The Role of Information in the Policy Process: Implications for the Examination of Research Utilization in Higher Education Policy

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To what extent do policymakers rely on research evidence during the legislative process? Do they use research to shape policy or merely to reinforce their preferred solutions? What are their preferred sources of evidence? Are policy advocates providing useful information? We know surprisingly little about these questions, especially given the mounting evidence and experience with varied education policies. Yet, the extent to which states rely on research evidence to craft policy remains under-studied.

The need to connect research with policy and practice remains one of the most commonly identified challenges for education researchers.[1] For instance, the theme of the 2008 Association for the Study of Higher Education (ASHE) Annual Conference "Research and Practice: Embracing Connections" encouraged papers aimed at bridging this divide. The past two ASHE Presidential Addresses have reflected on the impact of research on campus-level practice in the dean's office (Eisenmann, 2009) and on state-level policymaking (Johnsrud, 2008). Indeed, this has been a recurring charge to higher education researchers from Patrick Terenzini's (1996) ASHE Presidential Address which urged a stronger link between public policy and higher education and from David Leslie and Joseph Beckham's (1986) edited special issue of *The Review of Higher Education* related to the relevance of higher education research.[2] As Jim Hearn (1997) points out, eminent scholars of higher education have colorfully described our field's research as "trees without fruit" (Keller, 1985) and "shipyards in the desert" (Weiner, 1986) for its disconnect with what policymakers and practitioners consider useful. Adriana Kezar's (2000) more recent appraisal of higher education research, which focuses exclusively on research-to-practice, confirms this divide yet suggests that this gap may be based on a false dichotomy between theory and practice that can be traversed more easily than it appears. Can the research-to-policy divide be traversed as easily? Many studies on the topic suggest that it cannot based on fundamental differences in language, norms, and values between "policy makers and policy scholars" (Birnbaum, 2000) and between the "two cultures" of science and government (Snow, 1961).

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J.C. Smart (ed.), *Higher Education: Handbook of Theory and Research* 25,
DOI 10.1007/978-90-481-8598-6_1,

Given these stark differences, it seems that researchers may under-estimate the obstacles to bridging research and policy and thereby expose a pejorative undertone implying that if only policymakers considered research evidence and made decisions accordingly that our public policies would be much more efficient and effective. Rich (1991) cautions researchers, however, to acknowledge these normative assumptions regarding knowledge utilization and to extend the descriptive, conceptual, and empirical understanding of the role that information plays in the policymaking process.

The study of research utilization or use of research evidence has again become ascendant among political scientists and policy scholars (Nutley, Walter, & Davies, 2007). In the past decade, for instance, politics and policy researchers have extended our conceptual understanding of research utilization on theories of the policy process (Jones & Baumgartner, 2005; Weible, 2008), on interest group activity (Wright, 2003), and on policymakers' preferred sources of research information (Hird, 2005, 2006; Rich, 2004). Education researchers, most notably Frederick Hess's (2008) book on "how scholarship influences education policy," have also increasingly examined the research and policy nexus. In fact, policy-related journals such as *Policy Studies Journal* and *Educational Policy* have respectively published four and two articles on the topic in the last 5 years, yet surprisingly no studies on the use of information in the policy process have been published recently in three of the leading higher education journals: *The Journal of Higher Education*, *Research in Higher Education*, and *The Review of Higher Education*. Given the frenetic wave of higher education policy adoptions (e.g., merit-based aid programs, college savings plans, accountability initiatives, governance restructuring, tuition and appropriations alignment, P-16 movements) and the ever-expanding base of empirical studies analyzing these policy issues (e.g., Heller, 1997; Perna & Titus, 2004; St. John et al., 2004; Zumeta, 1998), the examination of research utilization in the higher education policy process seems prudent and promising.

This line of inquiry could complement both the anecdotal observations of higher education leaders and scholars and the growing number of politics- and policy-oriented studies recently undertaken by higher education researchers. As a sector, higher education has historically preferred to avoid the fray of politics, but has recently become much more active in lobbying and actively advocating preferred policies (Cook, 1998; Parsons, 1997, 2004). Likewise, higher education researchers have increasingly analyzed higher education political phenomena through the contemporary models of political science and public policy. In fact, since Michael McLendon (2003b, 2003c) urged higher education researchers to apply these conceptual frameworks of the policymaking process, studies have applied such frameworks to examine statewide governance reform (Leslie & Berdahl, 2008; McLendon, 2003a; Mills, 2007), budgeting and finance (McLendon, Hearn, & Deaton, 2006; Shakespeare, 2008), and merit aid programs (Cohen-Vogel & Ingle, 2007; Cohen-Vogel, Ingle, Albee, & Spence, 2008; Doyle, 2006; Ness, 2008). Application of these theories has led to many insights of the higher education policy process (i.e., state political, economic, social, and demographic characteristics matter), but we still know very little about the impact of research on the policymaking

process. While many of the policy frameworks that McLendon recommends incorporate the role of information to varying degrees, none of the higher education studies have deeply examined research utilization in the policymaking process.

This chapter follows three primary objectives to synthesize studies of research utilization and public policy theory and to suggest future research directions. First, I review studies related to research utilization, the "two-communities" perspective, and sources of information in public policymaking. This initial section includes education-related studies, but also reviews classic studies drawn from political science, policy analysis, and evaluation for their conceptual insights. Second, I distill from five leading theories of public policymaking how each framework specifically addresses the use of information. This substantive review draws deeply from the original (and updated) conceptual frameworks on the policy process and also reviews how higher education researchers have applied these frameworks. Third, I discuss the implications of research utilization on higher education policymaking. Conceptually, I focus on how two theoretical frameworks (diffusion and multiple streams) might be expanded to more fully account for the role of information. Finally, I discuss the influence of two types of intermediary organizations—state higher education agencies and regional compacts—on research utilization in the higher education policymaking process.

Research Utilization

The study of research utilization in the public policymaking process over the past four decades is best described as a U-shaped curve bounded by the "golden age" of research utilization in the latter-half of the 1970s through the mid-1980s and the more recent attention by researchers beginning in the mid-2000s. In fact, this progression tracks neatly to two peer-reviewed journals dedicated entirely to this topic. First, the U.S.-based journal *Knowledge: Creation, Diffusion, Utilization* published articles on the topic from 1979 until 1994 when the scope of the periodical was expanded along with the title, *Scientific Communicator*. More recently, the U.K.-based journal *Evidence & Policy* was established in 2005 to examine the nexus of research evidence and concerns of policymakers. Yet, despite these publication outlets and a critical mass of scholars from the public policy, political science, health sciences, and education fields, surprisingly few studies examine the role of research utilization in the higher education policy process. As such, this section reviews the seminal studies from the "golden age" and the more recent work, especially studies related to research utilization in determining K-12 education policy. Before doing so, however, it is first necessary to define and explain the most relevant terms.

The title of this chapter includes two terms that seem straight-forward enough—information and research utilization. However, these terms are used interchangeably in some studies and are identified as quite distinct from one another in other studies. For example, the term "information" is less precise and thus includes a wide range of documents, data, opinions, empirical research, policy

briefs, and polling information that might exist in the policymaking process. Some scholars have modified the term as "technical information" (Guston, Jones, & Branscomb), "policy-relevant information" (Rich, 1981), and "expert-based information" (Weible, 2008) to distinguish data-oriented or research-based information from general sources such as letters and phone calls from constituents (Mooney, 1991). Lindblom and Cohen (1979) add clarity by distinguishing "professional social inquiry"—systematic research or analysis conducted by academics or other trained, professional researchers—from "ordinary knowledge"—which includes information generated from casual experiences and non-scientific methods of discovery. They argue that findings generated through professional social inquiry are most likely to influence policy once they become popularized as ordinary knowledge.

The term "research utilization" (Weiss, 1977, 1980) more specifically identifies the type of information (research-based) and the extent to which it is used in the policymaking process. Similar terms are often used interchangeably, such as "use of research evidence" (Nutley et al., 2007), "knowledge utilization" (Dunn, 1983; Larsen, 1980), "research use" (Weiss, 1979), "social science utilization" (Mitchell, 1981a, 1981b; Rich, 1981), and "science" or "scientific knowledge" (Jasanoff, 1990; Ozawa, 1991). Notwithstanding this wide range of terms, researchers most commonly refer to two definitions of knowledge utilization. First, Lester (1993) opens his article on the use of policy analysis by state legislators with the following definition of the study of knowledge utilization as being "concerned with understanding and improving the utilization of scientific and professional knowledge in settings of public policy and professional practice" (Dunn, Holzner, & Zaltman, 1985). Second, in an earlier article titled "Knowledge utilization: What is it?," Larsen (1980) explains, "knowledge utilization is a complex process involving political, organizational, socioeconomic, and attitudinal components in addition to the specific information or knowledge" (p. 424). As these definitions suggest, despite the many overlapping terms, research utilization essentially converges around a simple question: how is information used to make policy decisions? Since so few higher education studies examine this question, this section broadly reviews the role of information in the policymaking process rather than limiting consideration, for example, only to use of empirical research evidence by policymakers.

Background on Research Utilization

While the perspectives from which researchers consider research utilization in the policymaking process seem to have varied over time, these studies as a whole enrich the understanding of how information influences policy decisions. Douglas Mitchell (1981b) outlines the use of social science research across five historical periods beginning in 1832 with the federal government's first sponsored research project to study steamboat boiler explosions. These periods track closely with the establishment of national associations, such as the American Social Sciences Association

in 1865 (second period), and of federal agencies, such as the National Institutes of Health in 1944 and National Science Foundation in 1972 (fourth period). The third historical period is bounded by the two World Wars and is tied most closely to the election of President Woodrow Wilson, who was a social scientist himself, and to President Franklin Roosevelt's New Deal policies informed directly by social science research. The fifth and final period that Mitchell outlines, however, seems of particular relevance as it coincides with the "golden age" of research utilization studies. Beginning in the mid-1960s, the legitimacy of federal social policies was being called into question and along with it the usefulness of social science research (Adams, 1976). As a result, federal research funding shifted from basic to applied research on topics outlined and framed by policymakers rather than researchers. It is within this context that many of the classic research utilization studies emerge.

In the late 1970s scholars studying research utilization seemed to be responding to the reduced role of research on the policymaking process. This era, less than a decade removed from the prominent role of research in shaping the Great Society programs, sparked examination of the research and policy nexus. Indeed, Caplan, Morrison, and Stambaugh (1975) studied the utilization of social science research by federal agencies by collecting and analyzing interview data with more than 200 upper-level government officials, which yielded 575 self-reported instances of research influencing policy decisions. The fundamental challenge to research use by federal agencies, Caplan et al. argued, was the "gap" between the perspectives of policymakers and social scientists that constrained knowledge transfer. In another study, Caplan (1977) identified a series of "minimal conditions" necessary for research use, which included factors related to policymakers' perspectives on decision making and on ethics and related to characteristics of the research findings (e.g., intuitive, politically feasible). One of the most pressing reasons to study research use during this "golden age" was the desire to better understand and perhaps mitigate the challenge posed by the conflicting (if not, competing) worldviews of political decision-makers and researchers. In fact, Wildavsky's (1979) classic book, *Speaking Truth to Power*, urges researchers to use evidence and analysis to influence policymakers' decisions. However, Carol Weiss (1980) cautioned colleagues to avoid a normative approach to the topic: that more research and/or increased utilization of research will lead to better public policy. Instead, Weiss aimed to empirically examine "when and how research has an influence" (p. 1). Similarly, Rich (1991) identified four normative assumption of research utilization scholars: (1) information provided to policymakers is of value; (2) the public would benefit from the use of this information; (3) political and bureaucratic considerations should not guide the use and acquisition of information; and (4) use of information by policymakers should be guided by the quality of information (p. 320). These cautions by Weiss and Rich extended the study of research utilization beyond its initial concern that policymakers were under-utilizing research evidence to instead call attention to empirical examination of the role of information in the policy process.

Rather than proceed immediately to review the literature related to the various meanings and settings of research utilization, the next section considers in more depth the apparent deep divide between policymakers and researchers in order to

provide the necessary background undergirding decades of research on knowledge utilization.

