



UNC
COLLEGE OF
ARTS & SCIENCES

THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

DEPARTMENT OF PUBLIC POLICY T 919.962.1600
ABERNETHY HALL F 919.962.5824
CAMPUS BOX 3435 david_dill@unc.edu
CHAPEL HILL, NC 27599-3435 dddill.web.unc.edu

DAVID D. DILL
Professor Emeritus

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Managerialism, Garbage Cans, and Collegial Governance: Reflections on an Economic Perspective of University Behavior¹

Introduction

Throughout his career Gareth Williams has applied an economic perspective to higher education policy and organization. In a now classic early analysis Williams (1984) noted the seminal insights Adam Smith contributed to the field, but emphasized contemporary economic research on higher education had emphasized Smith's "macroeconomic" insight on university behavior, what is now termed human capital theory (e.g., Becker, 1994). As a consequence Williams suggested the "microeconomic" insight also advocated by Smith, which examined the influence on university behavior of the different means of allocating finance to and within universities, had received much less emphasis and study. In subsequent analyses Williams (1995, 1997, 2004) contributed to this neglected area of research from an economic perspective.

With the reforms associated with the "massification" of higher education (i.e., expansion of participation to the majority of the relevant age group) in most developed and developing countries over the last quarter of a century, the impacts of finance on the policy making behavior of institutions of higher education has become a much more significant as well as controversial area of study. Because many within the academic profession perceive the impacts of these policy changes in negative terms, economic perspectives on university organization and governance themselves have sometimes been criticized, if not seriously contested. But similar to other areas of public regulation, it is important to distinguish between the insights of economic research and the design of implemented public policies. As with any public policy issue dealing with regulation, policymakers and economists may not agree on the necessary elements of the most effective policy options. Therefore in the analysis to follow I explore the research on university decision making behavior, attempting to suggest how an economic perspective, appropriately applied, may continue to provide useful insights into the design of university governance.

One of the earliest applications of a modern economic perspective to university behavior is Garvin's (1980) study of American research universities. At the outset of his empirical study

¹ I am grateful for the valuable comments on an earlier draft of this paper by Ron Barnett, Steven Hemelt, Paul Temple, and Boone Turchi, but I remain solely responsible for the arguments presented.

Garvin reviewed the alternative models of university behavior drawn from other disciplines as well as from academic tradition itself: the bureaucratic model, the political model, the “organized anarchy” model, and the academic collegial model. To provide a clearer understanding of the insights to be drawn from an economic perspective, I briefly examine these alternative models of university behavior, still widely applied and debated in contemporary research on higher education (Huisman et al, 2015), contrasting them where appropriate to generalizations drawn from relevant economic research.

The Bureaucratic Model

The bureaucratic or “command and control” perspective on university behavior was typically applied in the past to less developed university systems such as Eastern Europe, Latin America, and Africa; however aspects of the bureaucratic model have always been associated with US higher education. Its tradition of corporate independence among colleges and universities and its pattern of dual or “shared governance,” combined collegial control with aspects of administrative hierarchy (Dill, 2014a). The bureaucratic model assumes and justifies greater influence and control by university administrators through more top-down forms of academic governance and decision making. Because the massification of higher education systems world-wide in recent decades has been associated with growing concerns among policymakers about the efficiency and effectiveness of university systems, the bureaucratic model of university governance and administration has increasingly influenced the design of national higher education financing and regulatory policies in many developed nations as well. These new policies are viewed by many in the university community as an effort to empower academic administrators, imposing an inappropriate and ineffective “managerialism” on university behavior. This view is particularly espoused in the professorially guided university systems of the Westminster countries and some EU nations.

These managerially-oriented policies for higher education have often been justified by policymakers using concepts drawn from the New Public Management (NPM), a term first attributed to Christopher Hood (1991) However, because the concept of (NPM) is not systematically defined, it has become an “umbrella” concept associated with policy reforms that vary significantly from country to country. That is, they are path dependent, shaped by the particular history and institutions of each nation. But some of the NPM-related reforms appear to have been influenced by core assumptions of the new institutional economics (Weimer and Vining 1996).

