

**17th CLMPST
BUENOS AIRES 2023**

**INTERNATIONAL
CONGRESS
OF LOGIC
METHODOLOGY
AND PHILOSOPHY
OF SCIENCE**



MONDAY, JULY 24
9:30 – 14:30

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9:30 – 11:00 OPENING CEREMONY

11:00 – 11:30 COFFEE BREAK

11:30 – 13:00 PLENARY SPEAKER: HELEN LONGINO

AUDITORIUM 1

PLENARY SPEAKER

Helen Longino

(Clarence Irving Lewis Professor of Philosophy, Emerita, Stanford University)

Science, values, and “development”: How images of science matter

Abstract: While the status of traditional cognitive values is highly contested within philosophy, those values remain associated with and inform an image of science and scientific knowledge outside of philosophy. This talk relies on several case studies to explore the impact of this association in the arena of economic development and modernization.

13:00 – 14:30 LUNCH

Sara Eloy (Instituto Universitário de Lisboa (ISCTE-IUL), ISTAR), Pieter E. Vermaas (Delft University of Technology) - Social validation of multidisciplinary design in ICT and Architecture.

Topic: C.8 Philosophy of the Applied Sciences and Technology

Abstract: This paper brings the case of research centres operating at the crossing of the fields of architecture and ICT (Information and Communication Technologies). These centres aim at innovative multidisciplinary research on, for instance, smart buildings, for producing design projects that address societal issues. Yet they lack proper methods for validating these projects for their social impact. We discuss validation practices in ICT and architecture, demonstrate their insufficiency for social validation, and explore methods that can provide this validation.

In software development, it is common to do validation tests of developed products. These include performance testing where applications are tested for their stability and response time, and user acceptance testing where client/customer test applications with real-time scenarios. Assessing how the application may impact society beyond the primary users is rarely done. Examples of social failures in ICT are loss of privacy and bias in AI algorithms.

In architecture validation is mandatory by law for some parts of the design, such as load-bearing structures, safety against fire and energy efficiency. While design projects are assessed against such construction regulation, assessment of acceptance of buildings by future users is only taking place for a minority of designs. Assessment of how architecture can impact society in the future is seldom done. The strongest example of societal failures is social housing after World War II, such as on the outskirts of French cities.

So, for multidisciplinary research that combines ICT and architecture for addressing societal issues, one has to look beyond the existing validation practices.

Firstly, in architecture there are a few instruments for forecasting likely effects or assessing the impact of architecture on users (e.g. post-occupancy evaluation [3], and space syntax [2] that analyses how people move through buildings). Architects and urban planners rarely use these instruments and, if they do, apply them after construction, which might lead to substantive costs (if reconstruction or demolishing is needed, as for, e.g., post-war social housing). A step forward would be to use these instruments before construction.

Secondly, the European Commission has recently introduced new requirements in research project proposals to explain the potential impact of technological development when AI is involved (see, e.g. [1]). This is a step towards identifying potential social negative impact, but it is still not enough since there are no clear instruments available for giving these explanations.

A third route towards finding validation methods is to look at current developments in engineering and design to realise moral and social values in the design of technology and products (e.g. [4]). This development includes finding methods for validating these values, which may be transposed when the values involved in multidisciplinary ICT-architecture design projects are explicitly articulated.

References

- [1] European Commission (2020) Gender & intersectional bias in artificial intelligence. <https://op.europa.eu/en/publication-detail/-/publication/286e1432-021a-11eb-836a-01aa75ed71a1>.
- [2] Hillier and Hanson (1984) *The Social Logic of Space*. CUP.
- [3] Preiser, White, and Rabinowitz (2015) *Post-Occupancy Evaluation*. Routledge.
- [4] Van den Hoven, Vermaas and Van de Poel (eds.) (2015) *Handbook of Ethics, Values and Technological Design*. Springer.