

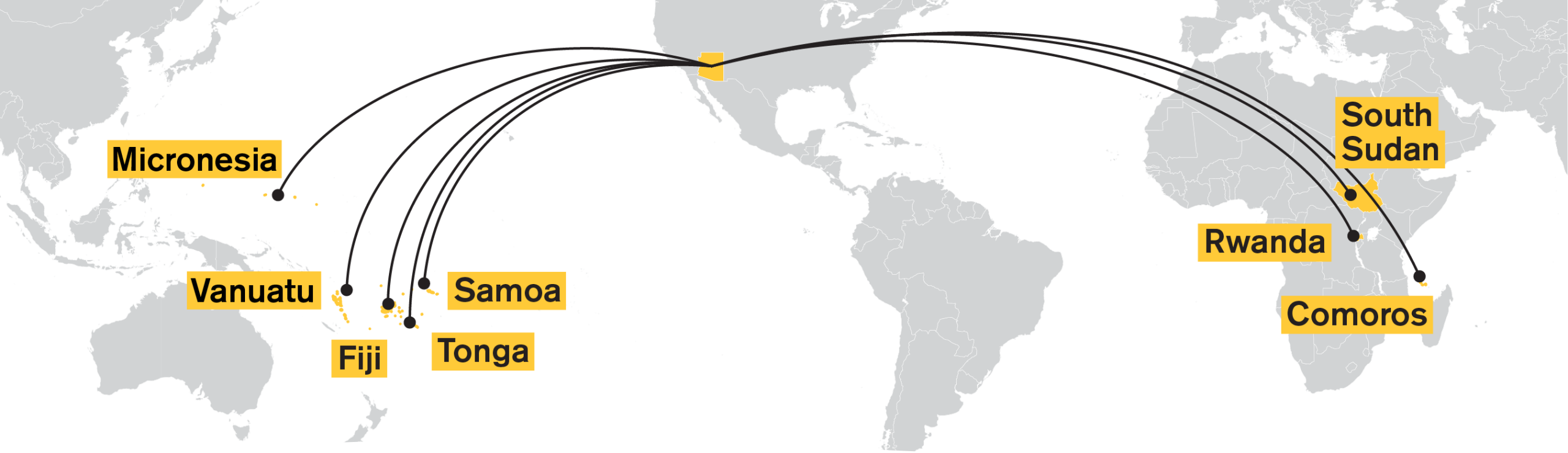


Unblackboxing transparent boxes: humanitarian digital libraries and the disconnected

