

Designing for Quality of Life



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<http://GerryStahl.net/pub/discussant.pdf>

What is our QoL?

- QoL is now about the **globe's life**, not individual life – see these recent publications:



- **Economic inequality** ([Ekbja & Nardi, 2017](#)) – need for democratic economy & just global world order
- **Climate change** ([Latour, 2017](#)) – need for ecological sustainability
- **Fake news** (Trump, 2017) – need for knowledge-building communities ([Bereiter & Scardamalia, 2018](#)) and deliberative reasoning ([Schwarz & Baker, 2017](#))

Consequences of: technology design &/or of capitalism?

- ***Automation** leads to unemployment for many & unimaginable wealth for a couple of CEOs*
- ***Climate change** is a consequence of industrialization*
- ***Fake news** is the new communication by social media*

- ***Automation** is driven by the attempt to minimize labor time in production*
- ***Climate change** is an external cost of capitalist production and consumption*
- ***Fake news** is a phenomenon of fetishism of commodities and the ideology of individualism (including destruction of global world order)*

Beyond CSCL's affordances



- Cindy's impressive cataloging of affordances researched by CSCL to date!
- *BUT*: How to respond to **major issues of our world**, which determine our QoL?
- *BUT*: **Vision of CSCL** for the world of the future?
- *BUT*: **Philosophical response** to Pelle Ehn's call for decentering and thinging?
- *BUT*: **Methods to analyze impact** of the CSCL tools Cindy & Heisawn compiled, for our QoL?

CSCCL for Group Cognition

- **Knowledge Forum** – writing and inscriptions as building knowledge collaboratively – support for collaborative knowledge building ([Bereiter & Scardamalia, 2018](#))
- **Argunaut & Digalo** – support for deliberative discourse in various historical cultures through argumentation ([Schwarz & Baker, 2017](#))
- **Virtual Math Teams (VMT)** – support for collaborative dynamic geometry as contemporary form of classic reasoning about dependencies in world ([Stahl, 2017](#))

A diversity of theory & methods

- **Decentering** away from individual unit of analysis
 - Latour actor network theory – look at temporal sequences of words, gestures, configurations of visible artifacts, group practices, active roles of artifacts, inscriptions, immutable mobiles, practices, knowledge artifacts
- Not just mental representations, but new **causality** and **agency** thru group interaction, group practices. Technological artifacts as “ANT agents”, as “used instruments”, as “thinging things”

- Analyzing how things act as **agents**– not affordances as Aristotelian attributes, but as opening worlds of activity



- **Thing-ing** in VMT, KF, Argunat: Discourse has life of its own. Structuring into perspectives, forums, arguments, drawings creates meaning. Dynamic-geometry app provides feedback about design of mathematical constructions, entering into dialog with learners and introducing knowledge from before Euclid

Design-Based Research

- Not design by designer intentions or models of learner psychology, but by how agents actually take up designed world in DBR
- Each kind of actor can be analyzed by some methodology: establishment of tacit group practices through explicit negotiation, conversation analysis, sequential analysis, animations of drawings, ANT....
- Conversation Analysis of discourse and gesture as artifacts/agents. Interactions among semantics or affordances etc.. Reception or take up. Open-ended and ambiguous meaning-making processes
- Group practices as tacit behaviors at group unit of analysis
- Instrumental genesis ([Rabardel & Beguin, 2005](#); [Rabardel & Bourmaud, 2003](#))
- The thing-ing of socio-material assemblies that evolve over time.
- User dialogs with “the materials of the design situation” ([Schön, 1992](#))
- In CSCL, shared group practices for using new artifacts and meanings mediate between individual and social units of analysis or the construction of social order thru structuration ([Giddens, 1984](#)). See *Essays in Philosophy of Group Cognition* ([Stahl, 2015](#)).

CSCCL to understand our world

- Knowledge Forum involves and models deep collaborative knowledge building
- Argumentation software structures democratic communicative competence (Dewey, Habermas)
- List of 60+ group practices of collaboration & math thinking & dependencies in the world – adopted in VMT ([Stahl, 2016](#))
- CSCCL collaborative learning may help prepare groups for surviving in a world of global economic interdependencies, climatic ecologies and obfuscatory fake news

Conclusions

- Our QoL is subject to global forces and crises. Traditional philosophy, technology and design do not escape these forces, but are part of them. To improve our QoL, CSCCL must help us understand our world in networked groups by supporting critical, insightful “group cognition” ([Stahl, 2006](#)) and **shared understanding of complex global issues**.
- CSCCL needs a **21st century theoretical framework**, incorporating Heidegger’s ontology of thing-ing, Latour’s actor-network theory, group-cognition....
- This involves more than simply selecting from existing CSCCL technological affordances – exploring ways to support group cognition using **many forms of fine-grained analysis** of real-world instrumental genesis, including tracking the adoption of valuable group practices during design-based CSCCL research ([Stahl, 2013](#)).

References

- Bereiter, C., & Scardamalia, M. (2018). *Foundations of knowledge building: Education for a knowledge-creating society*. Routledge.
- Ekbia, H., & Nardi, B. (2017). *Heteromation and other stories of computing and capitalism*. MIT Press.
- Giddens, A. (1984). Elements of the theory of structuration. In *The constitution of society*. (pp. 1-40). U of California Press.
- Latour, B. (2017). *Facing Gaia: Eight lectures on the new climatic regime*. Polity Press.
- Rabardel, P., & Beguin, P. (2005). Instrument mediated activity: From subject development to anthropocentric design. *Theoretical Issues in Ergonomics Science*. 6(5), 429–461.
- Rabardel, P., & Bourmaud, G. (2003). From computer to instrument system: A developmental perspective. *Interacting with Computers*. 15, 665–691.
- Schön, D. A. (1992). Designing as reflective conversation with the materials of a design situation. *Knowledge-Based Systems Journal, Special Issue on AI in Design*. 5(1), 3-14.
- Schwarz, B., & Baker, M. (2017). *Dialogue, argumentation and education: History, theory and practice*. Cambridge University Press.
- Stahl, G. (1975). *Marxian hermeneutics and Heideggerian social theory: Interpreting and transforming our world*. Unpublished Dissertation, Ph.D., Department of Philosophy, Northwestern University. Web: <http://GerryStahl.net/elibrary/marx>
- Stahl, G. (2006). *Group cognition: Computer support for building collaborative knowledge*. MIT Press. Web: <http://GerryStahl.net/elibrary/gc>.
- Stahl, G. (2013). *Translating Euclid: Designing a human-centered mathematics*. Morgan & Claypool Publishers. Web: <http://GerryStahl.net/elibrary/euclid>.
- Stahl, G. (2015). *Essays in philosophy of group cognition*. Philadelphia, PA: Gerry Stahl at Lulu. Web: <http://GerryStahl.net/elibrary/theory>.
- Stahl, G. (2016). *Constructing dynamic triangles together: The development of mathematical group cognition*. Cambridge University Press. Web: <http://GerryStahl.net/elibrary/analysis>.
- Stahl, G. (2017). Group practices: A new way of viewing CSCL. *International Journal of Computer-Supported Collaborative Learning*. 12(1), 113–126.

Support for Learning & Life: *Discussant*



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