Interests, Information, and Incentives in Higher Education: Principal-Agent Theory and Its Potential Applications to the Study of Higher Education Governance

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How do governance structures impact university actions? Why does it matter if a governance structure is centralized or decentralized? How does an institution respond to a governor and legislature with differing higher education agendas? Why are some campus activities politically significant while others go unnoticed? Is a university more responsive to a government that provides annual appropriations or students who are paying an increasing portion of university expenses? While some scholars (e.g., Lowry, 2001; Nicholson-Crotty & Meier, 2003; Payne & Roberts, 2004; Toma, 1986, 1990) have provided evidence that suggests the way in which governance structures are organized can impact policy outputs, theoretical explanations for this finding have been modest.

Indeed, the study of the relationship between higher education institutions and governments has long lacked a systematic and theoretical foundation (McLendon, 2003).[1] In part, scholarship of higher education politics has given little attention to understanding how the external political bureaucracy that governs colleges and universities actually operates and how that operation influences institutional activity.[2] Of late, however, a small set of researchers have been integrating principal-agent theory (aka agency theory, principal-agency theory) into the study of higher education governance, accountability, and oversight (e.g. Kivisto, 2005, 2007; Lane, 2003, 2005, 2007; Nicholson-Crotty & Meier, 2003; McLendon, 2003; McLendon et al., 2006; Payne, 2003; Payne & Roberts, 2004). Principal-agent theory (PAT) provides common assumptions for investigating the role of individual and organizational interests, information flows, and incentives in higher education administration

[1] Readers should note that our discussion relates primarily to the general relationship between governments and public higher education institutions. Throughout the chapter, we use such terms as university, college, and higher education institution interchangeably to represent all public postsecondary institutions. In addition, while our examples are primarily drawn from the US and Europe, as that is the focus of current work in the field, the PAT can be applied to many government-higher education governance arrangements.

[2] Notable exceptions include the work of Ferris (1991), Gourdrian and DeGroot (1990), and Toma (1986, 1990) who were among the first to introduce a neo-institutional perspective to the study of higher education governance; however, their work was largely unnoticed by mainstream higher education governance scholars.

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and governance. This chapter provides higher education scholars with an introduction to PAT, explores the divergent currents in its emerging use in the higher education field, and suggests new questions to further understanding of the governance process and policy implementation.

PAT focuses on the relationship between entities, either individuals or organizations, and can be used to understand motivations behind the activities of actors within hierarchical and contractual relationships. Among other areas of inquiry, the PAT can be useful for investigating and explaining why universities respond to legislative action in different ways, the impact of competing demands from different government officials on the decision making of institutional officials, and how bureaucratic governance arrangements can alter policy effectiveness and institutional autonomy.

Governments have long valued the societal contributions of colleges and universities and have used their resources to support these hallowed centers of learning. Those institutions that operate in the public sector, whether begotten through constitution, statute, or charter, were made in order to fulfill the educational needs of the citizenry. As such, these institutions often fall subject to oversight and regulation by the government. The structures that govern these institutions, particularly in how the institution relates to its sponsoring government, vary between states and nations; however, in every case there exists an underlying assumption that the institution, in some way, is responsible to the government. Edwin Duryea (2000), a historian of higher education governance, has noted that in the US, "Public boards have a direct responsibility to authorities of the state government that supports them and are subject to its executive and legislative governments—although governors and legislators traditionally have acceded to them substantial independence and, as a rule, have not meddled directly into internal affairs" (p. 3). In Europe, the relationship between the institution and the government has been even closer. National, federal and local governments in various European countries have traditionally had a dominant and direct role in governing and funding the public universities. Within the context of the US higher education system, Dunn (2003) discusses the tensions between increasing calls for accountability by external stakeholders and the ever-present expectation for autonomy and professional deference by internal stakeholders. He suggests that, "The conceptual problem centers on the necessity that non-elected public sector personnel, including ... administrators and faculty, be simultaneously empowered (by the definition of their responsibility, both objectively and subjectively) and constrained (through mechanisms of accountability that then feed into definitions of responsibility)" (p. 73). This tension is one of the classic dilemmas at the heart of the principal-agent framework: how does one empower an agent to fulfill the needs of the principal, while at the same time constraining the agent from shirking on their responsibilities?

Public colleges and universities operate as public bureaucracies, at least in part responsible to the governments that fund them and endow them with the power to grant degrees. In many nations there is a shift away from government spending on higher education, but a continued interest in ensuring those institutions remain accountable to the government. Specifically in the US, even though states now fund smaller proportions of institutional budgets than in the past, state governments

continue to exert substantial influence over post-secondary policy development, institutional decision-making, and governance organization. Literature focusing on the external politics of higher education (e.g., Doyle, 2006; Doyle et al., 2005; Hearn & Griswold, 1994; Hicklin & Meier, 2004; McLendon et al., 2007; McLendon et al., 2006; McLendon et al., 2005; Knott & Payne, 2004; Lowry, 2001; Nicholson-Crotty & Meier, 2003; Payne & Roberts, 2004; Toma, 1990) suggests that the structure of higher education governance impacts policy outputs and institutional decision making. Such findings resonate with the growing political science literature that utilizes "new institutionalism" perspectives founded upon rational theories of politics that "deemphasize the dependence of the polity on society in favor of an interdependence between relatively autonomous social and political institutions" (March & Olsen, 1984, p. 738). Evidencing the interactive role of external actors in higher education governance, Gittell and Kleiman (2000) concluded in their study of higher education political contexts:

> Public universities are not above and apart from politics. ... Political leaders, particularly the governor and top elected legislative representatives, play a significant role, often dominating design and implementation and sometimes frustrating policy reforms. (p. 1088)

Political theories derived from neo-institutionalism provide a theoretical foundation from which to study how government structures allow or inhibit actors such as political leaders to influence public bureaucracies like universities.

Similar to other public bureaucracies, public colleges and universities operate in an environment of hierarchical control and information asymmetry. Created, or at least funded, by governments to perform particular functions, colleges and universities serve as agents of the state (or nation). These agents have historically been allowed a high degree of autonomy and freedom from direct legislative control (Duryea, 2000). This freedom derives partially from the highly professionalized nature of academia, with faculty and administrators viewed as experts (see Mintzberg, 1979 for a more in-depth discussion of the characteristics of a professional bureaucracy).[3] This expertise creates a knowledge imbalance, as it is usually not possible for politicians or other actors in the governing structure to monitor and assess whether faculty and administrators operate in the best interest of the government, the institution, or the individual (assuming that these interests differ). Further exasperating the issue, the highly specialized nature of academic work and the complexities in the organizational structure (e.g. Clark, 1983; Birnbaum, 1988; Holtta, 1995) and production technology (e.g. Bowen, 1977; Johnes & Taylor, 1990; Cave et al., 1997) often create favorable conditions for high levels of information asymmetry.

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[3]Even though trust in the academia has decreased in the last several years, the information asymmetry caused by faculty expertise still exists. External stakeholders may use indicators such as graduation rates to determine compliance with principal goals, but this does not mean they have ability to assess such things as faculty use of time (e.g., to what extent does writing a book impact student learning?).

In light of these dynamics, a handful of scholars have used the PAT to model, study, and understand the functions of higher education governance systems. In general, PAT describes the relationship between two or more parties, in which one party, designated as the principal, engages another party, designated as the agent, to perform some task or service on the behalf of the principal (e.g. Ross, 1973; Moe, 1984). PAT has been considered relevant in different kinds of agency relationships where there exists goal conflict between the parties of a relationship and informational asymmetries favoring the agent. These two conditions activate the possibility of a moral hazard problem known as "shirking".[4] One of the main purposes of PAT is to solve this shirking problem (i.e., to find instruments that will motivate the agent to behave in the principal's interests). Although the traditional forms of PAT have focused on the relations between individuals, the applicability of the PAT has proved to be relevant at the group and organizational level as well (e.g. Ferris, 1991; Braun, 1993; Lassar & Kerr, 1996; Moe, 1990, 2005). Both theoretically- and empirically-oriented research conducted by scholars of different disciplines can be found in increasing numbers. PAT is not and has never been the exclusive property of a certain scientific paradigm; rather, it has been and could be a useful theoretical framework for many different disciplines and approaches (Kivisto, 2007).

As public bureaucracies, public colleges and universities are replete with principal-agent relationships, both internal and external to the institutions. This chapter examines how the principal-agent framework applies to the higher education setting (primarily external to the institution) and possibly reframe how both scholars and practitioners assess governance operations. In particular, the chapter begins with an overview of the economic and political science origins of PAT, focusing on the importance for scholars to be aware of how differing assumptions of the two disciplines impact adaptation of the model to different organizational settings. The chapter then reviews existing work that incorporates PAT in higher education studies, discusses application of the theory to higher education, and explores potential applications for future work.

Overview of the Principal-Agent Relationship

Originating in the study of economics, the principal-agent framework is based upon a basic contractual relationship in that a principal contracts with an agent to engage in certain functions that will improve the status of the principal relative to the status quo (Alchian & Demsetz, 1972; Jensen & Meckling, 1976). Examples of such a

[4] Shirking in the principal-agent literature is defined as the action of evading one's work or pursuing one's own goals in lieu of the principal's (Fiorina, 1982). Shirking in this context may be either passive or aggressive. It may mean that the agent advertently fails to pursue the goals of the principal or purposefully engages in actions not in line with the goals of the principal.

relationship include: patient-doctor, investor-broker, client-lawyer, and employee-employer. In such relationships, the premise is that the principal does not have enough time, knowledge, and/or energy to fulfill all of its own needs in an adequate fashion. As such, the principal contracts with an agent, usually one with the necessary time and specialized skills, to act on behalf of the principal. In its most basic form, this model suggests the concept of a market where decisions concerning the allocation of resources are made by a delegate or representative of the resource owner (Whynes, 1993). The agent is trusted to make decisions that are in the best interest of the principal. However, agent preferences derived from self-interest and self-preservation do not always ally with the preferences of the principal. The potential, and likely, difference in principal and agent preferences calls for the principal to provide incentives and monitor agent behavior to ensure compliance with "the contract."

According to Moe (1984), "The logic of the principal-agent model ... immediately leads us to the theoretical issues at the heart of the contractual paradigm: issues of hierarchical control in the context of information asymmetry and conflict of interest" (p. 787). The model is based upon the rational assumption that an individual prefers to pursue self-interest before the interests of others. Therefore, the contractual paradigm requires the principal to ensure the agent acts in the best interest of the principal, particularly given the fact that the agent's specialized abilities and knowledge advantage the agent in using the principal's resources to pursue ends that benefit the agent (Shepsle & Boncheck, 1997; Ortmann & Squire, 2000). The principal must utilize an array of oversight, compensatory, and punitive initiatives to ensure the agent acts in the principal's best interest. Provision of compensation to the agent, should mean the principal has the right to expect a minimum level of utility from the agent in exchange for the compensation (Sobel, 1993). Yet, there is still no guarantee that the agent will not shirk on its responsibilities to the principal.

In a rational world, "[a]gents relentlessly exploit every opportunity to ease their work burden, as long as the principals do not react and punish them so severely that their net utility from shirking is decreased" (Frey, 1993, p. 663). Given this expectation, it is assumed that the principal does not only need to consider instituting various oversight mechanisms, but also must have the means to alter the actions of the agent when shirking exists. When shirking is reported to the principal and verified, the principal takes action either by limiting or eliminating compensation or initiating some sort of punitive action to entice or force the agent to alter its actions. An important part of the relationship is that fear of the corrective actions of the principal may be enough of a motivation to prevent or decrease the agent's shirking. So, while one may not witness the agent altering its actions in response to the principal's demands, this lack of action does not mean that the relationship is absent of oversight mechanisms or that methods of control do not exist (LaFollette, 1994). It may, in fact, represent an almost perfectly balanced principal-agent model, where there is just enough incentive to limit agent shirking to a level of non-concern to the principal.

