



Remembering John Warfield*

Julie Thompson Klein, Wayne State University, Detroit, Michigan, USA, Email: julietklein@comcast.net

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I will always remember the day John Warfield declared, "Im taking you to the war room." The "war room" was the famed interdisciplinary think tank on the George Mason University campus where John and his colleagues engaged in integrative design and problem solving. The excitement of their work and other projects is conveyed in the wonderful photo of John, shown in Figure 1¹

1 Who is John Warfield?

John Nelson Warfield was born and grew up in Missouri. When he died, he held the title of University Professor Emeritus and Laureate at George Mason University. Warfield began advanced studies at the University of Missouri but, like many of his generation, found his life interrupted by World War II. After basic training in the U.S. Army Infantry, he was placed in an electrical engineering program. When the war was over, he returned to the Columbia campus in Missouri, where in 1948 he received a Bachelor

of Arts in mathematics and a Bachelor of Science in electrical engineering and in 1949 a Master of Science in electrical engineering. In 1952, he earned a Ph.D in electrical communications from Purdue University.

During the course of his career, John held many important positions. He was elected president of the Systems, Man, and Cybernetics Society of the Institute of Electrical and Electronics Engineers (IEEE) and president of the International Society for the Systems Sciences. He was an editor of Systems Research and of the IEEE Transactions on Systems, Man, and Cybernetics. He was also president of Integrative Sciences and the AJAR Publishing Company. Beyond these academic posts, he had ten years of industrial experience and was the author of two U.S. patents on electronic equipment. It comes as no surprise, then, that John was honored in his lifetime. He received the Joseph G. Wohl Award for Career Achievement at the 2006 annual meeting of the IEEE Systems, Man, and Cybernetics Society. The highest award conferred by the Society, it acknowledged his contributions to systems engineering concepts, methodology, design, education and management. In 2007 he also received INCOSE Pioneer Award and the IEEE Third Millennium Medal.

John was not a boastful man, so not one to tout such accomplishments or being called, as he was, "the father of systems science." These qualities were evident to everyone who met him at annual meetings of the Association for Integrative Studies (AIS), a professional organization dedicated to advancing interdisciplinary education. He was a kind and easy-

¹TheATLAS Publication thanks Special Collections and Archives and at George Mason University Libraries, for access to the photo with Dr. Warfield (upper right) and a colleague working on an early computer in the 1950s. George Mason University <http://vault217.gmu.edu/?p=1302> and original source The Pennsylvania State Engineering Review, Summer 1954.

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Figure 1: John is Working with a Colleague.

going person who enjoyed a good debate, but also chatting informally with anyone during meals and breaks at AIS conferences. John attended many conferences and was an early proponent of the link between complexity and interdisciplinarity. In 1997, at Appalachian State University, he spoke on “Seven Milestones in the History of Thought.” At the 1996 gathering at Eastern Michigan University, he considered implications of five schools of thought for integrative inquiry in his presentation on “Interdisciplinary Domains and Complexity.” At the Arizona State University-West conference in 1995, he participated in a panel on “Demands of Complexity on Integrative Communications.” At the 1993 meeting hosted by Wayne State University, he defined “Criteria for Structural Thinking” that would help promote incorporation of structural thinking into interdisciplinary teaching and research. In 1990, at St. Anselms in New Hampshire, his topic was “On Language Components of Integrative Studies.” He proposed four terms for use in integrative sciences—platform theory, domain theory, subsumption, and supersumption. In 1988, at the University of Texas–Arlington meeting, he explored how liberal arts could revitalize science. In his presentation on “Universal Priors to Science,” he examined the roles of human beings, language, reasoning through relationships, and archival representation. In 1987, at Pennsylvania State University, he spoke on “Knowledge Integration and the Systems Community.”

