

ON THE DYNAMICS AND EVOLUTION OF SOME SOCIOTECHNICAL SYSTEMS

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1. Introduction. With statistical mechanics having been a central theme in my research program, it gives me special pleasure to have been invited to lecture in memory of one of its great founding fathers, J. Willard Gibbs. I feel personally closer to Gibbs than to two of the other fathers, Maxwell and Boltzmann. During the late 1940s and early 1950s, I had the good fortune of having many discussions with Edwin Bidwell Wilson, collaborator on the Gibbs-Wilson vector analysis book, probably the Gibbs student closest to the master, and eighth Gibbs lecturer. Since Wilson's favorite topics for discussion were Gibbs and the National Academy of Sciences, after n of these I began to feel that Gibbs was a third grandfather, one whom I never had the joy of knowing, and that I was prematurely a member of the inner circle of the National Academy of Sciences. Incidentally, Wilson (author of a once-popular advanced calculus book, editor of the *Proceedings of the National Academy of Sciences* during the period when it evolved into an internationally prominent journal, and for a time professor of vital statistics at the Harvard School of Public Health) considered himself to be the middleman of statistical mechanics in the United States. He was Gibbs' student and a teacher of Richard Tolman, whose treatises on the subject were classics of the 1920s and 1930s. Wilson, while head of the MIT Physics Department in the early 1920s, hired J. S. Slater, who became a teacher of Jack Kirkwood, the man who directed more Ph.D. students and postdoctorals in statistical mechanics than any other American professor.

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