To ensure that the principal receives the appropriate return on its investment from the agent, the principal establishes oversight mechanisms. However, political science and economics portray these oversight mechanisms in different ways. From

the vantage of political science, governments employ a range of oversight tools to ensure that the bureaucratic agents pursue legislated goals. McCubbins and Schwartz (1984) famously suggested that government oversight can be divided between "police patrols" and "fire alarms." Police patrols are direct and centralized and tend to be in operation regardless of whether an agent is believed to be shirking or not. In higher education, police patrols include annual reports, purchase approvals, performance audits, and other forms of required reporting (Lane, in press). Comparatively, a fire alarm is "... less centralized and involves less active and direct intervention than police-patrol oversight;... [a legislature] establishes a system of rules, procedures, and informal practices that enable individual citizens and organized interest groups to examine administrative decisions (sometimes in progress), to charge executive agencies with violating [legislative] goals, and to seek remedies from agencies, courts, and [the legislature] itself" (McCubbins & Schwartz, 1984, p. 166). In essence, these fire alarms rely largely on non-governmental actors to oversee the activities of bureaucratic agents and sound an alarm should shirking believe to be observed. Lane (in press) found state governments to monitor university behavior through a web of oversight that, in addition to typical direct mechanisms (e.g., purchase approvals, program reviews, budget reviews, etc.), also includes such indirect mechanisms as investigative reports by the press, communiqué from constituents, and legislative hearings where individuals can raise concerns about an institution's activities. Upon learning about a potential shirking activity, the legislature may engage in a more formal investigation.

In terms of oversight, the economics PAT focuses more on the type of behavior to be overseen rather than the mechanisms used to oversee the behavior. In particular, economists make a distinction between "behavior-based contracts" and "outcome-based contracts" (Eisenhardt, 1989). When choosing behavior-based contracts the principal chooses to monitor agent's behaviors (actions) and then reward those behaviors. The basic idea behind monitoring behavior is to decrease the information asymmetry between the principal and the agent. In some situations, the monitoring procedures may be too expensive or difficult to be worthwhile or violates some agents' expectation of professional autonomy. In these situations, the other option, namely outcome-based contracts, could be a more logical choice for the principal. As the name implies, outcome-based contracts compensate agents for achieving certain outcomes. As a concrete example, reward schemes such as performance-based (or merit-based) salary structure can be considered as forms of outcome-based contract. Outcome-based contracts are considered to be effective in curbing the possibility of an agent acting in an opportunistic way. The rationale is that such contracts are likely to reduce goal conflict because they motivate the agent to pursue outcomes that are incentive compatible with the principal's goals (Eisenhardt, 1989; Bergen et al., 1992).

No matter how it is constructed or codified, oversight is the lynch pin of the PA relationship; for without it the agent has little incentive to pursue the goals of the principal and the principal has no means to ensure that its goals are being pursued by the agent.

The Emergence of Principal-Agent Theory[5]

PAT derives from the development of neo-institutionalism, which emerged in reaction to shortcomings identified in both neo-classical and behavioral approaches to studying organizations (Moe, 1984; Powell & DiMaggio, 1991). The neo-classical (or "old institutionalism") view of organizations centered around the "entrepreneur, a hypothetical individual who, by assumption, makes all decisions for the firm and is endowed with a range of idealized properties defining his knowledge, goals, and computational skills and transaction costs" (Moe, 1984, p. 740). As such, aspects of individual choice, environmental contexts, and goal conflict are assumed away. In response to the neo-classical school of thought, behaviorists centered on individual choices and often viewed organizations as a collection of individual processes. One major criticism of behavioral models is that they neglected the fact that "social, political, and economic institutions have become larger, considerably more complex and resourceful, and prima facie more important to collective life" (March & Olsen, 1984, p. 734).

New institutionalism developed as a way to incorporate theories about the power of institutional structures with theories about the power of individuals. Humans purposefully designed social institutions to help structure the world in which they operate. These institutions subsequently both constrain and structure individual behavior. For example, colleges and universities evolved as a way for society to preserve and transmit knowledge. Now, the structures within universities clearly impact individual and collective behavior of faculty, staff, students, and administrators (see e.g., Cohen et al., 1972; Ortmann & Squire, 2000). The focus of new institutionalism, as applied to higher education, includes understanding the influence of organizational structure on individual action and decision making behavior.[6] Further, institutions structure the nature of the relationship between individuals and organizations, empowering and subordinating various actors and groups. Moe (1984) describes this amalgamation of the power of the organization and the power of the individual as two-way authority. While bureaucratic structures purposefully create power imbalance between actors, the extent of one actors' authority over another actor is limited by a "'zone of acceptance', within which [the subordinate actor] willingly allows the [other actor] to direct his behavior" (p. 745).

One theoretical strand to emerge from neo-institutionalism was PAT, which accounts for both actor motivation (e.g., self-interest) and the role of organizational structures in constraining that behavior. After its birth, the development of the main-

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[5]This section provides only a brief overview of the major aspects of the evolutionary pattern of new institutionalism, primarily in the context of economics and political science research. New institutionalism has had significant impacts on the study of organizations in other fields such as sociology, organizational theory, and history. While basic concepts remain the same, each field has developed various sets of assumptions and goals associated with new institutionalism. See Powell and DiMaggio (1991) for a comparative discussion of new institutionalism in political science, economics, and sociology.

[6]One of the classic applications of new institutionalism to higher education is Cohen et al.'s (1972) "garbage can model" explanation of university decision making.

stream principal-agent research in economics has developed along two lines, which are usually referred to as "positive theory of agency" and "principal-agent" (Jensen, 1983; Eisenhardt, 1989). The two streams share a common unit of analysis, the contract between the principal and the agent, as well as some of the common assumptions of the theory. Nevertheless, the two streams also differ in many respects. The principal-agent literature is generally more abstract, mathematical and non-empirically oriented. Characteristic of formal theory, the principal-agent stream involves careful specification of assumptions, which are followed by logical deduction and mathematical proof. The main focus is on determining the optimal form of the contract. The other stream, the positivist literature, is generally non-mathematical and more empirically oriented. Positive researchers have focused more on identifying situations in which the principal and the agent are likely to have conflicting goals and then describing governance mechanisms that limit the agent's self-serving behavior. Positive researchers have also focused more exclusively on the intra-organizational principal-agent relationships, especially shareholder-manager relationships (Jensen, 1983; Eisenhardt, 1989). Although the differences between the two streams are notable, the streams can also be seen as complementary to each other: whereas positive theory may identify the behavior of the agent and various contract alternatives available, the principal-agent stream may indicate which contract is the most efficient in a given situation (Eisenhardt, 1989).[7] The higher education literature applying economics PAT has not made analytical distinction between the two streams. This is because the majority of previous studies have treated the PAT primarily as conceptual framework to be used for illustrative purposes, not as a theory which should be modelled mathematically or tested empirically.

The economics PAT has been considered especially valuable in re-establishing the importance of incentives, interests and information in organizational thinking. It assumes that, whether we like it or not, much of organizational life is based, at least partly, on people's self-interest, opportunism and goal conflicts. In addition, the theory has drawn attention to the issues related to information, and especially the asymmetries of information (Eisenhardt, 1989; Petersen, 1993).

Application of PAT to public bureaucracies and other political entities follows the basic tenets of the economic model discussed above; however, due to differences in the administrative and governance structures of private firms/corporations and government bureaucracies, aspects of the model need modification and further elucidation in order to be useful in the political context. As Miller (2005) observed in his review of the use of PAT in political science, "principal-agency has been

[7] The positive theory of agency seems to have connected to a broader body of theoretical work known as 'Organizational Economics' (see, e.g. Barney & Ouchi, 1986; Donaldson, 1990; Barney & Hesterly, 1996). Organizational Economics (OE) is composed of transaction cost economics (see Coase, 1937; Williamson, 1975, 1985) and property rights literature (Alchian & Demsetz, 1972). Although some other contributions of OE exist (see Barney & Hesterly, 1996), PAT and transaction cost economics are clearly its best known components. As the name implies, OE basically applies different economic models and assumptions to the field of organization studies (Kivisto, 2007).

substantially challenged, modified, and even turned upside down in order to accommodate the distinctly political aspects of several key Weberian asymmetries" (p. 203). Usage of PAT in the public realm aids in identifying and understanding the complex relationship among the various actors involved in public bureaucracies—structures filled with a vast array of oversight, purposeful and de facto autonomy, and intertwined lines of hierarchical structures not found in most private sector companies and thus largely excluded from economic models. The theory has most frequently been used to model legislative (e.g., McCubbins & Schwartz, 1984; McCubbins, 1985; McCubbins et al., 1987; Wood, 1988; Wood & Waterman, 1991) and executive (e.g., Moe, 1985) oversight of the bureaucracy; but it has also been used in the study of the President's relationship with voters (Downs & Rocke, 1994) oversight of police officers (Brehm & Gates, 1993), congruence between Supreme Court decisions and the subsequent rulings of lower courts (Songer et al., 1994), and the relationship between a regulatory agency and the non-governmental entities that it regulates (Scholz, 1991).

Mitnick (1980) first recognized the value of using the PAT to study public bureaucracies; however the theory did not begin its move toward the mainstream until about four years later when several articles sought to apply the PAT to the study of political institutions. Weingast and Moran (1983), Weingast (1984), and McCubbins and Schwartz (1984) used the principal-agent assumptions of information asymmetry and agent outcomes to reinvent the study of Congressional oversight. They posited that even though Congress did not constantly monitor the activities of bureaucracies, this did not mean that Congress was shirking on their regulatory responsibility (which is what many scholars of the time were concluding). Instead, Congress employed a combination of direct and indirect oversight, along with different forms of incentives, to retain control over bureaucratic outputs.

Moe (1984) and March and Olsen (1984) provided a broader discussion of the theories application to political sciences. These articles discussed how the behavior within political structures may not simply be studied as an accumulation of individual preferences and choices, but also a result of organizational structures. Moe's (1984) classic overview, "The New Economics of Organization" elucidated the application of the PAT to political models through an extensive comparison of political and economic organizations. Moe suggested that the entire governmental enterprise is based on the contractual paradigm (e.g., voters contract with elected officials, elected officials contract with bureaucrats, public governing boards contract with CEOs, etc.), thus postulating (and in some cases illustrating) the ubiquitous existence of agency problems throughout public bureaucracies. Noting the contractual foundation, Moe went on to observe that PAT can be used to explain various aspects of government bureaucracies: policy products, bureaucratic influence, oversight, control, shirking, and information asymmetry.

Almost immediately, a new field of research was "sparked" in political science. As Miller (2005) concludes:

> For the first time, the field of public bureaucracy had a research agenda that was based on deductive theory and demanded the highest level of methodological competence. At the same time, the empirical results suggested a more complicated story—one that led to

> challenges to the canoncial model and opened the door to reformulations of PAT that better fit this important political relationship. (p. 209)

In much the same way that PAT prompted political scientists to take a different look at oversight and accountability, the theory has the potential to further and reframe current understanding of the governance and policy making of public higher education.

Comparison of Perspectives: Economics vs. Political Science

Due to the divergent development of PAT in different disciplines, application of the theory to higher education governance and policy has been somewhat disjointed as scholars using the same "theory" utilize different assumptions based on disciplinary perspective. To help scholars better understand the use of PAT in higher education research, this section provides a comparison of the differing assumptions used by political scientists and economists.

Political and economic PAT both developed as part of the growth of new-institutionalism and attempt to predict how actors and organizational structures behave in hierarchical and quasi-hierarchical situations. Much like the economic applications, PAT in political science investigates the role of incentives, interests and information in organizational thinking. Certain assumptions regarding agent desires to shirk on responsibilities and the need for the principal to provide oversight and incentives to reduce agent shirking remain fairly constant between applications. However, a number of key differences do exist. Moe (1990) argues that the two primary differences between economic and political models can be found in the construction of the principal and the type of output produced by the agent. Political principals tend to be comprised of collective entities that produce a single contract (e.g. voters collectively electing a representative or the members of Congress creating and funding a bureaucracy) and multiple entities that create multiple contracts (e.g., the legislature and the governor placing different demands on higher education). Likewise agents can be comprised of: (1) collective entities that work together to produce an output, which typically resembles a public good (rather than a more easily measurable output such as a private consumable or corporate profit); or (2) multiple entities responding to the same principal such as when several institutions are governed by a single board.

Comparing the two disciplinary perspectives reveals a number of other critical theoretical differences in how economists and political scientists apply PAT in their respective fields. (Table 1 provides an overview of these differences.)

