DECENTRALIZATION OF HEALTH SYSTEMS:

DECISION SPACE, INNOVATION AND PERFORMANCE

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Executive Summary

Decentralization has long been advocated as a desirable process for improving health systems. Recently, it has been seen as an integral part of broader health reforms to achieve **improved equity, efficiency, quality and financial soundness**. Nevertheless, we still lack a sufficient analytical framework for systematically studying how decentralization can achieve these objectives. We do not have adequate means for analyzing the three key elements of decentralization:

- the **amount of choice** that is transferred from central institutions to institutions at the periphery of health systems;
- **what choices local officials make** with their increased range for discretion
- **what effect these choices have on the performance** of the health system.

This paper argues that the **principal agent approach** provides a promising way to analyze how decentralization might facilitate the achievement of broader health reform objectives. The principal agent approach was developed to analyze how central decision makers in firms (principals) use incentives and rules to encourage other managers (agents) to achieve their objectives. It assumes that agents are likely to have other objectives and better information about local conditions than do central authorities. Within the context of health reform, the principal agent approach is useful in analyzing the options available to central authorities, like the Ministry of Health, to encourage local institutions, such as municipal health departments, to make choices that achieve the objectives of the national health reform. These options include monitoring local officials, and using incentives, sanctions and rules to shape local decisions.

This framework can be expanded by the concept of **decision-space**, which is a map of the range of choice allowed to local officials along a series of functional dimensions. Within this decision space, local authorities may make **innovative** choices that are different from the choices they made before decentralization and different from **directed change** that the central authorities impose on localities which have not been decentralized. This framework then suggests that we evaluate the performance of those localities with wide decision space to see if they make better choices than those with narrow decision space. Using examples from Colombia, Chile and Poland, the paper shows how the principal agent framework allows us to examine the way central authorities manipulate decision space, incentives, sanctions, and the control of information to encourage the achievement of national objectives, and to evaluate the effectiveness of this manipulation.

The approach also allows us to evaluate the capacities of local institutions and how local authorities may be seen as other principals who potentially may conflict with central authorities.

1. Introduction

Decentralization has been promoted by advocates of health sector reform for decades.[1] Viewed initially as an administrative reform which would improve efficiency and quality of services, and later as a means of promoting democracy and accountability to the local population, decentralization was seen by many advocates as a major reform in and of itself. Despite this advocacy, few nations have actually adopted and implemented decentralization reforms. This lack of a wide range of empirical experience has resulted in little informed study to examine the actual impact of decentralization. The studies which exist are partial reviews of specific problems in one or two case studies. There has been no systematic study using a common analytical framework that has provided information on the relationship between processes of decentralization and actual outcomes or performance in the health sector.[2]

This concept paper is designed to prepare for an applied research program to provide policy relevant conclusions about decentralization derived from a series of carefully constructed case studies in Latin America. These studies will be part of two projects at the Harvard School of Public Health which the author is directing, a comparative study of decentralization in Latin America for the Data For Decision Making Project at the Harvard School of Public Health, and a study of decentralization in Colombia for the Colombia Health Sector Reform Project.[3] The country cases that are tentatively planned for study are the two countries in Latin America with the longest period of decentralization from a unitary system, Chile and Colombia, and two countries with recently implemented decentralization policies, Bolivia and Nicaragua.[4]

This review will first focus on the analytical approaches to the study of decentralization. I have chosen this approach because the current empirical literature on decentralization describes country experiences in a relatively unorganized and unsystematic manner. This literature often provides insights into specific processes and suggests particular problems with the implementation of decentralization; however the definitions of decentralization; the processes of implementation and the measures used to demonstrate impact are often unclear or in a form that make comparisons and generalizations difficult. Literature reviews of this empirical

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[2] A recent series of studies by World Health Organization, in which the author participated, was unable to develop a specific comparative framework of analysis that was sufficiently discrete to examine the relationship between decentralization structures and processes and their impact on the achievement of health sector objectives (see World Health Organization, 1995).

[3] The Data for Decision Making Project is implemented by the Harvard School of Public Health on a contract with the U.S. Agency for International Development. The Colombia Health Sector Reform Project is a contract of the Harvard School of Public Health with the government of Colombia and the Interamerican Development Bank.

[4] These studies of decentralization at this stage will not include the federal systems like Mexico, Argentina and Brazil.

literature are available already -- see Peterson (1994), Bossert (1996) and Collins (1996). Examples of this literature include studies of decentralization in Paupa New Guinea (Campos-Outcalt, et al. 1995; Kolehmainen-Aitken, 1992); Mexico (Gonzalez Block et al. 1989), Brazil (Tendler, 1994), Colombia (World Bank, 1994), Chile (Bossert, 1993), Bolivia (Holley 1995) and the United States (Altman and Morgan, 1983).

In this paper I will first examine the four major analytical frameworks that have been developed by authors who address problems of decentralization in the health sector: the
1) *public administration*; 2) *local fiscal choice*; 3) *principal agent*, and 4) s*ocial capital* approaches. I will evaluate these approaches in light of current research and reports on experiences in decentralizing systems. Then, I will propose using the principal agent approach as a general framework for analysis and develop this framework by introducing the concepts of "decision-space", "innovation", and "directed change". [5] In conclusion, I will suggest some of the research issues in applying this approach to studies in Latin America.

I should set out here my criteria for an adequate framework for analysis of decentralization. The framework should provide a means of distinguishing the core characteristics which differentiate centralized systems from decentralized systems. It should also help order theoretical propositions and hypotheses about how decentralized systems will function differently from centralized systems. Finally, the framework should lead toward policy relevant conclusions that allow central governments to design the process of decentralization in order better to achieve their social objectives.

It should be noted that many donors, government officials and observers tend to view decentralization as a recognized good-in-itself without much need of argument or evidence to support the broad claims of its desirability. These advocates see decentralization as a vehicle which they assume will bring a variety of other benefits. For them the central problem is not whether they achieve other benefits, but rather how to get centralized countries to initiate and complete the process of becoming decentralized. This has been the dominant view taken in most WHO, World Bank, and U.S.A.I.D. reports (see for example, The World Bank 1993).

This view has had a pervasive presence and success in generating a constituency of decentralization promoters, despite its lack of empirical and theoretical grounding. However, as increasing numbers of empirical studies emerge with serious questions about the impact of decentralization on other objectives, this view has become less and less tenable, (for a review of this literature see Collins, 1994, and Prud'homme, 1995).

In this paper we will begin with an alternative view, rejecting the argument that decentralization is a good-in-itself. We want to evaluate how decentralization achieves other objectives. In countries which are implementing or considering major comprehensive health reform, it is appropriate to determine if the process of decentralization is capable of achieving the central objectives of the health reform.[6] These objectives, for the purposes of this paper, are defined

[5] In this section, I will draw on examples from countries in which I have been recently involved: Colombia, Chile and Poland.
[6] For an argument for the public role in regulation of health reform see Hsiao, 1995.

in general terms as improving equity (including universal coverage, access and solidarity), efficiency, quality and financial soundness (see Berman, 1996). [7] It is the performance of decentralization in achieving these objectives that we will use as the standard of evaluating the success or failure of decentralization processes.

