Is the Structural Holes Thesis Culturally Parochial? A Choice-Theoretic Formal Approach and its Relationship to Confucian Capitalism

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Theoretical Background


• Burt (1992) put forward apparently competing theory about advantages of structural holes in social network theory.

• Closure still often used as explanation in applied sociology (i.e. education), but elsewhere structural hole theory is seen as more accurate and empirically confirmed.
Closure (Coleman, 1990)
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M has (1) information advantage from the two different groups, and (2) control advantage by maintaining the separation of the groups. M spans structural holes in this relational structure.
Structural Holes (Burt, 1992)
Unresolved Questions about Role of Culture

• “Law-like” status of structural hole thesis (Burt 1992) in economic sociology and social network theory

• Strong predictor of socioeconomic achievement in multiple studies (review Burt 2000)

• Empirical testing largely limited to U.S. and other Western countries

• However, Non-West setting seems to suggest weaker, or opposite dynamic (Xiao and Tsui 2007)

• No clear theoretical development that explains why there is such a different in results.
Possible Link with East Asian Institutional Forms

- Qualitative literature on “Confucian Capitalism” (Tu 1984, 1997; Redding 1990, etc.) implies that organizations tend to be based upon closed, often ascriptive groups.

- Attempt to establish individual connections with outside organizations usually seen as betrayal and is punished.

- Nonetheless, organizations seem to do well at generating cooperation and collective benefits
Theoretical Approach

• Recognize there is a unit of analysis problem in direct comparison between closure and structural hole theses.

• One way to analyze this issue is by trying to ground structural analysis in choice-theoretic microfoundations.

• Examine the role of generalized social norms in determining network interaction equilibria.
Network Model of Cooperation, Closure, and Structural Holes

- population $N$, within which there exists a network $g(N)$, set of pairs $(i, j)$ s.t. $i, j \in N$
- $N_i = \{j: (i, j) \in g(N)\}$
- endogenous norm of contribution $c_{ij} > 0$ to each actor $j \in N_i$
- $b_{ji} = \phi(c_{ij})$, where $\phi'(0) > 1$ and $\phi''(c) < 0$ for all $c > 0$
- upper bound $\nu > 0$ on $|N_i|$. 
Prior to each round, $i$ can propose $(c_{ij}, c_{ji})$ to any $j$ in 
\{\(j: j \in N_i \lor (\exists k \in N_i: j \in N_k \land (c_{ij} \neq 0 \lor c_{ji} \neq 0))\}\):

- If $j \in N_i$, this is a modification of an existing norm
- If $j \notin N_i$ but $\exists k \in N_i: j \in N_k$, this is the creation of a new tie
- If $j \in N_i$, and $c_{ij} = c_{ji} = 0$, this is the destruction of a tie

$j$ can either accept, reject (norm returns to status quo), or counteroffer.
Informational Assumptions

- all proposals publicly observable
- contributions made simultaneously
- level of contributions only visible within bilateral relationship
- communication of outcomes possible to actors to whom a tie exists
Derived Propositions

• *Propositions 1 and 2*: Higher levels of cooperative effort can be maintained in closed groups, where no actor has an outside tie, than in open ones.

• *Proposition 3*: If a group following individualist (bilateral) norms has a single member with outside ties that member will tend to gain equivalent benefits at lower levels of contribution than other members.

• *Proposition 4*: Given a closed community norm which withholds cooperation from any members who has developed outside ties, sanctioned actors will either stay and contribute at same level as others, or leave group completely.
Discussion

• Equivalence of closed community norm to “weak Confucian norms” (Chai and Liu 2005).

• The contrast between Propositions 1, 2, and 3 highlighting the fact that levels of analysis problem can explain why both closure advantage at collective level and structural hole advantage at individual level.

• Closed community/Weak Confucian norms can explain how optimal collective production can be maintained at cost of individual opportunities.

• Such norms also provide a general explanation for distinct social institutions associated with East Asian firms, as well as their particular strengths and weaknesses in the face of structural change.
Confucian Capitalism and Institutions of the Ideal-type East Asian Model Firm

- relatively closed and dense network of relationships among employees across intrafirm departmental boundaries but not across firm boundaries

- long-term, effectively lifetime, employment restricted to key employees; salary based on time of service

- diffuse patterns of interaction that merge work and non-work relationships

- long-term, price-inflexible contracting relationships with trading partners
Closed Community Norms and Institutions of Ideal-type Confucian Capitalism

• relatively closed and dense network of relationships among employees across intrafirm departmental boundaries but not across firm boundaries

• early-recruitment, long-term (“lifetime”) employment (including family firm) restricted to key employees

• diffuse patterns of interaction that merge work and non-work relationships

• long-term contracting relationships that replace structural holes with nested networks and
Strengths and Weaknesses of Confucian Capitalist Institutions

• higher level of work effort corresponding to lack of exit opportunities (Hechter 1987)

• greater incentive for firm to invest in human capital of workers (Coleman 1988)

• relies on homogenous external environment of firms, (Poldony and Baron 1997) hence threatened by globalization leading FDI and competing practices

• closure is harmful where novel, specialized skills are needed (re: Krugman 1994), and institutions must respond by accepting mid-career “talented employees”, thus weakening closed community norm among existing employees
Work for Future

- more general integration of choice-theoretic formal modeling with network models.

- modeling of induced preference change (affect towards members of in-group) through Confucian Capitalist social institutions

- modeling of effect of non-economic external ties (e.g. birthplace, school, military) on possibility of strength of closed community norms as possibility for structural hole arbitrage