

# On the Comparative Performance of Spontaneous Orders: Academic Economics Research vs. the Market Economy

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## 1. Introduction

The study of spontaneous order, or “orderly structures which are the product of the action of many men but not of human design,” (Hayek 1973: 370) has been an element of economics since Adam Smith and the Scottish Enlightenment. Hayek (1973) pointed out that other social processes share with the market economy the basic feature of spontaneous or emergent order, where order arises without design. Other social emergent orders include language, the emergence of money, the common law, and scientific research, and many natural systems feature order without design as well. Polanyi (1962: 1-2) drew out the parallels between spontaneous coordination in science and markets: “...the community of scientists is organized in a way which resembles certain features of a body politic and works according to economic principles similar to those by which the production of material goods is regulated. ... We may call this a coordination by mutual adjustment of independent initiatives - of initiatives which are coordinated because each takes into account all of the other initiatives operating within the system.”<sup>1</sup>

Perhaps the most enduring contribution of Austrian economics has been to explain how spontaneous order outperforms central planning in the organization of economic activity. The virtues of emergent order have been noted in other complex systems as well. And yet significant differences exist in the operation of spontaneous coordination in different systems. The three spontaneous domains of liberal community, the market, democracy, and science (di Zerega 1997), are coordinated through money and prices, votes, and citation and reputation respectively. Given the very different means of coordination, the question naturally arises whether spontaneous coordination

performs equally well in all of these varied domains. For instance, public choice economics has identified numerous inefficiencies of democracy and voting relative to markets (Mitchell and Simmons 1994). Many Austrian economists who extol spontaneous coordination in the market economy question the performance of the invisible hand in economic research. Specifically, Austrian economists maintain that their school's failure to gain wider acceptance in the economics profession does not demonstrate the inferiority of their school's method and analysis.<sup>2</sup> Academic disciplines in the humanities have also been accused of systematic dysfunction (Kimball 2008).

These examples suggest that spontaneous coordination in fact does not perform equally well across different domains. If so, what features of an environment inhibit spontaneous coordination? I explore this question by comparing academic research with the market economy. By academic research I mean both traditional science fields along with other disciplines in the social sciences and humanities, drawing examples from economics, the field with which I am most familiar with. Assessing the comparative performance of the invisible hand in different domains requires a standard against which to compare a spontaneous order process. Austrian economics has found the elucidation of efficiency for the market process elusive. Traditional economics' definition of Pareto efficiency is based on an end state analysis, which is clearly an inadequate approach if the economy is not converging to an end state (O'Driscoll and Rizzo 1985). I will not offer a definitive performance metric here, but note that while in both the economy and in research individuals participate for a variety of personal motives, the processes also serve a social purpose (material well-being and the creation of knowledge respectively). I presume that performance on both dimensions is important for a well-functioning order. Specifically a field of research in which the participating scholars contentedly producing journal articles and books but which does not advance knowledge (or results in retrogression as Kimball (2008) suggests) would not be considered as performing well.

In essence this paper attempts, through the specific comparison of the market economy and the academic research, to develop a theory of market process (or spontaneous order) failure. Mainstream economics has the taxonomy of market failure, conditions under which markets do not attain Pareto optimal outcomes. Austrian economics criticizes this end-state based taxonomy as failing to recognize the role of dynamic market forces in addressing public good, externality, or asymmetric information problems. Nonetheless, this still leaves open the question of when spontaneous order forces may not work well. Several literatures relate to my subject. Dysfunctional aspects of spontaneous orders have been addressed, including perverse orders which result in bads (e.g., riots, discrimination; see Martin and

Storr 2008) and the potential for one emergent order to extend its domain and adversely impact another order (di Zerega 1997). An extensive literature has applied economic analysis to science, with McQuade and Butos (2003), Butos and McQuade (2006) and Walstad (2002) specifically applying market process economics, in the spirit of Polanyi (1962). A number of papers have examined potential maladies in economic research (Klein 2005, Beed and Kane 1986, Coehlo and McClure 2005). Other papers have addressed the democratic efficiency debate from an Austrian economics perspective in essence comparing the political and economic orders (Sutter 2002, Ikeda 2003, Boettke, Coyne and Leeson 2007).

