

*Systemic Design Inquiry: The Reconstitution of
Sophia—The Wise Hand*

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There is frustration with inaction in the face of irrefutable facts. Global warming is a fact but there is little change in behavior that would diminish the threat. The pandemic is real but there is little consensus around which actions ought to be taken in reaction. Starvation is a threat to millions of people but there is minimal discernible change in population levels or food supply strategies. Species are going extinct everyday but root causes remain unchallenged. Autocrats and ideologues continue to erode good governance and public well-being. The list goes on.

Professional expertise is ignored while serious threats continue unabated. Experts try to influence change through what the Germans call *Sachzwänge*—which Horst Rittel translates as *coercion by fact* (Protzen and Harris, 2010). But the bridge between that-which-is and that-which-ought-to-be is not crossed just by putting together more facts. What is required is a synthesis of different approaches including those that have been used to integrate inquiry with prudent action in the past—what the ancient Greeks called *sophia—the wise hand* (Nelson and Stolterman, 2012).

C. West Churchman, in his seminal book *The Design of Inquiring Systems* (Churchman, 1971), focuses on selected examples of five different approaches to inquiry. The shared expected outcome of each dramatically different approach to inquiry is to discover or uncover what can be considered to be *true* (see below). These five diverse designs-of-inquiry are still commonly used today. The five examples include:

- Leibnizian fact nets — inductions from elementals
- Lockean consensus — agreement among inquirers
- Kantian representations — deductions from a priori perceptions
- Hegelian dialectics — argumentation & rhetoric
- Singerian progress — continuous approximations

These *designs-of-inquiry* have been transformed over time into *methods-of-inquiry* that are expected to supply certitude for the outcomes of any formalized inquiry—certitude about what is true and by extension what is *real*. In addition, other methods derived from other approaches to inquiry are used to discern what is *ideal* or what is *prudent*. Rational methods like the *scientific method* (actually a diverse collection of methods) have been refined and applied in different scientific disciplines since the beginning of the 20th Century. Also, since the latter half of the last century, such scientific methods have been injected into nonscientific fields including creative and innovative fields such as business and design.

For example, the *Design Methods Movement* (Upitas, 2008) in the latter part of the last century was meant to rescue design inquiry from the primacy of intuition by injecting reasoned and disciplined methods—scientific methods—into professional fields. An important footnote is that professional fields, like design and business, use scientific methods but should not be limited to them.

In the world of formal inquiry, *fields* and *disciplines* are subcategories of *domains* of inquiry which are inclusive of hard science, soft science, technology, law, medicine, organized religion and design. Domains, in turn, are subsets of *cultures* of inquiry as characterized in C. P. Snow’s well known distinction between the *two cultures* of the sciences and the humanities (Snow, 1959). Other cultures of inquiry have been identified by others since.

Churchman’s selection of five different designs-of-inquiry are not the only approaches available for determining what is true. Religion and art-based approaches to *true-revealing* inquiry are representative of a myriad of designs-of-inquiry that share the same purpose or outcomes as the diverse designs-of-inquiry discussed by Churchman—to ascertain what is true. Although Churchman did not include his own systemic design-of-inquiry among his examples, he became well known for his *systems approach* to inquiry (Churchman, 1979). Interestingly, Churchman did not investigate the nature of the kind of inquiry that his selected inquirers used consciously to design their designs-of-inquiry.

Inaction in the face of today’s complex challenges and concomitant consequences is not a good option. And continued reliance on reaction depends too much on luck, reflexes and

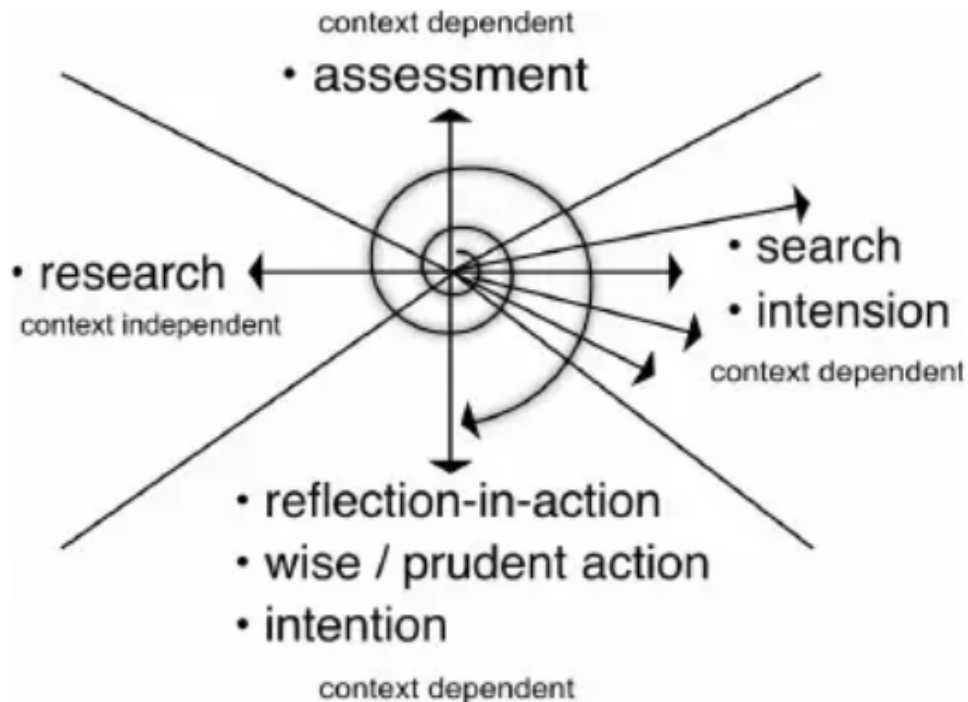
resilience. There is a need for designs-of-inquiry that bridge between analysis and action. The answer does not lie in good science alone—description and explanation do not prescribe action. Nor, does the answer lie with technologies—prediction and control do not justify action. What is needed is a design-of-inquiry that is designed for action that is inclusive of follow-up action. *Systemic design inquiry* is this type of an approach. It is inquiry for action that bridges into action. It brings together a diverse set of types of inquiry that are synthesized into a compound process linking analysis to action.