Contract

Traditionally, economics PAT has considered PA relationships primarily as codified contractual relationships. For this reason, economics PAT usually understands contracts as more formal and explicit instruments for enabling the economic co-operation

Table 1 Differences between PAT assumptions in economics and political science

	Economics	Political science
Contract	Explicit	Implicit
Unit of Analysis	Principal	Principal/agent
Actor Motivation	Economic utility	Economic utility and political power
Principal-Agent Relationships	Bilateral	Multilateral
Principal's Primary Mode of Control	Economic contract	Social/political contract
Output	Private good	Public good
Source of Shirking	Individual	Individual or structural

between the principal and the agent.[8] According to Perrow (1986), PAT "assumes that social life is a series of contracts ... specifying what the agent should do and what the principal must pay in return" (p. 224). Political science also views the relationship as a contractual one, but that contract can also be a vaguely defined agreement between two autonomous or semi-autonomous entities with varying levels of expertise. In fact, while the economic contract typically stipulates what is to be produced, leaving the "how" of production to the expertise of the agent; public bureaucracies often retain an information asymmetry in both how best to produce a policy output and what that policy output should look like. For example, a public university operates under the auspices of a contract with the state in that the state appropriates money to the institution with the expectation that the institution contributes to the public good through teaching, research, and service. In some cases, the state even provides some guidelines about the expected output (e.g., establishing performance measures or funding specific types of research activity); however, how those outputs are achieved are usually left up to relevant administrators or faculty members because of their expertise. This expertise "gives bureaus (agents) strategic opportunities" (Bendor et al., 1987, p. 1041) not typically observed in relationships regulated by economic contracts.

Unit of Analysis

Economics PAT gives conceptual priority to economic aspects of the principal-agent relationship by investigating and analyzing the agent's shirking behavior and the principal's means to overcome it. In this sense, the economics PAT is primarily

[8]The contract was the central concept for the early PAT theorists because it distinguished PAT from classical and neoclassical economics, in which market forces act as a disciplining mechanism on the owner/entrepreneurs who actively manage firms (Tosi et al., 1997). However, inside the various approaches of economics PAT there exist different ways to understand the nature of the contract. Some scholars including Eisenhardt (1989) and Bergen et al. (1992) have seemingly interpreted the contract to be more like a "metaphor" of a PA relationship, not as a specific and detailed construct that should be rigorously operationalized.

"principal's theory" since it takes the perspective of securing the principal's welfare against potential or actual agent shirking. While shirking and oversight are central to political science PAT as well, political scientists investigate the welfare of both the principal and the agent. Given that it is much more difficult to exchange political agents, recognizing and understanding the impact of a PA relationship on the agent (e.g., politician or a public bureaucracy) is much more important in political science than economics.

Principal-Agent Relationships

Economics PAT understands and examines relationships as bilateral relationships between one principal and one or more agents. Influenced by the assumptions common to rational choice and methodological individualism, it assumes a homogenous incentive structure from the principal. In political science, two significant departures from economics are generally acknowledged: (1) political PA relationships often involve multiple and collective principals (Bendor & Meirowitz, 2004; Moe, 1990; Lyne & Tierney, 2003); and (2) there can exist intermediary principals/agents between a primary principal and agent. In the first distinction, multiple principals act independently of each other and can create heterogeneous incentive structures, sometimes forcing the agent into scenarios not noted in economics, such as the agent having to choose between competing contracts. Also, studies of collective principals (e.g., governing boards) investigate sources of real power. For example, what is the functional difference between boards with unanimous or split votes? Does the power of the Board chair impact the operation of the principal? In the second deviation from economics, political scientists recognize that hierarchical structures can create long chains of principals and agents. These PA chains can create different agency problems than exist in a bilateral relationship.

Actor Motivation

Both economics and political science PAT considers the principal and the agent as self-interested utility maximizers. Therefore, given the choice between two alternatives, the rational principal or agent is always assumed to choose the option that increases its individual utility (Davis et al., 1997).[9] However, as Waterman and Meier (1998) observe, "In the marketplace, principals and agents clearly have different goals and/or preferences. Obviously agents want to make as much money as possible while principal's want to pay as little as possible for services ... in the bureaucratic

[9]The utility maximization assumption is especially important for mathematically oriented principal-agent researchers, because it allows different situations to be modeled and predicted mathematically in a way that would not be otherwise possible (Hendry, 2005).

setting, with a focus on policy and process instead of profit, goal conflict may not always exist between principals and agents. Principals and agents may disagree over policy, or they may not" (p. 185). Yet, it is possible for principal and agent to agree on policy while also disagreeing over how to implement the policy.

Principal's Primary Mode of Control

For economics PAT, 'contract' is understood to be an instrument enabling economic co-operation between the principal and the agent. The main purpose of the contract is to explicitly set the task for the agent, and introduce the detailed means through which the agent will be compensated for performing the task. The nature of political arrangements leads to a mode of control that is often less explicit than witnessed in relationships assessed by economic PAT. As such, while the contracts may govern economic relationships, political PA relationships can often be governed through elections, appointment of intermediary principals, power brokering, and signaling from political elites. For example, political scientists have raised questions such as whether the electorate uses elections as a type of game to select the best representative of the voters (Fearon, 1999) or a moral hazard game designed to punish politicians who fail to fulfill the desires of the polity (Ferejohn, 1986). Similar questions could be raised about how legislators use state appropriations to either reward or sanction bureaucratic behavior or governors use their power of appointment to influence board decisions.

Output

For economics PAT the output of the PA relationship is a private rather than public good.[10] This means that the output is usually somehow observable to both the agent and the principal, and it could also have many facets, such as quality and quantity. It can be, for example, the number of shoes produced by a factory worker, the volume of sales generated by a department store salesperson, the success of a surgical procedure, and so forth. Governments, however, are often in the business of producing public goods, making it much more difficult, although not impossible, in political science PAT to measure agent outputs (Moe, 1990).[11]

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[10] In the traditional sense, a 'private good' is a good consumed by one person which cannot be consumed by another person (i.e. exclusion feasible, private use). A 'public good' is a good that, even if it is consumed by one person, is still available for consumption by others (exclusion infeasible, collective use) (see e.g. Begg et al., 1994).

[11] This is not to ignore attempts to measure university outputs though such indicators as graduation rates, exam scores, and graduate school acceptance; but there remains debate about the appropriateness of these indicators to measure institutional productivity.

Source of Shirking

Economic PAT assumes that it is the self-interested utility maximization which drives the agents to act opportunistically towards their principals (i.e. to shirk). The existence of information asymmetries further encourage the shirking activity. Indeed, the assumption and existence of agent self-interest is crucial for economics PAT. If the utility functions of self-serving principals and agents coincide, there would be no possibility for shirking to appear (Davis et al., 1997). Similarly, if the information available to both the principal and the agent were to be the same, self-interest would not matter since the principal could immediately detect any shirking behavior on the part of the agent (Ricketts, 2002). Many studies in political science also focus on shirking as defined by economists; however, some recent work has attempted to identify various gradients of shirking. For example, shirking could occur due to "slippage"—unintentional shirking. In principal-agent relationships, particularly those with long principal-agent chains, information may not be fully or accurately communicated between the primary principal and the primary agent. As such, an agent's actions may be perceived as "shirking" when the agent actually thought it was pursuing the principal's goals. Thus, the source of the agents behavior would be information slippage rather then self-interested shirking.

Principal-Agent Theory in Higher Education in Governance and Policy Research

As a field of study, higher education scholars often draw on the theories of other disciplines to analyze postsecondary institutions. Usually a scholar or set of scholars adapt a theory to higher education research and then others build upon and further refine the application of that theory. However, the writing using PAT in higher education suggests a somewhat spontaneous interest in PAT by scholars working on different governance questions in varying governmental contexts (e.g. a decentralized federal system such as in the US vs. a centralized system such as in Finland).

Despite its strong research tradition in economics and political science, until recently the PAT was only sparingly incorporated into the study of higher education.[12] Wider application of PAT was seemingly ignored not only by mainstream higher education researchers, but also economists and political scientists working in the higher education field. Nevertheless, a change has seemingly taken place during the last few years; authors such as Lowry (2001), Lane (2003), Liefner (2003),

[12] Previous higher education governance studies using PAT include Toma (1986, 1990) and Gourdrian and DeGroot (1990) as well as a few occasional references and some short analyses that took place in 1990s (e.g. Ferris, 1991; Braun, 1993; Williams, 1995; Massy, 1996; Geuna, 1999).

McLendon (2003), Nicholson-Crotty and Meier (2003), Payne (2003), Gornitzka et al. (2004), and Kivisto (2005) have now more thoroughly introduced PAT to the field of higher education governance and policy studies. The rapidly growing usage is a testament to the theory's utility and flexibility. However, it also means that there has been no systematic evolution of the theory in higher education.

A review of the recent work using PAT reveals two distinct tracks of analysis with about half of the authors adhering more to economic assumptions and the other half aligning more with the assumptions derived from political science. For example, Liefner (2003), Gornitzka et al. (2004), and Kivisto (2005, 2007) align with the economic origins of PAT, which Miller (2005) refers to as the "canonical" PAT as it relies on the traditional assumptions of the theory. Knott and Payne (2004), Lane (2003, 2005, 2007), Lowry (2001), McLendon (2003), McLendon et al. (2006), and Nicholson-Crotty and Meier (2003) approach PAT from a political science perspective, which tends to slacken some of the canonical assumptions as to better fit the model to the operations of a public bureaucracy. Interestingly, due to the quasi-private, quasi-public nature of most colleges and universities, both approaches further our understanding of the academic enterprise.

The use of PAT to study higher education governance began with a mostly canonical approach by a set of papers by economist Eugenia Toma (1986, 1990), who first introduced PAT to higher education politics through a study of public university governing boards. In her first analysis, Toma asked a very simple question: what factors lead to politicians' selecting a certain type of governing board structure over competing structures? Toma's (1986) analysis suggested that states in which there were minimal barriers to taxpayers' ability to influence legislative decision making tend to have less centralized boards than those states in which citizens had to overcome high barriers to political involvement. The second analysis (Toma, 1990) investigated how board type impacts the operations of public universities. She found that:

> The structure of the boards is important because it helps to define the constraints on the board members and on the internal agents of the universities. An implication of this study is that public universities can be made to function more like private ones by placing them under separate governing boards. (p. 7)

Toma's initial inquiry demonstrated the utility of using PAT to study higher education governance; but the work also raised a number of important questions that only recently have scholars begun to address: (1) What factors influence the structural design of university governance? (2) How does the design of a governance structure influence policy outputs and the operations of a university?

The general conclusion that board structure impacts the operation of colleges and universities has been supported by subsequent studies. Following the work of Toma in higher education and building on the work of Horn and Shepsle (1989), McCubbins et al. (1987, 1989) and Moe (1989, 1990) in political science, several authors began investigating how governance structures impacted institutional characteristics. In particular, scholars were interested in how the organization of governance structures impacted funding—specifically, the cost of a college education to a student. The work of Bowen et al. (1997) and Lowry (2001) found evidence

suggesting that centralization of state governance leads to lower costs for students. Moving beyond the extent of centralization, Lowry's study also suggested that how board members are selected can also influence costs (i.e., elected, as opposed to appointed, boards lead to lower tuition).[13]

Essentially, these studies indicate that the way in which a board is organized and its members are selected can impact the interests of the board and the effectiveness of various incentives to prevent the board from shirking. This supports the suggestion of McLendon et al. (2006) that we should view, "governance arrangements as serving to institutionalize the preferences of different sets of stakeholders, which seek to shape policy consistent with their premises" (p. 19). For example, Lowry (2001) explained that his findings of centralized governance structures leading to lower costs demonstrated the board's responsiveness to a certain set of stakeholders. In his view, coordinating boards, which are generally appointed by either the governor or legislature, are likely to pursue the interests of elected officials and the general public (i.e., keeping tuition low and having higher levels of spending on student service). Whereas, non-consolidated boards were more responsive to internal academic stakeholders (i.e., faculty and administrators) and would have higher tuition costs and lower levels of spending on student services as to free up money for academic expenditures. Lowry's is a speculative explanation as the data did not directly assess board responsiveness, but it does demonstrate the feasibility of how a structure can impact the principal-agent relationship and, thus, board priorities and actions.