I evaluate five possible sources of differences. The first is extensive government funding of higher education, which might disrupt academic research in the same way that central planning ruins an economy. The second is the organization of the academy on the basis of departments directed by peer review. The third is a lack of commercial incentives in nonprofit colleges and universities, which would reduce the cost of indulging prejudices regarding scholarship. The fourth is the lack of a medium of exchange across departments, which can affect the organization of the production of research. The final point is the lack of ownership of research paradigms, in contrast with privately owned technological standards and prestige in place of profit, leading to more persistent lock-in problems. The lack of commercial forces in academic research - nonprofit firms, citation and coauthorship in place of money, and unowned paradigms - may explain why emergent order fails to attain the level of coordination in academic research which it does in the market economy.

## 2. Government Funding

The market process encourages entrepreneurial discovery of new and better uses of resources, and government intervention interferes with the market process. Economies become less efficient as government decision making supplants private decision making. International comparisons use government spending as a percentage of GDP to measure government's involvement in the economy, pure central planning would entail government allocating all resources. Central planning has long been regarded as inimical to scientific progress as well: "any authority which would undertake to direct the work of the scientist centrally would bring the progress of science virtually to a standstill" (Polanyi 1962: 3). Butos and McQuade (2006) detail the dangers of government involvement with science, while Klein (2005) considers reliance on taxpayer support a source of academic dysfunction.

Table 1: Sources of Revenue for U. S. Higher Education

	Public	Private
Tuition & Fees	16.3	29.4
Grants & Contracts		
Federal	13.1	14.1
State & Local	6.2	1.4
Government Appropriations		
Federal	0.8	
State	22.3	
Local	0.2	
Gifts	2.2	12.0
Investment Income	4.7	21.8

The table reports components as percentage of total revenue, but do not sum to 100% because not all categories are reported. The figures are for four year colleges and universities, and for 2004-05. Grants & contracts for private universities include appropriations.

Source: Digest of Education Statistics,  
[http://nces.ed.gov/programs/digest/2007/menu\\_tables.asp](http://nces.ed.gov/programs/digest/2007/menu_tables.asp)

At first glance, the numbers validate the government support and central planning thesis. The majority of students in the U.S. attend public universities, and government research, federal student aid, and government guaranteed student loans are other important politicized source of revenues. Table 1 presents data on funding sources for four year public and private universities in the U. S. For public universities, government appropriations and grants and contracts amount to over 42% of revenue, and when other types of government support (including Federal financial aid) are included, easily more than half of funding for these universities comes from government. Government grants provide 15% of the revenue of private universities, and student aid comprises a good part of the 29% of revenue from tuition.

Government spending is not pernicious per se, as Cowen (2006) argues the impact of government spending on discovery depends on the details. Government spending can sometimes augment discovery, as illustrated by the arts in the U.S. during the 1930s. Cowen argues that the low cost of individual discovery projects (the amount an artist needs to produce a painting or sculpture) and the concentrated benefit to society from the best works of art create a setting where government support may be beneficial. During the 1930s, the Depression reduced market support for the arts, so government funding in all likelihood allowed the production of art which otherwise would not have come to exist; even if most government supported art was forgettable, the contributions Cowen documents probably render public support beneficial

on net. The centralization of government support is also key. A national arts council with control over the bulk of the resources for the arts is likely to reduce diversity and inhibit innovation. But smaller amounts of support from many different governmental units (say local arts councils) which supplements substantial market support is more likely to augment discovery. The crucial factor is whether government supports discovery projects which would not be undertaken otherwise without restricting privately supported projects.<sup>3</sup>