Martín Pérez Comisso

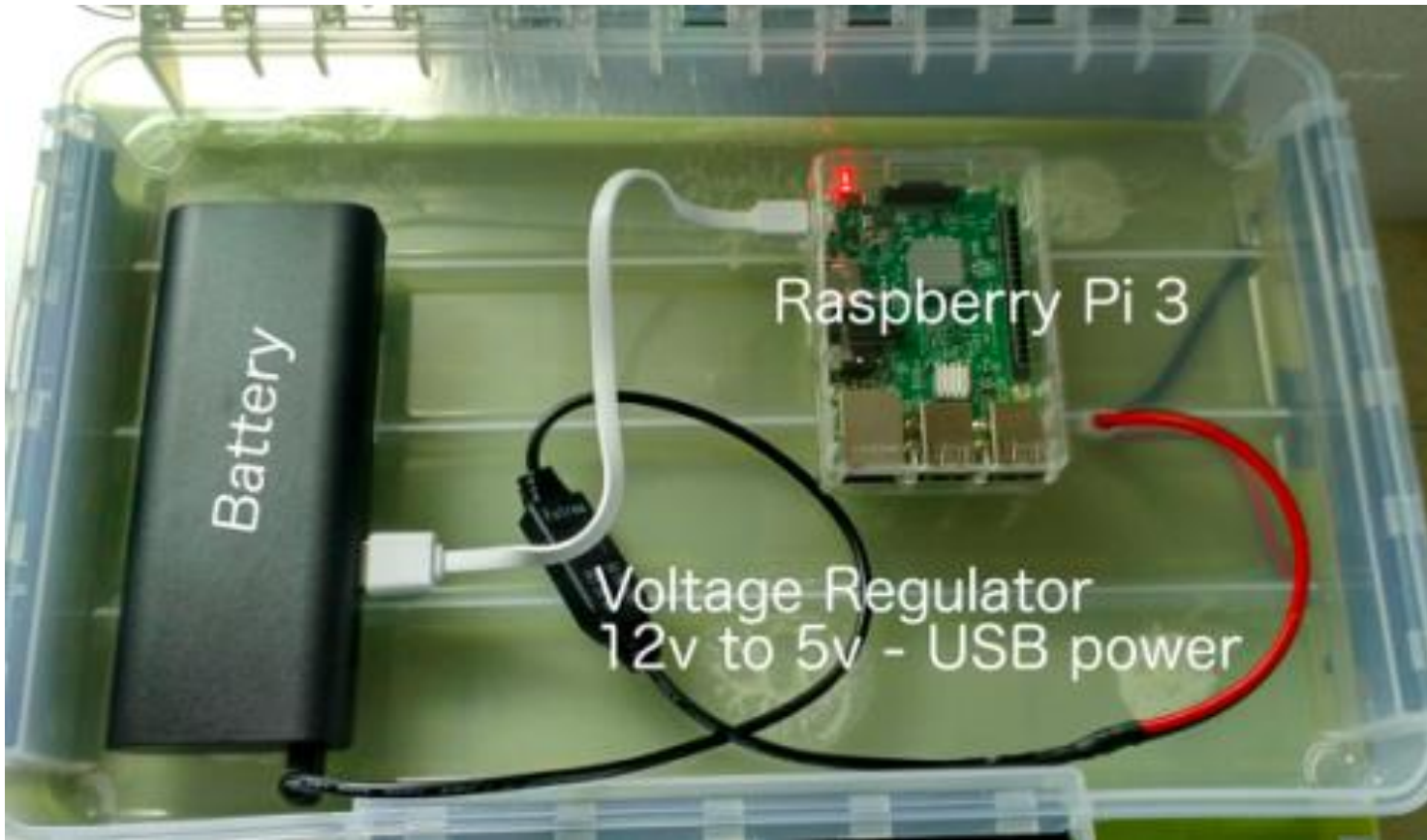
HSD 504 Introduction to
Sociotechnical systems

April 15th, 2019



The Dis/connection

- Educational experience relies in the access and distribution of knowledge
- Current digital technologies increase the opportunities to access to it... if they are connected
- What happens for those who are not connected to the internet? What kind of futures have they available? What solutions are possible for this problem?
- Connectivity became a new structure of power and privileged in the information society



“It’s a durable, portable solar powered **digital library** over an off-line WiFi hotspot, designed to mimic an online experience. Making use of open access educational resources and ever-smaller and more efficient technology, SolarSPELL provides an all-in-one, self-powered plug-and-play kit.”