2. Review of Frameworks of Analysis

The following section reviews the major frameworks for analysis of decentralization that have been used in the current literature on health care decentralization. It should be noted here that we are discussing *frameworks of analysis* at this point and not *theories*. These frameworks help us order the logic of categories of actors, behaviors, events, and processes and suggest avenues of investigation which focus on important relationships among these categories. These frameworks may lead to theories which predict and explain the results of those relationships. Since decentralization is such a complex combination of categories and relationships, we should not expect to find a single theory that will explain the process of decentralization with researchable relationships in empirical cases. However, the theoretical propositions for specific relationships that have been examined by researchers often come out of these analytical frameworks, and as we develop a specific research agenda we will use a variety of theoretical propositions from different frameworks. Our immediate objective in this review of frameworks is to establish an overarching approach which can guide our analysis of decentralization.

2.1 Public Administration Approach

The public administration approach was first introduced by Dennis Rondinelli and G. Shabbir Cheema for evaluating broad processes of decentralization in developing countries (Rondinelli and Cheema, 1983). This approach was applied to the decentralization of health systems in a seminal World Health Organization publication on the issue (Mills, et. al. 1990).

The public administration approach focuses on the distribution of authority and responsibility for health services within a national political and administrative structure. The analysis tends to assume that the public administrative organization is highly centralized and concentrated at the Ministry of Health offices at the national level in the capital city -- an often realistic assumption in developing countries. Therefore the analysis leads toward prescriptions about how to move responsibility and authority out from the center to the periphery of the administrative system. This approach has developed a now well known four-fold typology of different *forms* of decentralization: 1) deconcentration; 2) delegation; 3) devolution; and 4) privatization. Deconcentration is defined as shifting power from the central offices to peripheral offices of the same administrative structure (i.e. Ministry of Health). Delegation shifts responsibility and authority to semi-autonomous agencies, usually with boards of directors representing separate corporate interests (labor, business, government). Devolution shifts responsibility and authority

[7] We could also evaluate decentralization against performance in other sectors or performance in promoting democratic processes and practices. However, we are here attempting to evaluate the role of decentralization in the health sector.

from the central offices of the Ministry of Health to separate administrative structures still within the public administration (e.g. provinces, states, municipalities). Privatization creates a contractual relationship between public entities and private providers of service. In each of these forms of decentralization significant authority and responsibility usually remains at the center. In some cases this shift redefines the functional responsibilities so that the center retains policy making and monitoring roles and the periphery gains operational responsibility for day to day administration. In others, the relationship is redefined in terms of a contract so that the center and periphery negotiate what is expected from each party to the contract. A central issue of the public administration approach has been to define the appropriate levels for decentralizing functions, responsibility and authority (see Mills, 1994). The principal arenas are usually regions, districts, and local communities, and there is usually some question about the appropriate number of levels depending on the size of the country analyzed.

In Colombia, the dominant form of decentralization has been the devolution of responsibilities for secondary and tertiary hospitals to the 32 departments (similar to provinces and states in other systems) and for primary care to the 1050 municipalities. In Chile, there is a combined system in which primary care facilities were devolved to municipalities and hospitals were deconcentrated to Ministry regional offices called Servicios. Bolivia's recent decentralization is similar to that in Chile, but the tasks assigned to the municipalities are limited to decisions on the capital budget.

This approach focuses on the institutional arrangements of decentralization, but it does not provide much guidance for analyzing the functions and tasks that are transferred from one institutional entity to another, and does not identify the range of choice that is available to decision makers at each level. There is an implicit assumption that moving from deconcentration toward privatization is likely to increase the range of choice allowed to local officials and managers; however there is no clear analysis for why this should be the case. Much of the empirical literature using this approach discusses the need to specify just what tasks or functions are assigned to each form or level, but as a framework it does not provide us with analytical tools to specify and compare tasks and functions (see Gilson, et. al. 1994).

2.2 Local Fiscal Choice

The local fiscal choice model was developed by economists to analyze choices made by local governments using their own resources and intergovernmental transfers from other levels of government (Musgrave and Musgrave, 1989; Tiebout, 1956). It has been applied mainly in federal systems where local governments have had a history of constitutionally defined authority and significant locally generated resources. This theory assumes that local governments are competing with each other for mobile voters/taxpayers and that government officials make choices about resource mobilization, allocation and programs in an attempt to satisfy the preferences of the median voter (see Chubb, 1985 for review of this approach). Studies of federal systems have tended to find that central

governments are more effective for making equitable allocation decisions (especially for assisting the poor), and that local governments may be more effective in utilizing funds for efficiency and quality objectives. This approach to choice usually views intergovernmental transfers from higher levels of governments as simply part of the resources of the local government (Oates, 1979). One issue often stressed in this literature is the role of intergovernmental grants as substitutes for local spending, driving out local funds for health rather than stimulating local counterpart funding.

Literature where this approach has been used includes Peterson (1994), whose review of recent Latin American experience in fiscal decentralization leads to a criticism of the trend of assigning state and local governments an increasing share of centrally collected revenues. Peterson sees this trend as a threat to macro-economic policy control. He also notes that there is little incentive for local governments to match the intergovernmental transfers, since these transfers are usually not stable and are viewed by the local government as subject to increases negotiated with the central government. Wisner (1995), Correa and Steiner (1994), The World Bank (1994) and Kure (1995) found evidence for this trend toward "fiscal laziness" of local authorities in Colombia. A recent study in Chile found similar trends (Carciofi, et.al. 1996). In contrast, some studies in the United States have found evidence of a "flypaper" effect in which intergovernmental grants "stick" to their intended targets (Inman 1979). Jacobsen and McGuire, (1996) found that matching grants in the United States for Alcohol, Drug Abuse, and Mental Health Block Grants were effective in stimulating local spending. This study suggests that stronger monitoring by national level regulators, effective interchange between central government regulators and state officials, and "set asides" which restrict local choice explained the outcome. Each of these explanations focuses on factors which this model does not incorporate.

The local fiscal choice approach has additional weaknesses for the purpose of analyzing decentralization of health systems in Latin America. As Peterson points out, in most Latin America countries, local resources are such a small portion of local expenditures, and intergovernmental transfers come with such restrictions, that it is difficult to assume that the voter holds local authorities responsible for both the taxation, which is centralized and the programs, which are only partially decentralized. In Colombia, for instance, intergovernmental transfers account for over 90% of most local resources, and the central government restricts local choice over these transfers. In addition, as Chubb notes, it is difficult to assume that local authorities respond to the median voter assumptions when so many other political factors are involved in making local choices, including clientalism (see Rojas, et al. 1996). Also, voters tend not to be single issue voters; they choose candidates for a variety of reasons, not just health care issues. Finally, the assumption of voter mobility is often unrealistic (see Prud'homme, 1995).