Examination of government spending for academic research suggests that government probably does not restrict discovery. I consider first disciplines where research does not involve extensive capital investments, fields where research can be conducted using normal resources provided by a university. Public universities in the U.S. are typically operated by states which compete against each other in the research market. Most states have more than one independent public university, and even branch campuses in university systems have considerable autonomy in hiring or tenure decisions; the faculty at each of the campuses of the University of California system make their own personnel decisions. Reliance on peer review decentralizes personnel decisions to the department in many universities college level and based largely on peer review (see Section 3), so even large state universities are not centrally planned. The number of academic positions under control of any one department is an infinitesimal portion of all positions in a discipline. While peer review creates a potential mechanism for disciplinary guilds, the American Economics Association -- like most disciplinary associations -- does not enforce a guild system: the organizations do not have the power to approve eligibility for faculty positions or assign members to teaching posts.<sup>4</sup> Federal financial aid and loans are more like vouchers and the conditions on eligibility, which have led some colleges to refuse to accept student aid, do not affect faculty hires or research. Given the freedom that faculty members possess in choosing their research topics and department discretion in hiring, government does not centrally plan academic research. The highly decentralized nature of government funding for higher education in the U. S. should render its effects second order.<sup>5</sup>

The analysis differs in fields where research is capital intensive. Government research grants account for more than half of university research and can substantially affect its conduct. But the total of federal funding ignores the many agencies which fund research. Table 2 lists the 2006 budgets of several top federal grant making agencies to document the multiple sources of funding. And even these agencies are not unitary actors; the National Science Foundation is organized with seven directorates which each possess autonomy. Of course, the multitude of federal funding sources obscures the concentration

Table 2: Research Grants for Universities for Selected Federal Agencies

Department	Funding (Millions of Dollars)
Agriculture	\$552
Defense	\$2,313
Energy	\$4,024
Health & Human Services	\$16,220
NASA	\$3,011
National Science Foundation	\$3,611

Totals from 2006. Source: Federal Funds for Education & Related Programs, Research Programs at Universities, [www.census.gov/compendia/statab/tables/08s0210.xls](http://www.census.gov/compendia/statab/tables/08s0210.xls)

of funding in the National Institutes of Health or National Science Foundation in some research fields. And due to their prestige, the influence of National Science Foundation grants may exceed their dollar amounts; many scientists may alter their research in pursuit of NSF grants they never receive. Federal research agencies might be better described as big players in science and engineering fields as opposed to central planners, and big players can adversely affect the performance of a spontaneous order (Koppl and Yeager 1996, Koppl and Mramor 2003). Still even in these big player fields, federal agencies cannot prevent researchers from securing funds from other sources like industry, private foundations, and state and local governments. Thus even a scientist who runs afoul of federal funding agencies may still be able to continue his or her research. Many federal research grants in fact encourage or even require matching funds from industry. Some observers decry the influence of industry on research in some fields (Washburn 2005), which demonstrates that federal agencies do not direct all research.

I do not claim that government support has no adverse effects on higher education. Universities which receive support from taxpayers will place less emphasis on serving the customer (the student or parent), and the pursuit of Federal research dollars divert attention away from undergraduate education.<sup>6</sup> Subsidizing students increases the cost of higher education and encourages attendance by marginal students. But these effects are largely separate from the content of academic research; indeed, an increase in enrollment will increase faculty positions, increasing the quantity of research if not necessarily the amount of knowledge discovery. Selection of faculty is decentralized and no government agency must approve qualifications, while the publication process proceeds through hundreds of independent journals, so academic research remains a spontaneous order process.