For example the principal-agent assumption that transaction costs, including monitoring the self-interested behavior of professionals, can be minimized through better specified contracts has led to national policies tying university research funding to clearly defined indicators of university output. But as previously suggested, economic research (Weimer and Vining, 1996) raises questions about the effectiveness of applying simplistic principal-agent conceptions to organizations as complex as universities. For example the principal-agent model is likely inefficient for organizations with the goals of research universities, because of the difficulties and high costs of validly measuring complex outputs such as academic education and research. In addition the principal-agent model predicts difficulties in effectively controlling cross-subsidies in professional organizations with multiple outputs, such as universities, which are engaged in teaching, research, and public service. The costs, continual adjustments in measures, and identified impacts upon university behavior of the former Research Assessment Exercise (RAE) in the UK provide some evidence in support of these points (Dill, 2014b).

NPM policies have similarly been associated with government efforts to reshape university governance, encouraging greater executive authority for administrators and diminishing the collegial influence in university decision making of academic staff. But an economic perspective also suggests an emphasis on managerial authority in universities is likely less efficient for society than well designed collective or collegial processes of governance and decision making, because long-term academic staff are more likely to provide truly independent judgments on critical university decisions than are shorter-term administrators who may personally benefit from the decisions made (McPherson and Schapiro, 1999). As Williams (2013, 67-69) observed with regard dishonest management in the UK university sector:

In any economic or social organization there is always a risk of corruption, as some people in positions of influence use their power for their own advantage rather than for that of the organization or society to which they owe allegiance. ...In a competitive market system those in positions of authority are particularly susceptible to temptation, especially if they promote entrepreneurial behaviour where success is measured largely in terms of effective innovations, which often means bending the rules, sometimes to breaking point. However, the adoption of market values and financial incentives greatly increases the temptation. ...Certain British universities have been fined considerable sums for over-recruiting on student target numbers and occasionally for submitting misleading statistical returns about numbers of students and course completions.

Furthermore, consistent with an economic perspective, research on university governance in the US indicates administrators and academic staff members pursue different goals and interests (Kaplan, 2004). Consequently a recent economic behavioral model of shared governance (Carroll, Dickson and Ruseski, 2012), which controlled for the degree of faculty participation in US higher education, discovered that decisions made primarily by administrators led to an overinvestment in university “non-academic quality,” such as athletics, amenities for student life, and residential facilities. Administrator-controlled decisions also led to increased undergraduate enrollments and to higher total costs for undergraduate students. In contrast decisions reflecting greater faculty participation in governance led to lower investments in non-academic quality and to higher levels of graduate enrollment, to greater sponsored funding, and to increased academic quality as measured by the scope and rigor of academic program offerings as well as faculty qualifications. Based upon their measures of impacts the authors concluded, when compared to greater administrative authority, increased faculty participation in academic governance, particularly in tight fiscal times, yields more socially optimal outcomes.

At the same time it is important to distinguish between national policies promoting managerialism within universities, understood as increased executive authority and centralized decision making, and collective actions by universities themselves designed to improve the management of instruction, research, and public service. For example the increased emphasis on “national innovation” among the OECD nations has stimulated reforms in academic research funding that have led to experimentation with new means of managing academic research and technology transfer within universities. Research (Dill and van Vught, 2010) suggests some of these new university processes have improved both the productivity of academic research and scholarship as well as their benefits for the larger society.

The Political Model

The “political model” of university behavior, well-articulated in the US by Baldrige (1971), emphasizes the variations in university goals and policies among administrators, students, and faculty members, as well as differences among faculty members in different disciplines regarding educational matters. However in contrast to the bureaucratic model, emphasizing increased executive authority and centralized decision making, the political perspective focuses on the distribution of power among all constituencies of the university as well as the governance structures and processes employed to resolve internal conflicts. Therefore the political perspective is often associated with models advocating a more inclusive or “democratic” form of academic governance.