The approach, however, does introduce the importance of considering locally generated revenue, and the role of local politics and accountability to the local population. While the usual assumptions of the local fiscal choice model may not hold, the orientation toward

local sources of funding and accountability to local political processes is important for generating hypotheses about how *devolved* systems will function.

2.3 Principal Agent Approach

This approach has also been developed by economists, primarily to examine choices made by managers of private corporations (Pratt and Zeckhauser, 1991). It has also been used by economists and political scientists to analyze federal intergovernmental transfers to states in the United States (Chubb, 1985; Hedge, et al. 1991; Frank and Gaynor, 1993). In recent years, agency theory has also been used by sociologists, economists and others in the field of health care to analyze the relationship between provider and patient (Dranove and White 1987).

This theory proposes a *principal* (individual or institution) with specific objectives, and *agents* who are needed to implement activities to achieve those objectives. These agents, while they may share some of the principal's objectives, also have other (usually self-interested) interests, such as increasing their own income or shirking. Agents also have more information about what they are doing than does the principal, giving them an advantage and allowing them to pursue their own interests at the expense of those of the principal. The principal might like to overcome this information asymmetry, but gaining information has significant costs and may be impossible. So the principle seeks to achieve objectives by shaping incentives that are in line with the agent's own self-interests. The principal can also use selective monitoring and punishments to encourage agents to implement activities to achieve these objectives. In most models using the principal agent approach, it is assumed that the principal receives the benefits of any profit that is produced by the agents. In addition to the information asymmetry, the principal agent theory also focuses on issues of control of information and monitoring (see empirical studies of Chai 1995, and Hurley, et al. 1995).

Applied to health decentralization we might use the principal agent approach to view the Ministry of Health as a principal with the objectives of equity, efficiency, quality and financial soundness (rather than profit as assumed in the economic models), and the local health authorities as agents who are given resources to implement general policies to achieve these objectives. This theory encourages us to examine how the principal monitors performance and shapes incentives and punishments.

The principal agent approach has some advantages for developing a systematic framework for research on the decentralization of health systems in Latin America. In contrast to the local fiscal choice approach, which focuses only on the dynamics at the local level, the principal agent approach forces us to look at the relationship between the center and periphery without assuming that either is better (as would the ideological advocates), and to see the relationship as dynamic and evolving. The approach, by focusing on the mechanisms that the center can use to shape choices at the periphery, is also appropriate for providing policy advice to authorities at the national level. It allows us to focus on

defining what the national level can do to encourage local authorities to achieve the broad goals of the health reform.

Principal agent theory has been criticized for its primary focus on the vertical relationship between the principal and the agent, making it difficult to analyze multiple principals, especially if they are of different administrative levels. Some analysts have taken this problem as a crucial weakness in the principal agent theory (Hedge, et. al. 1991). Decentralization, at least in its devolution form, implies that those who manage the health system will be accountable to the local population (or local political system), who become additional principals and who may have quite different objectives from those of the principals at the national level.

However, the principal agent theory can accommodate multiple principals. While the usual multiple agent analysis has focused on a vertical chain of principals -- the "people" as principal who elect the Congress as agent, which in turn acts as principal over the government bureaucracy which acts as agent (see Moe, 1991; Chubb, 1985) -- multiple principals can be competitive (as in Congress vs. the President) and the theory can still inform us on this relationship. There is no inherent logic in principal agent theory which prevents this analysis from including multiple principals at either the national or the local level.

Nevertheless, when it is applied to the analysis of decentralization, the principal agent theory does have a specific blind spot. It does not have an easy conceptual means of defining the process implied in decentralization in which a range of choice is by law and regulation transferred from one authority (the principal) to another (the agent). As it has been applied in the literature, principal agent theory can be used to analyze both centralized and decentralized systems -- the agents in a centralized bureaucracy are subject to a principal's control through incentives and punishments and through monitoring, although the types of incentives and monitoring may be different than in a decentralized system. What is needed to make the approach applicable to an analysis of the effects of decentralization is a means of describing the shift in the range of control that the principal can exercise over the agent. We will return to this point later as we develop the concept of *decision space*.

2.4 Social Capital Approach

The social capital approach, used by Putnam in a path-breaking work on Italy, has generated new research in the area of decentralization. This approach focuses on explaining why decentralized governments in some localities have better institutional performance than other localities (Putnam, 1993). Putnam finds that it is the density of civic institutions -- a broad range of different, largely voluntary, organizations like choral societies and soccer clubs -- that create general expectations and experiences among the local population that he calls "social capital". It is this investment in social experience that encourages people to work together rather than as autonomous self-seeking individuals, and to develop expectations, reinforced by experience, that they can trust each other. He argues that it is this trust that fosters behavior that makes for better performance in local institutions. This argument builds on Elinor Ostrom's challenging work on "governing the commons", which uses game theory to explain why public goods can be produced by collective rational economic actors (Ostrom, 1990).

Applied to health care, this approach suggests that those localities with long and deep histories of strongly established civic organizations will have better performing decentralized governments than localities which lack these networks of associations. In Colombia, where we do not have systematic information, anecdotal cases suggest that some regions, such as Antioquia and Valle, might have more dense social networks, which might explain why they have better performing local institutions. In Chile, the denser civic associations of Chilean democracy may vary from location to location, providing a test of these hypotheses. In addition, a cross national comparison of Chile, Colombia and Bolivia might provide insight into the effects of social capital -- with Chile likely to have the most "social capital" and Bolivia the least.

The weakness of this approach is that it does not provide easy policy relevant conclusions. Areas without civic networks seem to be left out of the picture. Putnam's case in Italy suggests that areas which did not develop social capital in the Middle Ages are not likely to perform well in the twentieth century. He seems skeptical that government policy can work to create this trust. We are left then with the possible policy conclusion that decentralization will work only in areas with strong histories of social capital and that the rest of the country should be centralized -- a conclusion that is not likely to be politically viable.

2.5 A Note on Assumptions of Motivation and Goals

Theoretical analysis generally requires the parsimoniousness that comes from well defined assumptions about the motivations and goals of actors. The assumptions of rational choice and its derived theories of public choice have this clarity. Assuming that individuals and some collectives will pursue self-interest through rational choices allows the analyst to role-play and develop models of choice that such rational actors, with a clearly defined self-interest, will choose. Unfortunately, for many real-life cases of

economic and political decisions, the assumptions developed by this role-playing do not hold, and what is often demonstrated is the failure of public choice theory to predict the actual behavior (see Ostrom, 1990, for the argument about economic choices and the recent debate over rational choice models in political science sparked by Green and Shapiro 1994 and followed by Friedman 1995). The attractiveness of the governing of the commons and the social capital approaches is that they provide a means of retaining some of the assumptions of rational self-interest while giving institutional body to collective action.

