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Self-organizing a strange attractor

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Symposium Summary Speech RSD3

Harold Nelson

Looking back—an appreciative critique of RSD events.

Looking forward—an invitation to even more inquiry.

There are these two young fish swimming along and they happen to meet an older fish swimming the other way, who nods at them and says

"Morning, boys. How's the water?"

And the two young fish swim on for a bit, and then eventually one of them looks over at the other and goes

"What the hell is water?"

David Foster Wallace¹

No one really understands water. It's embarrassing to admit it, but the stuff that covers two-thirds of our planet is still a mystery.

Philip Ball²

¹ From the commencement address given to the graduating class of Kenyon College in 2005

² *The mystery of water; Essay, Nature 452*, 291-292 (20 March 2008) | doi:10.1038/452291a; Published online 19 March 2008

Like water, design is ubiquitous and a mystery, while systems thinking appears to be its defining medium. So “What the hell is systemic design?” What sort of approach can be used to interrogate such a mystery? The forms of collective interrogation used in RSD events thus far include seminar, symposium and conference.

This Symposium (2014) is the third in a series of events under the title: The Relationship Between Systems Thinking and Design (RSD). The focus of all three events has been focused on the topic of *systemic design*. The term is used as a referent to the relationships, links, and connections among varieties of systems based perspectives and design praxis as well as the emergent qualities of such couplings.

The need for this new compound term, systemic design, grew out of my immersion into what I have named the ‘Berkeley Bubble’—a network of scholars and professionals in the 1960’s and 70’s who were associated directly or indirectly with academics and researchers on the UC Berkeley campus. People both on and off the UC campus were working, with varying degrees of cooperation, on the connections between the behavior of complex social systems and intentional change—i.e. planning and design. In order to denote the integration of both of these complex domains I started using the term *systemic design*. This idea has become a germinal idea for formal inquiry at RSD events.

The first of the RSD events was a classic *seminar (seed plot/bed -Latin)*.

This seed plot was tilled at Oslo School of Architecture and Design

(AHO) in October 2012. It was prepared by Birger Sevaldson with the assistance of Marit Helgessen as part of the Systems Oriented Design project at AHO. The emphasis was on how systems approaches can be adapted to design practice. The seminar involved both formal presentations and informal conversations. The speakers comprised a good mix of internationally known designers and systems thinkers, PhD fellows, and previous Master students from AHO.

The *seed* that took root at that seminar was *systemic design*. The seeding occurred during a classic *symposium (to drink together-Greek)* over coffee and tea, which self-organized in an Oslo hotel at the end of the AHO seminar. Those involved in this first symposium included: Alex Ryan, Birger Sevaldson, Colleen Ponto, Harold Nelson, Michael U. Hensel, Peter Coughlan, and Peter Jones.

This seedling grew into a second RSD event (2013) that was structured as a traditional academic *conference* (a meeting of people who *confer* about an academic topic by sharing individual research and projects)—the topic of which in this case was systemic design. The organizing committee was formed from those who had self-organized themselves into the original RSD symposium. Because, it was hoped by the organizers that the next gathering would garner more academic interest and institutional support internationally, it was natural and prudent to ‘execute the familiar’ by transforming future RSD gatherings into the efficient and effective design of academic conferencing.

This does not mean that future RSD conferences should not be augmented by a diverse collection of activities focused in different ways and by different means on inquiring into the nature and applications of systemic design. I will talk later about some possible new strains of collective inquiry that might be explored. For now, it is important to note that the last two conferences have successfully yielded a substantial variety of international attendees and a diverse crop of scientific studies.

This, the third RSD activity (2014) continues the cultivation of an *aggregative inquiry* process: an academic conference, where research findings and case studies are collected into categories of evidence demonstrating systemic design approaches and consequences. The fourth RSD activity (2015), now relocated to North America, will also be an aggregative inquiry. This conference will continue to enrich the storehouse of materials provided by previous RSD activities from which we can draw inferences about the nature of systemic designing.