Research on university behavior employing a political perspective expanded in the latter part of the twentieth century, because of the changes in university governance made in the US and Europe in response to the student demonstrations of the 1960s and 70s. In the US this led for a period of time to much greater student representation in university governance, while in northern Europe related national reforms led to longer lasting democratic forms of university governance involving not only students but also representatives of non-academic staff and external lay groups (Kogan, 1984).

In the US contemporary research (Kezar and Eckel, 2004) employing the political perspective on university behavior argues that the academic tradition of “shared governance” among administrators and faculty members rarely functions effectively in practice, slows necessary decision making, and impedes needed university reorganization and strategic change. However, much of this research, as Garvin (1980) originally noted, fails to control for academic performance, is often based upon case studies, and given its perspective, tends to underemphasize if not diminish the tradition of collegial or guild control of academic processes. In contrast Kaplan’s (2004) national survey of academic governance in the US, which replicated an AAUP survey in 1970, discovered the same institutions now reported striking increases in faculty control over decision making in the traditional areas of faculty authority. Kaplan’s survey responses, which included faculty representatives and administrators from each institution, also provided little evidence that shared governance posed widespread problems to effective academic management. Furthermore, reports of encroachments on the tradition of shared governance or the ineffectiveness of the process represented a clear minority of cases in his survey. Kaplan’s research also reaffirmed the hierarchical nature of academic authority in the US system of higher education identified by Clark (1987) and other researchers. That is, the highest rated and most productive research universities and liberal arts colleges reported greater influence of faculty authority and higher levels of faculty participation in academic governance.

In a later critique of the collected academic research on academic governance in the US, Kaplan (2006) argued it has too often reflected a political focus on the “hard” institutions of rules, procedures, and decision structures in academic governance and underemphasized the “soft” institutions by which universities communicate the attitudes and norms about how governance decisions ought to be made. Kaplan’s criticism is given empirical support by recent intensive case studies of leading international universities (Paradeise and Thoenig, 2013), which included the public University of California - Berkeley and the private Massachusetts Institute of Technology in the US, that focused on the collegial form of “internal governance” by which these institutions attain standards of excellence in instruction and research. Similar to Kaplan the authors concluded that academic quality was primarily sustained through the social interactions that occur within and between academic subunits and among academic staff in the host university. These collegial processes play a major role in building shared identities, developing valuable common knowledge in instruction and research among academic staff members, as well as generating and communicating communal norms and values through socialization and internal

regulation. Finally, these processes legitimate certain decision making criteria within academic institutions and have an impact as well on the distribution of authority and power within the university.²

The “Organized Anarchy” Model

The “organized anarchy” model and the related “garbage can model” of decision making articulated by Cohen, March and Olsen in 1972 has been continually influential in organizational research and is still widely cited as particularly descriptive of university behavior (Huisman et al, 2015). Cohen and March as well as Olsen (Cohen, March, and Olsen, 2012) were engaged in separate studies of higher education in the United States before they collaborated in the development of these models. Cohen and March (1986) also subsequently utilized these models as a conceptual cornerstone of their influential national survey of US academic leadership and decision making.

The “garbage can model” assumes decision making is a process in which decisions are generated by the random intersection of independent “streams” of problems, solutions, participants, and choice opportunities. Thus choice opportunities are “garbage cans” in which the resulting decisions if any depend on whatever mixtures the intersecting streams generate. As a consequence choices often just happen and solutions have no clear connection to problems. But garbage can decision making requires an “organized anarchy,” a setting characterized by problematic preferences, unclear technology, and fluid participation – conditions of ambiguity readily recognizable within universities. While some of the conceptual underpinnings of these two models can be related to economic theory, the unpredictable if not irrational nature of the garbage can decision-making model appears to undercut traditional economic concepts of rational choice. The models therefore are often cited by those who criticize the relevance to higher education of current “managerially-oriented” policies.