The neoclassical assumptions of rational choice usually focus on self-interest primarily defined in terms of maximization of financial gain, even though utility and individual preferences, theoretically, include all objectives. Rational economic choices can therefore be defined in terms of the pursuit of financial gain and the intermediate activity that promotes that gain -- such as career advancement, reputation for honesty and good service, etc. The analyst develops theories of choice by acting as a vicarious rational decision-maker, assuming pursuit of these self-interested financially-oriented goals. Even the literature on social capital and on governing the commons looks at how to structure rational choice around explanations for why collective choices will promote the economic and financial objectives of a collective of individuals.

These assumptions may be good fundamental assumptions for evaluating economic behavior, and may be an underlying explanation for behavior of individuals in non-economic institutions; however, the application of this assumption in non-economic institutions is not as clearly relevant as it is in economic institutions. Political and, by derivation, regulatory institutions amalgamate a variety of other objectives -- social and economic equity, religious values, security, national pride, professional values, organizational continuity, etc. -- which have not shown themselves to be as amenable to the assumptions of economic rationality. Indeed, much of the public choice literature has revolved around explanations for why economic gain alone does not explain voting behavior, bureaucratic behavior, and legislative behavior. Explanations run the gambit from laziness, lack of information, insufficient time, (all of which could fit in the rational economic model) to altruism, dedication to civic objectives, and some versions of patron-client ties (such as the moral economy of the peasant, Scott, 1975).

The objective here is not to develop a theory to explain an economic outcome. It is rather to explain why bureaucracies, in particular decentralized bureaucracies, achieve or fail to achieve the social objectives that they are intended to achieve. Our objective is similar to that of Putnam, who sets out to explain why some institutions are better performers than others. He, however, is not so concerned with what is performed but rather that a general sense of good performance is achieved, and he ties his social capital argument to the idea that good performance is a public good in an economic sense. It is possible however to see good performance of specific objectives as the central objective of institutions and that this is what the public desires, the politicians hope to demonstrate, and the values that the bureaucrats seek to achieve.

We can make these assumptions without resorting to the simplistic Weberian vision of administrators simply fulfilling the desires of policy makers who, in a democracy, simply reflect the will of the people. Focusing on the bureaucracy, we know that it is a player in making public policy; it does not just implement the legislative or executive will. We know that bureaucrats also can behave as economic rational actors, as posited by Niskanen's classic argument (1971). However, there is considerable literature in political science, sociology and psychology which suggests that values and attitudes also shape the choices of individuals in public bureaucracies. Wilson (1989) argues that bureaucrats are motivated by the desire to be seen by their professional colleagues as upholding the highest standards of their profession. Others have found similar importance of professional norms in bureaucracies (Eisner and Meier, 1990). Wilson argues that political leaders in top administrative roles pursue social values that are likely to promote public recognition (this last motivation can be analyzed in public choice terms -- following the same logic as that of politicians pursuing activities that will get them reelected -- but it also emphasizes the pursuit of specific values and goals).

We know from psychological literature that individuals are more likely to work hard to achieve organizational objectives if the goals of the organization are compatible with their own goals (Weiss, 1996). Other social scientists have found that the goals of a government agency are important for explaining the choices made by officials in that agency (Bullock and Lamb, 1994; Meier, 1987). It is also possible to see the pursuit of goals as either the result of dynamic leadership (Roberts and Bluhm, 1981) or as part of the life cycle of an organization (Schein, 1992).

These studies suggest an alternative explanation for the behavior of bureaucrats: they may be motivated by the prospect that they can actually achieve the goals and objectives the institution is supposed to achieve. This of course assumes that they know what the goals are and that they agree with those goals. Their motivation may also depend on the leadership that defines these goals and that encourages the achievement of those goals through administrative means. All of these assumptions are challenged by many studies of bureaucracies (e.g. March and Simon), which emphasize organizational imperatives (*satisficing*, goal displacement to organizational continuity, etc.), and by the recent theory of new institutionalization that focuses on environmental factors which cause *isomorphism*, or a tendency toward similarities, among institutions in a specific field (Powell and DiMaggio, 1991).

In the course of the research proposed here, many of the specific hypotheses will be informed by assumptions based on the rational economic actor models; however we will also explore hypotheses based on the assumptions of health sector goal-seeking behavior, and other institutional and organizational alternatives.

It should be noted that the issue of motivation can relate to officials either in the central bureaucracies or the decentralized entities. For the purposes of this analysis, we are focusing on the ability of the center to achieve specific objectives of health reform through the structures and processes of decentralization. We can therefore, at least initially,

assume that the institutions in the center -- in particular, the Ministry of Health -- are motivated by the objectives of health reform. This approach is consistent with our initial objectives of analyzing how decentralization can assist in the process of achieving health reform objectives. It is also consistent with the role that the two Harvard projects play in providing technical assistance to central governments. However, this assumption can be changed in situations where the center does not seem to be motivated by these objectives. In some countries and during some periods, it is the periphery that is more interested in achieving health reform objectives. In these situations, the analysis that is presented below could be modified to analyze how the other motivations of the center might affect the implementation of health reform at the periphery.

2.6 Toward a Framework for the Study of Decentralization of Health Systems in Latin America

Each approach which we have reviewed has some validity and provides some insight into key issues of decentralization. The public administration approach provides an institutional framework which focuses on types of institutional arrangements. It is particularly useful in describing different types of institutional ruptures (devolution, delegation and privatization). In these cases, it is particularly important to analyze the capacity of the institutions receiving the new powers and authority to take on the tasks assigned. However, this approach, although it is in wide currency now, is not very useful as a framework for analyzing the choices made by local authorities. Local fiscal choice is especially useful in focusing attention on the accountability of local officials to local populations (voters/tax payers). Since it uses assumptions of public choice models, it also proposes a clear set of objectives and/or motivations for generating hypotheses about choices at this level. However, the importance of intergovernmental transfers and the restrictions on its use by central governments limit flexibility and accountability at the local levels, undermining the utility of this approach as a general framework. The social capital approach suggests that some characteristics of the local community may facilitate the capacity of local governments to perform better and to achieve objectives such as those of the health reform. It is a relatively conservative vision, however, that does not have clear policy implications, at least in the form that it has been presented by Putnam.

This review suggests that the principal agent framework is likely to be more effective as an overall approach to decentralization and that other approaches may offer supplementary concepts and hypotheses. The principal agent framework focuses our attention on the relationship between the center and the periphery and can generate policy recommendations about how the center can shape decisions made at the periphery that are more likely to achieve the objectives of health reform. Its major weakness is that it does not have a clear way to define the range of choice allowed by decentralization. This is the issue we will address next.