Prior to his passing, John was chosen to be editor of the new *Transdisciplinary Journal of Engineering & Science*, a project of the ATLAS organization. The journal will now be dedicated to honoring him by recognizing responsibilities for a culture of peace and transdisciplinary knowledge. He was also paid tribute in vault 217, the online newsletter of the Special Collections & Archives at the George Mason University Libraries. The tribute highlights selected portions of 100 archival boxes of professional materials he donated in 2000. Accessible online, the John N. Warfield Digital Collection includes his papers as well as oral history interviews, videos of class lectures, and filmed sessions of his Interactive Management process (<http://digilib.gmu.edu:8080/xmlui/handle/1920/3059>).

The second edition of John's book *A Science of Generic Design*, published by Iowa State University Press in 1994, is ample testimony to his accomplishments. It represents his thinking on managing complexity through systems design. Sitting next to my treasured copy of *A Science of Generic Design* is another collection of writings that tap the astonishing range of his mind, including essays on topics he presented at AIS conferences. In one of my personal favorites, “Reading for Bureaucrats,” he offers an annotated digest of important readings culled from over thirty years of studying complexity. Other works pull together his own essays on complexity, and he lays out a plan for The Great University in *The Wandweaver Solution*. Characteristic of John, *The Wandweaver Solution* is a systematic proposal complete with research background, challenges, vision, programs, schedule and benefits. It was supported by a multi-year research support from the Ford Motor Company (<http://www2.gmu.edu/depts/t-iasis/wandwaver/wandw.htm>).

In his last paper, published in this special issue, John Warfield exhibited another vital quality that defined his life. He never stopped working to achieve the kind of change he knew is needed. His plan for Horizons College acknowledges the importance of a liberal education and attendant values of critical thinking, analysis, and problem solving. Yet, he exhorted, a liberal education and the current structure of institutionalized learning are not enough to realize a science of synthesis and systems design grounded in the cognitive domain of complexity. The sweep of his intellect and experience is readily apparent in

his vision, reaching from Aristotle, William Shakespeare, Alexander Pope to Ford Motor Company, the U.S. Defense Department, and the country of Ghana. Only a genuine “landscape of systems learning,” he admonished, will be capable of the level of problematization and comprehensive portrayal, appropriate responses, and implementation and management of responsible programs that is required.

In this regard, John reminded me of another important figure who was one of the architects of the seminal 1972 book, *Interdisciplinarity: Problems of Problems of Teaching and Research in Universities*—Leo Apostel. Even with their distinctively different intellectual backgrounds— one a philosopher and the other a systems engineer— and their different cultural styles—forged in American and European traditions—they were both committed to bridging the discourses of interdisciplinarity and systems thinking. They also shared a tendency to stand still physically while talking, but their minds were also moving. And, they shared a rhetorical style, always interrogating underlying assumptions while formulating conceptual tools for interdisciplinarity and laying out an operational approach. When I met Leo, he talked about another visionary in the 1972 book—Erich Jantsch. Unfortunately, Leo lamented, Jantsch died tragically too soon. It is all the more precious, then, that we had Leo, John, John's old friend Kenneth Boulding, and Joseph Kockelmans for so long. We learned much from them, cherish their friendship, and now carry on their work.

College (edited, 2002), the monograph *Mapping Interdisciplinary Studies* (1999), and *Humanities, Culture, and Interdisciplinarity: The Changing American Academy* (2005). She is also author of the forthcoming book *Creating Interdisciplinary Campus Cultures*, Associate Editor of the forthcoming *Oxford Handbook on Interdisciplinarity*, and author of numerous book chapters and journal articles.

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Professor Julie Thompson Klein is Professor of Humanities at Wayne State University in Detroit, Michigan (U.S.A.). Holder of a Ph.D. in English from the University of Oregon, Dr. Klein is past president of the Association for Integrative Studies (AIS) and former editor of the AIS journal, *Issues in Integrative Studies*. Her books include *Interdisciplinarity: History, Theory, and Practice* (1990), *Interdisciplinary Studies Today* (co-edited, 1994), *Crossing Boundaries: Knowledge, Disciplinarity, and Interdisciplinarity* (1996), *Transdisciplinarity: Joint Problem Solving among Science, Technology, and Society* (co-edited, 2001), *Interdisciplinary Education in K-12 and*