However many scholars citing and generalizing from these models, particularly in the field of higher education, have been inattentive to their derivation and conceptual components. For example the original models, while inspired by observations from American universities, were not based upon an empirical study or test, but were supported by the results of a computer simulation included with the published article. A retest of this simulation by respected scholars in the US (Bendor, Moe, and Shotts, 2001) revealed that it did not support many of the components of the accompanying verbal model and they therefore called for a needed reformulation and retesting of the core concepts. In response one of the original authors (Olsen, 2001) objected that the “garbage can” and “organized anarchy” concepts were never intended to be “testable models,” but rather were better understood as “metaphors” to help shape and guide thinking about organizational behavior. Possibly in response to this theoretical dispute a major conference on the “garbage can model” was subsequently held featuring recent studies applying the concepts to organizational behavior (Lomi, and Harrison, 2012). While this new research may have helped refurbish the reputation of the original “models,” it is worth noting that in

² One of the classic models of organizational behavior traditionally applied to universities is Weick’s (1976) concept of “loose-coupling.” In his original article Weick used educational organizations to illustrate his conception of decentralized or loosely coordinated units within organizations. However, in a subsequent reconceptualization (Orton and Weick, 1990) Weick expressed concern that the concept was being interpreted in the unidimensional sense of “decoupled,” when his original meaning was a dialectic, that is autonomous units that are still connected and coordinated, but loosely so. The recent research on governance in high-ranking universities (Paradeise and Thoenig, 2013) echoes the importance of the organizational integrating processes of communication, social interaction, and reaffirmation of shared values, which Weick also emphasized in his reconceptualization.

contrast to the initial studies by Cohen and March as well as by Olsen that gave birth to the concepts, none of the new studies was based upon or included a sample from higher education.

More useful for comprehending the value of an economic perspective on university behavior are two often neglected components of these original “metaphors.” The irrational behavior of garbage can decision-making was argued to be contingent upon an exogenous variable, “organizational slack,” defined to include the amount of money and other resources provided to an organization by the external environment. Cohen, March, and Olsen (1972) noted, in an analysis based upon the computer simulation that also appeared almost verbatim in Cohen and March’s (1986) subsequent study of higher education decision making, that slack in higher education declines during periods of financial adversity. As the financial adversity continues Cohen, March, and Olsen’s (1972) model predicts for all schools a very significant improvement in decision making: a substantial reduction in problem activity and decision time as well as a substantial increase in decisions by resolution. This apparent positive relationship between the degree of rationality in organizational decision making and the competitiveness of financial support would of course be quite consistent with an economic perspective regarding the impact of competitive markets on university behavior.

It is especially worth noting, and little observed in the related literature on higher education, that the “metaphors” of both organized anarchy and garbage can decision-making were originally derived from observations of US higher education in the late 1960s. This period is generally described (Geiger, 1993) as part of the “golden age” of American governmental support for colleges and universities, in which publicly provided financial resources for higher education grew precipitously and were loosely related with institutional behavior. In contrast many developed countries, including the US and the UK, have experienced over the last quarter of a century declining public support for universities. During the current period of greater market competition for financial resources there has also been some evidence of a corresponding increased rationality and efficiency in university governance and decision making, particularly with regard to research (Dill, and van Vught, 2010).

Finally as noted the original Cohen, March, and Olsen (1972) model required organized anarchy as a necessary structural condition for garbage can decision making. Organized anarchy was particularly characterized by “uncertain technology.” This assumed that in certain organizations or circumstances the technology or technique for converting inputs to outputs and/or for making strategic decisions was unclear if not unknowable. This condition is relevant to the structure of universities where the technology of research and scholarship is constantly changing and assumed to be improving. But the uncertainty of technology has been particularly observable in teaching and student learning, where there have been long-standing debates and disagreements within universities regarding appropriate technique, and where the norms of academic freedom offer professorial staff opportunities to avoid or resist organizational attempts to promote educational efficiency. But similar to the nature of market competition, technology is also subject to change, and this is clearly occurring in higher education as innovations in information technology are now significantly influencing traditional techniques of teaching and student learning.