SolarSPELL



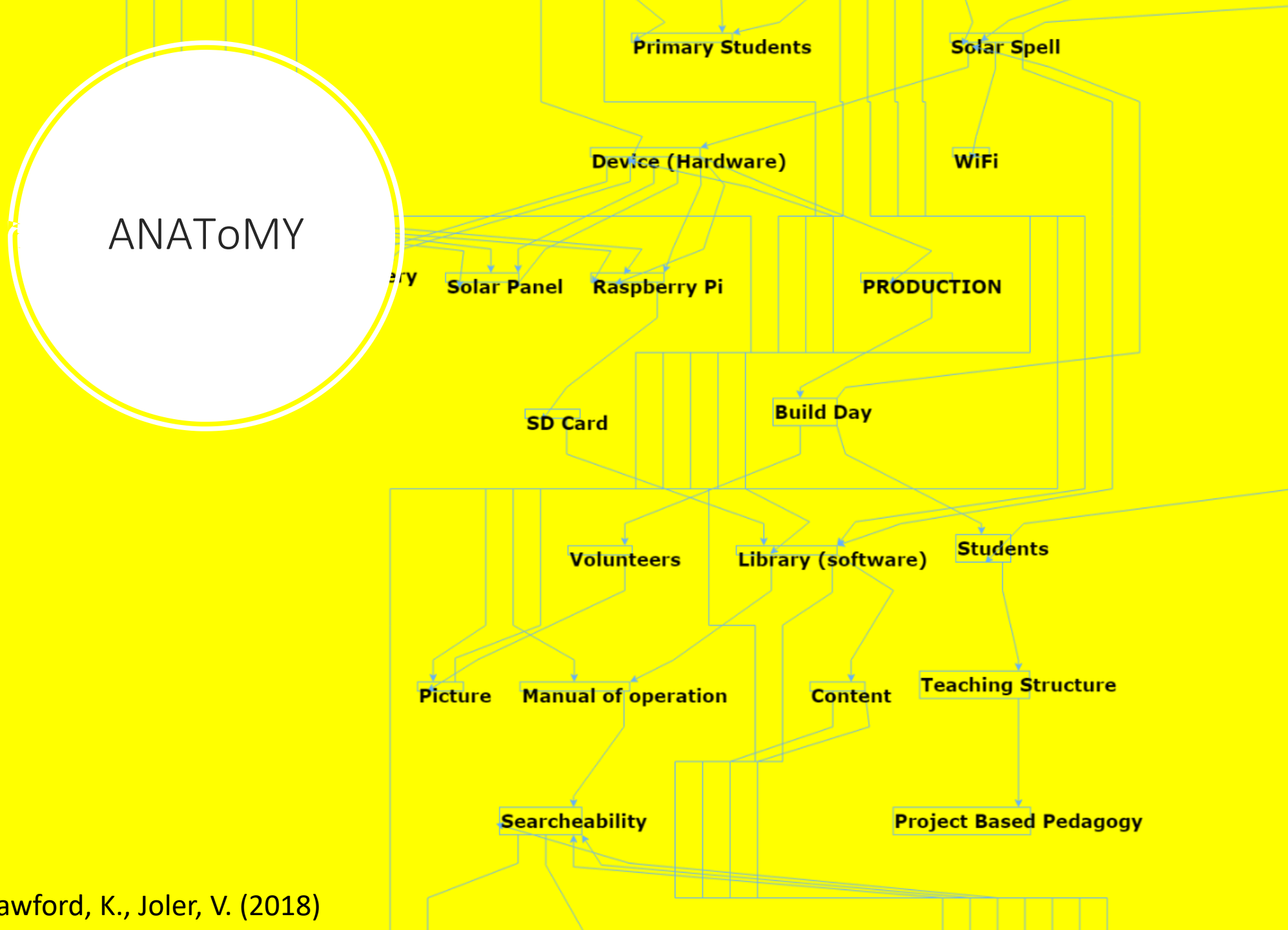
Question, methods and sources

Question: **How to differ the interpretation of the SolarSPELL's under sociotechnical systems theories?**

LTS: Large Technical Systems (Hughes, 1983; Sovacool, 2018). Systems builders, momentum, load factor, style, integration