### 3. The Organization of the Academy

The organization of the academy on discipline based departments and peer review insulates academic markets from the demands of students. Instead of having to cater to customers, as say a dry cleaners or auto repair shop must, academics are judged by their peers in the field (Klein 2005). The insulation from customer demands might lead universities to emphasize research at the expense of teaching, although evidence shows that students and parents value a university's reputation for research (Thornton 2004). But insulation from student demands should not substantially affect academic research. Peer review and department autonomy help ensure the decentralized character of the process and the basis for recognition which drives and fosters scientific research (McQuade and Butos 2003, Walstad 2002). The field of economics for example features hundreds of academic journals with different editors, and essentially the entire profession serves as referees. The hundreds of departments in most fields just at colleges and universities in the U. S. have discretion with regard to hiring and the journals to weigh in tenure decisions. The independence of scholars' judgments would have to be seriously compromised before peer review can entrench a dominant paradigm (Sutter 2007).

Discipline based departments create a relatively closed and insulated subsystem out of the academic discipline. As Klein with Chiang (2004) discusses, peer review, journal rankings, and citations are all highly self-referential. Just as individual scholars can choose their own research projects, a discipline can guide its own future. This is particularly true when feedback mechanisms from outside of the discipline are weak. Feedback mechanisms include a need for resources to conduct research, applications of research outside of the academy (either technological or public policy applications), and demand for students with specified skills.

Disciplined based departments create the potential for fields to pursue blind alleys in research for an extended period of time. A dysfunctional discipline which is not contributing to society's stock of knowledge could still appear to be functioning well based on the metrics of academic performance. Journals would continue to be published, citations earned, professional meetings held, honors and awards given, and classes taught. Departments would still be ranked, with some able to claim a top 20 ranking. When the feedback mechanisms are weak, there is limited scope for society to signal the negative marginal social product of scholarship to the discipline. As a concrete example, imagine that Marxist economics undergoes a rebirth and comes to dominate the profession. If society recognizes the Marxist dysfunction, the

salaries of economics graduates and the numbers of students studying economics might decline. In the long run this could reduce faculty positions and possibly lead to the elimination of the major or department at some universities. Also eventually the propagation of Marxist theories might adversely impact the quality of economic policy if policy makers cannot simply ignore the academic scribbling. But the present value of these future impacts would be negligible for today's scholars already holding academic positions. By contrast, a similarly inefficient industry would be unlikely to persist for long in a market economy in the absence, of course, of government subsidies or protection against competition.<sup>7</sup>

The autonomy of discipline based departments does not help explain how dubious scholarship might initially gain prominence. Once a method or paradigm comes to dominate the top departments of a field, autonomy will help preserve this dominance as challengers might be unable to earn degrees from top departments or publish in elite journals. Yet discipline based department institutionalizes the decentralized decision making which preserves the emergent order. Discipline based departments likely contribute more to discovery and the spontaneous order of research than they detract by helping to entrench a stagnant dominant paradigm.

#### **4. Commercial Incentives and the Non-Profit University**

The academic research and market economy emergent orders differ in one undeniable aspect: the academic order is based within nonprofit colleges and universities, while businesses in the economy pursue profit.<sup>8</sup> Reputation and prestige drive science and research, not profit, or at least not directly. Universities and departments do not have residual claimants and do not employ high powered incentives, in contrast with the firms which produce goods and services. Whereas the managers of firms might receive bonuses for meeting sales growth, profitability, or cost control targets, department chair persons and faculty do not receive bonuses based on their department's ranking. Note that monetary incentives are not absent from the nonprofit status of universities entirely, as universities compete for faculty in a competitive market and pay salaries in excess of \$250,000 a year in some disciplines. Administrators can enhance their reputation by improving the research rankings and research funding of departments. But universities do not offer bonuses to faculty based on the department's overall research ranking even though the quality of a department depends on the contributions of the faculty beyond their own research in the hiring, evaluation, and mentoring colleagues.