Fundamental Challenge to Research Utilization: The Two-Communities Perspective

Popularized by C.P. Snow's (1959) classic "two cultures" study of the humanities and sciences within academia, the "two-communities" perspective essentially holds that researchers and policymakers are members of separate communities each with its own language, values, norms, and goals. In his Godkin Lecture at Harvard University, Snow delivered an address on "Science and Government," in which he described how the former might (and might not) influence the decisions of the latter. Through a compelling narrative account of the role that two scientific experts played within Great Britain's government during World War II, Snow (1961) offered a vivid description of power and politics within the "black box" of the policymaking process. In particular, Snow detailed how scientific knowledge can be marginalized in "closed politics" situations where personalities and personal relationships matter most. Ultimately, Snow urged scientists to better understand the political environment, offered a few prescriptive conditions to maximize the effectiveness of a government-science commission, and warned of placing too much power over decision-making in the hands of a single scientist. The following statement seems to best capture Snow's conceptual, if somewhat normative, interests in the role of science in the policymaking process:

> I mean my description of politics to be taken as neutral statements. So far as I have been able to observe anything, this is how the world ticks—not only our world, but also the future world one can imagine, juster and more sensible than ours. It seems to me important that men of goodwill should make an effort to understand how the world ticks; it is the only way to make it tick better (p. 66).

During the "golden age" of research utilization studies, two authors in particular personified the link between the two communities of research and policy. Thomas Wolanin and Samuel Halperin served both as academics and as senior staff members in the federal government. Their essays pursue Snow's interest in "how the world ticks" from the perspectives of both policymakers and educators. Halperin (1974) emphasizes the perceptions that the two communities hold of one another: politicians are only interested in re-election and thereby short-term results; and, educators are arrogant, poor communicators, and have little understanding of the political process. Wolanin's (1976) primer on federal policymaking identifies many obstacles which tend to prevent information from influencing policy decisions, such as omnibus bills that lump together dozens of loosely related bills thereby encouraging log-rolling by policymakers. These descriptive studies, without explicitly doing so, lend support to the "two-communities" perspective as an explanation for the non-use of information in the policy process.

Three of the most prominent scholars of research utilization have characterized the two-communities perspective variously as "theory" (Caplan, 1979), as "metaphor" (Dunn, 1980), and as "misguided" (Rich, 1991). Caplan (1979) was the first to invoke the term and attributed the under-utilization, or non-utilization, of research to "action-oriented" policymakers who were not interested in "'pure' science or esoteric issues" (Caplan, 1979, p. 459). By outlining the significance of the "gap" between these two communities, Caplan argues for increased collaboration between researchers and policymakers, particularly at the conceptual-level of defining the questions and understanding the causes and antecedents of problems. For Caplan, the two-communities theory offers an explanation for why research evidence rarely influenced policy and highlights the entrenched value differences between researchers and policymakers.

Rather than an over-arching theory, Dunn's (1980) characterization of two-communities as a metaphor emphasized the conceptual and descriptive utility of considering different models of how research is used in the decision-making process. Through an exploratory case study of more than 100 cases of policy adoption at multiple levels of government (local, state, national), Dunn examines five models of research utilization: (1) product-contingent, (2) inquiry-contingent, (3) problem-contingent, (4) structure-contingent, and (5) process-contingent. By examining the constructs underlying the two-communities metaphor, Dunn argues that researchers will be better able to distinguish between the factors representing "cultural" and "structural" differences between their organizations (e.g., think tanks, government agencies, universities) and government decision-making entities. For instance, one key finding of Dunn's study is that in the process-contingent model, which emphasizes the scope and tenor of communications between researchers and policymakers, knowledge use is moderately more likely, despite the cultural difference between the two communities, if both stakeholders are active in all stages of the policymaking process.

Unlike the above characterizations of two-communities as a "theory" and "metaphor" that emphasize the competing cultures and values that minimize the likelihood of research utilization, Rich (1991) argues that these attempts are misguided and misrepresent Snow's (1961) original perspective on science and government. Essentially, Rich claims that Snow primarily examined the effectiveness of relationships, rather than the narrow concerns of communication skills or broad challenges of the chasm between two worldviews. In particular, Rich highlights the direct attention that Snow pays to politics, which many research utilization scholars have relegated to the "black box" or to the two-communities perspective. Indeed, Snow's quote above regarding the importance of "how the world ticks" underscores the importance of understanding the political landscape. Nevertheless, Snow's original "two cultures" theory of academia (Snow, 1959) continues to shape the two-communities divide because researchers believe that knowledge accrues through theory and method and thus they emphasize reliability and validity, in contrast with policymakers, who believe that knowledge emerges from experience and thus emphasize common sense.

Indeed, much of the recent studies of research utilization in education policymaking are grounded in a two-communities approach. Many of the chapters in Hess's (2008) edited volume, for instance, examine the gap between researchers and policymakers with regard to "school leaders use of research in decisionmaking" (Fusallari, 2008), "incentives that drive education research" (Goldhaber & Brewer, 2008), and "the weak incentives to use research in policymaking" (Wong, 2008). Moreover, Henig's (2008a) chapter summarizes the evolution of this two-communities divide in response to increased corporate presence in K-12 education and increased federal research spending on education. Through his examination of how research is used in the debates surrounding charter school adoption, Henig (2008b, 2009) identifies five dimensions along which researchers and policymakers differ: (1) time, good research often takes long periods of time while policymakers need answers to policy problems immediately; (2) cumulative evidence, researchers evaluate evidence based on the cumulative work on the topic while policymakers are more interested in finding the silver bullet or "killer study"; (3) causality, researchers recognize the nuances of this most vexing challenge while policymakers are more likely to place their bets based on compelling narratives; (4) abstraction, researchers prefer to use evidence from individual cases to support broader themes with wider implications for future research and practice while policymakers prefer concrete evidence related to specific policies and conditions; (5) simplification, researchers associate complicating factors and nuance with sophisticated analysis while policymakers prefer bullet points and sound bytes to communicate their positions in the brief and fleeting windows of opportunity. Although these dimensions illustrate stark differences between researchers and policymakers, Henig warns both communities to avoid the urge to "meet in the middle," which would require researchers and policymakers to disregard the norms of their respective contexts.

Perhaps because of its intuitive appeal, this dichotomizing perspective also seems to be firmly embedded throughout the higher education literature. In fact, without citing "two-communities" explicitly, Apfel and Worthley (1979) use its rationale to explain why state governments so seldom rely on universities for technical assistance. Indeed, their study concludes that "language barriers" and "heterophily—a condition in which sender and receiver are unlike one another in many respects" account for this trend. Similar to the earlier essays by Wolanin (1976) and Halperin (1974), William Sederburg (1989), a Michigan state senator and former Michigan State University political scientist, identified a dozen hypotheses for the language gap between state legislators and academics and, ultimately, recommends that university leaders adopt a statewide perspective and a deeper understanding of the political process. Many higher education researchers are likely most familiar with the two-communities perspective through Robert Birnbaum's (2000) article "Policy scholars are from Venus; Policy makers are from Mars," which argues that the work of scholars and policymakers should remain "two distinct knowledge-producing activities whose insights might inform each another but are not dependent on each other." Birnbaum's article seems contrarian. Instead of arguing for a bridge between these two communities, Birnbaum defends their differences in aims and contexts, placing the onus of a research-policy connection on intermediaries such as

governmental agencies' or non-governmental organizations' policy analysts, thereby excusing researchers and policymakers from any demands to alter their respective orbits. Having outlined the challenge to research utilization posed by the two-communities perspective from Snow's "two cultures" to Birnbaum's direct application to higher education, the next section reviews various classifications of research use in the policymaking process.

What is Research Utilization?

Just as there are many definitions for research utilization, scholars identify many different types of uses of information in the policymaking process. Most reviews (e.g., Amara, Ouimet, & Landry, 2004; Dunn, 1983; Neilson, 2001; Nutley et al., 2007; Tseng, 2007) of this literature identify three basic types of research utilization. First, *instrumental use* refers to the direct application of research to specific policy decisions. This model of research utilization follows most closely the rational choice model of decision-making in which a problem is identified, information is gathered about possible solutions, then the optimal solution is adopted. Research utilization scholars (Caplan, 1979; Weiss, 1977) have argued that the use of information in the policy process has been under-estimated, at least in part because researchers were looking solely at the instrumental use of information.

The second type of research utilization, *conceptual use*, refers to the broader, longer-term role that research can have on policymakers' understanding of certain policy issue. Considering federal student financial aid policy as an example, the instrumental use of research evidence might show the direct impact of increasing the Pell grant award amount on increased enrollment rates of lower-income students. The conceptual use of research evidence, however, would include the cumulative effect of a broad range of studies on the impact of college affordability on student enrollment, retention, and persistence even if this research does not immediately inform a specific bill or policy decision.

The third type, *political use*, refers primarily to the tactical or symbolic use of information by policymakers. Usually this entails a policymaker using research evidence to bolster support for previously held positions or policy preferences, as opposed to using research to identify the optimal policy solution. Policymakers might make political use of research by distributing research findings to fellow legislators as a means of gaining support for an issue important to their district. Formal testimony or hearings before legislative committees is often another form of tactical research use, especially when all the experts in a panel provide evidence in support of policymakers' preferred policies. These three broad types of research use are distilled from typologies, models, and stages of research utilization outlined in many studies. Arguably, however, no researcher has been more influential in identifying the "many meanings of research utilization" than Carol Weiss (1979). As such, this section first reviews Weiss's work on the topic, then briefly reviews other important contributions.

Beyond the instrumental, conceptual, and political uses of research, Weiss offers a more nuanced classification for meanings of both "use" (1979) and "research" (1991). First, Weiss (1979) identifies the following seven "meanings" of research utilization in an effort to clarify and guide future inquiry on the topic lest these vastly different meanings become conflated:

1. Knowledge-driven: applied research tests concepts and findings of basic research to policy-relevant problems
2. Problem-solving: research helps policymakers solve a specific problem; policymakers and researchers agree on nature of the problem and solution
3. Interactive: policymakers consider multiple sources of information, including their own experience, to support the decision-making process; usually involves multiple iterations between policymakers and researchers
4. Political: political positions are fixed and unyielding; policymakers seek information to bolster support for previously determined decision
5. Tactical: research used as strategy, often as a means to delay action; researchers can be blamed for unpopular decisions or used to give legitimacy to decision
6. Enlightenment: education of policymakers gradually over time through the accumulation of research
7. Intellectual enterprise: policy research is one of many forms of research that may be of interest based on wide social concerns

The first three of Weiss's meanings of "research" generally follow the *instrumental use* concept that intuitively rests upon research directly influencing policy decisions. In a more recent study, Weiss introduces an additional meaning of instrumental research utilization—*imposed use*—based on the dynamics associated with the adoption of D.A.R.E. programs and the policy mandates included in the No Child Left Behind legislation (Weiss, Murphy-Graham, & Birkeland, 2005). The remaining four meanings of the original seven uses, however, constitute Weiss's primary contribution by calling the attention of researchers to the *political* and *conceptual uses* of information. By broadening research utilization to include aspects that are not immediately observable, Weiss provides useful classifications to describe the use of information. Specifically, research utilization scholars credit Weiss for identifying the "enlightenment" function that research evidence has on policymakers (Dunn, 1983; Neilson, 2001; Nutley et al., 2007; Rich, 1991).

Similar to these insights on meanings of "use," in a subsequent study, Weiss (1991) identified three models of "research" each of which roughly aligns with one or more of her meanings of research utilization.

1. Research as data: most influential when few alternatives are sharply opposed and when policymakers are analytically sophisticated
2. Research as ideas: most influential in early stages of policy process, when current policy is unfavorable, and when uncertainty is high
3. Research as argumentation: most influential when conflict is high and after the policy decision has been made

These classifications respectively fit the instrumental, conceptual, and political uses of research. Weiss's (1991) models also refer to the conditions under which research is most likely to be utilized, thus adding clarity to the consumption of research in the policymaking process. Recently, research utilization scholars (e.g., Nutley et al., 2007; Tseng, 2007) have noted that our understanding of the demand-side is much more limited. Indeed, the two-communities perspective often emphasizes the problem with the "supply" of research (i.e., too technical, too narrow, not focusing on current issues). By contrast, studies that clarify the "demand" for research emphasize the sources and types of information preferred by policymakers, which will be addressed in greater detail in the next section, and in the discussion of theories of the policymaking process.

In one such demand-side study, Knott and Wildavsky (1980) outline seven standards of research use with increasing levels of utilization: (1) reception, (2) cognition, (3) reference, (4) effort, (5) adoption, (6) implementation, and (7) impact. These standards also roughly correspond to stages of the policymaking process. Standards 1–4, which seem to occur at the agenda-setting or pre-adoption stage offer the lowest threshold for what constitutes research use; over time, however, the first four standards could be associated with the broader enlightenment function of research use. Standards five and six, respectively, occur in the policy adoption stage and implementation stage. According to Knott and Wildavsky (1980), full utilization is not realized unless the seventh "impact" standard is fulfilled.