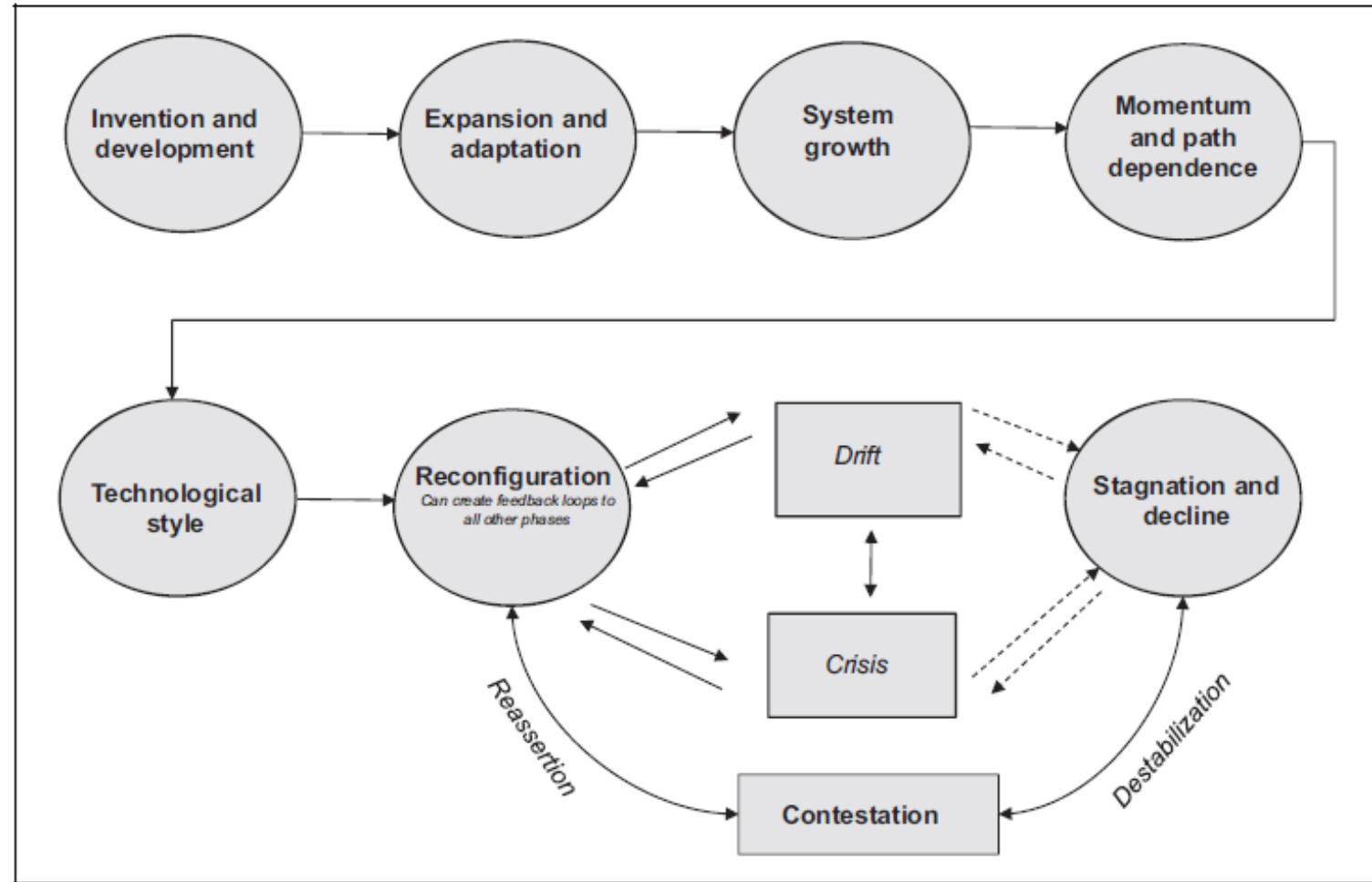
ANT Actor-network Theory (Callon, 1984; Latour 1992, 1999, 2005, Law, 1992, 2001) Actants, translations, enrollement, entanglements, assamblages,

Sources of information for this research: 2 years of participating as student in the Project, one semester mentoring some actions, conversations (non formal interviews) with the team, previous students and collaborators. Reserved documentation from the Project administration, my "own" device.



LTS

- Large technological systems is an historical approach to explain the evolution of a system from a prototype to a intricate collection of parts connected.
- Complexity produce (at least) two new properties: momentum and style
- Hughes identify 5 stages, Sovacool incorporate 3 new stages related to obduracy.



SolarSPELL under LTS+

- Design and System-builders
- High control in the content, distribution and partnerships
- Production is based in volunteer work. Essays of an supply chain.



- Momentum is increasing, meanwhile extends its functionalities, distribution and recognition
- Little understanding about the device in field doesn't show the effects of modification in practices, behaviors, learnings and values in community
- Rotation of early adopters (PeaceCorps) is a threaten in the stabilization of the system.
- Each community stablish a different style, depending of alternatives solutions (travel to networked áreas, use of common resources), being something to take more attention.



