

**Standardization in Action:
From the Adoption of the *Ecological Metadata Language* to its Enactment**
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As a federated infrastructure directed toward the ecological sciences, the Long-Term Ecological Research program aims at enabling interdisciplinary collaboration and preserving data for the long-term. With more than 1200 researchers and students involved in the program conducting interdisciplinary research at distributed research sites across the United States, interoperability is a critical issue. The LTER program participants have focused recently on a metadata standard, the Ecological Metadata Language (EML), as a strategy to achieve data interoperability. Presented as a success by its developers, the active deployment of the standard presents challenges for its users.

This presentation will contrast stories of EML that emerge from two distinct actors inside the LTER: the point of view of developers, the primary designers, and the view of information managers, the local enactors. From the developer perspective the EML story is almost complete and one of success as the standard has been endorsed – by common consensus – by all the actors in the program, including the information managers. The latter tell a different, unfinished story, unfolding with the endorsement of EML. From their perspective, implementation is frequently problematic as incorporation of the standard into highly interdependent, pre-existing local practices of data management proves difficult with implementation processes and tools limited, immature, or not yet developed. As a result, alternative, and ad hoc solutions are developing.

Drawing on Strauss' notion of 'trajectory', we provide an understanding of the divergence of these stories by situating them into the actors own trajectories, accounting for the ways in which the intervention represented by a standard changes the course of these trajectories – and considering how the standard makes explicit the implicit, which roles and requirements are implied for the actors, what part of the work becomes visible or invisible, as well as how the standard is adapted, modified, and transformed as it is integrated into local work flow.

This exemplary case reveals neither the limits of standardization in practice, nor the capacity of resistance of the users facing enactment of a community standard. Rather, it discloses that the local work of adaptation to a standard and the adjustment of a standard is inherent in the standardization process, and as such, has to be acknowledged and taken into account with each and every interoperability endeavor.