The noted economist and former President of Princeton University William Bowen (Bowen et al, 2014) recently conducted a rigorous study comparing the productivity of a traditional university course in economics and a hybrid version of the same course utilizing on-line instruction. Bowen is well known as the co-author in the 1960s of the “cost disease” concept (Baumol and Bowen, 1966). Following this concept wages in certain labor-intensive professions such as the performing arts and higher education necessarily rise at a rate greater than their growth in productivity, because technical efficiencies are difficult to achieve in these

fields. However Bowen now argues that productivity growth in higher education instruction has become both technically feasible and necessary.

Bowen underscores the need for systematic evaluations of different approaches to on-line learning, in different subject fields, and in different academic settings. However, his research study led him to call both for openness to new means of instruction by traditional institutions of higher education and for needed reforms in our conventional models of academic governance and decision making (Bowen, 2013, 64):

...if wise decisions are to be made in key areas, such as teaching methods, it is imperative that they be made by a mix of individuals from different parts of the institution -- including faculty leaders but also others well-positioned to consider the full ramifications of the choices before them. There are real dangers in relying on the compartmentalized thinking that too often accompanies decentralized modes of organization to which we have become accustomed.

The Academic Collegial Model

The traditional model of university behavior explored in the literature of higher education is the “collegial” model of internal university governance most prevalent in the US and UK (Shattock, 2010). This focus on peer control of organizations has received some theoretical support from sociologists such as Hage (1974), Mintzberg (1979), and most recently in an insightful study by Lazega (2001). But for the most part the literature in higher education has ignored these theoretical contributions and based the collegial model upon descriptive analyses of academic organizations. For example Tapper and Palfreyman’s (2010) recent attempt to clarify the academic collegial model employs the English tradition of the “collegiate university,” characteristic of Oxford and Cambridge, which they define as autonomous residential colleges emphasizing undergraduate education. Consequently Tapper and Palfreyman’s analysis of collegial governance in US higher education focuses exclusively on the collegial structure of liberal arts colleges and consortial arrangements among these colleges, but completely ignores the collegial governance processes for instruction, research and public service characteristic of the best US research universities.³ As a consequence this particular “federal” conception of academic collegiality is of limited assistance in understanding the internal academic governance of universities in other countries, including the US, which are not organized according to the English tradition of the collegiate university.

Within all universities there is always a tension between the academic authority granted particular roles, for example the significant influence traditionally awarded individual professors in European university systems, and collegial or collective academic authority. Clark (1987) therefore highlighted the US academic department as a powerful mechanism not only for protecting the professional control of academic work, but also for providing a means of constraining excessive individual authority. Academic departments in the best US universities do acknowledge the importance of faculty seniority and experience by requiring the chair of a department to be a senior or full professor and by assigning to full professors responsibility for appointment or promotion to full professor as well as for the award of academic tenure. But on most other departmental matters, voting is by “one person, one vote,” which includes junior

³ For an insightful analysis of the collegial university processes in the US that contribute to producing high quality academic work, see Thoenig and Paradeise, 2014.

members of the academic staff, and thereby acts as a collegial brake on the authority of senior professors. As Clark (1987: 155) observed:

“National systems that do not have [academic departments] seem to evolve toward [them] to tame the more narrow inclinations of individual specialists and to bring collegial principles to the fore.”

Consistent with Clark’s view many EU universities are now for the first time adopting departmental structures and also reforming the traditional “master-apprentice” model of doctoral training, based upon the substantial authority historically awarded to individual professors. Instead they are developing a university-wide culture of shared values and commitment to research-doctoral education featuring new governance structures “with defined processes that enhance quality and aim at coordinating individual efforts” (Byrne, Jørgensen, and Loukkola, 2013: 13). These changes in EU university internal governance were not made in response to external policy directives or “managerialist” incursions, but rather illustrate the types of voluntary collegial adaptations viewed as crucial for assuring and improving academic quality in the more competitive global environment of higher education.