Several differences in the orders plausibly follow from this. Nonprofit universities will be less responsive to customer (student) preferences to the

extent which profit maximizing businesses must, and when combined with taxpayer support and captive demand for some departments due to curriculum requirements, customer service may often lag.<sup>9</sup> A consequence for academic research is that the lack of a profit motive might encourage faculty to indulge preferences or prejudices regarding research. Competition and profit seeking undermine discrimination in a market economy, as firms who do not hire qualified minorities sacrifice profit and lose out to firms that do not discriminate (Becker 1971). Indeed much of the apparatus of South Africa's system of apartheid was designed to counter firms' profit motive to undermine racial separations (Williams 1989).

Academic departments consequently should be more likely to indulge prejudices than firms in the market economy. Preferences regarding the racial or gender composition of the faculty could be one component of this. Of more concern for academic research would be indulgence of preferences regarding scholarship, perhaps fads in research or ideological or methodological conformity at the expense of quality. A for-profit business sacrifices profit by not hiring the best person, and even then a monetary penalty may still not overcome prejudice. The lack of commercial incentives may allow the persistence of mediocrity, fashion or bias in the academy.

But people are not just motivated by money. Many faculty contribute to the public good of their department by serving on search committees or reviewing candidates for tenure out of a sense of professionalism and pride. Universities may institutionalize mechanisms in the tenure process (e.g. service requirements) to help select faculty willing to contribute to this public good in addition to conducting their own scholarship. Outstanding colleagues can also improve the quality of one's own research, helping to align self-interest with the department public good. If these forces function well, then academic departments may not be significantly likely to indulge prejudices over quality despite the lack of a profit motive.

The extent of the distortion due to a lack of a profit motive in academics is an empirical question, and may not be as significant as economists might suspect. For instance, evidence of favoritism in journal publications is elusive (Thornton 2004). Laband and Piette (1994) examined citations to papers published in top economics journals for evidence of favoritism toward authors with institutional ties to the journal. Laband and Piette found, however, that papers by insiders were cited as often as other papers, so favoritism does not appear to compromise journal quality; indeed, they argue that ties and networks conserve on the cost of searching out good papers. Goff, McCormick and Tollison (2002) found that successful teams integrated first in both for-profit Major League Baseball and non-profit Atlantic Coast Conference college

basketball. They argue that teams succeed because they are well run and entrepreneurial, and good teams are more alert to ways to improve than their rivals, regardless of whether the team plays for profit or not. On the other hand, Pjesky and Sutter (2008) find that top law schools were significantly more likely than prestigious law firms to hire graduates of top ranked law schools, consistent with the nonprofit sector indulging a prejudice for pedigree. If law schools indulge in a prejudice for pedigree, they could also indulge in preferences regarding scholarship. The indulgence of prejudices regarding scholarship can help explain the establishment of a dominant paradigm or method in disciplines.

I have cast this discussion in terms of a prejudice for scholarship versus hiring the best researchers. Because academic markets are prestige based, departments may not face a trade off between perceived quality as usually measured and the method or content of research. The self-referential character of academic research can make hiring by top departments a self-fulfilling prophecy. If the economics departments hire only high powered mathematical economists, these hires will shape the course of research as journal editors. Mathematical economics could come to dominate top journals, seemingly validating the hires. In this case the lack of commercial incentive to stem prejudice would become irrelevant.<sup>10</sup>

## **5. A Medium of Exchange and the Division of Labor in the Academy**

The evolution of money is the paradigmatic example of the spontaneous emergence of an institution (Menger 1976[1871]). Money as a medium of exchange facilitates the extension of the division of labor. As the division of labor becomes more extensive, production can be organized in two different ways, via the firm or the market. Production and exchange take place in academic as well as economic markets, although the medium of exchange differs and this effects the organization of production. In academic markets, journals do not pay authors (Thornton 2004), and coauthorship and citation are the mediums of exchange. Researchers “pay” collaborators for their services by sharing authorship in the academic market as opposed to providing cash payment for their services.<sup>11</sup> The payment - a publication or citation - contributes to the reputation of a scholar. The parallel between citation and money has been noted by Walstad (2002), McQuade and Butos (2003), and Thornton (2004), among others. I consider coauthorship to serve as a medium of exchange in the production of academic research, as publications in top ranked journals contribute to a reputation while citations come after

publication from other researchers.