Another related term, *policy analysis*, often is used synonymously with research utilization, with one apparent distinction: policy analysis is always conducted with the aim of being relevant to and having an impact on the policymaking process. As outlined above, not all research, even analysis of pressing practical problems, is conducted with the explicit goal of impacting policy. Perhaps this distinction has led to claims of "the end of policy analysis" (Kirp, 1992) and, less alarmingly, "the paradox of policy analysis" (Shulock, 1999), which both emphasize that as long as policy analysis is viewed as a rational process it is unlikely to be perceived as having a significant influence on the policymaking process.

It seems natural that the role of policy analysis would evolve similar to the conceptual frameworks of the policymaking process. In recent decades, policy process theories have emerged to offer alternative perspectives to the linear and rational approach. In particular, the stages model of policy formation in which a problem is identified, solutions (or policy alternatives) are explored, then one policy is adopted, implemented, and evaluated does not reflect the current conceptual understanding of how policy is made (deLeon, 1999; Lindbolm, 1959). Recent research views the policy process as more fluid than linear and more serendipitous than rational. Policymaking is described by models such as "multiple streams" (Kingdon, 1995; McLendon, 2003a; Ness, 2008), "punctuated equilibrium" (Baumgartner & Jones, 1993), and "advocacy coalition" (Sabatier & Jenkins-Smith, 1993). Given more recent conceptualizations of the policymaking process, Shulock (1999) argues that policy analysis should not be viewed as research prepared specifically for policymakers to address certain problems, but rather as an "instrument of the democratic process" that policymakers and interest groups, media, and citizens can use to influence public opinion and the policy process.

What Sources of Information Do Policymakers Prefer?

As a means to better understand both the supply- and demand-sides of research utilization, scholars have examined policymakers' preferred sources of information. Studies conducted during the "golden age" (e.g., Caplan et al., 1975; Rich, 1981; Weiss, 1980) primarily explored how policymakers utilized specific social science research as opposed broader sources of information that influence their decision-making. For instance, Rich's (1981) study considers only the use of survey data generated by the Research Applied to National Needs Division (RANN) of the National Science Foundation. Likewise, Weiss (1980) controls for the sources of information by generating hundreds of standardized two-page abstracts of research findings that federal agency staff then rate and assess in terms of perceived usefulness. While these seminal studies produced much of the conceptual development undergirding the study of research utilization, they were of a much narrower focus than more recent studies, which have sought to capture the specific types of information that policymakers are most prone to utilize. Furthermore, these "golden age" studies were limited often to policymaking processes at the federal U.S. level; more recently, researchers have examined the role of information at the state-level. The following sub-sections outline relevant sources at the level of the American states: insider versus outsider, constituents, legislative research agencies, state agencies, and think tanks.

Insider versus outsider sources. For the most part, researchers find that policymakers prefer "insider" sources of information, such as legislative staff and fellow legislators, to "outsider" sources, such as the media and academics. Rather than rely solely on surveys and interviews with elected officials, Mooney (1991) examines state legislators' use of information by analyzing the extensive bill files for 12 human services bills of 29 legislators in three states. Through these 348 information searches and interviews with all 29 legislators, Mooney (1991) finds that legislators prefer each of the three information sources at a different stage of the legislative process: (1) insider sources are preferred at voting decision stage, (2) outsider sources are preferred at the development stage, and (3) middle-range sources, such as interest groups, are preferred at the "persuasion" or policy formulation stage. Due to time constraints, re-election concerns, and the broad array of policy issues on which elected officials must act, legislators tend to adopt a "satisficing" approach to collecting information, which entails conducting an efficient search that ends when an adequate, though rarely optimal, solution is identified by a trusted source (Simon, 1957). Mooney (1991) contends that this strategy leads legislators to rely upon one another for their specific areas of expertise at least in part because they are able to "speak the same language" and also based on the willingness of legislators to trust fellow members with similar ideological views. Another study at the federal-level attributes legislators' tendency to become issue experts on one or two policy issues to the legislative organizational structure, particularly the committee system (Krehbeil, 1991).

Similarly, Webber (1987) finds that "legislative colleagues" rank highest in usefulness and frequency of policy information sources. Yet, both Webber and Mooney

find evidence of legislators relying on external sources for the *conceptual use* of information. Webber, for instance, finds that legislators who value their role as "policy conveys," those who translate and communicate public policy issues and solutions to the broader public, are much more reliant on external sources, such as university and research organizations. These sources are more likely than insider sources, such as legislator committee staff or state agencies, to conduct research rather than synthesize its core findings. However, Nutley et al. (2007) highlight the substantial role that insider staff and agencies can have as "intermediary organizations," which serve to translate the most relevant and current research into plausible policy solutions. Oftentimes these agencies are also more likely to be perceived, especially among legislators who do not value their roles as policy conveyers, as trustworthy based on their familiarity with the state's political and cultural context. For example, Ness and Mistretta's (2009, in press) recent studies of merit aid adoption suggest that in North Carolina, unlike neighboring states, outside experts are not relied upon to provide policy information. Instead, insider sources such as officials in the state higher education governing board provide information culled from statewide data and summarized from leading research in the field.

Constituents. Based on legislators' inherent re-election interests, constituents serve as another influential source of information. Mayhew's (1974) classic and elegant electoral-connection perspective famously characterized elected officials as "single-minded re-election seekers." Accordingly, the best indicator of legislators' policy preferences is the public opinion of citizens in their districts, which permit the legislator to satisfy voter demands and thus become re-elected. As mentioned above, Mooney (1991) finds that constituents serve as valuable outsider sources of information, especially in driving the development of legislation. In fact, his examination of legislators' bill files reveals that constituent letters and phone call logs generated much bill-drafting activity, but exerted a notably low level of influence on the ultimate voting decision itself. Gray and Lowery (2000), in a single case study of Minnesota legislators and staffers, find that the importance of constituents as an information source rank the second highest for both identifying problems and voting behavior. Wright (2003), too, argues that constituents' preferences can significantly influence legislators' voting behavior. Specifically, Wright urges interest groups to employ information-sharing techniques, particularly at the district-level so as to identify constituents' preferred policies, rather than traditional lobbying techniques (i.e., grassroots mobilization and campaign contributions). A recent study of merit aid adoption, in fact, finds that such strategies were ultimately effective in determining merit scholarship eligibility criteria in Tennessee. In this policy episode, I identify the significant impact of testimony from out-of-state university scholars and representatives from the College Board that disaggregated eligibility projections disaggregated by county. This district-level information allowed legislators to see the proportion of eligible students from their districts dwindle as the eligibility criteria become more rigorous and thereby influenced the adoption of more widely attainable scholarship criteria (Ness, 2008).

Legislative research agencies. Policymakers have long relied upon their aides for policy information needed to perform effectively their roles (Guston, Jones, &

Branscomb, 1997). Recent studies, however, have more closely examined the roles of various types of legislative staff, including aides assigned to their capitol and district offices, staff to support legislative committees, legislative caucus and leadership aides, and legislative research agencies, and the differences in these roles between states. Using survey data of legislators' rankings of 16 different information sources collected in 19 states, Hird (2005) explores the growth of legislative research agencies and their increasing influence in the policymaking process. Unlike other legislative aides, these non-partisan policy analysis organizations (NPROs) are not beholden to a political party; rather their function is to provide neutral, non-partisan analysis of policy issues. Notwithstanding the wide variability of funding, staff, and expertise among the states,[3] Hird (2005, 2006) finds that state legislators identify non-partisan policy research agencies as the most important source of information for understanding and reaching public policy decisions with the sole exception of their constituents. Despite this important *conceptual* or *enlightenment use* of information, legislators rank NPROs as having among the least influence over policy adoption as compared to other sources.

State agencies. The many state governmental agencies, usually under control of the executive branch, serve as another common source of policy information. As captured by the earlier research utilization studies (Caplan et al., 1975; Rich, 1981; Weiss, 1980), policymakers (both elected and senior agency officials) rely upon information from federal agencies such as National Institutes of Health (NIH), National Science Foundation (NSF), and cabinet-level agencies such as the Department of Agriculture. More recent state-level studies have found mixed results. For example, one study considering the importance of various sources of technical information ranks executive agencies as second only to NRPOs (Guston et al., 1997). According to Gray and Lowery (2000) and Webber (1987), on the other hand, legislators rank state agencies as only moderately useful and as an infrequent source of information. However, among legislators who value scientific and technical information, Webber finds a strong correlation to the usefulness of state agency information. Although not specifically examining information use, another study using an "ethnography of education policy" approach (Hamann and Lane, 2004) highlights the role of state-level education agencies as mediators in the implementation of federal U.S. policy by reframing policies to reflect local mores. Specifically, Hamann and Lane find that state agencies intercede to help school districts comply with No Child Left Behind requirements. Finally, in one of the few research utilization studies to consider higher education policy adoption, Shakespeare (2008) examines the role of the governing board systems, State University of New York (SUNY) and City University of New York (CUNY), in the budget decision process. Shakespeare's analysis reveals that multiple, competing coalitions rely heavily upon SUNY and CUNY data and analysis to bolster their position in favor of or in opposition to altering the state's Tuition Assistance Program.

Think tanks. This final source of information has become increasingly more prevalent in the policymaking process. With the swelling number of think tanks in recent decades, these organizations have varied agendas and missions ranging from research producers, research translators, issue advocacy, and ideological advancement. Andrew Rich's (2004) recent book on the role of think tanks on

federal public policy states that policymakers perceive think tanks to be "more marketing than research organizations, with styles of behavior that mimic interest groups rather than universities." Similar to Henig's (2008a, 2009) characterization of the politicization of charter school research, which included high-profile education experts debating policy findings and quarrelling over methodological approaches in national newspapers, Rich argues that think tanks' aggressive marketing efforts have blurred the boundaries between experts and advocates. Through interviews with policymakers and leaders from funding organizations and think tanks, Rich finds that the credibility of think tanks has been especially diminished by their ideological and partisan alliances. Indeed, only a single centrist organization (Brookings Institution) ranks among the top four influential think tanks as rated by policymakers and journalists from both parties. In addition to Brookings' second place rating, Rich's respondents rated three conservative think tanks in the top four: Heritage Foundation (1), American Enterprise Institute (3), and Cato Institute (4). Ultimately, Rich argues that the influence of think tanks is mitigated by their propensity to deliver research information in the same polemic fashion that characterizes the policymaking process, and thus clearly aligns with the *political use* of information.

The research utilization line of inquiry from the "golden age" to present has conceptual implications for higher education policymaking. The types of research use—instrumental, conceptual, and political—and other classifications of research utilization could be extended by applying them to higher education policy episodes. For example, given the increasing migration of higher education policies across states, are policymakers more likely to make instrumental use of technical information regarding policies adopted by other states? If this use of research does occur, is the diffusion of ideas between states' policymakers (rather than researchers), as suggested by the two-communities perspective? Finally, given the wide array of information sources, are policymakers more likely now than in the past to utilize research evidence in shaping higher education policy?

The classic and emerging studies of research utilization also align well with an ascendant examination of theories of the policymaking process. Since 2000, for example, more than 30 articles the higher education policy process in peer-reviewed journals have examined, indicating significant growth in understanding the complex dynamics of public policymaking. These policy process theories seek to clarify, explain, and illuminate phenomena surrounding policy adoption; to varying degrees, they also capture the role of information in the policymaking process. The following section surveys the extent to which five conceptual frameworks incorporate research utilization and reviews their application to the higher education policymaking process.

Theories of the Public Policymaking Process

This second section of the chapter reviews the ways in which leading theories of the policy process conceptually account for the role of information. Through the application of increasingly sophisticated research designs and data sets (both quantitative

panel datasets and qualitative case studies), researchers have been able to examine with growing rigor the nuances of various conceptual approaches to the study of policy processes, each with information and research utilization playing either a central or secondary role. For example, Weible (2008) synthesizes recent studies of the policy process to compare how four leading policy theories—multiple streams, punctuated equilibrium, social construction, and advocacy coalition—process and use "expert-based information." Weible offers a series of falsifiable propositions related to policy subsystems and information use to guide future study. However, similar to the studies referenced in the previous section on research utilization, very few examine the higher education sector.