The new structures implemented by EU universities (Byrne, Jørgensen, and Loukkola, 2013) include doctoral schools, often a university-wide unit similar to a US graduate school. In the US a graduate school is a collegial governance structure engaging the collective academic staff of an institution in developing and implementing policies designed to assure the academic standards of each of a university’s research doctoral programs. Similarly in a number of EU universities the collective faculty has been significantly involved in creating new university-wide rules and guidelines for doctoral supervision. These new rules include the adoption of doctoral committees to augment the expertise of the traditional thesis supervisor, the creation of university-level admissions committees for research doctoral education, as well as the creation of “institutional spaces” for the exchange of experiences and good practices among thesis supervisors via informal peer-learning groups and training opportunities.

The adoption by many EU universities of departmental and graduate school structures as well as university-wide policies governing research doctoral education represent necessary adjustments in the distribution of academic authority within institutions, a shift to a more balanced system featuring collegial or collective academic authority over research doctoral and instructional programs. These changes in university governance and decision making appear largely voluntary, not influenced by government incentives or directives, and responsive to ongoing changes in the universities’ environment.

The Perspective of Organizational Economics

Over the last several decades the use of economic logic and methods to understand the existence, nature, design, and performance of managed organizations has matured into the field of organizational economics (Colombo and Delmastro, 2008; Gibbons and Roberts, 2013). Several generalizations from this field, which is based primarily upon studies of organization in business and industry, may be used to summarize a number of the points noted above regarding organizational behavior in higher education. First organizational design and performance is significantly influenced by the character and competitiveness of the markets in which organizations operate. Second, the nature of relevant technologies has independent effects on organizational design and performance. Third, as a consequence of changes in markets and technologies, historical studies of organizational design (Colombo and Delmastro, 2008) reveal

an evolution from the early hierarchical “M-form” to the more contemporary and leaner “J-form” of organizational structure. The M-form was characterized by a deep organizational hierarchy, vertical coordination and control, highly centralized decision making, and measurable data upon which the organization’s strategies were based. The more contemporary J-form reflects the demands of global market competition and is characterized by decreased bureaucratization, larger spans of control, decentralized decision making to encourage more innovative approaches to complex and less quantifiable tasks, as well as greater reliance on the management of human resources to achieve needed coordination. Strikingly the more modern J-form of organizational design evolving in the business sector has many similarities to the recent research on the governance and structure of effective universities (Paradeise and Thoenig, 2013).

As noted in the preceding review of organizational behavior in higher education, greater market competition, some but not all induced by new forms of government financing and regulation, as well as significant changes in technologies relevant to university research, teaching, and resource allocation are requiring universities world-wide to make adjustments in their organizational design. Reflecting the recent research on organizational economics some economists (Aghion et al, 2010) have argued national policy reforms for higher education are most efficient for society when they emphasize merit-based competition for university research funding and allocate greater authority to universities. This autonomy permits universities independently to control the use of their budgets, to choose compensation for their faculty, and to hire whichever academic staff they most prefer, processes associated with socially beneficial research performance.

While these types of deregulatory policies are being implemented in a number of countries, as previously indicated policymakers in some developed nations including the UK and US are also advocating increased “managerialism” in university governance and decision making. This is being pursued through regulations promoting greater executive authority, more centralized governance of university strategy, and diminished influence of academic staff over teaching and research policy. From an economic perspective this type of managerialism appears to be applying an outdated and increasingly inappropriate organizational design to academic work.

The “Commons Model”

The forces of increased market competition and changing technology will require significant changes in university behavior. Additionally in countries where institutional governance was significantly influenced by the policies of educational ministries and/or by the collective academic profession, universities now are being awarded greater autonomy, transforming them into strategic actors able to define their own policies and to implement them through internal organizational processes. In this new and challenging environment, how is the organizational design of universities best conceptualized and studied? A potentially more valuable framework for exploring organizational behavior in universities is the “commons” model thoughtfully articulated by the Nobel laureate in Economics Elinor Ostrom (2005). In her Nobel Prize lecture Ostrom (2010) argued that neither market forces nor the rules of the state are the most effective institutional arrangements for governing, managing, and providing complex public goods. Instead, she has attempted to identify universal design principles that permit individuals in self-governing organizations to effectively address collective action dilemmas.