The quality of each contribution to each conference will be judged in part by the critically appreciative responses to earlier proceedings as well as these published proceedings—by individual scholars and practitioners such as you. The aggregated value of these contributions will be a result of the combined critiques of communities of individuals sharing their reflections, which means that a comprehensive appreciative critique will begin to emerge over time.

An appreciative critique of the RSD activities involves several types of inquiry:

The **first** type involves determining what is believed to be true about systemic design. Are there invariant principles and facts that underlie the systemic design framework?

The **second** type of inquiry involves determining what is the reality of systemic design now? Is it evolving and changing and how does it get expressed in practice? For example the research findings and case studies presented at RSD2 and RSD3 could provide some insight.

The **third** type of inquiry searches for what would be considered to be an ideal formulation of systemic designing. What do scholars, academics and practitioners feel would be desirable?

The **fourth** type of inquiry involves determining what form of systemic designing would be prudent—i.e. wise, well thought out, sensible, politic, viable, realistic etc.

In the interim, and while waiting for the future responses to this conference to be made, I would like to invite you to consider other forms of inquiry that might be explored for non-conference activities that would help interrogate the mystery of systemic design further. When designing new forms of inquiry that can assist in triangulating fundamentals, best practices, and promising paths for future inquiry, it is essential to pay attention to assumptions, first intentions and initial conditions from the very beginning.

For example, it would be worthwhile to emulate what the physicist did when they formulated the fundamental questions to be answered in their inquiry into “...identifying some specific open

problems about the nature of quantum reality in order to stimulate and guide future research.” The questions were formulated at a conference entitled “Quantum physics and the Nature of Reality”, that took place in 2011³.

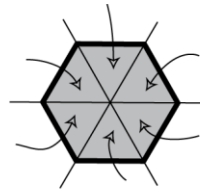
The importance of this example is that *seminal inquiry* begins with *well-formed questions*. A conference is probably not the best context for determining well-formed questions about systemic design, nor should the purpose of the questions be limited to just serving *research inquiry*. This is the reason that it is important to look at additional modes of inquiry.

The process of investing time and energy in determining high quality, fundamental and foundational questions through exploratory or open inquiry will give the overall process the status and attention it deserves. These questions should be further augmented with determinations of what the fundamental postulates and axioms of systemic design are as implied by practice or deemed desirable by scholarly practitioners.

To put the best foot forward at the very beginning of such a significant inquiry as this, it is desirable to help individuals make *cognitive pivots* similar to the *overview effect* reported by astronauts when they first turned back to look at the earth while moving forward on their way to the moon. Each reported a fundamental shift in the way they now saw the earth and they way the perceived their own relationship to the earth and its inhabitants. Cognitive pivots need not be as profound as the one experienced by the astronauts to be effective, but the process of reframing the lenses through which we engage in inquiry and how we choose to filter what we see as a result, provides fresh opportunities to see anew, from different perspectives—i.e. to be creative. A facilitated pivot, with the intention of taking a fresh look at systemic design, is a good first step in creating different designs of inquiry for different outcomes. The priority has to be to create opportunities for pivots at the beginning of any significant inquiry process.

The aggregative form of inquiry as animated in conferences needs to be matched with *collaborative inquiry* (see Fig 1). Collaborative inquiry brings together the multiple contributions of individual research projects and case studies and assembles them into comprehensive overviews of how the research results and particular examples advance our understanding of systemic design conceptually and practically.

³ G. A. D. Briggs, et al. **The Oxford Questions on the foundations of quantum physics.** *Proceedings of The Royal Society A*. DOI: 10.1098/rspa.2013.0299 (free)



seeing the elements
seeing the categories
seeing the divisions

frames of reference:

- discipline / specialization
- interdisciplinary contribution
- multidisciplinary contribution

challenge:

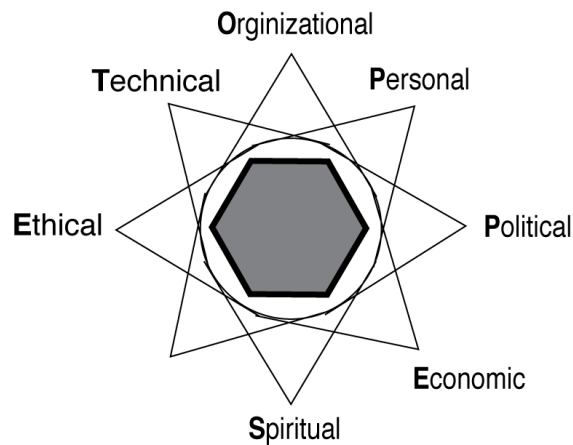
- relationships of parts - 'the in between'
- synthesis of parts - assembly / composition

Fig. 1 Collaborative Inquiry

Professional designers also engage in aggregative inquiry similar to that of academic conferences including a special case where they submit projects to different categories to be judged and awarded, in ordinal measure, on the quality of their designs—a step beyond the outcome of academic conferencing. They too would benefit from collaborative inquiries integrating their particular instances of design into an expanded understanding of design; one with an eye to improving and advancing praxis in a professional field.

For systemic design it would of course be quite beneficial to utilize collaborative inquiry to 'sweep in' and integrate the contributions of scholars, researchers, and professionals across multiple occasions of formal aggregative inquiry involving all of the above participants.

In summary, so far the *exploratory inquiry* of seminars and the *aggregative inquiry* of conferencing will remain important strategies for interrogating the mystery of systemic design. In addition, the *open inquiry* of symposiums is essential for developing well-formed foundational questions and fundamental beliefs that support the ongoing inquiries into the nature of systemic designing. But there is an additional form of inquiry to consider, one that I would invite you to consider being a part of—e.g. *shared inquiry* (see Fig. 2).



seeing the whole

multiple lenses:

- multiple perspectives (e.g. TOPPESE...)
- multiple traditions of inquiry (rational, aesthetic...)

challenge:

- integration of perspectives
- recognition of emergent wholistic image

Fig. 2 Shared Inquiry (an example)

Shared inquiry is used by design teams and cohorts to transit from real world situations to desired, concretized new situations. It is a form of inquiry that describes and explains reality from multiple perspectives and viewpoints, or imagines new and prudent forms of reality that are found to be desirable enough to be made part of the real world.

A shared inquiry into systemic design would disclose what it has been in the past, what it appears to be now in reality, and what it should be ideally. Shared inquiry is a way of describing and explaining what a complex phenomenon is synthetically (collaborative inquiry) rather than primarily analytically (aggregative inquiry). But even more importantly it is a way of imagining what a desired whole would look like if it was ideally formulated and how it could be constructed as a prudent new real addition to the world.

Shared inquiry is manifested through self-organizing behavior. It is engaged in by systems of inquirers negotiating their way through phases and stages of developmental transitioning—i.e. transforming from whole individuals into functional groups and thence into high performance teams and finally into fully integrated cohorts.

In conclusion I would like to propose a few standing invitations in addition to the one inviting you to participate in future RSD conferences:

The **first** is a standing invitation to participate with your colleagues in a bit of collaborative inquiry that integrates the research findings and case studies presented at the RSD conferences into some kind of coherent understanding of systemic design—what it has been and what it is now.

The **second** standing invitation is to participate in exploratory seminars that focus on germinating new approaches to thinking about systemic design.

The **third** invitation is to participate in symposia exploring the formulation of fundamental questions, postulates, axioms and new strategies of inquiry that establish solid ground and direction for future inquiry into the mysteries of systemic designing.

Fourth, is a standing invitation to self-organize into shared inquiry constituencies to search for ideal formulations of systemic designing and necessary preparations for systemic designers—i.e. to prepare to take action.

Fifth is the invitation to take action—to make an ideal real— to prudently realize new formations, application and practices of systemic design.

Discovering what systemic design has been, seeing what it is now and making it what it would be ideally is a significant enterprise in this, the anthropocene age—the age of unmitigated human influence in an environment of volatility, complexity, uncertainty and ambiguity. It is essential that we get better at being systemic designers.