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**Relating Systems Thinking and Design
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In Defense Of Friction: Designing for agency through constructivist entanglements

Jennifer Briselli

This article seeks to interrogate and reframe the role of friction in design from a separate and isolated phenomenon that hampers a system to one that emerges from the entangled interactions between objects and their environments and serves as a valuable feedback cycle within the system. This feedback can teach us how to facilitate more equitable experience ecosystems where agency is organically empowered to emerge instead of granted or allowed. To this end, design is overdue for a constructivist turn as a counterbalance to cognitivist and behaviourist modes of thinking. Constructivist approaches necessarily rejigger the relationships between designer and designed and reframe their interactions as emergent entanglements rather than linear dynamics. Drawing on the work of Dewey, Friere, Mezirow, Barad, and others, this presentation explores and synthesises key ideas from agential realism, transformative learning theory, and liberation pedagogy through a constructivist, systems-oriented lens to identify themes with great potential for the work of systemic designers.

Keywords: constructivist theory, transformative learning theory, agential realism, experience strategy

RSD: Learning & Education, Methods & Methodology

The nature of friction

This article seeks to interrogate the nature of friction in design and to reframe its role from that of a discrete phenomenon that hampers a system to one that emerges from

the entangled interactions between objects, actors, and their environments and serves as a valuable feedback cycle within a system. Learning to observe friction as a feedback cycle instead of merely managing and mitigating its presence can teach us how to facilitate more equitable experience ecosystems where human (and non-human) agency can be more organically empowered instead of paternalistically granted or begrudgingly allowed.

To this end, design is overdue for a constructivist revolution. The cognitivist origins of human-computer interaction, which focused on brain science and information processing, and the behaviourist frameworks that have earned their spotlight in recent years by addressing behaviours as an end run around internal mental process, represent but two legs of a conceptually three-legged stool, highlighting the relative imbalance we observe in many innovation spaces and a potentially critical role for systemic design to play in rebalancing. In contrast to prevailing (albeit reductionist versions of) these cognitivist or behaviourist lenses, constructivist approaches necessarily rejigger the relationships between designer and design and reframe their emergent entanglements. In a complementary manner, systems-oriented design affords design practitioners a facilitative role akin to the tending of human experiences as organic ecologies where friction-as-feedback helps mitigate and even pre-empt runaway power imbalances and other harmful dynamics from emerging—a welcome alternative to the more paternalistic control required to keep overly engineered or mechanistic systems operating efficiently as a constant battle against the energy of the system. As such, we might take as inspiration the words of Buckminster Fuller, “It is not for me to change you. The question is, how can I be of service to you without diminishing your degrees of freedom?”

To answer this question, we can look to another field that has traversed the intersections of cognitive, behaviourist, and constructivist theory in support of agency, dignity, and freedom: education.

Drawing on the work of Dewey, Friere, Mezirow, Kegan, Barad, and others, we can explore and synthesise key ideas from agential realism, transformative learning theory, and liberation pedagogy through a constructivist, systems oriented lens to identify themes with great potential for the work of systemic designers, including the argument

that education is the most radical form of participatory systemic design, and illustrates how friction is a meaning-making form of information exchange—and one of the most important entanglements in our praxis.

Primers

- Dewey's work on experiential learning and his emphasis on the interconnectedness of knowledge and action. His ideas highlight the importance of active learning, critical reflection, and the role of experience in shaping understanding.
- Freire's concept of liberation pedagogy and conscientisation in his conception of education as a tool for empowering individuals and fostering critical consciousness. These ideas can be applied to systemic design to promote agency and freedom.
- Mezirow's transformative learning theory emphasises the role of critical reflection and perspective transformation in learning. Mezirow's theory might be leveraged in design to encourage meaningful change and facilitate equitable experience ecosystems.
- Kegan's work on adult development and the theory of constructive developmentalism, specifically, different stages of individual and collective development and design for growth and transformation.
- Barad's concept of agential realism focuses on the entanglement of human and non-human agencies. This framework can inform deeper understanding and design within complex, interconnected systems.
- Sanders' and others' work on generative codesign focuses on the collaborative and participatory potential of generative, facilitative methods that empower diverse stakeholders, foster co-creation, and enhance the organic empowerment of agency within design ecosystems.

I advocate for a paradigm shift in systemic design by reframing friction as a valuable feedback cycle and adopting constructivist and systems-oriented approaches to listen to and respond to this feedback, designers can empower greater agency, dignity, and freedom within experience ecosystems. Drawing inspiration from ideas from agential

realism, transformative learning, and liberation pedagogy, the presentation highlights the potential for systemic designers to embrace education as a radical form of participatory systemic design. By recognising the significance of friction as a form of information exchange, designers can navigate and leverage its entanglements to create more meaningful and impactful design interventions.

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Reflexivity Statement

As a cisgender white woman, I recognise the potential biases and privileges that may shape my perspectives and contributions to the discourse. I acknowledge that as a cisgender individual, my understanding of gender-related issues may be limited, and I

aim to engage with diverse voices and experiences to ensure inclusivity in my work. As a white woman, I am aware of the systemic advantages and privileges afforded to me within society and strive to amplify marginalised voices and perspectives that are often underrepresented in academic and professional spaces. I am grateful, in particular, for the access to education, namely physics, that has made engaging with works like Barad's more accessible for me than is likely for others. Finally, I'd like to acknowledge that I live and work among the ancestral lands of several Indigenous communities, including the Massachusett, Wampanoag, and Nipmuc peoples, who have lived on this land for thousands of years, as a small step towards recognising historical injustices and promoting a more inclusive and equitable future.