Although she received the Nobel Prize in Economic Sciences, Ostrom’s work has often been viewed as marginal to economic theory. For example, the recent authoritative *Handbook on Organizational Economics* (Gibbons and Roberts, 2013) cites her work only once. In part

this is because rather than statistically testing formal economic models she attempted to build her commons model from empirical analyses of actual collective goods problems in the field. But Ostrom's commons perspective is not inconsistent with much economic theory as she incorporated concepts of rational choice, transaction costs, and game theory into her perspective on self-governance.

More to the point Ostrom argued a commons perspective is most applicable in circumstances where more effective cooperation and integration among independent individuals is critical to performance, clearly and increasingly the case in contemporary university instruction, research, and service. Her commons perspective is also most appropriate when the organization's members share common values, when the organization is a self-organizing community, when the organization possesses a "nested" structure with multiple levels of rule-making (e.g., the "federal" model of academic governance), and when the organization is of a size to facilitate the active participation and interaction of its members. All of these characteristics apply to most established universities around the world. Finally the external governance of universities in the US and many developed countries including the UK has traditionally assigned the *collective* faculty or academic staff of an institution primary responsibility for the quality of academic degree offerings, the content of the curriculum, the evaluation of teaching and research, as well as for the rules and norms governing instruction, research, and public service (Dill, 2014a). Indeed in one of her last publications Ostrom (Ostrom and Hess, 2007) applied her commons framework to universities and argued they are best understood as humanly constructed, self-organizing, "knowledge commons."

From research utilizing her model Ostrom (2005) has developed several principles of "commons design." The first principal requires public confirmation of the professional autonomy and responsibility of commons members to govern their own institutions. Implementing this design principle could strengthen the commons members' motivation and commitment to invest the necessary time and effort in collective actions required to address contemporary challenges to assuring effective performance. Research relevant to this principle would explore the "external governance" of higher education, particularly the impacts on university behavior of government policies. With regard internal university governance and decision making additional "commons" design principles emphasize collective actions by commons members: 1) to develop more valid and reliable information for improving professional performance; 2) to enhance members' ability to learn new means of improving professional activities from one another; and 3) to develop more effective governance processes. Systematic research on these types of university practices, employing as in Ostrom's approach careful field studies and/or as in the traditional economic approach, testable formal models of the efficiency and impacts of these types of processes, would be more consistent with the emerging perspective of organizational economics.

Conclusion

Over the many centuries of their existence universities have been continually adjusting and adapting their internal governance and decision-making processes. As publicly supported or subsidized organizations universities have necessarily been conscious of and responsive to legitimate government directives as well as resource allocation policies. But changes in the processes of instruction, research, and public service and their respective management within universities have also occurred over time, often without government influence. While dramatic changes in basic university instruction have been less common, even in the UK the development of the residential college system at Oxford and Cambridge, the adoption of the tutorial system,

and in the nineteenth century the implementation of laboratory instruction each represented a significant change and arguably led to improvements in student learning. As previously suggested potentially the thoughtful adoption and implementation of ICT in student instruction within universities can further improve student learning⁴. In the case of university research and scholarship changes in methods, measures, and instruments over time have been continual, increasingly rapid, and significantly beneficial in improving academic knowledge and understanding. As noted the recent changes in the collective management of research and research doctoral education within the OPEC nations and EU universities also appear to be making positive improvements. Finally, substantial reforms in the processes for providing and managing university public services, including technology transfer, are underway in most nations. Understanding the impacts of these processes and how they can be continually improved for the public good remains an important challenge.

Given the critical importance of higher education to individuals and to society collective actions to improve the effectiveness of university governance would genuinely be in the public interest. Consistent with the traditional values of academic research the best means for assuring and continually improving the core academic processes of university instruction, research, and public service is through systematic, evidence-based analysis. As suggested an economic perspective on organizational behavior in higher education can make a valuable contribution to this effort.

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⁴ See for example the ICT-related university courses available from the Open Learning Initiative at Carnegie Mellon University that were rigorously designed and developed utilizing research on student learning: <http://oli.cmu.edu/>

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