In a more recent study of American governance structures, Nicholson-Crotty and Meier (2003) investigated how the composition of a principal may impact the output of an agent. The study examines how consolidated governing boards (i.e., boards that governing more than one institution; often serving as the sole board for all institutions in one state) either mitigate or enhance the external political influences on the operations of universities. Using an array of structural and political variables, the authors ran a series of multiple regressions to determine the impacts of politics on different economic variables (i.e., cost of higher education per student; tuition per student, need-based scholarships and financial aid per student, and state/local appropriations per student). While there was not a clear set of themes across the states,

[13]One possible explanation for this finding is that the way in which a member is selected can impact that member's ability to shirk. Let us assume that the board member is an agent of those who enable their membership on the board. Let us also assume that the electorate is generally highly concerned about the cost of a higher education to the student. If a board member is elected by the public, they should be responsive to the desires of the public (the public's ability to prevent shirking is in their ability to remove or choose not to re-elect a board member with whom they are displease). However, appointment of members removes the public's ability to directly punish shirking. In appointment situations, the board member's principal become the government official making the appointment (likely the governor). The new principal's priorities may be freeing up state funds by shifting the costs to the individual. Even though the public still prefers lower costs, it is unlikely that they would unseat a politician simply because they refused or were unable to reign in a university board. Because there is little punishment for not following the priorities of the public, there is little incentive to keep costs low.

the study did determine that the type of structure did significantly impact the influence of politics. The authors attempt to explain the complexities of their findings:

> The widely varying pattern of coefficients as politics interacts with structure suggests that the relationships are highly complex. Providing an explanation for the patterns and how those patterns should appear will require additional theoretical work. One possibility is that the relationships are even more complex than the current regressions reveal them to be. For example, the direction of effect of legislative professionalism might be a function of both the structure of higher education and the ideology or partisanship of the legislature. This notion suggests a three-way or perhaps even a four-way interaction of these terms. (p. 93)

Such interaction should not be surprising as higher education governance structures contain an array of principals and agents. In an empirical study of European tertiary governance structures, Liefner (2003) attempted to identify the possible principals and agents in the context of higher education.

> In higher education the principal can be a ministry of science and education, the management board of a university, a president, dean, or department chair. The agents are those actors in higher education, who receive assignments, funds, a nd salaries from the principals. Therefore, a number of higher education managers, for example, heads of departments, are simultaneously principals and agents, whereas most of the professors, researchers, and lecturers can be viewed primarily as agents. (p. 477)

The findings of the Nicholson-Crotty and Meier (2003) and Liefner (2003) studies support Toma's (1990) and Lowry's (2001) premise that any theory of higher education governance cannot merely account for the existence of principals, but rather must also account for the composition of those principals.

The complexity, however, is not limited to the operation of multiple principals, but is in part due to the operation of different types of principals. Building on the work of Moe (1990) and Lyne and Tierney (2003), Lane (2005) argued that the impact of a governance structure is difficult to explain because such structures are not standard hierarchies, but contain up to three different types of principals: single, multiple, and collective. A single principal is that typically described in the PAT and often the focus of economic analysis. A multiple principal relationship involves more than one single principal, each of which having separate, independent contracts with the agent. A collective principal is where there are multiple members of a single principal, such as a governing board. The governing board acts as a single entity, but is actually comprised of multiple members. The existence of more than one principal can create competing goals, confusing the agent and leading to inconsistent outcomes. Failure to recognize the existence and operation of complex principals could lead to a misinterpretation of actor motivation and behavior.

Lane (2003, 2007) also found that the governance arrangements can impact the type of oversight used by principals. Drawing on the political science literature (e.g., Moe, 1984; Ogul & Rockman, 1990), he employed the PAT as a conceptual framework for investigating how states engage in oversight of public higher education. Using a comparative case study approach, the study uncovered that universities operate in a "spider-web" of oversight that uses multiple latent and mani-

fest forms of oversight to keep legislators informed of the activities of postsecondary institutions. While further study is needed, the data suggested that systems with fewer direct forms of oversight compensate with indirect forms.

Scholars outside of the US have also used PAT to analyze higher education governance, but view the relationship from more a canonical perspective. While American studies of PAT tend to focus on the structure of governance systems, Liefner (2003) analyzed forms of resource allocation in higher education systems and their effects on the performance of universities. Liefner recognized that the assumptions concerning goal conflicts and information asymmetries are especially relevant in the higher education context. Because of the specialized knowledge of the faculty, the production of higher education is very difficult to monitor, particularly at the level of research groups and individual scholars, but also at the institutional level. In order to avoid a situation where some agents take advantage of the fact that their efforts are hard to control, Liefner suggested that the principal should use outcome-based contracts in a form of performance-based funding procedures. Based on this analysis, Liefner formulated two hypotheses:

> 1 Agents that have been rather inactive before the introduction of performance-based resource allocation will have to work harder.
> 2 With performance-based resource allocation agents will tend to avoid projects with a high chance of failure. Departments and individuals will concentrate on activities where success can be expected because they will have to meet a formula's criteria or market demand. (pp. 478–479)

Liefner 'tested' these hypotheses with empirical (qualitative) data that consisted of interviews with 53 professors at six universities in the US, Switzerland, the Netherlands, and Great Britain. On the basis of his empirical analysis, Liefner found that the instruments of performance-based budgeting worked largely as predicted in theory. However, although the hypotheses concerning the changes in individual behavior were correct, Liefner found that universities with a large number of highly motivated and qualified faculty were successful regardless of the form of resource allocation. Despite the result that a form of resource allocation could not directly influence the long-term success of universities, Liefner explained that it still could (1) force universities and individuals to pay attention to the needs of governments and taxpayers, (2) help to adjust the organizational structures of universities more quickly to the emerging needs and opportunities, and (3) be used to re-allocate funds to those groups and scholars that have proved to be successful and to reduce the budgets of those who are not performing in an acceptable way.

Seeking to find additional empirical evidence of the PAT applicability to higher education, Gornitzka et al. (2004) attempted to integrate the perspective of PAT into the sphere of contract arrangements between state and higher education institutions. Gornitzka et al. analyzed the strengths and weaknesses of established contract arrangements in Finland, Sweden, and Denmark. The authors made several tentative and incidental observations through the PAT constructs like adverse section, moral hazard, and information asymmetry. After their analysis, they concluded that a closer integration of the external quality evaluation system with other instruments of regulation is likely to decrease informational asymmetries and thus provide greater

accountability; however, it is not possible to reduce this information asymmetry to zero, because the institutions will always know more about their functioning, efficiency, and quality than the state authorities.

Kivisto (2005), also focusing on the European context, examined some of the key perceptions and insights that PAT could offer for higher education researchers. He applied PAT concepts to the context of government-university relationships and concluded that PAT could provide a useful and applicable framework for analyzing this relationship since it is able to offer explanation for certain government behaviors (e.g. why governments acquire information before making funding decisions, why governments are creating quality assurance mechanisms and performance-based funding procedures instead of input-based funding procedures). Kivisto's other work (2007) continued this discussion by focusing more deeply on the concept of moral hazard opportunism in the context of Finnish higher education system and program implementation. He also examined the potential strengths and weaknesses of PAT more systematically. As a result of his analysis, Kivisto argued that the strengths of PAT lie mostly in its capability of offering theoretical understanding and solutions for the phenomenon of inefficiency and cost growth. Through exploring the weaknesses of PAT, Kivisto identified its limited perspective on human nature and behavior, and the theory's simplicity with regards to its capability of providing accurate descriptions of a complex reality. As a conclusion to his analysis, Kivisto suggested that PAT should be understood as an incomplete, partial, but still justified perspective for examining government-university relationships.

If anything, these recent works show the rapidly growing interest towards PAT and its applicability in studying higher education governance. Reasons for this development are various, but the general emphasis on topics like accountability (economic/political), governance, funding, and performance measurement have guided different researchers to examine PAT in the higher education context. What is interesting is that because of the unique nature of public higher education as both a public bureaucracy and a revenue producing corporation both the economic and political traditions of PAT traditions are represented in these contributions.

Economic PAT Applications to the Study of Higher Education Governance and Policy

The most central issue in economics PAT is contract effectiveness, which focuses on agent shirking and the principal's choice of options available to neutralize it. Logically, different aspects of shirking in universities could be illustrated using approaches that model the economic behavior of universities. Probably two of the best known models are referred to as the 'revenue theory of cost' (Bowen, 1980) and the utility maximizing models of (Garvin, 1980) and James (1986, 1990). In short, Bowen's revenue theory of cost assumes that universities raise as much money as they can, and then spend it all. Utility maximizing models assume that the main goal of the universities is to maximize utility, usually in a form of prestige.

Prestige is important to universities for both non-pecuniary and pecuniary reasons. It is highly associated with good quality and good quality is associated with effective and expensive educational and research services. Further, possessing a good reputation enhances a university's social standing in the larger academic community. Prestige is also important because it contributes to the financial survival of the university. By developing a reputation as a prestigious institution, the market area of a university is likely to be expanded (Garvin, 1980).

Prestige maximization usually includes intra-organizational cross-subsidization. From an economic perspective, cross-subsidization can be understood as activity, where an organization carries out a set of profitable activities that do not yield utility per se to derive revenues it can then spend on utility maximizing activities that do not cover their own costs (James, 1990). Probably the most usual form of cross-subsidization takes place between undergraduate education and research. There, resources of low-prestige undergraduate education are transferred to subsidize high-prestige graduate studies or research (see, e.g. James, 1990; Mora & Vila, 2003). Although research excellence can improve teaching and learning experiences, it often competes directly with undergraduate instruction for the monetary resources and the time and attention of the faculty (Goldman et al., 2001). In fact, undergraduate instruction can be seen as a disutility-making activity preventing faculty from concentrating on prestige generating graduate training and research (Holtta, 1995).

Revenue theory of cost and utility maximizing models indicate the possibility of various types of shirking behavior, which may appear at both the individual and organizational level. Recognizing both levels of shirking is important as governing principals often do not discern the difference between the two, construing most shirking activity as coming from the institution. At the individual level, shirking is likely to come in the form of occasional and uncoordinated activity by individuals. For instance, faculty members could increase their discretionary time largely at the expense of meeting their institutional responsibilities due the increased revenues. This would represent shirking in the full meaning of the word (i.e. faculty divert those working hours not already taken up by teaching, grading, or conducting research to private activities such as accepting speaking engagements or private consulting). Simultaneously, the shirker may benefit from the prestige generated by the collective output of other faculty in his or her department or even elsewhere at the university (James, 1990; Massy & Zemsky, 1994; Ortmann & Squire, 2000).[14] At the institutional level, shirking could mean opportunistic cross-subsidization. The government can provide the same level of resources per undergraduate and graduate student, but the university may actually spend more on prestige-generating graduate students against the will of the government. The latter tend to be taught by expensive expert scholars in small classes, compared with undergraduates who are taught in large classes by less-expensive, relatively inexperienced teaching assistants. Similarly, university administration may base its allocations to departments on

[14] The phenomenon of benefiting from the group while not contributing is also referred to as "free riding."

enrollments, but departments may assign low teaching loads, thereby transferring much of their resources to more prestige-generating research activities (James & Neuberger, 1981; James, 1990; Vedder, 2004).

The main problem of shirking from the government's perspective is that it decreases the productivity of universities as assessed by the efficiency and effectiveness of government provided funds. A university behaves opportunistically when it deliberately produces less or less effective outputs with the same inputs or consumes more inputs with same output.[15] Any form of shirking—whether individual or organizational—will have lowering effects on a university's efficiency since it deploys productive resources to other, non-productive purposes. It can also have a negative impact on effectiveness, including the quality of teaching and research. For instance, the shirking activity of the faculty members leading to a constant absence from the scheduled instructional tasks may lead to lower learning outcomes and unnecessary prolonging of students' time to graduation. Effectiveness is also lost when funds intended to be spent on undergraduate education are opportunistically transferred to subsidize research or other more prestige generating activities. Bigger class and group sizes or easier pass-rates in exams may produce "savings" that lower the quality of undergraduate instruction. As a result of this, lower learning outcomes of under-resourced undergraduates also result in ineffectiveness (Kivisto, 2007).

In addition to analyzing shirking behavior of universities, economics PAT offers insights to categorize the alternative government oversight mechanisms (behavior-based contracts vs. outcome-based contracts). Governments perform numerous oversight procedures in their relationships with universities, and many of these procedures have a logical analogy with behavior-based contracts. These include reporting requests, site visits, reviews and evaluations that focus on monitoring the productive activities, with the primary purpose of informing the government about how universities are behaving in economic and operational terms. As in behavior-based contracts, the amount of government funding has a connection with the observed behavior. Different forms of input-based funding arrangements (line-item budgeting/input-based formula funding) applied by the governments represent one type of behavior-based governance procedure (Kivisto, 2007).