In part, this is surprising given how attuned higher education researchers have been to the recent developments surrounding policy theory in the social sciences, particularly political science. For example, Paul Sabatier's (1999a, 2007) *Theories of the Policy Process*, currently in its second edition, provides constructive summaries for seven policymaking process theories. Both editions of this book generated hundreds of studies considering policy issues related to the environment, health care, economic development, education, and many others. Joining this flurry of theory development, higher education scholars have responded to McLendon's (2003b, 2003c) recommendation of theories reviewed in Sabatier (1999a, 2007), including: multiple streams (Leslie & Berdahl, 2008; McLendon, 2003a; Ness, 2008; Ness & Mistretta, 2009, in press); punctuated equilibrium (Mills, 2007; Monear, 2008); diffusion of policy innovations (Doyle, 2006; McLendon et al., 2006; McLendon, Heller, & Young, 2005; McLendon, Deaton, & Hearn, 2007; Ness & Mistretta, in press); principal-agent (Lane, 2007; Lane & Kivisto, 2008); and advocacy coalition (Monear, 2008; Ness, 2008; Ness & Mistretta, 2009; Shakespeare, 2008).

This section examines the extent to which each of these recommended frameworks attends to research utilization in the policymaking process. To this end, I summarize the core elements of each framework, then briefly discuss how each conceptual lens might be applied to examine higher education policy adoption. After separately considering each framework, Table 1 provides an overview of how each framework captures research utilization by summarizing the central or secondary role of information, the possible types of information use, and the sources of information.

Advocacy Coalition Framework

Sabatier and Jenkins-Smith (1988, 1993) originally introduced the advocacy coalition framework (ACF) as an alternative conceptualization of the policymaking process emphasizing "policy change and learning." This framework was among the first to explicitly incorporate the role of technical information in the policy process. Sabatier and Jenkins-Smith (1993, 1999) specifically identify two factors, a professional forum for research dissemination and commonly agreed upon quantitative measures of a policy issue, as examples of the influence of scientific and technical

information on policy change. Similar to earlier conceptualizations of policy subsystems, such as the iron triangle of elected officials, government agencies, and interest groups, ACF attributes policy change (and stability) to the role of coalitions, which are stable over a decade or more, held together by common belief systems, and influenced by external perturbation. Before outlining specifically how ACF relates to research utilization, however, I provide a brief summary of the core conceptual components of this framework.

Sabatier and Jenkins-Smith (1993) define an advocacy coalition as, "people from a variety of positions (elected officials, agency officials, interest group leaders, researchers, etc.) who share a particular belief system—that is, set of basic values, causal assumptions, and public perceptions—and who show a non-trivial degree of coordinated activity over time" (p. 25). In addition to the three iron triangle primary actors, advocacy coalitions include other actors, such as journalists, researchers, policy analysts, and governmental actors at all levels. In further contrast to previous policy process theories, advocacy coalition suggests that multiple coalitions may exist within a policy subsystem. Sabatier and Jenkins-Smith identify a series of parameters that have a stabilizing influence on rival coalitions that relate specifically to the policy issues. In addition to these stable parameters, ACF identifies external (system) events that influence the policy process, such as changes in socioeconomic conditions, changes in public opinion, and policy decisions and impacts from other subsystems. Changes in these external events inevitably affect the stable parameters identified above and could affect the policy subsystem depending upon the constraints and resources of sub-system actor. As with all aspects of advocacy coalition, external events are most likely to influence policy change if they affect policy belief systems.

The crux of the advocacy coalition framework rests on three structural categories of policy belief systems. The *deep core* of fundamental beliefs, such as the nature of man as good or evil, is highly resistant to change. The *policy core* or policy position beliefs, such as the desired scope of governmental versus market activity, is difficult to change, but change can occur due to changes in the external events. Finally, *secondary aspects* of belief systems, such as administrative rules and budgetary allocations, are relatively easy to change (Sabatier, Jenkins-Smith 1993).

The advocacy coalition framework includes a set of nine hypotheses related to policy stability and change. The first three pertain to the stabilizing influence of belief systems on policy sub-systems. The next two hypotheses pertain to the conditions necessary for changes in the policy core belief system. For instance, Sabatier (1988) contends that policy change is not likely to occur in the absence of a power shift within a policy subsystem or significant changes external to the subsystem. The final four hypotheses pertain to policy-oriented learning across belief systems. Since each of these propositions deal directly with the role of scientific and technical information, I list them separately:

Hypothesis 6: Policy learning is most likely to occur when an intermediate level of conflict exists between coalitions and when two conditions exist: (a) both coalitions have technical resources to engage in the debate, (b) the conflict is between secondary aspects of both coalitions' belief systems or between the policy core of one and secondary aspects of the other.

Hypothesis 7: Policy learning is more likely for problems for which accepted quantitative indicators and data exist than for problems for which data and theory are subjective, qualitative, or altogether lacking.

Hypothesis 8: Policy learning is more likely in problems in natural systems, than in social or political systems, since controlled experimentation is more feasible in the former and critical variables are not themselves active strategists.

Hypothesis 9: Policy learning is most likely when there exists a forum that is: (a) prestigious enough to force professional from different coalitions to participate, and (b) dominated by professional norms (Sabatier & Weible, 2007, p. 220).

More recently, however, despite these four hypotheses related to policy learning and information utilization, ACF has been criticized for its limited conceptualization of technical and scientific information use and for its emphasis on the *conceptual use* of research that occurs within coalition (James & Jorgensen, 2009). This is ironic, according to James and Jorgensen (2009), given Sabatier and Jenkins-Smith's (1988) observation that, "one of the most surprising—and distressing—aspects of the literature on knowledge utilization is that it has developed largely independent of the literature in political science on the factors affecting the policy process" (p. 123). In addition to ACF's narrow consideration of the conceptual use of technical information, policy process researchers have criticized ACF for relying too heavily on individual belief systems and over-emphasizing the influence of external events. James and Jorgensen (2009), for instance, suggest a policy design approach that incorporates information utilization and focuses on the content of policy (i.e., the specific policy alternatives or recommendations) rather than simply whether or not policy change occurs. Higher education researchers may also benefit conceptually from such an approach and, in fact, recent studies have extended ACF is similar ways.

Based on two of the hypotheses regarding the conditions under which information utilization and policy change are most likely, policy-oriented learning seems unlikely to occur in higher education, which is not a natural system (hypothesis 8) and quantitative indicators and data are unavailable or insufficient for some problems (e.g., student learning outcomes). However, for other higher education problems, such as student financial aid policy, professional forums exist (hypothesis 9) and often multiple coalitions (e.g., merit-based versus need-based financial aid) have technical resources to engage in the debate (hypothesis 6). Two recent higher education studies offer further support for hypotheses 6 and 9.

The advocacy coalition framework has recently been applied to state-level higher education issues such as merit-based scholarship program adoption (Ness, 2008; Ness & Mistretta, 2009) and budget priorities for tuition assistance (Shakespeare, 2008). The merit scholarship case studies of program adoption provide evidence confirming the vital role of professional forums. Research utilization was most prevalent in the Tennessee policy episode based in large part on the professional forum, which included a task force discussion and invited presentations by merit aid proponents and critics (Ness, 2008). Although Shakespeare (2008) does not formally test ACF's hypotheses, her study on budget changes to the tuition assistance programs certainly finds that rival coalitions had sufficient technical resources

as outlined in hypothesis 6. For instance, the "shrink funding" coalition relied upon information and expertise from within the governor's office and upper house of the legislature and the "maintain funding" coalition relied upon the technical resources of the lower house of the legislature and the state financial aid commission. Moreover, as James and Jorgensen (2009) recommend, Shakespeare's study specifically considers the content of information related to policy alternatives and identifies dozens of internal and external sources of information upon which coalitions relied to inform or substantiate their policy preference. Indeed, these sources of information receive much more attention than the coalitions various belief systems.

Researchers might examine further the role of belief systems, which serve as the crux of ACF, on the sources of information preferences and the extent to which policy actors utilize information in the policy decision process. In many ways, this is a challenge for applying ACF to higher education: there are few higher education issues that lend themselves to long-standing stark differences of opinion at the deep or policy core set of beliefs. For example, legislators and state higher education leaders may be likely to favor decentralized governance arrangement for some time only to favor a more centralized system a few years later based on shifting political, social, and economic conditions.

On the other hand, ACF may provide a promising lens through which to examine policy decisions related to student admissions and financial aid. There does seem to be evidence of long-standing opposing coalitions: one favoring excellence and the other favoring access. These coalitions generally divide on partisan and ideological lines, so how do belief systems impact the likelihood for policy adoption or change? Financial aid coalitions might draw heavily from *deep* and *policy* beliefs, such as a preference for redistributive and entitlement financial aid programs, would be much less likely to change as opposed to *secondary aspects*, such as formulas for sliding scales to calculate award amounts based on financial need. However, studies of the political dynamics surrounding the adoption of merit scholarship programs suggest that lottery and merit scholarship advocates do not always follow predictable political and ideological patterns (Ness, 2008). Higher education researchers might test the strength of belief systems on policy decisions. How, for instance, does research evidence or other political information (such as media accounts and constituent preferences) influence policy decisions?

More than any of the following theories of the policymaking process, ACF manifestly accounts for how research evidence enters the policy arena and shaped policy outcomes. Higher education researchers might further examine ACF's hypotheses related to forum of debate. Is the forum for the merit-based versus need-based debate, for example, guided by professional or political norms? That is, does the debate occur in settings dominated by politicians (e.g., hearings, formal testimony), or does the policy debate seek out empirical evidence and encourage expert recommendations? As ACF hypothesizes, issue experts are more likely to participate in a professional forum. Through the examination of these questions and others, ACF may very well offer conceptual insights on the policy subsystem actors and phenomena that would extend our understanding of research utilization in the decision-making process.

Diffusion of Policy Innovations

The policy innovation and diffusion framework rests firmly on Everett Rogers' (1962, 2003) seminal text, *Diffusion of Innovations*, currently in its fifth edition. Essentially, the diffusion framework examines the migration of policies within organizations or governments. According to Rogers, innovations are adopted in an S-curve characterized first by "early adopters," then by policy adoption of the majority or organizations or governments until finally the innovation is common. Higher education researchers, however, are likely more familiar with Berry and Berry's (1999, 2007) application of the diffusion framework to policy adoption in the American states. Although this framework does not manifestly incorporate research utilization, diffusion of policy innovations implicitly incorporates information use as policymakers borrow ideas from other states. I return to possible implications for research utilization within the diffusion framework after briefly outlining its conceptual fundaments.

In addition to the "diffusion of innovations" framework as conceptualized by Rogers and Berry and Berry, three additional terms are related to studies relevant to policy diffusion. The first two terms, p*olicy entrepreneurs* and *policy networks*, are not unique to the diffusion framework and as such will also be discussed in the subsequent sections on multiple streams and punctuated equilibrium. Nevertheless, Michael Mintrom (1997) directly links policy diffusion to the presence of policy entrepreneurs, "policy actors who promote policy ideas," in the successful adoption of school choice policy in the U.S. states. Similarly, Mintrom and Vergari (1996) find that policy entrepreneurs are more likely to achieve their legislative goals as they are more involved with social and professional policy networks. The third overlapping term, *policy transfer*, is often used synonymously with diffusion of policy innovations. In fact, Dolowitz and Marsh (2000) provide thorough reviews of this literature "that directly and indirectly uses, discusses and analyzes the processes involved in lesson-drawing, policy convergence, policy diffusion, and policy transfer" (p. 5). The authors also present a continuum ranging from lesson-drawing, which is based on the rational decision-making process to "coercive transfer" adopted by direct imposition. In an earlier article, Dolowitz and Marsh (1996) critique extant policy diffusion and policy transfer models for their reliance on rational decision-making models. Instead, they argue that policy transfer should be examined through more nuanced lenses of decision-making, such as the garbage can theory (Cohen, March, & Olsen, 1972).

As Mintrom's studies above illustrate, Jack Walker's (1969) study popularized the application of policy diffusion with the American state as the unit-of-analysis. Walker (1969) finds that states were more likely to enact economic and governmental policies of their neighboring states both as a means of "satisficing" (Simon, 1957) and in response to competitive pressures. Rather than following national trends or peer states, Walker's (1969) study suggests that states are more likely influenced by states in their region. Berry and Berry (1990), for example, find similar evidence in their study of lottery adoption, which cites states, desires to reap the revenues of citizens who frequently cross the state line to purchase lottery tickets. However, unlike

Walker's study, Berry and Berry (1990) also account for certain so-called internal determinants, such as political, economic, and demographic characteristics of the state, in their examination of lottery adoption. Both the integrated model and event history analysis (EHA) of this integrated model have become the norm for recent diffusion studies, which according to Berry and Berry (2007) exceeds 50 interstate and international studies their initial study of lottery adoption (Berry & Berry, 1990).

