Transformational Organizations and Institutional Change: The Case of the Institut Pasteur and French Science

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aOne small part of a larger work attempting to synthesize a number of theories of Marx, Durkheim, Weber, Mead, Parsons, Giddens, Goffman, Wallerstein as well as the work on organizational ecology, institutional theory, endogenous growth theory, racism, feminism, and neo-colonialism. It is a new theory of societal change based on the evolution in knowledge production systems. A paper on this is available.
What are the Theoretically Relevant Aspects of this Talk?

- Define and provide several solutions to issues in institutional analysis and especially relative to societal change (Campbell, 2004).

- Define and provide several solutions to the debate about agency vs. structure.

- Connect the micro level (organizations) with the macro level (institutions) by other than reductionism.

- Add to the discussion of qualitative methods and historical analysis as a case in point.

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Key Concepts in Institutional Analysis

- Definitions of path dependency vs. institutional change
- What are the bundles of rules that impact and create path dependency?
- In particular, what are the mechanisms for creating cognitive path dependency?
- Addition of the concept of institutional disconnectedness.
- Addition of the concept of transformational organizations, i.e. organizations that change their institutional environment.
- How does one define institutional entrepreneurs?
Key Theoretical Issues in Agency vs. Structure

- The definition of agency—as large discontinuity in scientific research, creation of new discipline, new organizational forms, and new careers.
- The definition of path dependency—continuity in all of the above, i.e. incremental advances in scientific research, etc.
- What are structures that facilitate agency?
- What are structures that impede agency and especially ones that create cognitive path dependency?

Other Theoretical Issues

- The basic problematic is can a transformational organization changes its institutional environment despite the theory of the “iron cage” (DiMaggio and Powell, 1983) and the strong tendency towards path dependency of all kinds including cognitive?
- A secondary problematic is can these ideas be applied to other historical cases involving other issues than scientific research?
Path Dependency in French Science:
Part One: Definitions of path dependency and cognitive path dependency

Path Dependency in the creation of new scientific disciplines

➢ Except for physiology, no new scientific specialties in the biological sciences since Napoleon created the institutional structure of the universities until the 1960s.

Cognitive Path Dependency created by the following:

➢ use of mathematics as a major criterion for selection in the science tracks and anatomy for medical tracks.
➢ reliance upon examinations that stressed memorization.
➢ absence of financial support for poor students.
➢ hostility to certain schools of thought such as Darwin’s
➢ long wait until promoted to a senior position because of structural blockages.
➢ impact of class barriers.

_N.B. This helps explain the social reproduction thesis of Bourdieu_
Path Dependency in French Science:
Part Two: Causes of path dependency

Structural Blockages in the Career

- only a few positions available at each level of training.
- only a few positions available after graduation.
- individuals have to work with a mentor with low pay until a position is available, usually not until they are in their 50s.
- key publications are in the Academy of Science, which is controlled by a few people.
- in the hospitals researchers frequently need a sponsor.

Institutional Blockages for the Creation of New Discipline

- must be approved by the Ministry of Education or the Ministry of Health
- In the former case a complex set of institutional rules requires the creation of a new teaching exam, called the agrégation.
- during much of the period 1880 through 1950, little economic growth.
Transformational Organization: New Research Form that Institutionally Disconnected Itself

Characteristics of a Transformational Organization

- Complex charter.
- Visionary team leadership or institutional entrepreneurs
- Recruitment from less prestigious universities and medical schools and foreign countries.
- Diverse sources of funding.

Consequences

- Creation of a biomedical research discipline
- Made 8 1/2 major breakthroughs in biomedicine came from those recruited from less prestigious universities
Transformational Organizations: New Research Form that Changed the French Institutional Environment

Changes in the French Scientific Research Environment

- Creation of multiple new specialties within biomedicine, e.g. cellular approach to immunology, bio-chemistry, protozoology, biology of radium treatments of cancer, etc.

- Creation of a broad scope biomedical education track.

- Creation of a number of career opportunities: positions, promotions, and publication outlets.
Issues for Discussion

- Strategic importance of studying ways of overcoming path dependency.
- Can the idea of institutional disconnectedness be applied to other situations?