The other option for the government to prevent shirking is to offer output/outcome-related incentives to universities. Similarly with outcome-based contracts, the general objective of output-based governance[16] is to reduce goal conflicts by aligning the goals of universities with the ones of the government. It is usually organized through performance-based funding practices which are constructed on some output-based funding formula. Because of the intangible nature of teaching and research outputs, governments have been forced to create surrogate measures and proxies, indicators, to describe and represent the outputs (Cave et al., 1997). Output indicators derived

[15] For this general discussion, we are not considering inflationary increases.

[16] PAT usually utilizes the term 'outcome' in the traditional meaning of 'output', and therefore, these terms are considered here as synonymous.

from teaching activities can include the number of study credits obtained, the number of exams passed, the number of undergraduate and graduate degrees granted and graduates' employment rates. Output indicators derived from research activities can include the number of research publications, research income, the number of patents and licenses received, the number of doctoral students, and the number of doctoral degrees granted (e.g. Jongbloed & Vossensteyn, 2001). In addition, the government may also use more complex output-based performance indicators, like 'value-added', 'graduation rate', 'graduation time', and various output-connected average cost measures (Cave et al., 1997; Kivisto, 2007).

The central challenge for governments is to make a choice between behavior-based and output-based governance. For this challenge, PAT presents the two inter-related concepts of 'agency variables' (Eisenhardt, 1989) and 'agency costs' (Jensen & Meckling, 1976). Agency variables describe the levels of different internal and external conditions connected to the agency relationship that may have implications for the choice of oversight methods. In other words, agency variables are believed to be able to predict the most efficient governance choice for a given situation.[17] When choosing between different behavior-based and output-based governance procedures, the government can analyze and make predictions about the applicability and cost of each procedure in light of the agency variables. In addition to their predictive capabilities, the use of these variables offers help both for conceptualizing and analyzing many of the strengths and weaknesses that are inherent in using particular behavior- and output-based governance procedures. The other concept, agency costs, can be defined as the total sum of the costs resulting from governing universities plus the costs incurred because of the shirking behavior of the universities. The total governance costs include the direct costs associated with the governing procedures, but also the indirect costs that are incurred because of the dysfunctional effects they cause. The government faces a trade-off between two costly options: either it attempts to decrease informational asymmetries and pay the costs related to behavior-based governance, or, it reduces goal conflict by choosing the output-based form of governing and pays the agency costs related to output-based governance (Kivisto, 2007).[18]

Political Science PAT Applications to the Study of Higher Education Governance and Policy

As noted above, there exists a strong if quite varied relationship between public universities and the government of their state and/or nation. This relationship, however, cannot always be construed as one of a standard hierarchical PAT relationship.

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[17] Although the exact number of agency variables has varied in different research settings, at least five variables known as 'outcome measurability', 'outcome uncertainty', 'task programmability', 'goal conflict', and 'length of agency relationship', can be identified.

[18] The monetary costs of governance in a given concrete situation are practically impossible to calculate. It is unlikely that government cost calculation systems would be able to count all the costs that are related to the use of a certain type of governance procedures. Nevertheless, these costs can

Universities, as government agents, operate, in part, as public bureaucracies. This type of operation gives need for incorporating aspects of the political PAT to the study of public colleges and universities.

First, like most public bureaucracies, the relationship between the governing principal(s) and universities does not cease to exist should one entity dislike or no longer value the relationship. As previously discussed, the use of performance and behavior-based contracts to guide university behavior are increasingly common. The contracts act as sub-contracts to the more fundamental contract that link the university with the government. While the government can use the subcontracts to regulate specific behaviors, it cannot altogether end its relationship with the university.[19] As Moe (2005) has noted, once created public bureaucracies assume a life of their own and their survival is protected by democratic rules which greatly inhibit governments' ability to eliminate existing parts of the bureaucracy. Thus, while the subcontracts can be renegotiated, the university does not operate under the assumption that its funding will completely disappear nor that its survival could be totally threatened.

Universities were formed and funded by the government to fulfill the need of society to create, preserve, and transmit knowledge. In order to empower the university to be able to fulfill its mission for the public, the government typically appropriates

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be indirectly estimated and perceived in other than monetary terms. For instance, the cost of governance procedures could be evaluated indirectly as the amount of planning they require to be established and to operate, the number of new employment positions required, or new hierarchies their application creates and the observable or estimated dysfunctions they inflict on the production behavior of the universities. Due to the invisible and unperceivable nature of shirking behavior, the costs of detected and undetected shirking, 'opportunism costs', are even more difficult to calculate, although analytically they are possible to distinguish (see Vining & Globerman, 1999). Nevertheless, as a theoretical concept, they could offer interesting perspectives in speculating on the meaningfulness and effects of the government governance of universities (Kivisto, 2007).

[19] In a standard corporate model, the principal could fire the agent should the agent expend the principal's money in a manner with which the principal does not agree. Further, should the agent not like the terms of the agreement (i.e., expending the money to support undergraduate education), it could choose not enter into a relationship with the principal or seek to cancel its contract. (Or they could both complete the contract and simply choose not to work together in the future.) However, when dealing with public bureaucracies, such actions are not typically possible. Indeed, the government could try to dissolve the university by revoking its charter or deleting the enabling statutes. While such an action is theoretically possible, the practicality is near impossible as it is very difficult to eliminate a public bureaucracy. Structures created through political means often assume a life of their own and thus work to sustain their survivability. In particular, while it is often easy to garner votes to create an entity, it is much more difficult to garner votes to eliminate a public entity, particularly one that provides a public service (Moe, 2005). This inherent sustainability of public bureaucracies allows them a level of power agents in other PAT relationships may not exist. If one realizes that a principal cannot threaten your survival, one may be less likely to fully abide by or pursue the goals of the principal. However, the government does possess options than can threaten the stability or thrivability of an institution. For example, governments can choose to reduce or eliminate funding, can influence personnel actions against those supporting insubordinate action, or use their public presence to influence public opinion (possibly resulting in decreases in student quality or private donations).

money to the institution. This is the basis of the implied PAT contract: the government pays for services provided by the university (an agent often created and protected by government rules). However, as noted earlier in the paper, agents (both individual and collective) are self-interested entities and prefer to pursue their own goals in the lieu of those of the principal. Not being able to completely leave or void the contract inhibits the government's ability to enforce the contract and, thus, must create new and vast incentive-based sub-contracts to guide university behavior.

Second, some of the products produced by a university are a public good. Universities engage in ever increasing array of activities, including teaching, research, social criticism, and most recently economic development (Fischer, 2006). These public goods are difficult to measure and it is even more difficult to assess how they are most effectively achieved (Trow, 1996). Above we discussed differences in teaching and research, where a faculty member could be viewed to be shirking teaching responsibilities to focus on graduate education or research. However, one could also argue that the research engaged in by the faculty member makes her a better teacher. Such linkages, realized by some faculty, are not easily measurable or demonstrable. Assuming that research aids in fulfilling the teaching function, it is not always evident at what point does time spent on research begin to negatively impact teaching. This point may vary based on institution, discipline, and faculty member. However, although research excellence can improve teaching, in all disciplines it usually competes directly with undergraduate instruction for the monetary resources and the time and attention of the faculty (Goldman et al., 2001). As such, no performance contract issued by the government can fully cover all aspects of a university's behavior. Thus, while the government may use such sub-contracts to guide university behavior, there is no way to completely eradicate the moral hazard problem as it is impossible to fully measure or observe all of the functions of the university without drastically reorganizing the university structure and diminishing the professional and academic autonomy of the enterprise (e.g. Berdahl, 1990; Gornitzka et al., 2004; Kivisto, 2007).

Third, the government does not operate as a single principal. While there exists some rare occasions when a university can turn to a subcontract that clearly defines the goals of the government, universities usually operate under multiple explicit and implicit contracts (most of which declare a relationship between the university and a specific principal, but the terms of the contract are in constant flux depending on who holds a specific office or title). Universities operate in an environment of multiple, complex principals that created numerous agency problems (Lane, 2005). Shirking can be avoided when the agent's utility from fulfilling the goals of the principal is higher than the utility achieved in pursuing other goals (Frey, 1993). Thus, in order to alleviate shirking, the principal(s) that oversee the university must be identified.

The standard PAT is based on a single-principal relationship, in which the agent assesses and pursues the goals of one principal. The problem with public bureaucracies like universities, however, is that they operate in an environment filled with a range of multiple and collective principals. A multiple principal is when there exists more than one single principal relationship. For example, in the US, Congress and the President operate as multiple principals in that neither is subjugated to the other, but

both can monitor and sanction a bureaucracy without consent of the other (Lyne & Tierney, 2003; see also Calvert et al., 1989; Hammond & Knott, 1996). Assessing shirking in such relationships becomes increasingly difficult, particularly if the multiple principals draft competing contracts with the agent. In such cases, the agent may need to pursue the goals of principal in lieu of the goals of another principal. Is this shirking? More importantly, it raises a set of question not directly addressed by economic models—how does an agent decide to which principal to subjugate? How does the other principal respond? Or, what happens when one principal benefits from the actions of a different principal? Space limitations inhibit our ability to fully explore all of these issues, but we will briefly discuss some of these implications in order to illuminate the implications of politics on the development of this model.

Like economists, political scientists suggest that agents choose which principal to follow based on utility maximization. The problem is how one assesses utility maximization in a political environment. It has already been suggested that survivability is not a concern as democratic rules provide extensive protections. In the corporate realm, the situation would be assessed based on which option would provide the most monetary profit for the agent. However, in politics, strings are usually attached to money, but money is not always the principal motivator. Universities are sometimes principled entities and choose to forego monetary rewards in order to do what they believe is right and proper. Thus, a university may find autonomy more important than increased appropriations. Further, in the political realm actors constantly change. Thus, the university may choose a less profitable contract from an actor with the chance of reelection over that of a lame duck.

Collective principals present particularly interesting agency concerns not witnessed in the other PA relationships because of issues pertaining to collective action (Kiewiet & McCubbins, 1991). While collective principals can be viewed as single agents (e.g., a governing board) their differentiation from a single actor is that multiple individuals must agree on the nature of the contract with the agent. One potential problem with the collective principal is the possibility of underperformance in achieving goals because of the need to appease multiple entities. As such policy proposals may be weakened in order to achieve necessary votes for passage. Or, because of the delegation of power to an agent (e.g., president), the possibility arises for a subset of the collective to influence the agent for their benefit. "In this case, the de facto principal is distinct from the de jure principal, and thus the delegation must be analyzed in this light" (Lyne & Tierney, 2003, p., 12). Understanding the differences between de facto and de jure principal is critical for understanding such relationships as that between a governing board and a president. If a board chair rules with nearly absolute authority over the board, the chair becomes the de facto principal, even though by law all members of the board comprise the de jure principal. In this case, the president is likely to spend most of her time educating and responding to the board president. Time spent on the other members may be viewed as wasted time as they have little impact on the contract. Further, in this example, the board chair may be able to unilaterally influence agent behavior. If the president knows the Chair has the support of the other Board members, requests from the Chair may be perceived as contract changes, even though no formal vote of the de jure principal was taken.

The basic tenets of the contractual paradigm, including the existence of information, incentives, and oversight, hold constant in all PAT models. However, the existence of multiple and collective principals and an output that is difficult to measure make it difficult to clearly define the nature of the contract and the parties to that contract. As such, shirking, which continues to exist, becomes difficult to measure and thus more difficult address.

PAT's Application to Higher Education and Directions for Future Research

Like any other theory, PAT has confronted criticism (see, e.g. Perrow, 1986; Donaldson, 1990, 1995; Davis et al., 1997; Ghosal, 2005) and part of this criticism can also be considered relevant in higher education context. PAT has been criticized mostly because of the behavioral assumptions it makes concerning human motivation and behavior. The critics of PAT argue that the theory presents too narrow a model of human motivation and that it makes unnecessary negative and cynical moral evaluations about people. According to critics, focusing on self-interested and opportunistic behavior makes it possible to ignore a wider range of human motives, including altruism, trust, respect and intrinsic motivation of an inherently satisfying task. This criticism has validity also when PAT is utilized for analyzing government-university relationships. If universities are considered only as aggregates of self-interested shirkers, a high level of realism, objectivity and tactfulness will undoubtedly be lost.