Coauthorship is not as effective a medium of exchange in prestige based academic markets as money. Publication does not benefit the author directly, but rather indirectly by contributing to a scholar's reputation. Prestige and reputation earns a scholar job offers, tenure, promotions, and raises. Thus although a scholar can offer coauthorship for assistance on a paper, the publication generates reputation only if valued by peers. The organization of the academy around discipline based departments reduces the effectiveness of coauthorship as a medium of exchange in academic markets, particularly across disciplines. Publications in journals outside of one's own discipline are often discounted, for a number of reasons including difficulty in evaluating quality, a perceived lack of rigor of the other field, or prejudices of what constitutes economics (or other fields). The lack of a suitable medium of exchange for collaboration across departments creates inefficiency in production - departments must use the firm and not the market to produce interdisciplinary research. Sutter (2009) examines inefficiency generated with respect to the production of mathematical and econometric research in economics. Economists could produce model building and data analysis by purchasing the required skills on the academic market, that is, by coauthoring with mathematics or statistics faculty. The mathematician who publishes in economics journals may create a reputation for himself among economists, but not necessarily among mathematicians. By failing to generate prestige among peers in mathematics, publications in economics journals may not buy tenure in the math department. Consequently economists can only effectively "pay" a mathematician by using the firm, hiring and tenuring him in the economics department.

The need to use the firm instead of the market affects a discipline over time. Firms are identified with and defined by the activities they undertake internally and not the tasks they contract for in the market. Hiring faculty with mathematical and statistical expertise into the economics department creates a perception that solving models and running regressions are the core of economic research. By contrast, if economics "hired" technical model solving and econometric skills on a genuine academic market, more of economics graduate education would focus on history, economic history, history of thought, and current practices of business. Mathematicians and statisticians once hired on the economics faculty must also teach courses, and this increases the mathematical sophistication of the economics curriculum. Money is a highly evolved medium of exchange, and in its absence, the division of labor and cannot be fully exploited in the organization of production.

## 6. Lock-In and Commercial Incentives

Academic markets will be prone to network effects.<sup>12</sup> Both internal and external factors motivate researchers. As Polanyi, McQuade and Butos and Walstad all note, many scientists are motivated by a desire for knowledge or understanding, the sense that they know how the world works, and that their research and writing contributes to this knowledge, however modestly. Curiosity or a thirst for knowledge is an internal motive. Research will also be produced for others, and this second hand or external motive works in academic markets through reputation, as described above. Scholars or scientists might value reputation and prestige directly, that is, they enjoy being esteemed by their peers, or indirectly because it results in things of value (job offers, promotion, raises, tenure, research grants, honors, etc.). The external motive creates synchronization value in research: research produces a reputation only if it is sufficiently similar to the research of others to be favorably received. The external motive creates flexibility in the selection of methods and subjects, a desire to undertake research that will sell. The external and internal motives sometimes coincide and sometimes conflict: the research you want to undertake to satisfy your own curiosity may or may not be valued by professional peers. Most scholars pursue research for both internal and external motives, although the relative weight of the two varies across individuals. Only researchers who achieve a reputation will gain access to the systemic resources which allow them to continue to participate in the academic order (di Zerega 1997).

The external motive combined with the nature of scholarship and the role of paradigms creates the potential for pervasive network externalities in research. Kuhn (1996: 10) describes a paradigm as “achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice...” which then “provide models from which spring particular coherent traditions of scientific research.” The majority of scholars in a discipline will be adherents of the discipline’s dominant paradigm. Research which deviates from the core tenets of the paradigm will not generate reputation among scholars trained in and who accept the discipline’s dominant paradigm: “Subsequent practice will seldom evoke over disagreement over fundamentals” (Kuhn 1996: 11).

