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Extended Abstract

Designing for the Tension of Information and Values: The Garden as an Inquiry System

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Problem Background

Understanding and functioning in the constantly evolving and increasingly complex world in which we exist requires systems of equal or greater complexity [1]. Such systems must recognize the dialectic relationship between the hard and soft (rational and values/ethics) [2], and a Singerian-Churchmanian inquiry systems (SCIS) has been proposed as a system that achieves this [3]. SCIS are able to effectively and efficiently address both wicked decision problems and uncertainty by producing exoteric knowledge to solve the problem at hand. Knowledge is a collection of information, an activity, or potential and includes ethics, morals, values and aesthetics in addition to scientific and specialized knowledge [2]. It is generated and constantly refined by continual, multilevel learning and adaptation through feedback by the sweeping in and synthesis of additional data, information, and technical, organizational, social, and personal perspectives [2, 4, 5]. However, SCIS in and of themselves are multifaceted, multilevel phenomenon, and understanding them, yet alone implementing them, is almost overwhelming in itself in terms of its complexity. Thus, making these systems understandable and available to non-experts is extremely challenging—at a time when such understanding is critical.

Research Purpose

One possible approach to address this challenge is to cast SCIS in terms and concepts which are more familiar to wider audiences. This research attempts to do so by utilizing the concept of a contemplative garden as a SCIS. A contemplative garden is a system that effectively integrates and manages the tensions created by the physical and the spiritual, and whose ultimate purpose is to offer the possibility of realization. It magnetizes us with its sensual beauty and layered meanings, where awareness is enhanced and mind and body drop away. We thus experience the basic nature of who we really are, and it is from this enlightened view that values emerge; yet such values never exactly fit the reality of the moment but reside in a state of tension with phenomena [6].

We conceptualize a contemplative garden as a SCIS because, at some level, almost everyone is familiar with and has experiences interacting with nature and the components that make up a contemplative garden. We take a systems approach which focuses not only on key system parts but how these parts interrelate and exist in states of tension. This research draws on the expertise and experiences of an award-winning landscape architect whose design of contemplative gardens is influenced by his being a Buddhist monk, and by an information systems researcher whose interests include complex adaptive systems and sensemaking.

This research sheds light on how design influences the tension and integration of rational and values-based aspects of systems. Just as the integration of information and values is full of paradoxes, interrelationships, and potential conflicts, so is garden design. System design affects how we perceive, participate, and act in our world—including the values shaping our actions. Design facilitates co-construction and synthesis of system parts, and feedback loops where system output is part of and affects the system itself. Insights and key concepts about SCIS derived from contemplative gardens and their design are discussed and how vision and information interact in such gardens are presented, as are examples of when this does and doesn't work.

A Contemplative Garden as a Singerian-Churchmanian Inquiry System

A contemplative garden is an SCIS in that both are systems with goals that are achieved through the integrations of parts themselves and the environment. Such systems exist in a dynamic balance resulting from the tensions among the different parts. Their outcomes are dependent on the different perspectives we take, and are impacted by the design of the systems themselves.

1. A Systems Approach

Both SCIS and contemplative gardens are complex adaptive systems (CAS). A CAS is a system where agents interact with each other and where these interactions and the resulting system behavior are nonlinear [7]. SCIS are CAS in that they generate their outcomes by sweeping-in and synthesizing additional data, information, and perspectives from multiple agents. Likewise, a contemplative garden is a bounded complex adaptive living system based

on nature and its five elements: earth, water, fire, air, and space. Gardens consist of categories (different rock types, flower types, etc.,), behaviors (movement, growth rates and patterns), spatial relationships, and values [6]. Thus, the outcomes of both SCIS and contemplative gardens are a function of the nonlinear interactions of their parts, and such outcomes themselves are nonlinear and not the result of apparent cause and effect.

2. System Goals

Both SCIS and contemplative gardens have similar goals. The goal of a SCIS is to solve the problem at hand, whether it be wicked or uncertain, by producing exoteric knowledge. Similarly, the goal of a contemplative garden is realization by creating an environment of heightened awareness where we focus on the present moment. Achieving such goals often requires restructuring the goals or the problems themselves. A fundamental characteristic of a SCIS is that it changes the nature of the basic problem [3]. Likewise, the goal of a garden challenges the very notion of goal. It is a place where time stops or has a different contour where every moment presents a new vista, odor, breeze, or experience. We become aware of nature, and occupied with beauty, too much in awe to follow our habitual thought patterns. This is an environment suitable for realization, experiencing the ineffable and transcendent realm. The goal, then, of the garden designer is to create an environment where we feel at one with nature, within ourselves, and with one another [6].