Also, the fact that PAT examines agency relationships without questioning the legitimacy or justification of a principal's goals or the task to be accomplished can be considered as a limitation of the theory. In the free market environment, this framework is more understandable because of the free exit option the agents have. Because of the freedom of entry and exit to contracts, those agents that can accept the terms of a principal's contract are assumed to be willing to engage in principal-agent relationships. On the other hand, those agents who do not agree with the terms of a contract are not assumed to be engaged in a principal-agent relationship in the first place. The situation is usually somewhat different in the relationships between the government and public universities, in where universities' exit option is more limited or even denied by legislation. Therefore, one could justly ask the following questions: Should universities accept all the goals of the government without questioning their effects on freedom of speech, academic freedom or other aspects of institutional autonomy? Or, what happens if universities understand better than the government which higher education goals the government should be promoting (Kivisto, 2007)?

While certain objections about the model's assumptions may exist, PAT offers a range of heuristic and theoretical benefits for the study of higher education governance. In particular, the development of the theory in both economics and political science makes it particularly useful and versatile. Universities are driven

by both economic and political motives (as well as philosophical beliefs about the role of the academy). As such both the economic and political derivatives of PAT help explain the behaviors of the various actors involved in the government-university relationship. Yet, as noted throughout this chapter, they neither fully explain the motives of the university; and in some cases the balance of power between the principal and agent leans toward the agent—more so than is typically seen in either economic or political models.

As discussed, economics PAT gives conceptual priority to economic aspects of the principal-agent relationship by investigating and analyzing the agent's shirking behavior and the principal's means to overcome it. In this sense, the economics PAT is "principal's theory" since it takes the perspective of securing the principal's welfare against potential or actual agent opportunism. In the context of higher education, this approach manifests itself in the focus on economic issues like costs, university productivity, and the efficiency and effectiveness of government's control and governance procedures. Moreover, economics PAT understands and examines government-university relationships as bilateral relationships between one principal (government) and one or more agents (universities). Influenced by the assumptions common to rational choice and methodological individualism, it assumes a homogenous incentive structure from the government. Since the concepts and problematizations are derived from markets and private sector settings, special emphasis is put on the explicit nature of explicit governance mechanisms and contracts. Therefore, the funding relationships between government and universities are considered in essence contractual, and they come close to the standard economic form with specific economic agreements distributing the exact responsibilities and rights of contracting parties. For this reason, although teaching, research, and service outputs and outcomes can be considered totally or partially as public goods, they are characterized by the contractual exchange process which is more typical for the transmission of private goods.

From the vantage of political science, universities cannot be viewed merely as contractual agents of the government. While they were originally created by the government to fulfill the needs of citizens, universities possess a level of autonomy that provides some protection from external interference. As such, the university may behave somewhat differently than an agent in a relationship in which a principal can readily end a contract and stop payment should the agent shirk on its responsibilities. Further, political PAT suggests that the government cannot often be viewed as a single entity, rather one that is comprised of multiple principals. When these separate principals act in concert, then the government may be assumed to be acting as a single principal. However, when these principals act in contradictory ways, it is important to recognize the existence of these multiple entities as it has a significant impact on how the university operates. At times, it is assumed that the university may have to select between competing goals—thus it becomes important to know why the university behaved in the way it did.

Finally, in adapting the model to the study of political governance in higher education, we must be vigilant in not just acknowledging what assumptions the different PA models bring to the table; but also how those assumptions impact

perceptions of the operation under study. In fact, understanding the assumptions driving decisions may also help us in understanding certain patterns of institutional behavior. For example, does it make a difference to view the output of the university as a public or private good? To what extent can the output be construed as a private good? However, if we begin to view all of the work of the university in such a light, it may be easy to want to convert all of its work to easily measurable outputs. For example, it is much easier to measure the wages of recent graduates rather than how cultured that student may be. As such, a state may tend to focus on a graduate's employability instead of the quality of his liberal arts education, thus leading government agencies with oversight responsibilities to seek to replace humanities classes with more focused career education.

The vast majority of previous higher education studies applying PAT has utilized the theory primarily as conceptual framework, heuristic tool, or as an organizing concept with a purpose to offer new insights related to government oversight of universities.[20] These studies have been able to offer many definitions and operationalizations which can be considered as groundwork for further applications of the theory.[21] However, the number of empirical studies applying PAT, especially, the studies utilizing quantitative methods, have remained relatively low. For many of the PAT studies containing empirical data, the role of PAT has been treated as being of secondary importance, with priority given to the subject of the study. There may be various reasons for this, but the outcome has probably been influenced by the general lack of familiarity social scientists working in the field of higher education have had with the theory. In addition, suspicions about economic theories and some of their negative behavioral assumptions (e.g. self-interest, opportunism) also have presumably reduced empirical applications of PAT. On the other hand, other studies have given priority to theoretical development of PAT in higher education context without corresponding empirical analysis. Such developments occur, in part, due to the desire to develop more theoretically robust explanations for the operation of higher education governance; and, in part, related to the general problems of testing the PAT's explanatory and predictive potential as a theory.[22]

Regardless of the difficulties associated with the competing economic and political assumptions unique to higher education, or the difficulties with testing PAT-based hypothesis, which transcends disciplines and organizational types, PAT does provide

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[20] A very few scholars (e.g. Gomez-Mejia & Balkin 1992; Wiseman, 1999; Ortmann & Squire, 2000) have used PAT to examine the internal workings of universities, but such analysis is beyond the scope of this discussion. Nevertheless, it seems that also focusing on intra-university agency relationships and their role and influence on government-university relationships still need further empirical clarification and modeling.

[21] See Kivisto (2007) for more in-depth discussion of the theoretical strengths and weaknesses of the economic theory, particularly in relation to European settings where there tend to be a strong and unitary government organization acting as the principal.

[22] For a general discussion of empirical testing of PAT from an economic perspective, see, e.g. Perrow (1986), Eisenhardt (1989), Barney (1990), Donaldson (1990), Petersen (1993) and Ghoshal (2005).

much potential for furthering our understanding of complexities of higher education governance. There exists a fertile field for those interested in incorporating PAT into their work and the following section overviews the practical and theoretical areas ripe for further empirical exploration.

(1) ***How can PAT improve understanding of policy and policy making?***
While most of this chapter has explored the theoretical and conceptual issues related to importing PAT into the study of higher education governance, it is important to note the practical benefits of using PAT to study, understand, and improve policy and policy making. Tuition setting, government funding programs (e.g., performance-based funding), governing board restructuring and performance, presidential appointments and decision making, and the implementation of almost any policy (e.g., affirmative action, aid programs, access issues, etc.) could benefit from the use of PAT. For example, by introducing the concept of shirking, PAT offers alternative explanations for lower levels of performance by universities. Shirking behavior may also explain why governments are so willing to invest time, effort and monetary resources in the governing and monitoring of universities. Important questions such as faculty productivity, higher education cost growth, tuition setting, and the quality of undergraduate education can all be analyzed in the light of the shirking concept. PAT is also able to offer insights for policymakers by analyzing the efficacy of alternative oversight mechanisms, such as legislative committee hearings, program reviews, budget reviews, selection of funding mechanisms, performance measurement, or simply allowing students, parents or the press to trigger "fire-alarms". Indeed, it is important for policy makers to ensure that various oversight mechanisms intended to verify university accountability are both valid, and theoretically and empirically sound, and that they have been developed within a conceptual framework coherent with the ideas and purposes for which they will be used (Cave et al., 1997).

Further, studying the role of information, interests, and incentives could provide a much more rich understanding of the complex dynamics between governors and boards, boards and presidents, legislators and presidents, and so forth. Why is it possible for governor, against the will of the legislature, to influence board behavior? If boards are intended as political buffers, why do politicians often circumvent the board when trying to influence policy? These same factors can help with studying policy decisions made by presidents and how presidents interact with boards. Why could a president be successful by only communicating with the board chair at one institution but loose favor of a board at a different institution with the same behavior? It could simply be because the organization of the board is different and the president failed to appropriately adjust for the differences. Turning to policy implementation, why do institutions embrace some policies while adamantly fight others (or simple ignore their implementation)? Could the explanation be based on philosophical (dis)agreement or the amount of money (incentive) attached to the policy implementation? All of these very practical situations are filled with principal-agent variables that, when acknowledged, could greatly aid in unpacking issues of administration, governance, and policy.

(2) ***Does shirking exist in postsecondary governance structures? What might such shirking look like? How does it manifest itself?***

Even though PAT does not suggest that self-interest and opportunism are the only motivators of human beings or organizations, part of the problem is that the theory partly fails to explain the principal's utility losses by any other factor than agent opportunism. This problem is especially severe in government-university relationships. Given the ulterior nature of university opportunism, it can possibly be detected mainly from the low productivity levels of universities. With the exception of identifying some issues related to output uncertainty, economics PAT has not attempted to provide any analytical apparatus (except the agency variable of outcome uncertainty) by which the principal could distinguish an agent's non-opportunistic performance failures from the opportunistic ones.[23] Political science, however, has identified an issue of slippage—the concept that shirking may be due to information lost in communication, particularly when there are extended principal-agent chains.[24]

More specifically, as noted previously, shirking can assume both aggressive and passive forms. This is a particularly critical issue in studying the behavior of educational institutions, which must deal with multiple and complex principal-agent relationships in addition to both economic and political motivations. If a government demands change that violates the fundamental tenets of the academy, does the academy shirk if it does not comply with the will of the government? For example, if a legislature demands the university not allow an event with a controversial subject matter (e.g., sex, drugs, offensive art) to occur on campus and the university refuses to comply citing freedom of speech principles, is the university shirking? Further, if the enabling statute suggests that the purpose of the university is "serve the state," who has the right to determine how the university serves the state?[25] Should it be the legislature or should it be the faculty? What if the faculty and the legislature have competing conceptions of appropriate university service? Is it shirking for the university to align itself with the conceptions of the faculty rather than the legislature? If a university refuses to admit an unqualified student that a specific legislator demands be admitted, is the university shirking on its contract with the government? These examples all relate directly to government relations, but similar questions could be raised about relationships with other actors such as students and donors. In an environment with multiple lines of authority, multiple sources of funding, and multiple sets of priorities, the concept of shirking exists but is exceedingly more complicated than that of a simple principal-agent hierarchy.

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[23] For recent discussion of organizational performance failures, see, e.g. Meier & Bohte (2003), Mellahi & Wilkinson (2004), Andrews et al. (2006), and Murray & Dollery (2006).

[24] See the discussion on page 10.

[25] Dunn (2003) provides an excellent discussion of the applicability of the classic Friedrich-Finer debates about the appropriate relationship between elected and non-elected officials to the study of higher education governance.

(3) ***How do governments oversee university activities? What are the costs and impacts of different oversight mechanisms? To what extent do oversight mechanisms differ between systems/structures?***

Institutional arrangements differentially impact decision making and decision making processes. As Moe (2005) notes, governments create specific governance structures as a way to enact and institutionalize their agendas and empower specific groups. Therefore, understanding the impact of the arrangement of governance structures can help explain political processes and institutional behavior. A centralized governing board may provide political actors with greater influence over a state's system of higher education by consolidating power at one point of influence; paradoxically, it could increase institutional autonomy as the span of control increases as that one board is charged with overseeing the operations of multiple agents. The existence of multiple agents could make it more difficult for a board to hold institutions accountable. On the other hand, in a decentralized system with a separate board for each institution, the board may be better able to oversee the actions of an institution; but it does make it more difficult for a politician to control or influence a state's higher education system. Other arrangements that PAT could help us understand include the locus of power (constitutional vs. statutory), formation of board membership (elected vs. appointed), identification of board membership (body politic vs. special interest), or construction of reward structures (behavior-based vs. output-based). This topic could include at least the following research questions: Do governments use different types of oversight for constitutionally versus statutorily created institutions? To what extent can the utilization of different governance mechanisms be explained by perceived or real information asymmetries and conflicts of interests between government and universities? What are the impacts of governance mechanisms on the assumed or perceived shirking behavior of universities? What counter-incentives and dysfunctional effects may oversight mechanisms create? How does the selection of board members impact policy outputs (e.g., tuition setting or access)?