Michael McLendon (2003b, 2003c) recommends that higher education researchers apply the integrated diffusion and internal determinants approach to examine postsecondary education policy adoption. Indeed, recent studies utilizing EHA methods find the integrated diffusion and internal determinants framework to be a stronger explanation for the rise of many policy adoptions in higher education, including finance strategies (McLendon et al., 2005), performance funding initiatives (McLendon et al., 2006), state-wide governance restructuring (McLendon et al., 2007), and state merit aid programs (Doyle, 2006). Not all of these studies find evidence of diffusion effects to explain policy innovation, however. For instance, Doyle's (2006) event history analysis of the adoption of state merit aid programs does not find evidence to support the diffusion hypothesis or political characteristics of states (such as ideology and partisanship), instead finding education and demographic characteristics of states as the most significant predictors of merit aid adoption.

As Berry and Berry (2007) note, the diffusion framework's scope is much narrower than many other theories of the policymaking process. One possible extension of the diffusion lens would be to specifically consider the use of information in the integrated framework. Since few diffusion studies have focused on the role of information, in-depth case studies may initially be more helpful than EHA in understanding the uses to which information is put in state policymaking research utilization. Once utilization patterns and information sources have been identified, quantitative studies could incorporate measures for research use in EHA models.

Greater attention to the diffusion comparison groups may also offer insights into how policy ideas and information might migrate. For example, diffusion influences among *neighboring states* might rely upon overlapping media markets and the formal and informal relationships and communication between policymakers and citizens. These same information sources might apply to diffusion influences within a *geographic region*, but would also likely include regional policy associations and compacts (Hearn & Griswold, 1994). Finally, a *national diffusion model* would rely almost entirely on policymaker connections through political and policy associations (e.g., National Governors Association, National Conference of State Legislatures, Education Commission of the States) and the connections between leaders of states with similar social, demographic, economic, or political characteristics. Yet, similar to ACF's emphasis on policy change, the EHA diffusion studies that focus solely on policy adoption are unlikely to capture the nuances associated with research utilization.

Recently, however, Lora Cohen-Vogel, Kyle Ingle, and colleagues have broken from the EHA convention in their study of diffusion effects through use of qualitative case studies. According to the authors, "qualitative approaches represent an

important tool for comparative state and innovation diffusion scholars" (p. 626). State policy adoption is a complex process, and context probably matters a great deal. Indeed, echoing Mooney (2001), Ingle, Cohen-Vogel, and Hughes (2007) argue that qualitative approaches hold great potential for unpacking the complexities that surround geographically based policy diffusion among the American states.

Based on evidence accumulated in interviews with policy actors in adopting states, Cohen-Vogel and Ingle (2007) suggest that three significant factors may play a role in the diffusion of merit aid programs among south-eastern states. First, policies are likely to migrate across borders when policymakers feel pressure to enact similar popular programs as neighboring states. Second, state legislators may be able to navigate the policymaking process more strategically if they can look to the experiences of a neighboring state to inform their decisions. Third, policy communities can serve as either formal or informal networks to advocate the adoption of particular programs in other states. Cohen-Vogel and Ingle (2007) also note that the influence of other states in the adoption of merit aid programs seems "particularly strong" during agenda-setting and policy development stages (p. 256).

Another benefit of the case study approach is the examination of states that *resist* regional diffusion. While there is growing interest in the phenomenon of policy diffusion, there is little research available on why some states failed to adopt merit aid programs. Two recent studies examine merit aid non-adoption. One study suggests that hold-out behavior occurs due to an absence of diffusion pressures and unfavorable internal conditions (Ingle et al., 2007). In their examination of merit aid policy adoption patterns, Ingle et al. (2007) find that in merit aid hold-out states, respondents reported less pressure to compete with neighboring states. Additionally, hold-out states did not report contact with merit aid policy experts or participation in regional associations. Similarly, Ness and Mistretta's (in press) case study considers the nonevent of merit aid diffusion in North Carolina which has three neighboring states with HOPE Scholarship programs (Georgia, South Carolina, and Tennessee). Indeed, North Carolina was the only southeastern state in the past 20 years to adopt a lottery and not fund merit scholarships with its proceeds. Archival and interview data suggest that organizational structures and technical information served as significant influences on the policy process. In particular, the financial aid community in North Carolina appears to have been successful in staving off merit aid support among individual legislators and regional policy organizations.

These case studies of policy innovation and diffusion theory suggest that research utilization occurs not only during policy adoption, but also in the earlier policy formulation and agenda-setting stages. Evidence also illustrates the *conceptual, instrumental*, and *political* uses of information. Policy trends and information from other states often serve as an enlightening (or conceptual) influence. Specific state-level data related to how closely the implemented policy met its desired effect (instrumental) can have a direct effect on whether other states adopt similar policies. And, policymakers tend to make tactical (or political) use of information to encourage the adoption of policy to compete economically or otherwise with a neighboring state.

Despite the swell of higher education studies applying the diffusion framework to policy adoptions, this framework holds further promise for understanding the higher education policymaking process. Most notably, as McLendon and Cohen-Vogel (2008) discuss, the policy innovation and diffusion lens might be applied to other phases of the policy process in addition to the current work focusing on dichotomous outcomes (adoption/non-adoption). In the agenda-setting and alternative specification stages, for instance, the diffusion framework might offer insights into the sources and flow of information. The role of policy networks within states, regions, and nationally seems to hold potential not only for understanding the migration patterns of ideas, but also for understanding the sources of information upon which these networks rely. Do the networks of policymakers rely on different sources than those of policy analysts? For instance, do the National Governors Association (NGA) and National Conference of State Legislatures (NCSL) provide information that influences policy decisions differently than information provided by State Higher Education Executive Officers (SHEEO) and the National Center for Higher Education Management Systems (NCHEMS)? These questions and others are addressed more fully in the final section of this chapter, which also offers a conceptual extension of the diffusion framework that seems appropriate to the higher education policymaking.

Multiple Streams

Unlike other theories of the policy process, the multiple streams (MS) framework emphasizes the dynamic, fluid, and serendipitous nature of policymaking. Indeed, Cohen, March, and Olsen's, (1972) garbage can model emerges from their examination of decision-making in colleges and universities, which they classify as "organized anarchies." John Kingdon's (1995) revised garbage can model, which emerged from his study of federal policymaking, has since been applied to policymaking in various contexts to explain the rise of issues to the agenda, the generation of policy alternatives, and the adoption of policy solutions. Despite the multiple streams framework's significant emphasis on randomness and political dynamics, research utilization is evident as a secondary aspect of the framework as captured by policy actors' efforts to connect problems, policies, and politics. As with the previous discussion of the diffusion framework, I first review the central aspects of MS in this section, then discuss possible extensions of MS to more fully account for research utilization in the final section of chapter.

Three fluid streams—problems, policies, and politics—represent the fundamental elements of the multiple streams framework. As Kingdon (1995) states, "People recognize problems, they generate solutions for public policy changes, and they engage in such political activities as election campaigns and pressure group lobbying" (p. 87). Not all problems, however, emerge in the *problem* stream. Kingdon maintains that there are three mechanisms by which conditions become problems: (1) through systematic indicators, (2) dramatic events, and (3) feedback based on programs, citizen input, and previous experience.

Kingdon (1995) identifies the *policy* stream as the process in which policy alternatives are considered in a sort of "policy primeval soup." These policies are generated from a variety of sources, including executive and legislative staff, interest group communities, researchers, and bureaucrats, which suggests that research utilization is evident. Kingdon also suggests that within the policy stream academic research, policy reports, and media accounts play a significant role in the alternative specification stage (more so than in agenda-setting). Moreover, 66% of Kingdon's respondents found academics, researchers, and consultants to be somewhat or very important.

The *politics* stream accounts for the many influences external to the specific problems and policies. The national mood, public opinion, political culture, electoral turnover, and interest group activity represent the most common elements. Kingdon maintains that this stream may exert the most influence, especially as policy decisions are made among the alternatives. Indeed, one of Kingdon's respondents suggests that regardless of the specific policy recommendations, decisions ultimately come from the preferences or proclivities of powerful committee chairmen. As Mooney (1991) suggests, constituents may serve as another source of influence and information within the politics stream given elected officials' inherent decision to link their preferred policies with their districts' interests.

As these separate streams flow through the policy process, phenomena affect each stream independently until for serendipitous reasons a policy actor is able to "couple" an issue across streams. This essential coupling aspect of the multiple streams framework can happen only during a brief period of time, or policy window. At such time, *policy entrepreneurs* seize the opportunity to advance their pet issues or solutions and gain political support. Kingdon notes that three qualities contribute to an entrepreneur's success: a claim to hearing (expertise or authority), political connections or negotiating skill, and persistence. These skills are often utilized in the policy stream as these policy actors "soften up" the system for policy change, then once the timing right, successful entrepreneurs pounce with their solutions or issues.

The multiple streams framework maintains that both *visible* and *hidden clusters* of policy actors influence the policymaking process. The *visible cluster* receives broad public recognition and media attention based on the high-profile participants such as executives and their cabinet members, legislative leaders, and, especially during election cycles, political party leaders and media. The *hidden cluster* includes researchers, staff members of elected officials, and career bureaucrats. Kingdon claims that the *visible cluster* is most effective in setting the agenda, while the *hidden cluster* more often generates alternative solutions. Similar to findings in the research utilization studies on the reliance upon insider and outsider sources (Mooney, 1991; Webber, 1987), the involvement patterns of these clusters suggest that various information sources enter the policy process at different points.

Having emerged from the garbage can model of campus-level decision-making, higher education researchers have since applied Kingdon's revised MS model to examine the policymaking process in the governmental context. At the federal-level, for instance, Hearn (1993) suggests that MS offers a compelling explanation for the paradox in the growth of federal student financial aid in the latter half of the

twentieth century despite substantial shifts in political control. Based on the internal and external forces attendent to federal student aid (i.e., broad political support for policies targeting the middle-class and heightened tension within Congress around hot-button issues, such as energy policy), Hearn argues that MS offers a conceptual explanation for an otherwise seemingly disjointed policy trend.

Higher education researchers have also found MS to offer compelling insights on state-level governance restructuring initiatives (Leslie & Berdahl, 2008; McLendon, 2003a; Mills, 2007) and on state merit scholarship adoption (Ness, 2008; Ness & Mistretta, 2009). Each of these studies illustrate MS's explanatory power based on the dynamic, often frenetic pace of policy developments, the non-linear connection of solutions to political developments rather than organizational functions, and the involvement of key individuals (policy entrepreneurs) to relentlessly advocate their preferred policies. Two studies also offer extensions of Kingdon's model. Based on his three-state comparative case study of statewide higher education governance reform, McLendon (2003a) recommends adding an outer layer to the MS model to account for intra-state economic, political, and demographic characteristics. The second extension (Ness, 2008), also based on a three-state comparative case study, incorporates an important element of ACF—the use of technical information—in a revised MS model to explain how states established merit aid eligibility criteria. In fact, by directly considering the role of information, researchers could find increased relevance of MS on higher education policy decisions.

Principal-Agent Theory

Concerned primarily with the relationship between two parties, principal-agent theory (PAT) essentially considers the tension between a formal authority (principal) and its designated, more specialized agency (agent). The theory suggests that such a relationship is characterized by goal conflict and by information asymmetries, which often lead to "shirking" behavior among agents and to "monitoring" efforts by principals. Having originally been applied by economists (e.g., Arrow, 1985; Jensen & Meckling, 1976; Ross, 1973) to individual relationships such as employer-employee, patient-doctor, and investor-broker, political scientists (e.g., McCubbins & Schwartz, 1984; Moe, 1984, 1985, 2005) have since applied PAT to relationships between government agencies and elected bodies. More recently, higher education researchers (e.g., Kivisto, 2005; Lane, 2007; Lane & Kivisto, 2008; McLendon et al., 2006) have applied PAT to relationships between state governments and higher education institutions and systems. These and other PAT studies offer conceptual insights on the complex relationships between governments and organizations and, more importantly for the purpose of this review, highlight the role of information (specifically the imbalance in favor of agents) in decision-making dynamics.