ANT

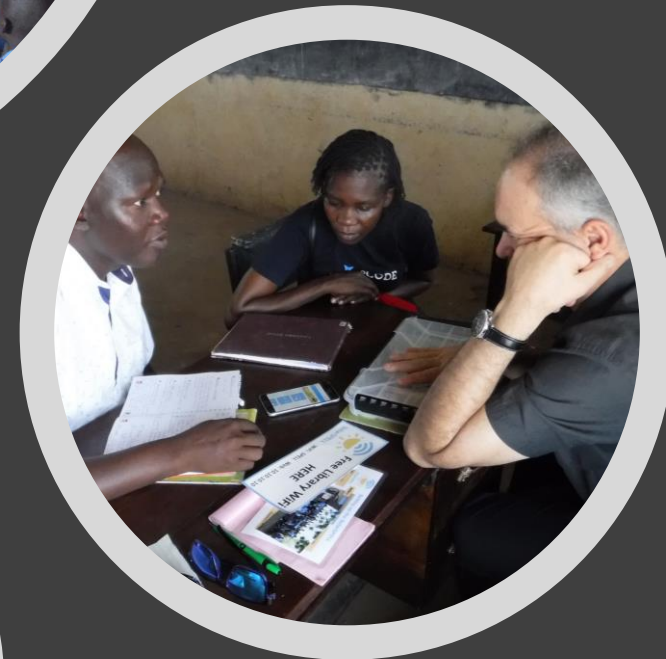
Description over understanding.

Traduction (creation of ANT) → Problematization, Interestment, Enrollment and Mobilization

Obligatory passage point (OPP)

Follow the actors, examine inscriptions (mapping material and semiotics relations)

Puntualization/Depuntualization (Collapse of complexity in one actor)



SolarSPELL under ANT

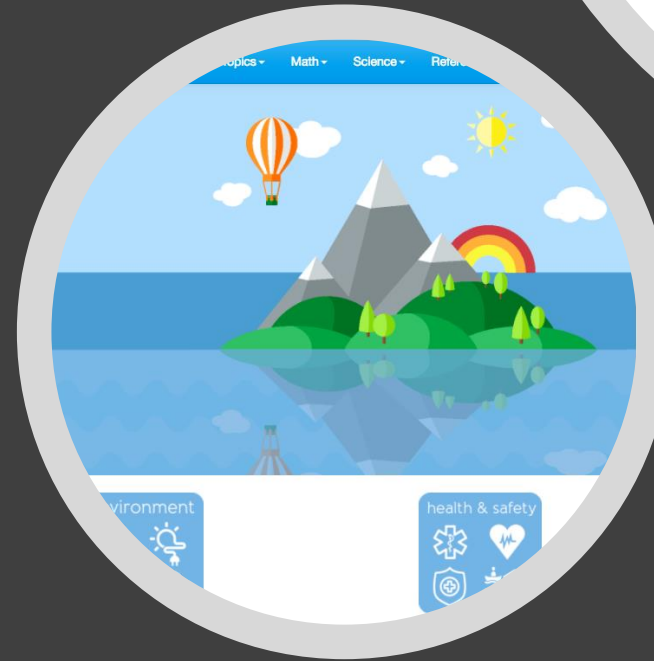
- Problematization: Access/Opportunity to digital resources/way of thinking
- Interestment: Center-peripheria in material, intellectual and organizational ways
- Enrollment: transference (of capabilities, resources, agencies)
- Mobilization: Need of connectivity, opportunity to thrive (OPP!)



- Alignment of internal elements (battery, voltage regulator, solar panel, RPi, SD Card)
- Lack of training (in teaching practices, WiFi, video reproduction)
- Users are puntualized (as teachers, volunteers, peace corps, students...)
- Due to OPP, silver bullet discourses are used in representation of the ANT (webpage)

Complexity in dis/connection

- How theories Works?
- What is different between results?
- What is missing?
- What new questions emerge?
- What we (I) can do with these insights?