(4) ***What is the differential impact of single, collective, and multiple principals?***

The existence of multiple and complex principals presents a number of complicating issues for institutions and the recognition of such is fundamental for understanding how a university interacts with different types of powerbrokers and decision makers. This line of research overlaps with the first two points on shirking and the organization of governance structures, but is significant enough to warrant separate mention. Above, we discussed the fact that higher education governance is more complex than the standard single-principal, single-agent relationship at the foundation of most PAT discussions. In reality, universities are responsible to an array of multiple and collective principals. In many cases, principals such as a governor and a legislature have the authority to oversee the activities of a university, but neither need the consent of the other to deal with the agent (Calvert et al., 1989; Hammond & Knott, 1996; Lyne & Tierney, 2003). If the governor and the legislature have two competing plans for higher education, one's interpretation of an institution's activities may differ whether one uses a single-principal or multiple-principal lens. An action

that may be interpreted as shirking in a single-agent model, may be determined to be a strategic political decision when analyzed from a multiple-principal perspective. Both are shirking, but interpretations about institutional intentions may differ. Further research is needed to determine which principal an institution chooses to follow when competing contracts exist. In addition, research needs to explore how competing principals interact with each other, how competition among principals impacts the autonomy of an institution, and the extent to which collective principals operate cohesively or allow individual members to influence the agent. For example, if the members of a coordinating board are caught in a scandal that attracts the ire of the legislature, what is the impact on the institution? Political fighting between the board and the legislature could allow a university to freely engage in activity that might otherwise be questioned or investigated or the event could bring additional attention upon a university causing rather ordinary activities to receive additional scrutiny. In the case of collective principals, many interesting research questions exist that could significantly redefine how boards are studied. As Lane (2005) has noted:

> If a board chair rules with nearly absolute authority over the board, the chair becomes the *de facto* principal, even though by law all members of the board comprise the *de jure* principal. In this case, the institution's president is likely to spend must of her time educating and responding to the board president. Time spent on the other members may be viewed as wasted time as they have little impact on the contract between the board the president. Further, in this example, the board chair may be able to unilaterally influence agent behavior. If the president knows the Chair has the support of the other Board members, requests from the Chair may be perceived as contract changes, even though no formal vote of the *de jure* principal was taken. (p. 22)

Such research areas are not easily pursued as data can be difficult to obtain as such activities usually occur around the edges of sunshine laws, yet a framework such as PAT can aid in understanding the actions of presidents and boards.

(5) ***How do interests, information, and incentives motivate institutional behavior?*** Finally, there is need for further exploration of the different motivations for university behavior and the creation of a model to predict when a university will behave more like an economically-motivated firm or more like a politically-motivated public bureaucracy. The evidence suggests that both types of motivations drive the university and that both economic and political models can partially explain its behavior. Yet, neither model can provide a full exploration and the two models actually contain competing assumptions of organizational and actor behavior. Both models can continue to be used independently, so long as researchers make clear the model which they are employing. However, in order to improve the robustness of the PATs explanatory ability, work needs to be done to identify the conditions under which each model is most appropriate and how the interactions of economic and political motivations impact agent behavior. For instance, more information is needed on the behaviors, motivations and attitudes of the faculty and administrators. The extent in which extrinsic incentives (e.g. salary, positions, promotions, power) and intrinsic incentives (e.g. self-esteem, self-actualization, pleasure from helping others) are motivating the faculty and administrators needs to be assessed both from the economical and political perspectives.

These areas of inquiry demonstrate the need for deepening the dialogue between theoretical assumptions and empirical reality. The final solution of a PAT model for higher education must be context-bound and flexible in a way that some assumptions can be relaxed and some applied from both the economic and political PATs when empirical changing contexts require different approaches and assumptions.[26] Rather than viewing this final solution as a simple merger of two incomplete models; it must be built on the most basic assumptions of PAT, but also driven by observations of higher education governance. It cannot be completely driven by the two existing models as they are built on assumptions about organizations that do not fully mirror the nature of tertiary educational institutions. As such, we must move forward in determining commonalties among tertiary educational institutions as well as determining in what ways they compare and differ from corporations and public bureaucracies.

Conclusions

One of the great strengths of PAT has been in its generic nature. Nevertheless, PAT as a framework also evidences various tensions between economics and political science. Therefore, simply applying PAT to the study of higher education without appropriately recognizing the differences between the economic and political versions of PAT may lead to incorrect or misleading conclusions. In adapting PAT from economics to political science, contractual relationships often become implicit rather than explicit, some agents possess various levels of protected autonomy from principal control, principals are not always concerned about agent behavior, and agent performance is not always easily or immediately measurable (such as the case with the profit produced by a business). Both perspectives are useful in attempting to understand and explain the interrelationship of government bureaucracies, the structure and impact of governmental oversight, and the vast information asymmetries that exist within the government. However, failure to realize or acknowledge the specific perspectives guiding a study can result in inaccurate or incomplete explanations of the behavior/actions being examined.

While possessing great benefit, adapting PAT to higher education governance must account for these conflicting assumptions. For instance, university behavior that seem to be shirking from the perspective of economics PAT may be only legitimate political survival strategy from the perspective of political science PAT. Making the merger even more difficult, in most cases it is not simply determining which assumption is correct or the better fit for the model. Indeed, the best fitting assumption may be dictated by the confines of a given situation. As such, we cannot pick one or the other; we must determine the conditions under which a given assumption applies. Acknowledgement of the conditional requirements of an

[26] Of course, the types of assumptions may also be dictated by the focus of the research question.

assumption is critical for further development of the model as misapplication of an assumption may lead to misdiagnosis of a particular behavior or an ineffective solution to the defined agency problem.

It should not be construed that a theory of higher education governance can not be achieved through the application of PAT. Rather, PAT holds great benefit for scholars of tertiary governance systems. Indeed, contracts, both implicit and explicit, are ubiquitous throughout the university and government relationship. Because the university operates as both a firm and a public bureaucracy, assumptions from both the economic and political PAT are applicable; however, neither is consistently in play and universities may switch between the two depending on the context. As illustrated through this paper, the difficulty is that higher education institutions operate under both economic and political assumptions; thus, understanding their behavior is not as easy as understanding that of a traditional firm or a pure public bureaucracy.

References

Alchian, A. A., & Demsetz, H. (1972). Production, information costs, and economic organization. *The American Economic Review, 62*(5), 777–795.

Andrews, R., Boyne, G. A., & Enticott, G. (2006). Performance failure in the public sector. Misfortune or mismanagement? *Public Management Review, 8*(2), 273–296.

Barney, J. B. (1990). The debate between traditional management theory and organizational economics: Substantive differences or intergroup conflict? *Academy of Management Review, 15*(3), 382–393.

Barney, J. B., & Hesterly, W. (1996). Organizational economics: Understanding the relationship between organizations and economic analysis. In Glegg, S. R., Hardy, C., & Nord, W. R. (eds.), *Handbook of organization studies* (pp. 115–147). London: Sage.

Barney, J. B., & Ouchi, W. G. (eds.) (1986). *Organizational economics* (3rd printing). San Francisco, CA: Jossey-Bass.

Begg, D., Fischer, S., & Dornbusch, R. (1994). *Economics* (4th ed.). London: McGraw-Hill.

Bendor, J., & Meirowitz, A. (2004). Spatial models of delegation. *American Political Science* Review, *98*(2), 293–310.

Bendor, J., Taylor, S., & Van Gaalen, R. (1987). Politicians, bureaucrats, and asymmetric information. *American Journal of Political Science, 31*, 796–828.

Berdahl, R. O. (1990). Academic freedom, autonomy and accountability in British universities. *Studies in Higher Education, 15*(2), 169–180.

Bergen, M., Dutta, S., & Walker, O. C. Jr. (1992). Agency relationships in marketing: A review of the implications and applications of agency and related theories. *Journal of Marketing, 56*, 1–24.

Birnbaum, R. (1988). *How colleges work. The cybernetics of academic organization and leadership.* San Francisco, CA: Jossey-Bass.

Bowen, H. R. (1977). *Investment in learning. The individual and social value of American higher education.* San Francisco, CA: Jossey-Bass.

Bowen, H. R. (1980). *The costs of higher education. How much do colleges and universities spend per student and how much should they spend?* San Francisco, CA: Jossey-Bass.

Bowen, F.M., Bracco, K.R., Callan, P.M., Finney, J.E., Richardson, Jr., R.C., Trombley, W. (1997). State Structures for Governance of Higher Education: *A comparative study.* San Jose, CA: The California Higher Education Policy Center.

Braun, D. (1993). Who governs intermediary agencies? Principal-agent relations in research policy-making. *Journal of Public Policy, 13*(2), 135–162.

Brehm, J., & Gates, S. (1993). Doughnut shops and speed traps. *American Journal of Political Science*, *37*(2), 555–581.

Calvert, R., McCubbins, M., & Weingast, B. (1989). A theory of political control and agency discretion. *American Journal of Political Science*, *33*(3), 588–611.

Cave, M., Hanney, S., Henkel, M., & Kogan, M. (1997). *The use of performance indicators in higher education. The challenge of the quality movement* (3rd ed.). London: Jessica Kingsley Publishers.

Clark, B. R. (1983). *The higher education system. Academic organization in cross-national perspective*. Berkeley, CA: University of California Press.

Coase, R. H. (1937). The nature of the firm. *Economica*, *4*(16), 386–405.

Cohen, M. D., March, J. G., & Olsen, J. P. (1972). A garbage can model of organizational choice. *Administrative Science Quarterly*, *17*(1), 1–25.

Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review*, *22*(1), 20–47.

Donaldson, L. (1990). The ethereal hand: Organizational economics and management theory. *Academy of Management Review*, *15*(3), 369–381.

Donaldson, L. (1995). *American anti-management theories of organization. A critique of paradigm proliferation*. New York: Cambridge University Press.

Downs, G. W., & Rocke, D. M. (1994). Conflict, agency, and gambling for resurrection: The principal-agent problem goes to war. *American Journal of Political Science*, *38*(2), 362–380.

Doyle, W. R. (2006). Adoption of merit-based student grant programs: An event history analysis. *Educational Evaluation and Policy Analysis*, *28*(3), 259–285.

Doyle, W. R., McLendon, M. K., & Hearn, J. C. (2005). *The adoption of prepaid tuition and savings plans in the American states: An event history analysis*. Paper presented at the annual meeting of the Association for the Study of Higher Education, Philadelphia, PA.

Dunn, D. (2003). Accountability, democratic theory, and higher education. *Educational Policy*, *17*(1), 60–79.

Duryea, E. D. (2000). *The Academic corporation: A history of college and university governing boards*. New York: Falmer.

Eisenhardt, K. (1989). Agency theory: An assessment and review. *Academy of Management Review*, *14*(1), 57–74.

Fearon, J. D. (1999). Electoral accountability and the control of politicians: Selecting good types versus sanctioning poor performance. In Przeworski, A., Stokes, S. C., & Manin, B. (eds.), *Democracy, Accountability, and Representation*. Cambridge: Cambridge University Press.

Ferejohn, J. (1986). Incumbent performance and electoral control. *Public Choice*, *50*, 5–25.

Ferris, J. M. (1991). Contracting and higher education. *The Journal of Higher Education*, *62*(1), 1–24.

Fiorina, M. P. (1982). Legislative choice of regulatory reforms: Legal process or administrative process? *Public Choice*, *39*, 33–61.

Fischer, K. (2006). The university as economic savior. *The Chronicle of Higher Education*, *52*(45), A18.

Frey, B. S. (1993). Does monitoring increase work effort? The rivalry with trust and loyalty. *Economic Inquiry*, *31*(4), 663–670.

Garvin, D. A. (1980). *The economics of university behavior*. New York: Academic.

Geuna, A. (1999). *The economics of knowledge production. Funding and structure of university research*. Cheltenham, England: Edward Elgar.

Ghoshal, S. (2005). Bad management theories are destroying good management practices. *Academy of Management Learning & Education*, *4*(1), 75–91.

Gittell, M., & Kleiman, N. S. (2000). The political context of higher education. *American Behavioral Scientist*, *43*(7), 1058–1091.

Goldman, C. A., Gates, S. M., & Brewer, D. J. (2001). Prestige or reputation: Which is a sound investment? *Chronicle of Higher Education*, *48*(6), B13–B15.

Gomez-Mejia, L. R., & Balkin, D. B. (1992). Determinants of faculty pay: An agency theory perspective. *Academy of Management Journal*, *35*(5), 921–955.

Gornitzka, Å., Stensaker, B., Smeby, J-C., & de Boer, H. (2004). Contract arrangements in the Nordic countries. Solving the efficiency/effectiveness dilemma? *Higher Education in Europe*, *29*(1), 87–101.

Gourdrian, R., & DeGroot, H. (1990). A principal-agent model of regulation applied to the case of American universities. In Prud'homme, R. (ed.), *Public finance with several levels of government* (pp. 181–194). The Hague, The Netherlands: Foundation Journal Public Finance.