The core components of PAT relate to the fundamentally different perspectives and interest of principals and agents. Principals have formal authority and as a result a commitment to broader goals, but have limited time and expertise to effectuate that authority. Agents have specific expertise and as a result commitment to that field or sector often outweighing the commitment to principals' broader objectives. To

clarify PAT's central elements, consider the investor-broker relationship from economic PAT. In this relationship, the investor (principal) contracts with a broker (agent) to invest a sum of money based on the broker's expertise. Indeed, the information asymmetry between investor and broker is a defining characteristic of the contract, since investors with as much expertise as brokers would be highly unlikely to contract for these services. But, given this imbalance of information, how can investors be sure that brokers are acting in investors' best interest? The investor could regularly track the broker's activity through monthly reports. Similarly, the investor could annually evaluate the broker's performance. Or, the investor could simply trust that the broker is acting as a fiduciary. In the first two scenarios, the principal would be engaging in monitoring activities that are respectively "behavior-based" and "performance-based." The final option may most likely lead to the agent "shirking" based on the "moral hazard" of the principal not being able to directly observe the agent. As a result, brokers may act in their private interest either actively (i.e., investing strategies that best serve the broker) or passively (i.e., not making time to track the investor's account) (Kivisto, 2005). Although this example illustrates the essential elements of PAT, its application to government and politics (including the higher education sector) require modifications.[4]

As summarized by Lane and Kivisto (2008), political PAT emerged from the neo-institutionalism perspective that emphasizes the role of organizational structure and power in addition to the role of individuals (Moe, 1984; Powell & DiMaggio, 1991). Specifically, Moe (1984) suggests that contracts exist throughout government, such as constituents contracting with their elected representatives and elected officials with bureaucratic agencies. Similar to tensions in the investor-broker relationship above, political PAT includes elements of shirking by government agencies based on their relative autonomy from elected bodies and in response to conflicting goals. However, unlike an investor who can always find another broker, Moe (1984) notes the contract between elected officials and agencies is implied rather than explicit, since in governmental contexts the principals can rarely terminate their relationships with agents. Instead, McCubbins and Schwartz (1984) suggest two metaphors illustrating how Congress monitors agencies: police patrols or fire alarms. Police patrols include direct and centralized activities, such as reporting structures, approval procedures, and regular audits. Fire alarms, alternatively, are decentralized and less direct activities, such as standard operating procedures and informal practices that allow citizens, interest groups, and government officials to monitor agency behavior and to "sound an alarm" when problems arise.

In both cases, principals seek to minimize information asymmetries by directly requiring that agencies report on identified goals (police patrols) or by creating transparency of information and progress (fire alarms). Although studies of PAT do not manifestly address the use of research evidence and other information in the policy process, it seems that principals' monitoring activities could increase the likelihood of research utilization. Moreover, as Kivisto (2005) outlines, agents may engage in "signaling" activities, such as providing information and behaving in ways that might enhance the principals' perception of their competence. In essence, political PAT provides a lens that magnifies the strain between bureaucratic agencies

and their elected principals and offers insights into how agencies' organizational structure might impact their decision-making behavior.

Higher education researchers have recently identified the utility of PAT to examine the relationships between government and higher education campuses and systems (Kivisto, 2005; Lane & Kivisto, 2008; McLendon, 2003c). At the campus-level, Jason Lane (2007) examines governmental oversight of two large public research universities and illustrates the complex and varying web of oversight mechanisms that go beyond police patrols and fire alarms, in particular the importance of the press in providing latent oversight in a state without centralized, formal controls and high levels of campus autonomy. In fact, Lane specifically identifies the significant role of information gathering, including agency reports, legislative testimony, and communication with constituents, on external oversight of institutions. Other studies consider the system-level (or state-level) impact of governance structure on higher education policy (Lowry, 2001; McLendon et al., 2006; Nicholson-Crotty & Meier, 2003). For instance, studies find evidence that states with centralized higher education governance systems (i.e., consolidated governing boards) lead to lower costs for students (Lowry, 2001) and are likely to adopt less restrictive accountability programs (McLendon et al., 2006). These studies emphasize the state-level agencies' responsiveness to stakeholders and indicate that less centralized coordinating boards seem to be more strongly influenced by the principal (state government) than centralized governing boards with more formal authority thus autonomy from the state. PAT has clearly offered conceptual insights to higher education organizational behavior, yet it seems that further insights could be gained by examining more closely the precise role that information plays in principal-agent relationships.

Researchers, for instance, might specifically consider the information sources upon which principals and agents rely. Although informational asymmetry lies at the crux of PAT, few studies seek to examine the nebulous role of information. Similar to Lane's (2007) emphasis on information gathering, future research might explicate the sources of information (e.g., newspaper articles, agency reports, and constituent letters) upon which principals rely to oversee agents. Do these sources of information reduce information asymmetry between principals and agents? Or, do non-expert information sources serve to expand the imbalance of information and reinforce the two-communities perspective of policymakers (principals) and policy analysts (agents)? Additionally, given the goal conflict between principals and agents, researchers might examine the role of information sources in reinforcing this conflict. If, for instance, elected officials rely primarily on polling data and state agency officials rely primarily on empirical research, then these different information sources serve to re-enforce conflicting goals and may induce agents to shirk.

Another possible extension of PAT would be to examine the impact of elected officials and government agencies relying on the same sources of information. For example, organizations such as the National Center for Public Policy and Higher Education prepare policy briefs and reports (of varying scope and format) for both elected officials and higher education system and campus leaders. Do reports such as *Measuring Up* (NCPPHE, 2008) reduce information asymmetry? Do such reports

lead to less shirking by state higher education agencies? These questions, specific to the higher education context, offer potentially important insights on the relationship between principals and agents that would greatly inform the policymaking process.

Punctuated Equilibrium

Similar to ACF, the punctuated equilibrium theory (PET) focuses on policy subsystems and has recently been updated to account more broadly for how governments process information in the policymaking process. As originally advanced by Baumgartner and Jones (1993), PET holds that long periods of policy stability (i.e., little policy fluctuation) are interrupted by periodic "punctuations" of policy change. Borrowing the term from evolutionary biology, PET attributes policies' static nature to subsystem control which is highly resistant to change. Occasionally, however, issues reach the larger policy agenda, thus becoming more amenable to change. As initially proposed by Shattschneider (1960), PET also recognizes policy actors' tendency to "socialize the conflict," or propose a policy change in a larger forum. Baumgartner and Jones (1993) describe this strategy as "venue shopping" whereby policymakers attempt to alter the "policy image" of a particular issue in order to reframe its critical elements and thereby attract new participants to the debate. Based on more than a decade of accumulated evidence of PET's conceptual relevance (e.g., Baumgartner, Jones, & Wilkerson, 2002; Jones, Baumgartner, & True, 1998; True, 2000), Baumgartner and Jones have expanded the scope of this theory to a more extensive theory of government information processing.

Baumgartner and Jones' expanded theory emphasizes the centrality of information processing and the attendant policy dynamics associated with this governmental function. In *The Politics of Attention*, Jones and Baumgartner (2005) distinguish between the supply of information and the prioritization of information to argue that the federal policymaking arena is best characterized by an over-supply of information. As a result, the prioritization of information takes precedence. With regard to energy policy, for instance, there is no shortage of information on alternative fuel sources, efficiency strategies, and consumption patterns. Hence, policymakers' main challenge is determining what information is most relevant.

To guide the prioritization of information, Baumgartner and Jones rely on insights from Herbert Simon on the "bounded rationality" of decision-making (Simon, 1957) and on the parallel and serial processing of information by political institutions (Simon, 1983). Essentially, parallel processing entails an institution examining multiple policy issues at the same time. Regarding federal energy policy, for example, the Department of Energy and other federal agencies, both collectively and separately, simultaneously process information related to general trends, public opinion, and research findings on multiple energy-related issues. Given this level of expertise and attention, parallel processing generally lends stability to policy issues.

Serial processing, by contrast, consists of an institution or individual processing information related to a policy issue serially. So, whereas federal agencies and various committees of U.S. Congress process information simultaneously, individual elected officials often consider issues one-at-a-time, in seriatim. This is particularly

the case when an issue rises to the national spotlight and captures the *attention* of policymakers and the broader public. In fact, Jones and Baumgartner (2005) highlight the scarcity and fleeting nature of attention to explain the punctuations in policy change. As an example, Workman, Jones, and Jochim (2009) mention the fiscal crisis in the latter half of 2008, which demanded policymakers' attention and ultimately led to various economic stimulus policies. During this time, the once hot-button issues of health care reform, energy policy, and education shrunk from the policy agenda, then later re-emerged when re-framed to fit the spotlight issue (e.g., create "green jobs" by investing in alternative fuel source infrastructure such as wind turbines and clean coal technology).

Although manifestly concerned with the role of information in the policymaking process, PET does not align with conventional elements of the research utilization literature. For instance, Jones and Baumgartner (2005) define "information" much more broadly than earlier studies consideration of empirical "social science research" (Caplan et al., 1975; Rich, 1981; Weiss, 1977). Also, Jones and Baumgartner do not explicitly mention many of the traditional information sources identified in studies of state legislatures (Hird, 2005; Mooney, 1991; Webber, 1987). Research utilization studies relied primarily upon surveys or interviews with policymakers, which allow researchers to examine how policymakers use information. Instead, Jones and Baumgartner (2005) rely on longitudinal analysis of information from more easily quantifiable sources, such as newspaper articles, Congressional hearings and legislative actions, and Gallup polling data,[5] which tend to report on the status of a policy issue rather than provide specific evidence to guide policymakers' decisions.

These fundamental differences in units of analysis and research design blur the extent to which punctuated equilibrium accounts for the types of use of information. For example, Jones and Baumgartner (2005) advance a *disproportionate information processing* model, which holds that information is not proportionally allocated across policy issues, but rather is concentrated on issues that rise to the macropolitical arena. Thus, *instrumental use* consists of the role information plays in capturing policymakers' attention to a certain policy issue, as opposed to the traditional instrumental use of information by individual policymakers to decide between policy alternatives. The *conceptual use* of information, however, aligns more closely with earlier studies. Similar to the enlightenment function that research evidence can provide over the long-term (Weiss, 1979), PET includes long periods of stability for policy issues during which time information continues to accumulate and lead to incremental change. While research evidence is unlikely to lead to significant change during this static period, if research evidence become "ordinary knowledge" (Lindblom & Cohen, 1979) and external perturbations capture attention, then this information could influence the significant policy change. In fact, as with the multiple streams theory (Kingdon, 1995), according to PET, policymakers make *political use* of information by changing the policy image and through venue-shopping. For example, proponents of reducing energy consumption could change the policy image from "eco-friendly" to "reducing dependence of foreign oil" to "cost savings for consumers" and utilize information ranging from academic research to policy briefs to polling data in support of their preferred energy policy. Although PET

does not directly account for these tactical uses of information, they are indirectly captured through introduction of legislation and Congressional hearings.

The punctuated equilibrium theory offers a promising lens through which researchers might consider the use of information in the higher education policymaking process. First, researchers could examine federal higher education policy trends using data from the Policy Agendas Project led by Jones and Baumgartner. Anecdotal evidence suggests that PET may help explain recent passage, in 2008, of the Higher Education Reauthorization Act. Having been slated for consideration five years before HEA was finally reauthorized, Jones and Baumgartner's (2005) recent theory suggests that the scarcity of policymakers' attention may explain this protracted time frame. In 2003, when the Act was originally set to expire, the attention of Congress was fully attuned to the war in Iraq and to issues related to homeland security, which continued to command policymakers' attention. Moreover, given the limited scope of the ultimate reauthorization bill, Jones and Baumgartner would likely characterize this as incremental change to a stable policy issue. Nevertheless, as the impact of the 2008 HEA reauthorization becomes more discernable over time, higher education researchers might use PET to consider the extent to which it can be characterized as a punctuation in federal higher education policy.

