

I. How do economic markets generate, distribute and accumulate knowledge?

Schumpeter and Hayek were among the first to offer a workable hypothesis concerning the ways markets generate and distribute knowledge. The notion of "competition as creative destruction" employed by Schumpeter and the view of "competition as a discovery procedure" as it has been advanced by Hayek are the starting points of modern evolutionary economics. This body of literature departs from the standard neoclassical economic theory in stressing the role of market competition in generating innovations and technological advancement rather than a perfect allocation of resources in the economic system. A static equilibrium view of the market cannot account for the constant innovative activities of firms driven by dynamic entrepreneurs nor of the dynamics of the diffusion of knowledge on both sides of the market.

Martens while rehabilitating in his comments the theory of the division of labor in societies drew a parallel between exchange of goods and symbolic exchange arguing that their main difference consists in the possibility of transfer of tacit knowledge through goods that is not available in the case of symbolic exchange. The distinction between knowledge per se and the use of knowledge was suggested in the discussion (Vaughn) and the issue has been raised whether it is fruitful to conceptualize goods as embodiments of knowledge.

Woody Powell addressed the issue of markets for technology in knowledge intensive fields and analyzed how certain types of governance structures affect innovation and R&D activities in the commercial field of the life sciences. A dramatic change of the mechanisms for discovery took place in this field in the last decade, which makes it a clear case of Schumpeterian discontinuity. In parallel to the discovery procedure a broad set of norms about relational contracting have emerged which can be summarized as a set of practices for organizing, financing and doing collaborative development that involves projects. There is no such entity called organization any longer, but rather a project and participants in the project. This change of the governance structure means that the nature of competition has also changed: agents try to defeat their rivals but not to eliminate them, since they are collaborating with them in one or more projects. The emergence of the project as a governance structure implies also that the knowledge transmission looks different since the participants are interacting in other more intensive forms. Besides, this field can be best conceptualized as a winner-takes it all market, since the key for success and profit is to be first in the market not just to create the third-best or the least expensive breast cancer drug.

A general question of obvious importance that has not explicitly been discussed but was implicitly addressed in many of the comments was the appropriate normative standard for the evaluation of markets. The traditional efficiency considerations employed by neoclassical economists seem to be obsolete when one takes the knowledge-creating properties of markets seriously. A notion of adaptive efficiency seems to be preferable, but a coherent development of this normative standard is still missing.

II. How do political institutions generate, distribute and accumulate knowledge?

Jack Knight proposed two ways of dealing with the relation between institutions and knowledge. To start with, political institutions being solutions to settings of social conflict, they can be classified into four categories, i.e. 1) electoral processes, 2) legislative processes, 3) bureaucracies and 4) courts. The first level of analysis concerns how political institutions instantiate knowledge. The second level concerns the way the different types of political institutions organize the generation and distribution of knowledge. These two analytical levels aim at clarifying the positive empirical relationships between politics and cognitive processes. Beyond these causal questions a series of normative issues seem to be equally important: how we might, through the creation of various types of institutional rules, minimize what we could think of as the distortive effects of politics on knowledge generation and accumulation.

The discussion revolved mainly around three basic features of the political process: persuasion, bargaining and coercion. In one of the readings for the workshop Lupia and McCubbins argue that political institutions can help people who lack information make reasoned choices. Since reasoned political choices require political knowledge that usually requires the testimony of others, the authors of the Democratic Dilemma argue that learning from others requires persuasion. Citizens are normally persuaded by political speakers when they trust them and when they assess their credibility positively. By providing substitutes for personal character assessments, external forces affect who can learn from whom. Three such forces are penalties for lying, verification and observable, costly effort. All of them are common to politics and can be deliberately introduced by the design of appropriate political institutions.

It has been pointed out that the formation of public opinion is an essential part of political competition (Kuran) and that persuasion is more common in politics than in markets (Vaughn). John Tooby proposed to conceptualize the issue as a market for truth and stressed the role of institutions in influencing the identities of the agents. Group identities often facilitate the exchange of knowledge. It is easier to share knowledge and convince somebody who shares the same group identity with you than one who does not. The implicit hypothesis here is the same as the one explicitly formulated above: the successful communication of knowledge requires a considerable amount of trust (and group identities facilitate to a great degree trust formation). Mokyr raised the related issue of loyalty and ideology, the first being fundamentally personal in nature whereas the second is substantially impersonal. What is the differentia specifica between the belief systems underlying loyalty and the belief systems underlying ideology? This question points at an obvious possible avenue of collaboration between cognitive and social sciences if a workable hypothesis is to be formulated.

Robert Cooter addressed in his own comments another feature of the political process, i.e. bargaining. Politics is the sphere of interaction without contracts and the bargaining problem cannot be solved without an arbitrary element such as a dictator, an agenda setter etc. One can distinguish between competition over jurisdiction, that is, for office and competition among jurisdictions. Cooter stressed that another form of competition is

to be acknowledged which is the competition for the interpretation of the rules of a polity that provide the framework within which intra- and interjurisdictional competition takes place. In most (modern) polities the interpretation of the rules of the political game is laid in the hands of independent judges and in this sense a competition for interpretation does not exist. The ideal judge is obviously different than the ideal politician in modern polities since the cost of expressing their own opinion differs. In order to capture the behavior of the judges as the legitimate interpreters of the rules of the political bargaining, one should therefore consider the constraints within which they express their opinion and what costs they bear when they do so.