Hammond, T. H., & Knott, J. H. (1996). Who controls the bureaucracy? Presidential power, Congressional dominance, legal constraints and bureaucratic autonomy in a model of multi-institutional policy-making. *Journal of Law, Economics and Organization*, *12*(1), 119–166.

Hearn, J. C., & Griswold, C. P. (1994). State-level centralization and policy innovation in U.S. postsecondary education. *Educational Evaluation and Policy Analysis*, *16*(2), 161–190.

Hendry, J. (2005). Beyond self-interest: Agency theory and the board in a satisfying world. *British Journal of Management*, *16*(1), S55–S63.

Hicklin, A., & Meier, K. (2004). *Race, structure, and state governments: The politics of higher education diversity*. Paper presented at the annual meeting of the Midwest Political Science Association, Chicago, IL.

Holtta, S. (1995). *Towards the self-regulative university*. Publications Joensuu: University of Joensuu.

Horn, M. J., & Shepsle, K. A. (1989). Commentary on "administrative arrangements and the political control of agencies": Administrative process and organizational form as legislative responses to agency costs. *Virginia Law Review*, *75*(2), 499–508.

James, E. (1986). Cross-subsidization in higher education: Does it pervert private choice and public policy? In Levy, D. C. (ed.), *Private education. Studies in choice and public policy* (pp. 237–257). New York: Oxford University Press.

James, E. (1990). Decision processes and priorities in higher education. In Hoenack, S. A. & Collins, E. L. (eds.), *The economics of American universities. Management, operations, and fiscal environment* (pp. 77–106). Albany, NY: State University of New York Press.

James, E., & Neuberger, E. (1981). The university department as a non-profit labor cooperative. In Bowman, M. J. (ed.), *Collective choice in education* (pp. 207–234). Boston, MA: Kluwer/Nijhoff.

Jensen, M. C. (1983). Organization theory and methodology. *The Accounting Review*, *58*(2), 319–339.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360.

Johnes, J., & Taylor, J. (1990). *Performance indicators in higher education. UK universities*. Buckingham: SRHE/Open University Press.

Jongbloed, B., & Vossensteyn, H. (2001). Keeping up performances: an international survey of performance-based funding in higher education. *Journal of Higher Education Policy and Management*, *23*(2), 127–145.

Kiewiet, D. R., & McCubbins, M. (1991). *The logic of delegation: Congressional parties and the appropriations process*. Chicago, IL: University of Chicago Press.

Kivisto, J. A. (2005). The government-higher education institution relationship: Theoretical considerations from the perspective of agency theory. *Tertiary Education and Management*, *11*(1), 1–17.

Kivisto, J. A. (2007). *Agency theory as a framework for the government-university relationship*. Tampere: Higher Education Group/Tampere University Press.

Knott, J. H., & Payne, A. A. (2004). The impact of state governance structures on management and performance of public organizations: A study of higher education institutions. *Journal of Policy Analysis and Management*, *23*(1), 13–30.

LaFollette, M. C. (1994). The politics of research misconduct: Congressional oversight, universities, and science. *The Journal of Higher Education*, *65*(3), 261–285.

Lane, J. E. (2003). *State government oversight of public higher education: Police patrols and fire alarms*. Paper presented at the annual meeting of the Association for the Study of Higher Education, Portland, OR.

Lane, J. E. (2005). *State oversight of higher education: A theoretical review of agency problems with complex principals*. Paper presented at 2005 Annual Conference of the Association for the Study of Higher Education, Philadelphia, PA.

Lane, J. E. (2007). Spider Web of Oversight: Latent and Manifest Regulatory Controls in Higher Education. *Journal of Higher Education*, *78*(6), 1–30.

Lassar W. M., & Kerr, J. L. (1996). Strategy and control in supplier-distributor relationships: An agency perspective. *Strategic Management Journal, 17*(8), 613–632.

Liefner, I. (2003). Funding, resource allocation, and performance in higher educations systems. *Higher Education, 46*, 469–489.

Lowry, R. C. (2001). Governmental structure, trustee selection, and public university prices and spending. *American Journal of Political Science, 45*(4), 845–861.

Lyne, M., & Tierney, M. (2003) *The politics of common agency: Unitary, multiple and collective principals.* Paper presented at the annual meeting of The American Political Science Association, Philadelphia, PA.

March, J. G., & Olsen, J. P. (1984). The New Institutionalism: Organizational factors in political life. *The American Political Science Review, 78*(3), 734–749.

Massy, W. F. (1996). Reengineering resource allocation systems. In Massy, W. F. (ed.), *Resource allocation in higher education* (pp. 15–47). Ann Arbor, MI: The University of Michigan Press.

Massy, W. F., & Zemsky, R. (1994). Faculty discretionary time. Departments and the "academic ratchet". *Journal of Higher Education, 65*(1), 1–22.

McCubbins, M. D. (1985). Legislative design of regulatory structure. *American Journal of Political Science, 29*(4), 721–748.

McCubbins, M. D., & Schwartz, T. (1984). Congressional oversight overlooked: Police patrols versus fire alarms. *American Journal of Political Science, 28*(1), 165–179.

McCubbins, M. D., Noll, R. G., & Weingast, B. R. (1987). Administrative procedures as instruments of political control. *Journal of Law, Economics, and Organization, 3*(2), 243–277.

McCubbins, M. D., Noll, R. G., & Weingast, B. R. (1989). Structure and process, politics and policy: Administrative arrangements and the political control of agencies. *Virginia Law Review, 75*, 431–482.

McLendon, M. K. (2003). The politics of higher education: Toward an expanded research agenda. *Educational Policy, 17*(1), 165–191.

McLendon, M. K., Deaton, R., & Hearn, J. C. (2007). The enactment of state governance reforms in higher education. *The Journal of Higher Education, 78*(6), 645–675.

McLendon, M. K., Hearn, J. C., & Deaton, R. (2006). Called to account: Analyzing the origins and spread of state performance-accountability policies for higher education. *Educational Evaluation and Policy Analysis, 28*(1), 1–24.

McLendon, M. K., Heller, D. E., & Young, S. (2005). State postsecondary education policy innovation: Politics, competition, and the interstate migration of policy ideas. *The Journal of Higher Education, 76*(4), 363–400.

Meier, K. J., & Bohte, J. (2003). Not with a bang, but a whimper. Explaining organizational failures. *Administration & Society, 35*(1), 104–121.

Mellahi, K., & Wilkinson, A. (2004). Organizational failure: A critique of recent research and a proposed integrative framework. *International Journal of Management Reviews, 5/6*(1), 21–41.

Miller, G. J. (2005). The political evolution of principal-agent models. *Annual Review of Political Science, 8*, 203–225.

Mintzberg, H. (1979). *The structuring of organizations: A synthesis of the research.* Englewood Cliffs, NJ: Prentice-Hall.

Mitnick, B. M. (1980). *The political economy of regulation.* New York: Columbia University Press.

Moe, T. M. (1984). The new economics of organization. *American Journal of Political Science, 28*(4), 739–777.

Moe, T. M. (1985). Control and feedback in economic regulation: The case of the NLRB. *American Political Science Review, 79*(4), 1094–1116.

Moe, T.M. (1989). "The Politics of Bureaucratic Structure." In J. E. Chubb and P. E. Peterson, (eds). Can Government Govern? Washington, D.C.: Brookings, 267–324.

Moe, T. M. (1990). Political institutions: The neglected side of the story. *Journal of Law, Economics and Organization, 6*, 213–253.

Moe, T. M. (2005). Power and political institutions. *Perspectives on Politics, 3*(2), 215–234.

Mora, J.-G., & Vila, L. E. (2003). The economics of higher education. In Begg, R. (ed.), *The dialogue between higher education research and practice* (pp. 121–134). Dordrecht, The Netherlands: Kluwer.

Murray, D., & Dollery, B. (2006). Institutional breakdown? An explanatory taxonomy of Australian universities. *Higher Education Policy, 19*, 479–494.

Nicholson-Crotty, J., & Meier, K. J. (2003). Politics, structure, and public policy: The case of higher education. *Educational Policy, 17*(1), 80–97.

Ogul, M.S. & Rockman, B. (1990). Overseeing Oversight: New Departures and Old Problems. *Legislative Studies Quarterly, 15*(1), 5–24.

Ortmann, A., & Squire, R. (2000). A game-theoretic explanation of the administrative lattice in institutions of higher learning. *Journal of Economic Behavior & Organization, 43*, 377–391.

Payne, A. A. (2003). The effects of Congressional appropriation committee membership on the distribution of federal research funding to Universities. *Economic Inquiry, 41*(2), 325–345.

Payne, A. A., & Roberts, J. (2004). *Government oversight of organizations engaged in multiple activities: Does centralized governance encourage quantity or quality?* Unpublished manuscript, McMaster University.

Petersen, T. (1993). The economics of organization: The principal-agent relationship. *Acta Sociologica, 36*, 277–293.

Perrow, C. (1986). *Complex organizations. A critical essay* (3rd ed.). New York: Random House.

Powell, W. W., & DiMaggio, D. J. (eds.) (1991). *The New Institutionalism in organizational analysis.* Chicago, IL: University of Chicago Press.

Ricketts, M. (2002). *The economics of business enterprise. An introduction to economic organization and the theory of firm* (3rd ed.). Cheltenham, England: Edward Elgar.

Ross, S. A. (1973). The economic theory of agency: The principal's problem. *American Economic Review, 63*(2), 134–139.

Scholz, J. T. (1991). Cooperative regulatory enforcement and the politics of administrative effectiveness. *American Political Science Review, 85*(1), 115–136.

Shepsle, K. A., & Boncheck, M. S. (1997) *Analyzing politics: Rationality, behavior, and institutions.* New York: W. W. Norton.

Sobel, J. (1993). Information control in the principal-agent problem. *International Economic Review, 34*(2), 259–269.

Songer, D., Segal, J. A., & Cameron, C. M. (1994). The hierarchy of justice: Testing a principal-agent model of supreme court-circuit court interactions. *American Journal of Political Science, 38*(3), 673–696.

Toma, E. F. (1986). State university boards of trustees: A principal-agent perspective. *Public Choice, 49*, 155–163.

Toma, E. F. (1990). Boards of trustees, agency problems, and university output. *Public Choice, 67*, 1–9.

Tosi, H. L. Jr., Katz, J. P., & Gomez-Mejia, L. R. (1997). Disaggregating the agency contract: The effects of monitoring, incentive alignment, and term in office on agent decision making. *Academy of Management Journal, 40*(3), 584–602.

Trow, M. A. (1996). Trust, markets and accountability in higher education: A comparative perspective. *Higher Education Policy, 9*(4), 309–324.

Vedder, R. (2004). *Going broke by degree. Why college costs too much?* Washington, DC: AEI.

Vining, A. and Globerman, S. (1999), "A Conceptual Framework for Understanding the Outsourcing Decision," *European Management Journal*, 17(6), 645-54.

Waterman, R. W., & Meier, K. J. (1998). Principal-agent models: An expansion? *Journal of Public Administration Research and Theory, 8*, 173–202.

Weingast, B. R. (1984). The Congressional bureaucratic system: A principal-agent perspective (with application to the SEC). *Public Choice, 44*(1), 147–191.

Weingast, B. R., & Moran, M. J. (1983). Bureaucratic discretion or congressional control: Regulatory policymaking by the federal trade commission. *Journal of Political Economy, 91*(5), 765–800.

Whynes, D. K. (1993). Can performance monitoring solve the public services' principal-agent problem? *Scottish Journal of Political Economy, 40*, 434–446.

Williams, G. (1995). The "marketization" of higher education: Reforms and potential reforms in higher education finance. In Dill, D. D. & Sporn, B. (eds.), *Emerging patterns of social demand and university reform: Through a glass darkly.* Oxford: IAU/Pergamon.

Williamson, O. E. (1975). *Markets and hierarchies: Analysis and antitrust implications. A study in the economics of internal organization.* New York: Free Press.

Williamson, O. E. (1985). *The economic institutions of capitalism. Firms, markets, relational contracting.* New York: Free Press.

Wiseman, M. S. (1999). *Faculty performance: Evaluation and principal-agent concerns at Texas state-supported universities.* Unpublished dissertation, Texas Tech University.

Wood, B. D. (1988). Principals, bureaucrats, and responsiveness in clean air enforcements. *The American Political Science Review, 82*(1), 213–234.

Wood, B. D. & Waterman, R. W. (1991). The dynamics of political control of the bureaucracy. *American Political Science: Review, 85*(3), 801–828.