Researchers might also consider applying PET at the state-level; however, this would require a substantial data collection project, especially if multiple states were considered. As McLendon and Cohen-Vogel (2008) suggest, researchers might identify a manageable project by focusing on a few carefully selected states with legislative bill information available online. Additionally, researchers might conduct single-state studies employing a mixed-methods research design that follow quantitative data collection and analysis strategies similar to Jones and Baumgartner (2005) and also include case study components relying on interview data and archival analysis to capture how policy dynamics might differ at the state-level and with respect to individual state contexts. As examples of the latter, Mills' (2007) single-case study suggests that PET offers conceptual relevance to higher education governance restructuring in Florida. From interviews with policy actors and an extensive review of archival data emerge three "stories of politics and policy" that emphasize the impact of executive control, a blue ribbon commission, and the press. While these narrative stories offer rich information from various viewpoints, they unfortunately blur the particular ways in which PET explains the Florida higher education governance restructuring. In another study of higher education governance restructuring, Monear's (2008) three-state study provides evidence of PET's conceptual relevance based on the strategic maneuvering of policy entrepreneurs to expand the issue in order to ultimately find support leading to enactment. These two case studies demonstrate both PET's promise for understanding higher education policymaking and, given the recent extension of PET to a broader government information processing framework, the need for extensive data collection that will allow for mixed-methods studies to examine research utilization with the punctuated equilibrium perspective.

In an effort to summarize the extent to which these five theories of the policymaking process account for research utilization, Table 1 provides a brief inventory

Table 1 Summary of research utilization in public policymaking theories

Theory	Central or secondary role of research utilization	Possible types of research use (Weiss, 1979)	Sources of information	Application to higher education
Advocacy coalition	Central. Since ACF is primarily a theory of "policy learning," the framework outlines conditions (e.g., quantifiable data, professional forum) under which research utilization is likely to influence the policy process	*Conceptual*, within coalitions shared belief systems information enlightens policy actors over time *Instrumental*, when quantitative information and a professional forum exist, information influences a particular issue *Political*, most likely for information related to the issues in the normative core (e.g., abortion) or policy core (e.g., corporate regulation) beliefs	Agencies, think tanks, academic research (preferably quantitative analysis)	Monear (2008), Ness (2008), Ness and Mistretta (2009), Shakespeare (2008)
Diffusion of policy innovations	Secondary. This framework is admittedly of a narrower scope than the others and does not aim to explain the overall policymaking process. Rather, the diffusion of policy innovations approach is limited to the adoption of certain policies	*Conceptual*, through learning from other states' policies and based on normative pressure to adopt "best practices" *Instrumental*, through reliance on policy data from other states to inform policy adoption *Political*, due to competition with neighboring states	Other states (neighboring, regional, national), regional compacts (e.g., SREB WICHE), national associations (e.g., NGA, NCSL, ECS), media	Cohen-Vogel et al. (2008), Cohen-Vogel and Ingle (2007), Doyle (2006), McLendon et al. (2007, 2006, 2005), Ness and Mistretta (in press)

Table 1 (continued)

Theory	Central or secondary role of research utilization	Possible types of research use (Weiss, 1979)	Sources of information	Application to higher education
Multiple streams	Secondary. Researchers may play role in "softening" the system within the policy stream, but politics plays much larger role in adoption	*Conceptual* and *Instrumental*, not likely due to: serendipitous nature of policy process, fleeting nature of policy opportunities, and fluid participation of policy actors. *Political*, most likely due to the role of policy entrepreneurs	Agencies, think tanks, academic research, constituents, fellow elected officials	Leslie and Berdahl (2008), McLendon (2003a), Ness (2008), Ness and Mistretta (2009, in press)
Principal-agent	Central. This theory is predicated on an asymmetrical distribution of information in which the principals (policymakers) rely on the agents (bureaucrats) for relevant information	*Conceptual*, through agents' "signaling" behavior (e.g., policy briefs) to gain principals' trust *Instrumental*, through principals' "monitoring" activities (e.g., annual reports), which provide systematic information on current policy issues *Political*, agents may tactically use information to justify their "shirking" behavior	Constituents (principals), academic research (agents), government agencies (agents), think tanks (agents)	Kivisto (2005, Lane (2007), Lane and Kivisto (2008), McLendon et al. (2006), Nicholson-Crotty and Meier (2003)

Table 1 (continued)

Theory	Central or secondary role of research utilization	Possible types of research use (Weiss, 1979)	Sources of information	Application to higher education
Punctuated equilibrium	Central. However, PET's emphasis is on governmental processing of general information (e.g., hearings, Gallup polls, media coverage) rather than research evidence	*Conceptual*, during periods of stability information informs incremental policy change and could accumulate to support punctuated change *Instrumental*, based on the "disproportionate information processing model," information on hot-button issues draws policymakers' attention to a certain issue *Political*, thought policy actors efforts to alter "policy images" and "shop venues"	Congressional hearings, government agencies, legislation, media, public opinion polls	Mills (2007), Monear (2008)

of each theory across four categories: whether research utilization serves a central or secondary role, the possible types of research use (instrumental, conceptual, and political), sources of information, and examples of higher education studies applying each theory. Three of the five theories incorporate research utilization as a central element of the framework: ACF emphasizes the role of information through policy learning; information asymmetry defines the relationship between principals and agents in PAT, and PET has been recently updated to account for how governments process information. For the other two theories (diffusion and MS), research utilization serves as a secondary element rather than a fundamental aspect of the framework. While several possibilities for research use exist in both frameworks, the primary emphasis for each theory lies elsewhere: internal determinants and regional or national influences (diffusion) and political dynamics (multiple streams). As the middle columns illustrate, all five theories of the policy process contain possible types of information use and rely on many sources of information. Although higher education researchers have applied each theory, this section identifies future research opportunities for each framework. The final section of this chapter extends this discussion by offering possible conceptual developments for the two frameworks in which research utilization serves a secondary role.

Application of Research Utilization and Theories of the Policymaking Process to the Study of Higher Education

This final section discusses how the conceptual insights from research utilization studies and theories of the policy process might guide future studies of the higher education policymaking process. In particular, two theoretical frameworks—diffusion of policy innovations and multiple streams—could be extended to capture better the role of information in the higher education policy process. While a growing number of studies in the field of higher education have deployed these two conceptual lenses, few have fully addressed the role of research utilization. After discussing the conceptual extensions, this section considers the role of "intermediary organizations"—statewide governing and coordinating bodies and regional compacts—on the state-level higher education policy process. I pay particular attention to the ways that future research might more deeply gauge the impact and influence of intermediary organizations on policy decisions. Indeed, both state agencies and regional compacts serve as significant sources of information during the policy process, yet little is known descriptively or conceptually about their roles and influence with respect to research utilization.

Diffusion of Policy Innovations: From Determinants to Delineation

While research utilization only plays a secondary role in the diffusion framework, this theory holds promise to explain more broadly the policy process through

greater attention paid to *how* policies diffuse. By more precisely delineating the ways in which policy innovations diffuse, the mounting empirical evidence of diffusion's relevance to higher education policy adoption may gain further clarity. Indeed, just as recent studies have greatly informed our understanding of the determinants of policy innovation, rich description of how these policies diffuse may reveal additional factors that could be measured empirically. Critically, researchers might consider what role policy information plays in the diffusion process. That is, does the type of information (e.g., policy brief, testimony, etc.), the informational agent or source, the timing of information, or its perceived credibility matter in terms of whether or not a policy diffuses? By examining questions such as this, researchers stand to better understand how research utilization is affected by internal determinants and how information affects policy diffusion.

Over the past decade, research on policy diffusion has generated distinctively new perspectives into what conditions influence policy adoption. A raft of longitudinal studies in the past five years have found certain political, economic, and social factors within states as significant influences on the adoption of state higher education policy. McLendon et al. (2005), for example, found Republican control of state legislatures to be a predictor of financing innovations. Doyle (2006) identified education and demographic attributes of the states as drivers of the adoption of broad-based, merit aid policies. McLendon, Hearn, & Deaton, et al. (2006) study of statewide governance changes found certain fluctuations in political leadership as key influences on adoption of state governance reforms. All of these studies empirically modeled diffusion, but their research designs and analytic procedures limited the manner in which diffusion could be studied.

Little research, for instance, has examined *how* policy ideas migrate across statelines or across policy communities within a given state. For example, could the impact of Republican control of state legislatures on policy adoption be related to the partisan networks of policy information that they share? Given the rising prevalence and prominence of conservative think tanks (Rich, 2004), might Republican legislators be better informed on policy alternatives for increased accountability initiatives, as an example, than their colleagues across the aisle? How do academic studies and policy reports affect policy diffusion? For instance does the research finding related to the "negative social consequences" of state merit scholarship programs (Heller & Marin, 2002) mitigate the diffusion of this policy innovation? Furthermore, what role do the information dissemination efforts of national policy organizations, such as the National Center for Higher Education Management's Information Center (www.higheredinfo.com), have on policy diffusion? As information on higher education policy trends becomes more broadly distributed, will the national model of diffusion become more prevalent than regional or neighboring state models?

Mixed-methods analyses of the diffusion of higher education policy would also extend diffusion's descriptive and conceptual relevance. In fact, to some extent, the mixed-method approach has already shown promise in a set of parallel, but unrelated studies on the diffusion of merit aid programs. Will Doyle's (2006) event history analysis of merit aid program adoption gauges the effects of a host of covariates

related to state characteristics and diffusion influences across all 50 states over a 12 year time span. As noted, Doyle finds that demographic and education variables drive merit aid policy adoption more so than diffusion influences. Two qualitative studies also find elements to offset regional diffusion pressures to adopt merit aid programs (Cohen-Vogel & Ingle, 2007; Ness & Mistretta, in press). As mentioned in the earlier diffusion section, these qualitative case studies find that although regional consortia could facilitate the diffusion of merit aid policy, certain internal state characteristics, such as college affordability, student migration patterns, and even constitutional language, trumped the diffusion impetus in some states. Notwithstanding the contributions of these case studies to delineate unique state context and characteristics from diffusion influences the case study approach is ill-equipped to measure merit aid diffusion across all 50 U.S. states or to identify the effect size of intra-state trends. Similarly, EHA studies are not well suited for understanding the nuance of how state context affects policy decisions. Future studies might integrate the qualitative and quantitative research designs to more fully apply the diffusion of policy innovations framework.[6]

Multiple Streams: Expanding the Policy Stream

Although most often applied to the agenda-setting phase of the policy process, the multiple streams framework also serves as a useful lens through which to conceptually understand the role of information in the legislative adoption of higher education policy. While this framework's explanatory power largely rests with its ability to elucidate political phenomena within the "black box" of the policy process, information often plays a large role in policy entrepreneurs' support for their preferred solutions. The multiple streams framework as outlined by Kingdon (1995), however, does not seem to fully account for research utilization. This framework's explanatory power could be extended by shifting its emphasis on policies (or solutions, according to the original garbage can theory) to a more central role in the framework.

In fact, in a recent comparative-case study of state merit aid policy adoption, I suggest this conceptual alteration in a revised multiple streams framework that also includes elements of advocacy coalition framework and electoral connection (Ness, 2008). According to this model, the *policy field* represents a substantive revision of MS by broadening the policy (or solution) stream from one of three streams to the field through which the *politics* and *problem* streams flow. This modification seems more consistent with Kingdon's (1995) conceptualization of the "alternative specification" process, during which policies are the principal consideration, as opposed to the "agenda setting" process when policies more directly compete with elements in the politics and problem streams. Moreover, this revised MS model reflects Kingdon's claim that during the alternative specification phase, instead of two of the three streams coupling, the politics and problem streams must connect in support of a preferred solution.

This conceptual extension of MS is also consistent with other theories of the policymaking process reviewed in this chapter. For example, the policy field incorporates elements ACF, such as the impact of policy information from sources within and outside the state. Rather than one of three factors that explain policy formulation, the policy field more accurately represents the landscape of potential policy ideas and related trend data and research evidence on which policy decisions are made. The policy field also provides conceptual space within the multiple streams framework for punctuated equilibrium's contention that "policy-oriented learning" occurs when subsystems learn from other policy decisions (Sabatier & Jenkins-Smith, 1999). Similarly, the policy field seems to better represent the regional and national migration of policy ideas as outlined by the diffusion of policy innovations framework (Berry & Berry, 2007).

Finally, the expanded policy stream conceptualization reflects the crucial role of information for policy entrepreneurs. As these policy actors garner support for their pet policies, they seek to align information about relevant policy trends and results with political phenomena and related problems. The research utilization studies examining policymakers' preferred sources of information seem to relate directly to the strategies that policy entrepreneurs might employ. For instance, although the universe of information on a given policy issue is constant across states, policy entrepreneurs in states with high capacity non-partisan research organizations (Hird, 2006) may rely more heavily on policy analysis vetted by issue experts, whereas policy entrepreneurs elsewhere may rely on ideologically-driven information from think tanks (Rich, 2004). The policy field allows researchers to conceptually account for these state-level differences by connecting policymakers' preferred policies to the information used to garner support. This prospect for future studies also responds to McLendon and Cohen-Vogel's (2008) recommendation that researchers examine how the content of policy entrepreneurs' proposed solutions might affect the ultimate policy decision. Indeed, by attending more closely to policy entrepreneurs' utilization of research evidence, future studies could demonstrate the extent to which information, as compared to political maneuvering, drives the policymaking process.