No objective measurement of goals for either system exists. In SCIS, such measures are constantly evolving, and SCIS output "is to be taken as is" [2 p. 2], and guaranteed by agreement among the different participants, where new variables and laws are swept in to provide guidance and overcome inconsistencies. A garden is a bounded sacred space; however, what makes it a sacred space and how that 'sacredness' is sustained, activated, and experienced is uncertain and constantly evolving [6]. The implication is that, rather than there being a correct solution, there are multiple, possible 'good enough' solutions. What is important is that both systems make us aware of the process by which we attempt to achieve our goals or solve our problems.

3. Achieved Through Integration of Parts

In both types of systems, such goals are achieved through the integration of parts with the self. SCIS produce exoteric knowledge by sweeping in, integration, and synthesis of all available information and values from multiple perspectives. A contemplative garden can be characterized by the Tibetan word 'hla' which means uplifting, inspiring, heavenly, and relaxing. All senses are occupied by vistas, odors, sounds, and feelings. The unfolding experience of the garden is the sole input into consciousness. It creates a sense of being at one with nature and at one with oneself, as opposed to feeling alienated, lonely, and threatened. We lose sense of personal identity and become the garden. The gardener becomes the garden, and the garden becomes the gardener. In both systems, the integration of the parts with the self is intentional and involves the orchestration of perception and experience. All parts affect and are affected by all other parts. Where we enter and exit, what the entry and exit experiences are, and what happens as we move through the space is considered. We experience integration

within – physically, psychologically, and emotionally – and with nature, which encourages an experience of connectedness within and without, resulting in the realization of Inter-Being. It is from this perspective that values emerge and analogies reveal meaning [6].

4. Both Exist in a Dynamic Balance Involving Tensions

This integration of parts does not result in the systems being in equilibrium; rather, they both exist in a state of dynamic balance involving tensions between parts within the system and between other systems. SCIS involve the tension resulting from the dialectic interaction between the hard and soft. There is a tension between the relation of the unchanging absolute and the always changing manifest. Likewise, a contemplative garden utilizes a dialectic process between the physical and the spiritual to achieve their goals of realization and heightened awareness. The garden depends on a balance and harmony between all categories and behaviors, yet such balance is the result of the tension between the parts of the garden themselves and the environment. This reflects the tension between earth and heaven [6].

5. Tensions the Result of Constant Change

The tensions that exists in both SCIS and a contemplative garden are the result of different system parts constantly changing at different rates. In SCIS, knowledge, generated by continual learning and adaptation through feedback, is constantly evolving, and Information is always expanding. Values tend to be more static than information but can evolve and change over time. In Abrahamic cultures they come from God through scripture. In Buddhist and Hindu cultures values are organized around the concepts of karma and enlightenment. In sectarian societies, values are made explicit as laws. There seems to be inherent tension here between what is conceptual and what is always changing.

Similarly, a garden is alive and constantly changing. So, as plants grow and change, human function alters, or age and decay take back that which was their own, the garden needs to be continually redesigned, renewed, and regenerated. This is made more challenging in that different parts of the gardens change at different rates. In the garden the design vision is fixed, but the garden itself is constantly changing. So, change needs to be managed to adapt to the vision of the design, or if information leads to reassessment of the garden's vision, the vision itself may need to be adapted to align with the evolving information [6].

6. Perspective

The outcome or effect of both system types is dependent on the perspective of a person at a particular place and point in time. In SCIS, different types of information and values have a different impacts and change at different rates, changing the value of the information and thus the information sought or paid attention to. It also can change the impact our values have on the outcome of a system at a particular point of time. Thus, what we consider, when we consider it, and how we consider it, changes the outcomes of such systems over time.

Likewise, different parts of a contemplative garden have different impacts on its goal and, as the parts change at different rates over time, our perspectives and thus our realizations and sense of heightened awareness also change over time. Outcomes are influenced by entry and

exit points, and proportions and scale resulting from the patterns in the composition and the different perspectives we utilize [6]. All of this, for both systems, is influenced by our sense of self and our intentions and motivations. The influence of perspective must be considered if we want to be truly able to meet the goals of the systems.

7. System Design's Impact on Effectiveness

The appropriateness and effectiveness of both systems are influenced by their design. Design impacts how effective both systems are at reaching their objectives, as illustrated by the importance of design in terms of structure and intention. The structure of both systems involves layered meaning created by patterns and relationships (physical, emotional, psychological), metaphors, allegories, stories, history, poetry, and myth. Such patterns are ordered by not symmetrical.

Implications are that system design influences what senses we use more and when we use them. This further influences what we notice or don't notice. System design is not symmetrical; rather, asymmetrical design is purposively done in order to influence the interaction, integration, and interdependency of the different parts. This includes the impact and integration of emotions and information and the influence of movements or non-movement and different types of movement. It makes us consider what categories (rocks, ponds, flowers, trees, shrubs, stopping places, etc., or information, knowledge, values, norms) are critical to balance and harmony.

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