding standards, digital infrastructures and linguistic hegemonies, to create a genuinely democratic and international scholarly community with more biocultural diversity (Fiormonte, 2017). According to Fiormonte (2022), it is necessary to decolonize the digital humanities so far troubled by a lack of perspectives beyond Westernized and Anglophone contexts and assumptions. The rise of the digital humanities in the Global South and other "invisible" contexts should be explored considering the impact of a globally diverse digital humanities. In this process, the distance and assumed relationship between centre and periphery is fading and border thinking (Mignolo, 2012) from the margins, where often the means are less, but the freedom to innovate is greater, becomes relevant. According to Fiormonte (2017), "It is vital that the emerging peripheries talk amongst themselves, and boost the South-South dialogue on theoretical models and practical shared solutions". In this frame, digital resources should enable the emergent diversity of knowledge (Boast et al., 2007). And the same must do scientific publishing (Lupo, 2022).

However, the ideology of knowledge supremacy must be questioned beyond the critique of modernity and colonialism, proposing new mindsets, theories, and methods to transform the world's dominant hegemonic narrative into multiple alternatives. To achieve the DEAI (diversity, equity, accessibility, and inclusion) imperative also in the knowledge ecosystem, it is necessary to overcome the approach of "tokenism": it is essential to embrace new ways of thinking, allowing actors outside of the mainstream (other than the dominant European and North American perspectives) to transform the dominant plot and therefore move to worlds of many centres (Leitão & Noel, 2022). Addressing pluriversality and multipolarity are crucial issues for new geopolitics of knowledge (Mignolo, 2018; Reiter, 2018; Escobar, 2018).

These reflections are common to design too, often concerned with the concept of peripheral vision of design, for which design should be done *in* the peripheries and not *for* the peripheries (Bonsiepe, 2003); or marginality to which design history poses some design models (Fry, 1995; 2017). The concept of "power" is one of the critical fields of contemporary design (Antonelli & Formia, 2021), to engage polemically with the opportunities to rethink what designing can be in a world based on radical interdependence and therefore promoting plural and choral narratives (Iñiguez Flores & Gianfrate, 2022).

In this pluriverse context, we aim to propose a vision that shifts from processes of knowledge power and control to processes of knowledge ownership and leadership (Mabey, Kulich & Lorenzi-Cioldi, 2012),

directing an epistemological change in the academic design community by driving processes of upskilling about new (social, technological means of) knowledge production forms and contexts. Finally, to really dismantle the existing established structures and make them more permeable, we think it is also mandatory to reframe excellence and impact assessment in a pluriverse perspective.

3. New models for quality and impact assessment

In this scenario, the evaluation and assessment of new publication forms should be completely re-shaped too: for instance, the visual and enhanced aspects of an article require structural changes in the editorial processes, and especially concerning publications review and evaluation. Authorship also becomes a concern when publications are increasingly open, collaborative and incremental: some scholars propose to move to a contributorship model, to better identify and endorse the specific contributions of co-authored works, through a taxonomy of roles (Brand et al., 2015).

Anyway, assessing the quality of research publication is a complex issue to innovate (especially when recruitment and academic careers are based on quantitative metrics of scientific production) because it struggles with institutional evaluation (Colarusso & Giancola, 2020) and new ways to build reputations (Gandini, 2016).

In Italy for instance the normative system of evaluation is articulated and complex, due to often-conflicting procedures (VQR -Valutazione della Qualità della Ricerca, ASN – Abilitazione Scientifica Nazionale) among actors at different institutional levels (ANVUR – Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca, SSD — settori scientifico disciplinari, etc) and this situation doesn't make easy to promote changes and improvement.

Internationally, a controversy has been raised about the use of impact factors (Curry, 2018; Waltman & Traag, 2021) and in general of quantitative metrics: the unanimous position is that it reduces, for example, the diversity and variety of leading institutions capable of attracting funding (Nature Editorial, 2022), but also that it is not reliable as an exclusive criterion for ranking institutions (Gingras, 2016). Therefore new open and collaborative ways have been promoted to recognize the value of academic contents, moving the evaluation from a purely quantitative logic to a qualitative one of "responsible evaluation" (typical of the non-bibliometrics sectors). Signs in this sense are initiatives such as the 2013 San Francisco Declaration of Research Assessment (DORA), the 2015 Leiden Manifesto for Research Metrics (Hicks et al., 2015), the 2022 Hong Kong Principles for the Evaluation of Researchers (Moher et al., 2020), and recently the establishment of COARA – Coalition for Advancing Research Assessment of 2022.

In this framework, peer evaluation is recognized by some scholars as one of the most "robust methods for quality assessment" (COARA, 2022): coming to publications' peer review, it is worth noting how the review

process is becoming more collaborative and transparent: according to Ross-Hellauer (2017), open peer review is making reviewer and author identities open, publishing review reports alongside the articles and enabling direct reciprocal discussion between the author(s) and reviewers. In addition, publication updates, responses and evolving contributions require to move from simple pre-publication peer review to continuous review. Anyway incentives should be provided to promote this model of transparent review.

However, a discussion is mining the validity of peer review too: peer review can be affected by some bias (Mulligan et al. 2013) and sometimes "abuses" (Heesen & Bright, 2021). Often the evaluation is perceived in a distorted way (Colarusso & Giancola, 2020) therefore more training is needed to share processes of constructive review based on objective and qualitative criteria such as originality, relevance and rigour.

Finally, the evaluation of publications is always more linked to impact: in calling for an alternative perspective on impact (Dinsmore, Allen & Dolby, 2014), we should refer to the "reputation economy" (Fetcher et al., 2017) and talk about "merit" which relies more on long-run credit (Heesen & Bright, 2021) than on metrics, in order to estimate the real value of a contribution to science.

It is therefore necessary to develop a true and solid review culture that is both rigorous and transparent, but also plural, i.e. capable of assessing quality and impact, protecting research of local relevance too (Hicks et al., 2015).

Post scriptum

In the days this position paper has been drafted, a critical situation is affecting Design Studies, the academic journal of the Design Research Society, formally published in co-operation with Elsevier Science. The recent treatment by Elsevier of the Editor-in-Chief and other Editors of Design Studies, for which "the journal is not growing, financially or editorially" and the pressure for "demanding a seven-fold increase in publications or facing closure", made the Editor-in-Chief together with the entire Editorial Board, resign their positions on the journal, on 10th of July, after various unsuccessful attempts to respond to Elsevier's action.

This situation proves evidence on how the power of big publishers and their commercial objectives can determine the future of scientific journals.

This is obviously beyond the control and the scope of this SID research group but is the context we move in and we should be aware of.

The urge for alternative and plural publishing models and platforms is evident.

1The impact factor (IF) or journal impact factor (JIF) of an academic journal is a scientometric index that reflects the yearly mean number of citations of articles published in the last two years in a given journal (https://en.wikipedia.org/wiki/Impact_factor).

2https://www.designresearchsociety.org/articles/the-future-of-design-studies-journal

3 https://www.designresearchsociety.org/articles/the-future-of-design-studies-update

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