Research creates a reputation only by being synchronized with the other scholars or the discipline’s dominant paradigm. Research outside of the mainstream and at variance with the dominant paradigm will not generate substantial external value - other members of the discipline will not appreciate the value of this research as referees, journal editors, and evaluators. External motives in publishing create an incentive to conform with a discipline’s

mainstream.<sup>13</sup>

Network externalities can produce path dependence and lock-in. Once certain modes of analysis become entrenched, they will be difficult to displace, because of the synchronization value. In academic markets, tenure will exacerbate persistence. Network effects can be overcome: telephones and fax machines did in fact penetrate the market even though no one should have wanted to buy the first telephone or fax machine; and Blu-Ray discs are supplanting DVDs, which earlier displaced VHS tapes. Liebowitz and Margolis (1990, 1995, 1999) have examined cases of technology selection and find that mechanisms exist in the market process to overcome network effects and prevent inefficient lock-in. Entrepreneurial action by the owners of technologies plays a key role in avoiding lock-in. The owner of a new and seemingly superior technology has an incentive to convince customers to try their product. Complementarity between the technology and specialized labor of software often help entrench a technology. In the paradigmatic case of the QWERTY typewriter keyboard layout, for example, typists trained in touch typing on the keyboard layout complement the hardware, creating a chicken-and-egg problem. No company would want to buy all alternative layout typewriter without typists trained on these machines, yet no typists will learn typing on the new machines without employers demanding their new skills. The owner of the alternative keyboard can intervene and train typists to overcome this labor-technology complementarity. Owners of rival technologies will compete with such inducements, and the owner of the technology which generates the most value, which is also the efficient technology, should be able to offer better incentives. The entrepreneurial role for owners of technologies should prevent an economy from remaining locked-in to inferior technology for long.

The entrepreneurial role of the technology owner suggests a potential difference between economic and academic orders: paradigms or schools of thought are not owned. No one “owns” the Austrian school of economics and will act entrepreneurially to sell the economics profession on Austrian economics. The heirs of Ludwig von Mises and Friedrich Hayek cannot earn royalties by convincing mainstream economists to use their writings to formulate better economic policy analysis, they would not be able to charge economists who begin to conceptualize the economy as a process instead of attaining an equilibrium end state.<sup>14</sup> Although adherents of different schools of thought and their patrons may celebrate an expansion of their school’s share of the market, a large profit cannot be made from rescuing economics (or other disciplines) from a dead-end paradigm. Consequently, network effects should cause greater disruption of coordination in the academic order than the

economic order. A paradigm shift should occur later (or with a lower probability) in academic research than the displacement of inefficient technological standards in the market order.

## 7. The Relative Performance of Spontaneous Orders

Academic research and the market economy are both emergent orders relying on spontaneous coordination as opposed to central direction. Production and exchange occur in both orders, albeit in different forms. The comparative analysis here suggests that these orders differ in at least one important manner, the likelihood of overcoming network effects and lock-in. Unlike technologies in the market, paradigms are unowned, so academic research lacks an entrepreneur able to profit from surmounting lock-in to an inferior research method. The organization of the academy in discipline based departments also insulates a field from feedback concerning the low value of the discipline's scholarship. All of the academics in a discipline might consider their field to be healthy, yet no outsider can capture the gains to society from overturning the status quo. The propensity for network effects to arise may not differ between academic and economic orders, but academic research will less readily escape lock-in to an unproductive paradigm.

Commercial forces are not as prevalent in the academic order. Most academics work for nonprofit institutions and the less effective medium of exchange in the academic order can distort production. Departments secure discretion to indulge prejudices regarding research with no residual claimant to check this discretion. And academic research is self-referential, so once a fad or bias in scholarship begins to take hold, adherents will be editing and refereeing for journals, validating the research, albeit in circular fashion. If feedback mechanisms in the discipline are modest - that is, if research does not require substantial capital investments or have technological or policy applications - a discipline might founder for decades.