3. Modifying the Principal Agent Approach to Address Decentralization and Health Reform: The Decision Space Approach

The following sections tailor the principal agent approach to the issues of decentralization and the achievement of health reform objectives. The principal agent approach places the issue of decentralization in the context of the objectives of the principal and how the principal uses various mechanisms of control to assure that the agents work toward achieving those objectives. The literature of the principal agent approach identifies several "channels of control" which are available to the principal. They include: positive incentives, sanctions, and information to monitor compliance. I will discuss these channels below; however, decentralization requires additional concepts to capture the widening range of discretion or choice allowed to agents in the process of decentralization which differentiates decentralized principal agent relationships from centralized relationships. I will call this concept "decision space".

3.1 Decision Space

Decentralization inherently implies the expansion of choice at the local level which is not accounted for in the traditional principal agent approach, so we first need to develop a way of describing this expansion. I propose the concept of "decision space" as the range of effective choice that is allowed by the central authorities (the principal) to be utilized by local authorities (the agents). This space can be formally defined by laws and regulations (and national court decisions). This space defines the specific "rules of the game" for decentralized agents. The actual (or "informal") decision space may also be defined by lack of enforcement of these formal definitions that allows lower level officials to "bend the rules".

Decision space is defined for various functions and activities over which local authorities will have increased choice. It can be displayed as a map of functions and degrees of choice as presented below.[8] *The Map of Decision Space* displays (across the vertical axis) a series of functional areas where expanded choice can occur and (across the horizontal axis) an estimate of the range of choice or discretion, (for illustrative purposes defined here as "narrow", "moderate" and "wide",) that is allowed for that dimension. This approach allows us to disaggregate the functions over which local officials have a defined range discretion, rather than seeing decentralization as a single transfer of a block of authority and responsibility.

This matrix shows the functional areas in which choice is allowed to the agent by the mechanisms of central control and the degree of choice allowed in each case. It specifies the administrative rules that allow the agent some room to make decisions.

MAP OF DECISION SPACE

[8] The map matrix presented here is derived from a matrix on hospital autonomy developed by Chawla and Berman, 1995.

	Range of Choice		
Functions	Narrow	Moderate	Wide
Finance			
Sources of Revenue	→	→	→
Allocation of Expenditures	→	→	→
Income from Fees and Contracts	→	→	→
Service Organization			
Hospital Autonomy	→	→	→
Insurance Plans	→	→	→
Payment Mechanisms	→	→	→
Contracts with Private Providers	→	→	→
Required Programs/Norms	→	→	→
Human Resources			
Salaries	→	→	→
Contracts	→	→	→
Civil Service	→	→	→
Access Rules			
Targeting	→	→	→
Governance Rules			
Facility Boards	→	→	→
Health Offices	→	→	→
Community Participation	→	→	→

Decisions in each of the functional areas listed above are likely to affect the system's performance in achieving the objectives of equity, efficiency, quality and financial soundness. Key decisions on sources of revenue and allocation of expenditures are likely to have significant influence on equity and financial soundness, although some allocation decisions -- for instance, those related to funding for prevention and promotion -- may also effect efficiency and the quality of services. Decisions about the organizational structure of services are also likely to have an important impact on efficiency, quality, and equity. For instance, increased hospital autonomy may enhance the ability of hospital management to make decisions to improve efficiency and quality of services (Chawla and Berman, 1995). Allowing competition among providers and insurance plans and between public and private entities may increase efficiency and quality of service (see the growing literature on managed competition, beginning with Enthoven, 1988). It is argued that increasing flexibility on decisions about human resources -- particularly allowing for productivity and quality incentives for providers and allowing managers greater ability to hire and fire -- will increase efficiency and quality of services. Restricting access to facilities or eligibility for subsidies is a classic tool for achieving equity objectives by allowing scarce public resources to be targeted to the poor.

Finally, governance rules influence the role that local political actors, beneficiaries and providers can play in making local decisions. These rules structure local participation in a decentralized system. For example, in Colombia, where devolution to departments and municipalities has been implemented over the last five years, the following matrix could be used to define the formal range of choice allowed for five major functional areas defined by a series of laws and regulations through which the central government devolved power to the departments. Since the rules for municipalities are somewhat different, a separate map of decision space would have to be prepared for municipalities. In systems like Poland, where large municipalities are allowed wider decision space than small municipalities, separate maps would have to be prepared for each type of municipality.

MAP OF FORMAL DECISION SPACE

COLOMBIA DEPARTMENTS EXAMPLE

	Range of Choice		
Functions	Narrow	Moderate	Wide
Finance			
Sources of revenue		% assignments of transfers and some local taxes % assignments	other local sources
Allocation of Expenditures			
Hospital Fees	defined by hospital board		
Service Organization			
Hospital Autonomy	defined by law		
Insurance Plans			allow options
Payment Mechanisms			allow options
Contracts with Private Providers			allow options
Required Programs		National norms and standards	
Human Resources			
Salaries		salary leveling	
Contracts			allow options
Civil Service	hiring/firing restrictions		
Access Rules			
Targeting	defined strata		
Governance Rules			
Facility Boards	defined		
District Offices	defined		
Community Participation	defined		

This map shows that for finance functions the decentralization process in Colombia has allowed local authorities a moderate range of choice over sources of revenue from intergovernmental transfers (by a formula which assigns a minimum percentage that must

be assigned to health and a percentage over which local discretion is allowed).[9] Some local revenues (taxes on liquor, beer, tobacco and lotteries) are assigned to secondary and tertiary health facilities by law. However, other local revenues can be assigned to health at the complete discretion of the Department government. By comparison, municipalities have slightly greater discretion for allocation of income since the major source of intergovernmental transfers to the municipalities (*participaciones municipales*) have different percentage rules.

For decisions on allocating expenditures the range of choice for the Departments is moderate. The Department government is directed to assign 50% of one source of intergovernmental transfer (the *situado fiscal*) to primary health care, transferring it to the municipalities which operate the primary level facilities. Of the remainder, 40% must be assigned to the secondary and tertiary care facilities, and 10% must be assigned to a basic public health benefits package (the *Plan de Atención Basica -- PAB*). The fee structure of hospitals in Colombia is determined by the hospital board so the Department government only has a role as participant in the board's decisions. For comparison, some countries, such as Chile, have a centrally defined fee structure for hospital payments.

For Colombia's departments, the decision space for a service organization is generally quite wide. While hospital autonomy is defined by law -- hospitals are supposed to have strictly defined tripartite boards with fairly wide powers -- under current law departments are allowed a range of choice on how to contract with insurance plans. The Departments themselves can act as public insurance providers (at least until significant private competition is available), they can contract with special publicly designed insurance plans (ESS), or they can contract with private plans. By comparison, hospital autonomy in Chile is much more restricted. Norms and standards of Colombian national health programs are quite restrictive in some areas -- for instance, in defining staffing patterns and architectural requirements for hospitals, -- but in other areas, such as quality and coverage objectives, the standards are not well defined. In Chile, some programs such as the Rural Health Program, have fairly strict and comprehensive national norms which limit the range of choice over service delivery at municipal levels.

