



Project Abstract

Co-evolution of State and Market: Renaissance Florence

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Background and Overview

This project assembles a cross-disciplinary (physics, sociology, statistics and history) and international (United States, India, Australia) team to analyze the social production of organizational innovation in Renaissance Florence. The project is built upon the empirical foundation of a powerful, indeed unprecedented historical data set – economic, political and kinship social-cum-organizational networks, traced over a two-hundred-year time span (from 1284 to 1500 A.D.). This data set, coded from original archival documents by Padgett (with significant help from McLean) over a span of fifteen years, will be described below. Under the sponsorship of the Santa Fe Institute, technical experts in social-network statistics (Pattison), in autocatalytic network dynamics (Jain), and in agent-based modeling (Sallach) will be assembled to assist substantive experts (Padgett and McLean) in the production of network models of organizational genesis, fitted to the Florentine data. The technical innovations demanded by the historical materials involve (changing) catalytic and regulatory feedbacks across the reproduction and development of multiple types of social networks.

Renaissance Florence was among the most innovative centers in Western history in its creation of new organizational forms. In the domain of economics, international finance and double-entry bookkeeping was invented in Northern Italy and came to be centered in Renaissance Florence (de Roover 1966, 1974, Goldthwaite 1993, Padgett 2001, Padgett and McLean forthcoming). In the domain of politics, republicanism reemerged in a few of the most prominent northern Italian city-states (Genoa, Florence, Venice), with Florence being particularly creative in its exploration of new electoral mechanisms (Najemy 1982). These Florentine electoral mechanisms later were to become important in the founding constitution of America (Pocock 1975). In the domain of extended family, dowries and the emergence of republican clientage had significant consequences for the restructuring of social elites, social status and social mobility (Brucker 1969, 1977). Such social restructuring created the competitive motivation for now-famous innovations in the production of new art (Baxandall 1988), new political philosophy (Baron 1966), and arguably new psychology (Burckhardt 1878).



Unexplored in the otherwise thorough secondary literature on Renaissance Florence are the causal connections among these extraordinary innovations. Were these simply a remarkable set of historical coincidences or ‘conjunctures’? Or did some sort of heretofore poorly understood ‘social innovation cascade’ occur within this particular city and time, across multiples domains? Padgett’s previous publications on this topic have documented the empirical plausibility of the second conjecture for the two domains of political-party formation (1993) and financial-market formation (2001, forthcoming). Specifying multiple-network feedbacks and possible organizational-form cascades analytically, and then empirically testing the resulting dynamic-network models with Florentine data, is the research goal of this project.

Possible parallels between biological and human social evolution need to be approached with caution, skepticism and discipline indeed (Maynard Smith and Szathmary 1995, Lewontin 1992). However, the possible phenomenological similarity between extraordinary outbursts of human creativity like Renaissance Florence and ‘macro-evolutionary’ events like the Cambrian explosion (Gould 1989, Morris 1998) has not escaped our attention. Sanjay Jain (with informal help from other SFI external faculty Doug Erwin and Ricard Sole) will explore the insights, as well as the limitations, that existing macro-evolutionary models in biology offer to understanding the Florentine case. No doubt major modeling extensions eventually will be required, especially in the direction of multiple-network feedbacks, but developing a common dynamic-network formal framework will be the first analytic step, already partially attained.