IASCUD Activity Report 2023

During the past year, the International Association for Science and Cultural Diversity organized two symposia, **Artificial Languages in the History of Science and Mathematics**, and **The Significance of Cultural Diversity in Biomedical Research**. Both symposia were presented as part of the seventeenth Congress of Logic, Methodology, and Philosophy of Science and Technology (CLMPST 17) in Buenos Aires in July. The symposium on Artificial Languages featured six speakers including two early career researchers whose expenses were supported, in part, by IASCUD, Chang and Petrukhina. The second symposium featured seven speakers, including four early career researchers whose expenses were supported, in part, by IASCUD: Arnaud, Baxter, Broeker, and Haddad. Because IASCUD receives funding from both the DHST and the DLMPST, and because the amount of DHST funding is nearly twice the amount received from the DLMPST, expenses were divided between the two parent organizations in that ratio. DHST funds were used to support Arnaud, Broeker, Chang, and Haddad for a total of 6,094.63 Euro. DLMPST funds were used to support Baxter, Petrukhina, and the IASCUD conference lunch for speakers and guests (15 diners) for a total of 3,020.55 Euro. The expenses submitted to both parent organizations exceed their contributions for 2022 and 2023 (DLMPST 1883 Euro = 1822 CHF; DHST 3500 Euro = 3386 CHF). After spending just over 9,000 Euro last year, we have a total bank balance of 4,150 Euro. Detailed receipts for each speaker are submitted as zip files online. Details of both symposia may be found online at the links above, with photos, as well as below.

Two IASCUD board members, Karine Chemla and Peeter Müürsepp, were speakers at the 24-hour DHST and BSHS Global History of Science and Technology Festival in September 2023.

Artificial Languages in the History of Science and Mathematics

The category, “artificial languages” calls to mind its contrast class, natural languages, spontaneously spoken in many varieties the world over. Artificial languages are more deliberate social constructs often built for specific scientific and philosophical purposes (cf. Lutz 2012). This symposium brings together case studies, from across the sciences and mathematics, featuring artificial languages that emerge between ordinary discourse, as naturally spoken, and formal symbolic notation, as written by scientists and mathematicians. These intermediate languages are not only compelling phenomena in their own right, but also offer a window into the natural sciences as communal, performative, and linguistic activities. The importance of artificial languages in the global history of mathematics has been pointed out by Staal (2007) and Chemla (2006). This symposium will build on these mathematical exemplars even as we seek to widen the scope of our case studies to include examples of artificial languages in the history of the sciences, broadly construed.

Chemla asks what the history of numbers can teach us about artificial languages that function as intermediaries between spoken languages and algebraic symbolisms. Müürsepp considers Leibniz’s characteristica universalis as an abstract project with initial instantiations which, with the benefit of hindsight, presage later developments in logic. Muntersbjorn presents Feature

Talk, an artificial language that acts as an intermediary between ordinary language, People Talk, and formal symbols in the learning progression model of the Algebra Project. Pronskikh shows how, in the field of high energy physics, artificial languages can be associated with complex computer codes used to simulate the interactions of accelerated particles with other particles and atomic nuclei. Chang considers the extent to which departures from natural language make it easier for nonhuman animals to acquire an artificial language. Petrukhina examines the work of Freudenthal and Ollongren, who developed the first and the second versions of lincos (Lingua Cosma), an artificial language for communicating with extra-terrestrials.

Although cultivated in different contexts for distinct ends, the artificial languages discussed in this panel share salient features as they facilitate connections between communities of learners—real or imagined—even as these deliberate discourses inform our understandings of ourselves as scientific knowers, idealizing agents, and language users.

References

Chemla, Karine. “Artificial Languages in the Mathematics of Ancient China” Journal of Indian Philosophy (2006) 34: 31-56.

Lutz, Sebastian. “Artificial Language Philosophy of Science” European Journal for Philosophy of Science (2012) 2: 181-203.

Staal, Frits. “The Generosity of Artificial Languages” International Institute for Asian Studies Newsletter (2007) 44 Summer: 46.

Speakers

1. Karine Chemla: What can the history of numbers teach us about artificial languages
2. Peeter Müürsepp: Leibniz’s Universal Language, the Three Strategies
3. Madeline Muntersbjorn: Feature Talk and the Algebra Project
4. Vitaly Pronskikh: Pidgin and Creole Simulation Codes in High-Energy Physics
5. Shereen Chang: Artificial languages in animal language studies
6. Polina Petrukhina, “Between science and fiction: on the status of universal languages for interstellar messaging”

The Significance of Cultural Diversity in Biomedical Science

The need for representation of diverse groups in biomedical research has long been recognized. Actions have been taken for adequate inclusion of women and members of ethnic and racial minorities in clinical trials and biomedical databases. However, focusing on categories such as race, ethnicity, and biological sex runs the risk of overlooking relevant differences which do not align with these categories. This in turn may lead to harmful stereotypes rather than more precise medicine. Cultural diversity has recently been recognized as a relevant aspect of conceptualizing health, illness, wellbeing, and correspondingly health and illness behaviors.

However, Zanting et al. (2020) warn that current Western medical curricula may be misrepresenting cultural diversity by constructing what amounts to an ‘exotic other’ since they

overfocus on categories such as religion, nationality, and ethnicity. Intersectional approaches to conceptualizing diversity may fare better. Yet, Zanting et al. argue, they still treat some relevant factors as relatively stable categories, which may lead to treating underrepresented groups as deviant. Instead, Zanting et al. point out, culture is dynamic and its influence on health may shift over time. Thus, conceptualizing diversity in medicine should focus on biological differences and contextual factors.

Conceptualizing illness as a form of deviance and otherness inevitably leads to paternalistic attitudes of well-meaning advocates and medical professionals. Washington (2018) argues that contextualism, which focuses on personal values in determining an individual's wellbeing, provides a means for minimizing harmful paternalism in psychiatric practice.

With the growing acceptance of the biopsychosocial model of disease, contextualism naturally extends to the larger context of biomedical research and clinical practice. This model has brought about the recognition that lifestyle and social environment are instrumental for disease treatment and prevention as well as maintenance of good health. It follows then, that culture and personal values are integral in shaping health and illness behaviors.

The aim of this symposium is to attract scholars whose research focuses on the representation of marginalized groups (neurodiverse, transgender, indigenous, and migrant, among others) and invite them to explore the role of cultural diversity and contextualism in medical practice and biomedical research.

References

Washington, N. (2018). Contextualism as a Solution to Paternalism in Psychiatric Practice. Philosophy, Psychiatry, & Psychology 25(4), 235-243. doi:10.1353/ppp.2018.0034.

Zanting, A., Meershoek, A., Frambach, J. M. & Krumeich, A. (2020) The 'exotic other' in medical curricula: Rethinking cultural diversity in course manuals. Medical Teacher, 42(7), 791-798, DOI: 10.1080/0142159X.2020.1736534

Speakers

1. Yasmin Haddad: The value-ladenness of population descriptors
2. Janella Baxter: Biomedical Colonialism
3. Joanna Malinowska: The invisible colours of racism: on the need to decolonise the concept of racism in biomedical research
4. Bennett Knox: Hermeneutical Pluralism: The Neurodiversity Movement and Psychiatry
5. Sarah Arnaud: First-person perspectives and scientific inquiry of autism: towards an integrative approach
6. Nina Atanasova: The Promise of Big Data to Psychiatry: Precision and Prediction
7. Marianne Broeker: Can an algorithm become delusional? Evaluating ontological commitments and methodology of computational psychiatry