The approaches to inquiry that are based on today's existing norms of inquiry isolate scholars and practitioners from one another, when what is needed in a complex and interconnected world are designs-of-inquiry that reflect the rich integrated and focused contributions of a diversity of approaches. There is a need for approaches to inquiry that transcend the usual norms of inquiry.

In addition, tactical differences within approaches to inquiry allow for dramatic differences in success for achieving desired outcomes. For example, inquiry triggered by questions rather than methods and tools, is more purpose focused. Interrogating complex situations using well-formed questions offers the opportunity to use a spectrum of questions to form the threads of an integrated systemic approach to inquiry:

- what is **true**? (scientific research inquiry)
- what is **real**? (systems science research inquiry)
- what is **good**? (humanities & arts inquiry)
- what is **beautiful**? (humanities & arts inquiry)
- what would be **ideal**? (design inquiry)
- what would be **prudent**? (design inquiry)
- what would be **desirable**? (design inquiry)
- what ought to be made **real**? (design inquiry)

The systemic design inquiry schema presented below is an example of a design-driven inquiry that is formed from a set of four different approaches to inquiry with distinctive and different purposes that are yet related, linked, connected and bonded together. They are brought together by an emergent process that synthesizes research, assessment, search, and reflection-in-action.



systemic design inquiry

Systemic design inquiry is a transcendent approach to inquiry, integrating four differently purposed types of inquiry.

Research, in one form or another, is familiar to nearly everyone and is the lifeblood of academics and business interests. It is a form of inquiry leading to the type of change expressed by the 1933 Chicago World fair's motto:

- Science Finds
- Industry Applies
- Man (sic) Conforms

Assessment is a form of inquiry that reveals the character and quality of particulars and ultimate particulars in time and place—that which is real. It defines what is experienced as reality.

Search is a form of inquiry where direction and outcome are indeterminate. Search begins by making enabling judgments that name the elements and frame the boundaries of a situation. An enabling judgment also selects the inception point from which the search inquiry begins as well as determines the search inquiry's direction.

Wise or *prudent* action is an essential element that needs to be included in the follow-through to good inquiry. It is a concept that extends back into Western antiquity. The ancient Greeks called it *phronesis*—prudence. It is grounded in practical judgment-making—the kind that leads to wise actions.

To sum up, the integration of the true, the real, the ideal and the prudent through systemic design is exemplary of a reconstitution of *sophia*—wisdom. In pre-Socratic Greece, *sophia* was defined as the wise hand—the integration of creative thinking and prudent action. The West continues to retain the tradition where thinking and action are cleaved from one another. However, It should be obvious that it makes no sense, nor is it advantageous, to keep thinking and action separated. It is becoming ever more obvious that we need to think more carefully about what we choose to create or change and the interventions we choose to make—to invoke the actions of a wise hand through systemic design. Systemic design is the synthesis of thinking and action that creates the real world on behalf of clients and stakeholders who grant agency to the processes of inquiry and action. They also provide *enabling judgments* in the form of expressed *desiderata* that give direction and purpose to inquiring processes and subsequent actions. Systemic design inquiry and action provides the integrated knowledge needed to act with confidence in guiding the evolution of human systems—the praxis of a wise hand.

References

- Churchman, C. West (1971). *The Design of Inquiring Systems; Basic Concepts of Systems and Organizations*; Basic Books, New York
- Churchman, C. West (1979). *The Systems Approach and Its Enemies*; Basic Books, New York
- Cowels, Henry M. (2020). *The Scientific Method; An Evolution of Thinking from Darwin to Dewey*; Harvard University Press, Cambridge, Massachusetts
- Nelson, H. G., & Stolterman, E. (2012). *The design way: Intentional change in an unpredictable world* (2nd ed.). Cambridge, MA: MIT Press.
- Protzen, Jean-Pierre and Harris, David J. (2010). *The Universe of Design*; Horst Rittel's

Theories of Design and Planning; Routledge, New York

Snow, C. P. (2001) [1959]. *The Two Cultures*. London: Cambridge University Press.

Upitas, A. (2008). *Design Methods Movement, 1944–1967*. Dissertation at MIT. Retrieved Online: <http://dspace.mit.edu/handle/1721.1/45943>