The mechanisms that the departments in Colombia use to pay providers is also open to a wide range of options, from supply side subsidies to hospitals, to fee for service, to per capita payments and mixed payment schemes. Again, by way of comparison, Chilean payments are centrally defined.

In the functional area of human resources, salary levels for permanent staff are defined in Colombia by a national salary leveling law. These levels appear to be the floor for salaries and some discretion is allowed to local authorities to "top up" salaries. Contracts for non-permanent staff are not restricted by law or regulation. Hiring and firing of permanent

[9] The original legislation (Law 60) "forced" the departments to assign 60% of the *situado fiscal* to education, 20% to health and the remaining 20% could be assigned at the discretion of the department to either health or education. This flexibility has been reduced by a recent law which removed the discretion over the "unforced" percentage.

staff, however, is severely restricted by civil service laws that apply to all permanent staff public health providers regardless of official employer. In Chile, separate civil service rules apply to public health providers in municipalities and in the national health service.

National laws in Colombia also strictly define who is eligible for access to subsidized facilities and health plans. The targeting mechanism is a nationally designed census that identifies socio-economic strata by family (SISBEN). Local governments are required to implement this census and to distribute identity cards to the families. Governance rules for hospital boards, local offices, and arenas for community participation are also defined by law.

It is important to note that this formal map of the decision space may not reflect the actual range of decision that local authorities have. The formal laws and regulations may not be enforced and may be violated either by the agent or the principal. The agent may make decisions which are not formally allowed, and the principal may restrict choice that is formally allowed to the agent. In such a case, it may be necessary to develop an "informal map of decision space" to identify whether decentralization rules have been respected or whether the actual range of choice is different. In Colombia, for example, many municipalities which are legally certified as qualified to exercise wide discretion are still centrally controlled in some of the functional areas, while other municipalities, which are not certified, are able to exercise decisions in functional areas for which they have no legal decision space (Jaramillo, 1996). If the informal map is significantly different from the formal map, research should focus on the effectiveness of the actual range of choice on performance to see if the formal rules should be enforced or if they should be changed to reflect the actual informal map.

Viewed from the perspective of the agents, the decision space is a channel of central control. It is one of the mechanisms the center uses to try to get the agents to achieve the center's goals. At the center, however, the decision space is the product of a variety of decisions made by various actors, and in this sense it may be a channel of control of multiple principals in the center. The decision space may be partly defined by legislation in which both the Ministry of Health and the decentralized units are bound. The Ministry's ability to change the decision space, and even to provide incentives and punishments is limited by decisions made by the other institutions of the central government. For instance, in Colombia the Ministry cannot change the general rules for allocating revenues to the municipalities without proposing major changes in the laws. However, the Ministry can change the regulations on competitive bidding for insurance plans for the subsidized population, opening new options for insuring this population.

In the following discussion our focus will be on analyzing the Ministry as principal and the local health authorities as agents; however it is important to keep in mind the restrictions that are placed even on the Ministry by other principals in the center.

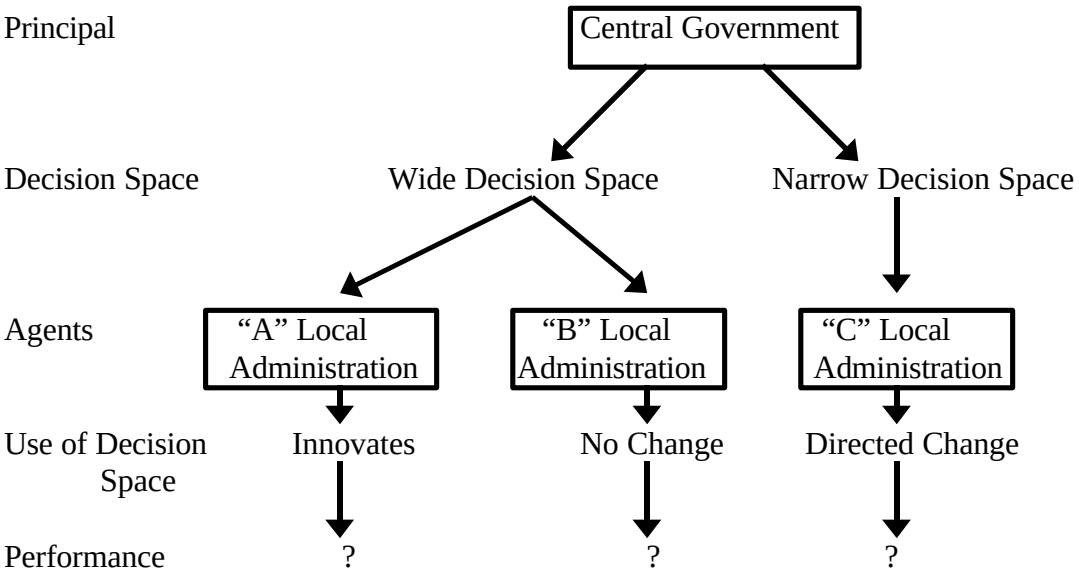
3.2 Use of Decision Space: Innovations, Directed Change and No Change

The second set of unique questions that decentralization raises is what we might call the response of the agent to the discretion allowed by a wider decision space. The agents who are allowed wider discretion may choose not to take advantage of the new powers and simply continue to pursue activities as they had before. Alternatively, they may choose to innovate by making new choices they had not made before. Innovation has become a central issue of investigation for programs promoting local government in Latin America (see Campbell, 1996). Innovation can be seen as having three dimensions, *temporal*, *functional*, and *structural*. Decentralized authorities innovate in a *temporal* sense when they make decisions that are different from those they made before decentralization. Local agents may also innovate in one or more *functional* area and not in the others for which they have wider discretion. Finally, the localities that enjoy a relatively wider range of choice in their decision space innovate when they make decisions to change that are not available to localities which are controlled by central decisions.

Centrally controlled localities may also make what we might call "directed change". The central authorities may promote significant directed changes over time -- changes which non-decentralized localities are forced to adopt but the decentralized authorities are not required to make. In these cases the non-decentralized units are changing policy and the decentralized units are not. If the decision space is characterized by a wide range of choice but local officials simply continue to do what they had been doing under the centralized system, then a wide decision space has not resulted in innovative local choice.

The use of decision space might be analyzed along the functional dimensions of the Map of Decision Space above to see 1) whether or not changes were made, and 2) in cases where there were changes, whether or not they were innovations or just directed change. This would allow us to make the precise -- and heretofore missing -- connection between the use of decision space and performance of health reform objectives.