The third and last feature of political processes that has been extensively discussed relates to the role of coercion. Itai Sened summarized his argument on coercion stating that we should start with murder, proceed to the analysis of politics and only at a last stage focus on economics. This was not meant to negate the role of coercion in markets, however. Mergers between inequals or hostile takeovers exemplify that coercion also exists in markets. Jack Knight took up this point and argued against the common dichotomy between voluntary exchange in markets and coercion in politics. He proposed to focus on choice as it takes place in an institutional context that can vary from being free and voluntary to being coercive. In this sense it is an empirical and historical question not a theoretical question which concrete institutional context is free and which is coercive. This naturally led the discussion to the issue of the alleged analogy between economic and political markets.

III. Is it reasonable to model political institutions as markets?

In his "Transaction Cost Theory of Politics" that was included in the readings Douglass North draws a comparison between economic and political markets arguing that political markets are far more prone to inefficiency. The reason is that it is extraordinarily difficult to measure what is being exchanged in political markets and in consequence to enforce agreements. What are being exchanged are promises for votes. The powerful role played by competition in the economic market place is far less effective in politics. The weapon of the constituent is periodic elections at which the representative can be held accountable and the opposition candidate has the incentive to promulgate her deficiencies. But this is a weak instrument to match preferences with outcomes in politics.

Greif has stressed in the discussion that though politics can often be thought of as exchange there are many historical cases that can be best captured theoretically if politics is viewed only as taking. Whether it is reasonable to model political institutions as markets cannot be answered on a priori grounds. The fruitfulness of a certain suggestion of modeling can only be judged after it has become clear what classes of events the suggested model can explain and whether the produced explanations have a greater empirical content than existing alternatives. It has become evident in the discussion that more work has to be done in this area of research before any safe conclusions can be

drawn. This rather pessimistic stance has been supported further by the comments of Norman Schofield. In viewing political process from an Arrowian perspective Schofield argued that the aggregation of preferences in three-dimensional systems of preferences leads to chaotic systems. The chaotic processes that are generated are genuine in the sense that the political systems are not just chaotic in terms of the sensitivity to a change of initial conditions. The question that remains important, however, is whether any kind of political order could ever arise out of political chaos and if yes then how it can be best captured in theoretical terms.

IV. What difference does it make to stress the cognitive aspect for the rational choice approach to politics?

There is an ongoing debate in the (American) political science in the last few years originating in the publication of the "Pathologies of Rational Choice" by Green and Shapiro on the productivity and explanatory power of the rational choice approach to politics. Mark Turner argued in his comments that cognitive science can add substantial content to the analysis of political phenomena by stressing some basic characteristics of individual cognition. The issue is not whether agents are perfectly or boundedly rational but rather how human beings actually reason and choose. Prior to choice a framing of the situation is constructed by the cognitive system of the agent; in this process, activation and categorization are of obvious importance. Besides, specific cognitive points tend to acquire a disproportionate weight in human reasoning. A good example is the different role that the (cardinal) number 100 and 99,5 play when we reason. One could reasonably speak of "focal points-reasoning" that may have implications for political behavior. Analogies is another essential ingredient of cognitive processes and Turner stressed that institutions often want to force you to make specific analogies, an insight that goes beyond what we know from the application of the standard rational choice theory on institutional analysis. Lastly, imagination, another neglected cognitive process, helps us explain how agents get from one node to another in the extensive form games conceptualized in game theory.

John Tooby opposed to the mainstream dichotomy between rationality and irrationality stressing the evolution of the different computational programs in the human cognitive systems to deal with different tasks. One kind of tasks for which we have evolved a specialist set of programs during our interaction in gatherer-hunters societies is clearly politics. If future research will be able to map this evolved mental program more accurately we would reach a better understanding of the interplay between cognition and institutions. Institutions would be in a way the expression of these mental programs, but on the other hand we could devise institutions so that they could compensate for the deficiencies of the human nature. Besides, Tooby suggested that we should abandon the folk-psychological division between preferences and beliefs prevalent in economics and rational choice political theory. He proposed to take the recent research findings on emotions more seriously that show that emotion programs have quite precise components and that they mobilize ways of acting that cross-cut the beliefs-preferences distinction.

Epilogue

Summarizing, the discussion has showed that an analysis of how economic and political markets work is a necessary ingredient of a general theory of social change. Mainstream economic theory has provided a body of theory that captures in a satisfactory way most static aspects of markets, but in order to capture the knowledge-creating aspects of markets, we should rather adopt evolutionary modes of theorizing. An analysis of political phenomena seems to be more difficult than that of economic phenomena, partly because of the intrinsic complications of the subject matter. Successful explanations have been produced mainly for the United States and other developed polities which operate in a network of fundamental constitutional and other political rules that remain relatively stable. A more general theory of politics must explore among other things the transaction-cost characteristics of political markets and the role of ideology in shaping political outcomes.

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