

# Designing Thriving Systems

Leslie J. Waguespack

# Designing Thriving Systems

Marrying Technical Rationality  
and Appreciative Systems

 Springer

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# design

describes  
science  
evolves  
ontology  
human  
rationally  
left  
protocols  
promoted

whole subjective Thriving nature hemispheres imperfect applicability value sciences properties character depictions possible combined strategy know world choices context quality choice choices thriving context beings Reflection-Driven scholarship achieve beauty adaptive largely design-as-a-noun social knowledge space system systems perspectives understanding right of-the-world design-as-a-verb formed assessment example rational Metaphor humans understand creative monograph physical behavior Although process believe experience instrument perception neuroscience Theory construction novel groundwork theorists world-view technically philosophically individually fact sociology artefacts sociology involvement sociality artefacts preceding actions Choice preceding reflective interpretation much recognition conceptualization individually-held artefact community might Systems might paradigmatic ordered essential evolution Generative ontological foundation

assuage effect monograph's intellectual information resonate perspectives rational understand creative interpreting demoststrate intrinsically introduced recombinant impact innovative personal cognition set interprets reflection-driven Clusters resonant compute emerge accessible spaces evolution

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# Acknowledgments

While my quest for understanding the quality of design has been a challenging one, the task of properly acknowledging all the contributors who have seeded the discourse of this monograph is impossible. At the core of this journey was a simple question, “How can you tell whether one model of a system is better than another?” And consequently, “Why is an artefact satisfying?” These questions emanate from my teaching of modeling in the object-oriented paradigm over the past three decades. I usually begin my first course lecture on this topic by declaring, “There are no perfect models but, there are useful ones and some models are better than others.” After dozens of semesters teaching OO modeling to more than a thousand undergraduate students, graduate students, and practicing software professionals, and repeating this declaration countless times, I began the mission to justify that statement with some rational validation greater than my intuition and some 50 years of software development and teaching experience.

In 2010, I was fortunate that Springer agreed to publish my initial attempt at a rational validation of my understanding of design, *Thriving Systems Theory and Metaphor-Driven Modeling*. In the 8 years that have followed, I’ve come to realize just how limited my understanding of design quality actually was at that point! But, a key accomplishment in that first monograph was a credible argument that design quality is more than being “error-free” in the *technically rational* sense (although I was ignorant of this term in 2010!). That began the expanding scope of exploring what “quality” means and, in particular, the difference between recognizing quality (*design-as-a-noun*) and achieving quality (*design-as-a-verb*), in other words, the difference between “This is why you’ll know design quality when you see it.” and “This is what attaining design quality is all about!” This key distinction sets *Designing Thriving Systems* apart from its 2010 predecessor. I have no illusions that the next few years will unearth that same realization of a “limited understanding of how to achieve design quality in design-as-a-verb” but, I sincerely believe that this monograph asks more questions, better questions, along with some answers that provide a promising direction for realizing a *better* understanding of design quality in future research.

This monograph could not have been possible without the antecedent 2010 monograph. But, this volume may be read stand-alone as it forges a different, broader perspective to shape its research grounding.

My first acknowledgment of contribution must go to Christopher Alexander whose writings on physical architecture provided not only the substance upon which I assembled my *Thriving Systems Theory* but also, upon the mode of rational investigation and argument that he models in his four-volume treatise on *The Nature of Order*. That work is both illuminating and inspiring in its approach to expressing facts and understanding.

Starting back in 2006, two of my professorial colleagues at Bentley University in the Computer Information Systems Department generously engaged with me in countless hours of discussion (and debate) over both the content and the mode of expressing these design ideas: Bill Schiano and David Yates, dear colleagues and friends. In 2010, Jeff Babb of West Texas A&M University joined the design project and added a rich academic background of understanding in classical IS (Information Systems) research enveloping aspects of the social sciences and management. The hours of discussion multiplied as the project produced a succession of exploratory scholarship that tested Thriving Systems Theory's viability for interrogating the quality of design in software, hardware architecture, data management, systems, and cloud security; as well as the methodological stream of Agile: Scrum and DevOps. The gist of selected inquiries in that succession of scholarship is excerpted, variously refashioned, customized, and incorporated as in this monograph.

I must recognize all those students who were brave enough to allow me to "bend" their minds toward an object-oriented worldview over the last 25 or so years. Bentley University granted me sabbatical twice over the last decade and a half to provide the time dedicated to exploring and shaping the questions of models and systems which led me initially to Christopher Alexander, George Lakoff, and Fred Brooks. And subsequently, my expedition has extended through Michael Polanyi, Donald Schön, Geoffrey Vickers, Nigel Cross, etc.

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Finally, I offer my deepest thanks to my father, Leslie (Sr.), and my mother, Catherine. They were always my first and best teachers in the values of life and living and the font of all the goodness and faith that has blest me all my days.

Bolton, Massachusetts  
19 October 2018

Leslie J. Waguespack Jr.

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