The following table suggests one possible case illustrating the basic relationships:



In Poland, in a small rural Voivoidship (district offices of central authorities which have received some expansion of their decision space) similar to Local Administration "A" in the chart above, the Health Director introduced an innovation in one functional area by contracting local physicians. This innovation was within the decision space allowed by deconcentrated powers of the new Constitution. Other Voivoid Health Directors, similar to Local Administration "B", have not yet taken advantage of this expanded decision space. Other local offices, such as small municipalities which continue to have limited decision space, like Local Administration "C", have been directed by central authorities to reduce staffing of local facilities without contracting local physicians.

As the table above suggests, we often do not know what choices -- innovations or directed choice -- will lead to better performance. We will discuss this step next.

3.3 Performance

As noted in the chart above, we need to determine which of the choices -- innovations, directed change, or no change -- is preferable. This determination is crucial to assessing the relationship between decentralization and the objectives of health reform. We will need to determine whether the wider decision space and the capacity to innovate, to reject "directed change", or simply to continue doing what was done before, is likely to improve the capacity of a nation to reach its health reform goals. Therefore it becomes essential that we evaluate the innovations, directed change and no change in terms of their impact on performance in areas defined by the objectives of health reform.

Much of the argument over different policy choices at any level of government is an argument about the likelihood of different mechanisms, tools, and institutional arrangements to achieve the broader objectives of a health system. There is no clear evidence to suggest that we know what combined package of policies can achieve the objectives of equity, efficiency, quality and financial soundness. Both central governments and local governments can make choices of policies which might or might not achieve the objectives. Furthermore, many of these objectives are also influenced by other factors which are outside the control of either level of government. We therefore must enter this territory with some caution. However, it is through measures of performance that we can establish whether, and by what ranges of decision space, decentralization can assist a country achieve the objectives of health reform.

There are some choices which theory or experience in other countries suggest are likely to achieve the objectives and there are others which are still quite open to question. Current thinking suggests that breaking financing and provision of service (for instance by introducing insurance plans between the financing and the providing institutions) and introducing some level of competition is likely to improve efficiency of health services, and might also improve quality. We also have some evidence that the ability of local managers to hire, fire and provide specific incentives to employees improves efficiency. We assume often that increased funding for health is likely to improve quality and, if targeted correctly, improve equity. It would be particularly useful to evaluate local level innovations that are not implemented generally, since they might give an indication of useful policies that the central government might, as principal, decide to alter incentives to encourage other local governments to adopt.

However, evaluating performance is a significant task. The central problem with the evaluation of performance is the lack of reliable data on all dimensions of the overall objectives. In each country we will have to assess the availability of data to evaluate performance beyond the adoption of policies which appear now to be likely to improve performance.

Recent examples of indicators of performance which have been used in studies of decentralization tend to focus on expenditures. Per capita spending is used as an indicator of equity (Putnam; Jacobsen and McGuire; Carciofi, et.al.). Other studies have examined the decline in counterpart funding generated by a growth in intergovernmental transfers as an indicator of "fiscal laziness" or lack of assumption of fiscal responsibility by local authorities (Wisner, World Bank, Kure). Putnam has also used an index of general performance to evaluate decentralized institutions in Italy. This index includes measures from all sectors, including only two from the health sector: number of family clinics and local health unit expenditures per capita.

We should develop a list of indicators for the objectives of health reform in each country in which studies will be implemented. This list then should be evaluated in terms of the availability of data. The following list is an initial attempt to develop Indicators of

Performance:

Equity

- changes in coverage by insurance programs
- changes in per capita spending
- changes in local vs. national revenue sources
- percentage of targeted population identified (e.g. with carnets)
- changes in utilization by socio-economic strata

Efficiency

- changes in hospital productivity
- changes in bed occupancy rates and lengths of stay

Quality

- changes in intra-hospital infection rates
- changes in immunization coverage and low birth weight
- changes in patient satisfaction

Financial Soundness

- funding/subsidized regime
- hospital deficits

These measures could be used to construct an overall health reform index -- similar to Putnam's -- or the activities that result from local agent innovations, centrally directed change or no change could be separately evaluated for performance along each separate objective.

3.4 Positive Incentives and Sanctions

The principal does not rely only on the decision space to encourage local agents to achieve the objectives of health reform. The major channels of control used by the principal agent are the rewards and punishments that the principal can use to entice the agents to achieve the principal's objectives. Following the fundamental assumptions of most economic models, the principal agent usually assumes rational, self-interested economic actors with the objectives of increasing their wealth or leisure. As we noted above, this restricted assumption may be useful in developing specific models and hypotheses, but is not necessarily the only set of motivations and goals that are present. Other motivations and goals may also be tested, even within the principal agent framework.

Incentives may need to be defined in both individual and institutional terms. The incentives of intergovernmental transfers usually are defined in terms of institutions, since the entity receiving the funds may be the municipal or provincial government. However, it may be also important to evaluate the individual incentives of major decision makers within these institutions.

The flow of additional resources as intergovernmental transfer might be seen as an incentive to the local authorities, especially if these resources can be taken away by the principal if the locality does not achieve objectives or follow administrative rules. One particularly important perverse incentive is the granting of discretionary funds to cover deficit spending -- the "soft-budget" constraint. Other mechanisms of incentives might be the achievement of benchmark targets which trigger additional funding, or different ratios of matching grants (see for example, Frank and Gaynor, 1993). It might also be possible to see the opportunity for personal graft as an incentive. In some cases, the granting of wide decision space is an incentive in and of itself. This is an important incentive for professionals within organizations and may be an incentive for local institutions. The following list of possible incentives is an example from Colombia, which categorizes the incentives in terms of economic/non-economic and institutional/ individual categories. The incentives that the principal (Ministry of Health in Colombia) can offer include:

Economic incentives for municipalities and departments

- manipulating the formula for the allocation of intergovernmental transfers to departments and municipalities to reward the agents who achieve objectives
- Ministry of Health discretionary funding for investments and some operating costs -- through control of some discretionary Ministry budgets, through social investment funds, and through influence over donor funding
- manipulation of matching grant requirements to reduce requirements for local resources

Economic incentives to individual officials

- Fellowships
- Career advancement
- Opportunities for corruption

Non-economic incentives to departments and municipalities

- Technical assistance
- Wider decision space

Non-economic incentives to individual officials

- Wider decision space
- Professional training
- Recognition for achievement

Sanctions might include reduction of transfers for failure to achieve objectives, intervention or takeover by the center for flagrant disregard for rules and regulations or failure to provide minimal health services. Sanctions include withdrawal of any of the positive incentives above and:

- Fines and jail (for breaking rules of formal decision space)
- Intervention (takeover by higher authorities)

- Firing officials
- Removal of political support or funding through a political party

This channel of control, like that of decision space, may be defined by a series of actors at the center, who may be seen as principals attempting to control both the Ministry and the decentralized entities through these incentives. From the perspective of the local authorities this may not make much difference, but from the perspective of the Ministry the other actors may restrict its ability to use incentives and sanctions to achieve its objectives. These restrictions could be analyzed in terms of multiple principals at the center, as in the studies by Moe and Chubb. Again, the formal right of the principal to use these incentives and sanctions may also be limited by lack of enforcement capacity or will.

