

480. Non-binary Methodologies: Integrating Art and Science to Challenge Power Dynamics in Environmental Transformations Research.

In this presentation, I reflect on a non-binary research approach that seeks to facilitate interdisciplinary integration between the arts and sciences in the context of environmental transformations.

C.P. Snow's influential essay, "The Two Cultures," highlights a persistent divide between scientists and literary thinkers, each harboring biases against the other. This dialectic not only suggests a foundational difference between these cultural realms but also rests on misinterpretations that can hinder genuine collaboration. As Snow articulates, such conflicts are destructive and largely unfounded, underlining the need for a more integrative methodology in contemporary dialogues (Snow, 1959, p. 3).

The prevalence of this "Two Cultures" perspective continues to influence current ArtScience collaborations in Europe. Although these collaborations are on the rise due to advancements in artistic research and increased funding from the European Union (Koskinen, 2018, p. 93), they often reflect imbalanced power dynamics that prioritize the interests of one discipline over another. Many ongoing projects exploit artistic endeavors for scientific gain or use scientific findings merely to enhance artistic presentations (Amir & Hasson, 2024).

This paper seeks to challenge the assumptions underpinning such collaborations by proposing a model of integration based on mutual respect and equitable contribution. ArtScience integration endeavors should strive to facilitate mutual exchange and idea development within an equitable framework. It is not simply an opportunity for artists to glean insights from scientists without reciprocation, nor should it be about artists merely enhancing the visual appeal of scientific work. True collaboration acknowledges that all participants bring valuable knowledge and skills, contributing equally to the creative process. This principle of mutual respect and contribution should underpin every ArtScience partnership (Schnugg, 2019, p. 227). For instance, ensuring that both artists and scientists secure funding is vital for maintaining equitable status within a project, preventing dependence on the generosity of individual contributors and fostering a more balanced and productive collaborative environment.

Artists play a crucial role in environmental research, and their involvement in large-scale initiatives should become normalized (Amir & Hasson, 2024). The integration of art's subjective and experiential insights with the objective rigor of science unlocks new avenues for understanding and addressing complex "Wicked" problems (Borgdorff, 2011). Both art and science stand to gain and evolve from a balanced collaborative process. Science offers access to specialized data and resources that artists may lack, fostering innovative artistic approaches and new problem-solving

techniques. Conversely, art can yield unexpected insights into both research subjects and methodologies, resulting in groundbreaking and scientifically significant outcomes (Borgdorff, 2011). Artists are adept at open-ended, experimental practices that highlight subjectivity and subjective experience while imagining new ways of existence (Burrows & O'Sullivan, 2019). For example, artists have engaged with contemporary issues—such as the implications of climate change and rapid AI advancements—long before these issues gained traction in mainstream discourse (Hudson & Finn et al., 2023).

To navigate the complexities of our reality, we should explore ways of collaboration that advance integrative practices and enhance all forms of life. We must harness a spectrum of knowledge—human, machine, animal, and plant—and embrace forms of understanding yet to be fully defined (Snaza & John, 2016). The human rights movement and related academic fields have taught us a crucial lesson: identity is fluid, and binary definitions cannot encompass all cases (Matsuno & Budge, 2017). The academic world urgently needs to transcend such dichotomies concerning what constitutes art, science, quantitative, or qualitative knowledge. Knowledge should be treated as we are learning to approach gender—embracing a non-binary framework.

In advocating for "Non-Binary Research," I propose a model in which the arts and sciences are not viewed as mutually exclusive but rather as interdependent disciplines contributing to a shared understanding. This model resonates with the "anti-disciplinary" notion (Eddy, 2005). However, "Non-Binary Research" does not reject its originating disciplines but exists in the interstitial spaces between them. This approach respects and draws from the systems that enabled its creation while recognizing that complex, "Wicked" problems demand more fluid forms of knowledge—ones that liberate creative expression from disciplinary constraints. In such partnerships, collaborators should be empowered to experiment beyond their established expertise, collectively engaging with all facets of the project.

Through this transformative integration of diverse perspectives and approaches, our collaborative research outputs can evolve into applied knowledge that shapes a healthier and more sustainable Anthropocene.

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