Intermediary Organizations

The diffusion of policy innovations and multiple streams frameworks would also benefit from greater attention paid to two intermediary organizations that often provide policy information and expertise: regional compacts and statewide higher education agencies. As the term suggests, intermediary organizations serve a translating function between two principals with different values and perspectives, which for higher education would be governments and colleges.[7] Studies in other related policy sectors have shown the important functions of intermediary organizations. In K-12 education, for instance, Honig (2004, 2008) illustrates the role that intermediary organizations at the district-level play in increasing evidence-based curriculum and pedagogical practices. Intermediary organizations, such as national research

councils and technology transfer offices, have also been shown to maximize research utilization (Bozeman, 2000; Braun, 1993; Guston, 2000, 1999; Slaughter & Leslie, 1997). This evidence suggests that similar influences could exist at the regional- and state-levels for higher education. State agencies and regional compacts most often fulfill these intermediary functions and, as such, the following sections outline how each might be conceptualized as an intermediary organization and how researchers might examine these organizations' impact on research utilization.

Regional compacts. For state-level higher education policymaking, regional compacts serve as valuable information sources and often as advocates for certain policy initiatives. All states, with three exceptions (New Jersey, New York, and Pennsylvania), belong to one of four regional compacts: Western Interstate Commission for Higher Education (WICHE), Midwest Higher Education Compact (MHEC), New England Board of Higher Education (NEBHE), and Southern Regional Education Board (SREB). Consistent with their original missions to share resources and advance education in their regions, these compacts facilitate articulation and tuition reciprocity agreements and lend expert analysis on higher education issues that individual states may not have the capacity to produce (Harcelroad & Eaton, 2005).

Regional compacts can be classified as intermediary organizations primarily based on structural and functional characteristics. Structurally, regional compacts serve both elected officials and higher education administrators. State participation in compacts, which requires membership fees, is approved by elected officials and compacts' boards of directors include governors and legislators from member-states. Compacts also work directly with state higher education officials to coordinate member-state efforts on policy goals and to systematically collect and distribute data. Functionally, compacts provide policy briefs targeted to elected officials and more detailed policy reports for higher education officials. Similarly, the professional staffs of compacts consult with policymakers individually, provide formal testimony, host meetings of state higher education leaders, and collaborate with higher education officials on state and regional policy initiatives. In many ways, regional compacts function as a combination of think tanks and state agencies. They produce reports and possess expertise similar to think tanks, but since states pay membership fees, policymakers may value this information as less biased than other partisan-aligned think tanks. However, without the formal reporting structure of state agencies and given their location outside of state capitals, regional compacts maintain an outsider status that can mitigate or accentuate their influence on the policy process. The conceptual understanding of regional compacts' structural and functional characteristics on state higher education policy could be enhanced by greater attention to this boundary function.

Similar to suggestions for the extension of public policy theories discussed earlier in the chapter, a deeper understanding of the role that regional compacts play on policy adoption would add clarity to the role of research utilization. For instance, to what extent do policymakers value or rely upon information provided by regional compacts? Does the type of information (i.e., original empirical research, descriptive data reports, policy briefs) influence the liklihood of utilization? Does the

frequency or mode of interaction (i.e., testimony, written formal reports, individual communication with legislators) matter? Also, do elected officials' participation on a compact's board of directors or various committees serve to moderate the two-communities divide? Studies addressing questions such as these would specifically inform the utilization of research and could more broadly inform theories of the policymaking process.

Based on their roles as intermediary organizations, I propose three possibilities for examining the role of regional compacts on higher education policy. First, in the vein of previous research utilization studies (e.g., Hird, 2006; Webber, 1987), researchers might survey policymakers within a given region or nationally in an effort to gauge their reliance on regional compact information. Such surveys may reveal patterns of preference that align by region or by various state-level characteristics. For instance, states with more professionalized legislatures may rely less on regional compacts given the greater legislative staff capacity. Or, on the other hand, states with citizen legislatures and more traditional political cultures may rely less on regional compacts based on their preference for information sources within the state.

Second, researchers might examine the influence of legislators' participation in regional compact activities. In a comparative case study of merit aid criteria determination (Ness, 2008), I find evidence from the West Virginia policy episode to support this influence. Multiple respondents indicated that legislators very often deferred to state Senator Lloyd Jackson, who also served as Chair of the Senate Education Committee, on education matters by virtue of his leadership role within SREB. This lends supports to Krehbeil's (1991) claim that the legislative committee structure facilitates issue experts and serves to mediate the need for every legislator to be deeply informed on every issue. Does this trend hold across regions and across states? Are certain regions more likely to value legislators' service to outside agencies? How does the absence of these opportunities affect the three states not participating in regional compacts (New Jersey, New York, and Pennsylvania)? This last question leads to the third suggestion for examining regional compacts' influence on research utilization.

Researchers might compare the role of information in policymaking process across member and non-member states of regional compacts. This might take the form of comparative case studies that include one or more of New Jersey, New York, and Pennsylvania in addition to comparable states selected from the region or other peer states outside the mid-Atlantic. Such a research design could provide in-depth analysis of the precise functions and influence of regional compacts that inform the extent to which these non-affiliated states have a greater or lesser reliance on research evidence. These influences could also be examined by incorporating a variable for regional compact membership in quantitative models. If EHA models of policy diffusion, for instance, could be extended to include measures of research use, then an additional regional compact variable (either a dummy variable in which New Jersey, New York, and Pennsylvania = 0 and all other states = 1; or a nominal variable that accounts for the particular compact) would provide empirical evidence on the effect of regional compacts.

State higher education agencies. Although the manner in which state agencies govern higher education varies widely, state-level higher education agencies serve crucial roles in providing information to and interceding between government and colleges. The conventional classifications for statewide governance structures include consolidated governing boards (all higher education institutions are governed by one board), coordinating boards (one board represents statewide interests, but single- or multi-institution governing boards retain varying degrees of authority), and planning agencies (state agency has very little formal authority, as with coordinating board structure, single- or multi-institution governing boards retain varying degrees of authority).[8] These three governance arrangements range in the level of formal authority, thereby influencing the dynamic of the state agencies relationship with the government and campuses. Early studies of statewide higher education governance suggest that coordinating and planning agencies are more likely advance state interests over campuses than are consolidated governing board arrangements (Berdahl, 1971; Millet, 1975). These differences have important implications for their role as intermediary organizations.

Regardless of the degree of centralization, the agencies largely emerged in the mid-twentieth century with the primary function to buffer state government from postsecondary education institutions. This buffering (or boundary) role of state agencies best represents their function as intermediary organizations. Prior to the creation of statewide governance systems, campus leaders directly represented their interests to state legislatures and governors. The resulting policy and appropriations decisions often reflected the strength of these individual relationships more so than wider interests of the state. Without an intermediary organization, for example, how could legislators determine which new campus buildings were of highest priority or how to equitably appropriate funds across varying institution types (e.g., flagship research universities, regional colleges and universities, community colleges)? These governance structures now have varying levels of influence on statewide master planning, budget allocations (or recommendations), and academic program approval. These general structural differences also suggest that higher education agencies may impact research utilization in the policy process.

As with the impact of regional compacts on information use, I propose two suggestions for studying state agencies' influence on research utilization. First, researchers might examine the impact of different governance structures on research utilization. Recent studies considering the effect of governance structure on state-level higher education policy might be extended to account for how effectively these agencies provide information during the policy process. For instance, McLendon et al. (2006) show that states with centralized agencies are more likely to adopt less restrictive accountability policies than states with coordinating structures. They attribute this difference largely to divergent loyalties: governing boards to their campuses and coordinating boards to the state. Do these loyalties also impact agencies' attempts to utilize research evidence? Are governing boards, for example, more likely to sense the two-communities divide, and thereby avoid advocating their preferred policies in the policymaking arena? If studies continue to show

that governance structure influences policy adoption, then an examination of *how* agencies do so seems appropriate.

The second suggestion for examining the role of information and state agencies concerns a recent development in the study of higher education governance: interest group activity. Specifically, some researchers contend that state agencies' efforts to represent campus or system interests to state governments is situated within a state's interest group landscape and therefore could be informed by interest group studies (Tandberg, Ness, & McLendon, 2009). In fact, Tandberg's (in press) recent study finds that states with increased levels of interest group activity receive more state funding. Moreover, an interaction variable between interest group activity and governance structure shows the significant effect on increased appropriations for states with the combination of high interest group activity and consolidated governing boards. Such conceptual developments could be complimented with studies that further examine how and why this effect occurs. For instance, as Wright's (2003) study of the increasing role of information in interest group behavior suggests, are state agencies using district-level data to lobby for appropriations increases? Are consolidated governing boards more effective due to their formal authority and system-wide data systems offering a rich information source from which to advocate preferred policies? These and many other questions informed by the interest group literature offer fresh conceptual perspectives through which to examine research utilization by state higher education agencies.

Conclusion

Connecting research and policy persists as one of higher education's most pressing challenges. ASHE presidents, think tank leaders, and government officials support strengthening this critical link. Currently, two growing streams of literature—research utilization and policymaking process theories—offer insights on how researchers might examine the role of information in the higher education policymaking process. The studies of research utilization present useful models for how research is used and examine the impact of several sources of information. The inventory of how five theories of the policy process incorporate the research utilization literature outlines possible conceptual extensions of these frameworks and holds promise for increasing our understanding of how research influences policy. Researchers might also consider the suggested directions for future study of the influence of intermediary organizations on research utilization. Indeed, recent studies of higher education policy adoption, political dynamics, and governance structure have led to important conceptual and practical insights, which might be complimented by more direct consideration of research use.

Acknowledgements I gratefully acknowledge the Spencer Foundation for grant support for this project. I am also grateful to Michael McLendon for his most helpful comments and patience throughout the preparation of this manuscript. Of course, I alone bear responsibility for all errors and omissions.

Notes

1. Although this chapter's scope is limited to research-and-policy connections, I occasionally mention insights from relevant research-to-practice studies (e.g., Coburn, Honig, & Stein, 2009; Honig, 2004; Hood, 2002). Given the differences in policy and practice communities (elected officials versus trained professionals), it is important not to conflate research utilization in policy and practice. So, when I mention research-to-practice connections I make every effort to do so transparently.
2. In his address, Terenzini also mentions similar pleas of outgoing ASHE presidents, including Conrad (1989) and Nettles (1995), and offers suggestions for future policy-oriented higher education research. The Leslie and Beckham issue specifically addressed the state of higher education research and thus emphasized its influence on policy and practice.
3. Political scientists most often measure this variability on a scale of legislative professionalism that provides three categories (Squire, 2000). Citizen legislatures are characterized by part-time legislatures who often hold other full-time jobs, by fewer days in session usually 2 or 3 months, by low pay, and by few legislative aides or professional staff. Professional legislatures are more similar to U.S. Congress with well-paid, full-time legislators, longer legislative sessions usually 6–10 months, and more legislative staff. Hybrid legislatures represent the middle-range category of legislative professionalism.
4. See Lane and Kivisto (2008) for a comprehensive review of economic and political PAT (pp. 150–154). Indeed, I rely heavily on their work for this brief overview of PAT. Their *Handbook* chapter also offers compelling suggestions for how PAT might be applied to the study of higher education governance.
5. For more information about the data elements upon which Jones and Baumgartner (2005) rely, see the Policy Agendas Project website (www.policyagendas.org).
6. I am grateful for conversations with Will Doyle about the potential benefits of mixed-method designs to study policy diffusion.
7. Intermediary organizations are broadly similar to "boundary organizations" and "boundary-spanning organizations," yet each represents slightly different conceptual perspectives. See Guston (2001, pp. 400–402) for a summary of their distinctions.
8. Even within these three classifications of governance arrangements, however, variation abounds. For example, some states have one single consolidated governing board for the entire higher education system, while others have separate governing boards for 2- and 4-year institutions. See McGuinness (1997), McLendon (2003b), and the Postsecondary Governance Structures Database (http://www.ecs.org/html/educationIssues/Governance/GovPSDB_intro.asp) for more information.

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