How might the insights derived here apply to other spontaneous orders? Consider the potential for lock-in in language versus the common law. Languages, like schools of thought, are unowned, and thus the profit motive will be difficult to harness to displace inferior languages.<sup>15</sup> Legal precepts are similarly not owned, but in contrast to research, the law is less insulated from the rest of society than the academy. While zero or negative marginal social product scholarship could persist in some corner of the Ivory Tower, inefficiency in the law will generate considerably greater negative feedback. An inefficient precedent will lead to more litigation. Thus language would be similar to research in its potential for lock-in, while the law might be closer to the market economy.

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## Notes

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<sup>1</sup> Page numbers are from an online posting of Polanyi’s paper at [www.compilerpress.atfreeweb.com/Anno%20Polanyi%20Republic%20of%20Science%201962.html](http://www.compilerpress.atfreeweb.com/Anno%20Polanyi%20Republic%20of%20Science%201962.html).

<sup>2</sup> On whether Austrian economics has or can face a valid market test see Rosen (1997), Yeager (1997), Anderson (2000), Laband and Tollison (2000), Block (2000), Thornton (2004), and Sutter (2007).

<sup>3</sup> One factor which also favors the productivity of government supported discovery in the arts is the closed-end nature of discovery. In art the discovery endeavor concludes when the painting or sculpture is completed and added to the stock of art. For new products the discovery is far more extended, including a period of production to learn if a product truly can be made and sold for a profit. Government might support an enterprise long after society has learned that the product does not constitute an efficient use of resources.

<sup>4</sup> Clearly in some disciplines like medicine or law, there is more of a centralized mechanism of control through accreditation of degree programs. Professional accreditation can also centralize decision making to some extent.

<sup>5</sup> By contrast, the more centrally controlled university systems of Britain and Europe underperformed the decentralized U.S. system, contributing to the brain drain migration of scholars to the U. S.

<sup>6</sup> Many have observed that at shopping centers employees park farthest from the mall to convenience customers, while at universities, faculty and staff get the best parking places. Responsiveness to student demands must necessarily be tempered in education, given that students are not in a position to fully evaluate curriculum content, and of course students will want to receive higher grades for less effort.

<sup>7</sup> There would be potential for competition among disciplines to correct the problem. Departments can expand by creating new programs or soliciting support for new types of research. And new fields can arise to meet gaps in scholarship by existing disciplines.

<sup>8</sup> There is a small but growing for-profit segment of the higher education market. These schools tend to specialize in standardized curricula, and have not ventured into the research market.

<sup>9</sup> Many have observed that at shopping centers employees park farthest from the mall to convenience customers, while at universities, faculty and staff get the best parking places. Responsiveness to student demands must necessarily be tempered in education, given that students are not in a position to fully evaluate curriculum content, and of course students will want to receive higher grades for less effort.

<sup>10</sup> Also faculty members may not perceive that they are necessarily indulging a preference at the expense of quality. Austrian economists might think that Austrian economics is the best way to do economics, even if Austrians do not publish in top journals, and thus see hiring a fellow Austrian as a way to strengthen their department.

<sup>11</sup> In the market for consulting services in economics or with grant funded research in the sciences, payment for service will often be made in cash.

<sup>12</sup> On network effects in economics see David (1985), Arthur (1989), and Liebowitz and Margolis (1999).

<sup>13</sup> A heterodox school of thought may have sufficient size to create some synchronization value of its own. Again this will be dependent on prestige, convincing members of this group of the quality of one's research.

<sup>14</sup> Except in the trivial sense that sales of Mises' and Hayek's books would increase.

<sup>15</sup> One exception would be when a nation, particularly a kingdom or empire, extends its rule over a territory with numerous local languages. The ruler would be able to capture a considerable portion of the gains of escaping lock-in to inferior languages.

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