

K-PLEX – Knowledge Complexity



Introduction

This humanities-led project examined how humanities and cultural researchers deal with messy data and what implications can be drawn from their approaches for big data research. It identified key aspects of data that are at risk of being lost in processes of large-scale data aggregation, and ignored in subsequent knowledge creation processes. It thereby advocates for AHSS-specific expertise in STEM-driven research fields.¹

Keywords

Big data, digital humanities, social/cultural/psychological anthropology, language technology, data science

Summary

The K-PLEX project was funded by Horizon2020 as an ICT programme “sister project” with the primary purpose of informing future research and policy in the ICT space. The funding enabled the principal investigator to unite a team of experts known from former projects and meetings. The team included research groups in both digital humanities and anthropology, a research data archive and an enterprise specialising in language technologies. The principal investigator Jennifer Edmond considers Digital Humanities as a field of study which invites interdisciplinary knowledge integration: **“Digital humanities itself is a great example of how humanistic knowledge creation can interact with other epistemic paradigms, given that we work all the time at the border of technology, the arts, culture and information science.”**² Reflection and integration of the different perspectives in the project team was built into the structure of the project and supported by several face-to-face meetings, culminating in a week-long writing retreat.

The project aimed to raise the awareness of the risks inherent in big data processing and corresponding knowledge creation processes. The project team explored the attitudes and opinions of researchers and professionals within four themes: discourses of data, hidden data, human bias in data and the loss of cultural information in data. **“Each thematic strand produced insightful and significant results, but the most compelling outcomes of the project stand at the intersection these themes”** (Edmond et al. 2018, p. 8). Deliverables included publications, book chapters and conference contributions, but also a brochure for big data researchers, policy makers and ICT professionals, posts in big data-related newsletters, open sharing of all research data, a blog, media reports, invited talks and the participation in events organised by the European

¹ STEM is an acronym for the fields of Science, Technology, Engineering, and Mathematics.

² Net4Society, Success Stories in SSH Integration. https://www.net4society.eu/files/net4society_d3_3_3_factsheets_ssh_integration.pdf p.14.



Commission and the European Parliament. Amongst other results, the project provided empirical analysis that depicts sources of bias in big data research.

The AHSS focus helped to demonstrate how important information – e.g., on identity, culture and individual emotions – is difficult to express in aggregable data. Furthermore, it raised awareness on the limitations of big data when attempting to capture complex phenomena. The project team developed constructive – and rather radical – recommendations for big data research.



In the place of incremental change, the K-PLEX results point toward four possible areas of quite radical intervention into how knowledge creation pathways might be re-constructed for the next generation of big data and society. Such measures will take courage to pursue, and their likelihood of upsetting extant hierarchies and power relationships will meet with resistance. The opportunity they could bring to re-establish the foundational assumptions of big data research could, however, be transformational, for technological as well as social development.

Edmond et al. 2018, p. 17

Whereas many of the case studies in the SHAPE-ID Toolkit illustrate a symmetric relationship between STEM and AHSS, this case study shows how (A)HSS disciplines advocate for their cause.



We'd like to think that the value of having an SSH-led project in the area of big data was that we were able to see things others take for granted. We were not always listened to in the big data community meetings, but we were there, we were represented, and our recommendations will stand.

Jennifer Edmond interview, Net4Society, p.14

To sum up, this case study illustrates how problem framing in a STEM-driven research field was approached with an AHSS perspective. It advocates for the inclusion of AHSS-specific expertise, such as understanding the complexity of identities, behaviours and meaning, considering ethical perspectives and addressing inequalities, as well as deriving alternatives from critical perspectives and reflexivity. In broader terms, it shows how AHSS contribute to the (re)framing of STEM-driven research problems such that human experience becomes the focus of interest.

Further Resources

- [K-PLEX project website](#)
- [Net4Society case study](#)
- Edmond, J., Horsley, N., Huber, E., Kalnins, R., Lehman, J., Nugent-Folan, G., Priddy, M. & Stodulka, T. (2018): [Big data & complex knowledge: Observations and recommendations for research from the knowledge complexity project](#). Trinity College Dublin.