A high-angle photograph of four school children sitting in a circle on a concrete floor. They are wearing light blue short-sleeved shirts and red skirts or shorts. Three of the children are holding black tablets, and one is holding a yellow pencil. A black grid mat is on the floor in the center. The children are smiling and looking towards the camera. A white circular overlay with a thin gold border is in the top right corner, containing the text "Questions?".

Questions?

Selected References

Callon, M. (1984). Some elements of a sociology of translation: domestication of the scallops and the fishermen of St Brieuc Bay. *The sociological review*, 32(1_suppl), 196-233.

Crawford, K., Joler, V. (2018) Anatomy of AI. Available at <https://anatomyof.ai/>

Hughes, T. P. (1983). Networks of Power: Electric supply systems in the US, England and Germany, 1880-1930. *Baltimore: Johns Hopkins University*.

Hughes, T. P. (1987). The evolution of large technological systems. *The social construction of technological systems: New directions in the sociology and history of technology*, 51-82.

Jurmo, P. (2017). Re-thinking English literacy development in Tonga: A case study, 2012–2017. *Prospects*, 47(3), 215-228. Available at <https://link.springer.com/article/10.1007/s11125-018-9427-z>

Latour, B. (1993). *We Have Never Been Modern*. Harvard University Press.

Latour, B. (1999) On recalling ANT. In Law, J. After ANT

Law, J. (1987). The structure of sociotechnical engineering—a review of the new sociology of technology. *The Sociological Review*, 35(2), 404-425.

Law, J. (2001) Actor Network and Material Semiotics. Materialities.org

Le Bot, J., & Noel, M. (2016). “Making and Doing” at 4S Meeting (Denver): Let’s extend the experiment!. *EASST Review*, 35(1), 34-37. Available at https://hal.archives-ouvertes.fr/hal-01396598/file/LeBot_Noel.pdf

Linzy, K., & Hosman, L. (2017). The SolarSPELL Offline Digital library. IFLA Conference papers. Available at: <http://library.ifla.org/2106/1/205-linzy-en.pdf>

Oyelude, A. A. (2016). What’s trending in libraries from the internet cybersphere—alternate technology use—03–2016. *Library Hi Tech News*, 33(10), 15-16.

Perry, A. (2019). Global Education, Global Challenges: Licensing for the New American University. *Against the Grain*, 29(4), 43. Available at <https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=7817&context=atg>

Redfield, P. (2016). Fluid technologies: The Bush Pump, the LifeStraw® and microworlds of humanitarian design. *Social studies of science*, 46(2), 159-183.

Sovacool, B. K., Lovell, K., & Ting, M. B. (2018). Reconfiguration, contestation, and decline: conceptualizing mature large technical systems. *Science, Technology, & Human Values*, 43(6), 1066-1097.

Thomson, I. (2016). OERs Taking Schools from Resource Poor to Resource Rich. Available at <http://dspace.col.org/bitstream/handle/11599/2520/PDF?sequence=4&isAllowed=y>

Theory/Model	Assumptions	Emphasis	Key concepts
Actor-Network Theory (ANT) – Callon (1984), Law (1989, 1999), Latour (1992, 2005)	<ul style="list-style-type: none"> - General symmetry between all actors - Follow the actors - Examine material and semiotics inscriptions 	Agency: how actors (human and non-human) build and become entangled in actor networks	Network assemblages, translation (Problematization, Interestment, Enrollment and Mobilization)
Large Technical Systems (LTS) – Hughes (1983), Sovacool (2018)	<ul style="list-style-type: none"> - Evolution of the system over time - Increasing resistance to change 	Systems: large-scale, capital intensive, sociomateriality and subsystems	System builders, momentum, coupling, style.
Technology Appropriation – Eglash (2007), Quezada & Perez Comisso (2016)	<ul style="list-style-type: none"> - Collected Individual experiences (postphenomenology) can explain local networks - Storytelling of experience decrease transparency 	Trajectory: which process (dis)connects human and non-humans in a context	Access, learning, Incorporation, transformation, transparency