Incentives and sanctions are central issues within the principal agent approach. A wealth of potential hypotheses about incentives and sanctions has come from the theoretical and empirical work that has been done to date. Much of the literature about principal agent relationships revolves around how the principal can set incentives so that agents have a stake in achieving the principal's objectives. Not only the type and level of incentives are seen as important, but also the structure providing the rewards and sanctions is crucial. Some interesting issues in this literature focus on incentives that are related to competition among agents for the reward of the incentives. The analogy to tournaments is often used in which agents directly compete to demonstrate how well they can perform, (Knoeber, 1989).

Whether the theory and studies of incentives in the principal agent approach are relevant to the study of current decentralized systems will depend on the actual availability and use of incentives in the individual cases of decentralization. In Colombia, for instance, the allocation of intergovernmental transfers is determined by the Presidency and the Ministry of Finance, usually for non-health objectives. It is not directly manipulated by the Ministry of Health and therefore it is difficult for the Ministry to use this incentive to reward achievement of national objectives of health reform. The Ministry, however, does have some discretionary funding, and some control over donor financing and other incentives that can be used to encourage the municipalities and departments to achieve Ministry objectives. We would have to evaluate whether these incentives are used by the Ministry to achieve its health reform objectives -- it might be that the Ministry uses these incentives for other objectives, such as building political support -- whether they have been effective in encouraging the agents to work toward those objectives, and whether there are alternative incentives (and structures for using the incentives) that could be more effective. While we can enumerate the mechanisms of incentives and sanctions that can be used as channels of control, it is far from clear that these incentives and sanctions are currently being used by principals to achieve the objectives of health reform. As noted above, the allocation of intergovernmental transfers may be used more for political objectives of the national ruling coalition rather than for health reform objectives. In addition, other revenues provided to cover deficit spending may reflect more the power of the agent to force the principal to comply (through threatened strikes, protests, etc.). Indeed, the history of providing funds for deficit spending is often considered a perverse incentive that

actually encourages agents to overspend and discourages efforts to achieve efficiency. It is therefore important in the analysis to determine how the incentives are structured and whether they are likely to be effective in encouraging achievement of the objectives of health reform. This information will likely require detailed case studies where incentives have been used.

3.5 Information and Monitoring

The central role of information and monitoring is to allow the principal to evaluate how and whether the agents are achieving the principal's objectives. However, information and monitoring have significant costs. Reducing the costs of supervision and monitoring is one of the common rationales for decentralization. However the agent's control of information is crucial to the negotiating power of the agent *vis a vis* the principal. Information and monitoring as a channel of control is therefore a mechanism through which the agent can also exercise some power.

Central ministries often have some routine information systems through which its agents must report. The information available is usually of variable quality and can often be manipulated -- through failure to report or through inaccurate reporting -- by the agent. This information often includes utilization, coverage, human resources, and budgets. While there may be massive reporting (at an unestimated cost to the agents), the quality of the data is questionable, and the ability of the center to process the information for monitoring is usually inadequate and costly. Usually, actual expenditures are under some accountancy review to assess whether the funds have been spent and in which budgetary categories, but accountancy reviews are often late and subject to their own forms of corruption. Budgetary categories are also usually not designed for assessing achievement of health reform objectives. It is therefore important to assess how much information is available to the central authorities, the capacity of the central authorities to process this information, and the quality of the information. It is also important for the central authorities to have the ability to cross-check reported data, since reporting may be distorted.

Currently in Colombia, the information available to the Ministry and its capacity to process it is severely limited. Information may be provided in a very unsystematic manner by agents who wish to persuade the central authorities to reward them with more timely payments, discretionary funds, etc. For the purposes of study, it will be important to determine for each locality the characteristics of the information flow to the center and what the center has been able to do with that information. In Chile, where the information systems have been undergoing significant upgrading, information available to central authorities may be of higher quality. However, it is not clear that this data is being used to evaluate municipal achievement of the objectives of health reform.

The principal agent framework and the literature on "governing the commons" also suggest the importance of agents monitoring each other. If the agents are in competition

with each other for incentives, or for access to public goods, they may have an interest in monitoring each other's performance. In this area, having access to information about other agents may be an important channel of control that reduces the role of the center while increasing the likelihood that agents will achieve the principal agent's objectives.

4. Characteristics of the Agent

The characteristics of the agent will also influence how it responds to the mechanisms of control. These characteristics can be classified as being related to 1) the motivations and goals of the agents; 2) the role and influence of local principals; and 3) the capacity of the local agents to innovate and implement.

4.1 Motivations and Goals of Agents

As discussed above, we can examine the motivations and goals of both principals and agents through a series of models to test assumptions about behavior (e.g. rational economic self-interest, health reform goal seeking, organizational imperatives). The central assumption of most principal agent literature is that agents (as individuals and, by extension, institutions) are self seeking and concerned mainly about maximizing control of finance and leisure. If these assumptions are correct, all agents will have these motivations, and incentives will have to be directed toward achieving them.

However, some of the literature on principal agent theory suggests that if the goals and motivations of both the principal and agent are compatible, then the principal-agent relationship will be more effective (Pratt and Zeckhauser). As we noted above in Section 2.5, while these assumptions assist in the formulation of theory and hypothesis, they do not always explain actual behavior. Several other motivations are discussed in the literature: professional approbation, achievement of a specific institutional mission; and organizational survival.

Case studies might examine the articulated objectives of health officials at the local levels to see if they correspond to those of the health reform, or if the local officials have other interests that might conflict with national objectives.

4.2 Local Principals

In decentralization cases where there has been an institutional break -- as in devolution, delegation or privatization -- it is likely that some form of multiple agency analysis would be necessary to appraise the results of decentralization. Since the health authorities in local governments must respond in part to elected officials (mayors, governors, legislators), who in turn are agents of the principals in the local political process (electorate and/or dominant political coalition), the goals and interests of these local

principals will shape the response of the municipal health officials to the incentives and rewards of the central government.

The role of the local political process can be examined by a variety of methods, from stakeholder analysis to median-voter public choice models. An initial study might focus on a stakeholder analysis of the agent, examining the power of different local interest groups, especially the power of physicians, insurance companies and hospitals. As Wilson points out, those interests which are concentrated and have significant investments are likely to have more influence over bureaucracies than are the dispersed beneficiaries who have only sporadic interest in health issues. The extensive literature on interest group politics in health care could provide additional hypotheses for local level decision-making (Reich, 1995; Marmor, 1973; Eckstein 1958). It would be particularly important to examine the mechanisms used for community participation to balance out the influence of the vested interest groups. Here again, a wide literature exists on community participation and local accountability from which to draw hypotheses (see Marone and Marmor, 1981; Paul, 1992; Esman and Uphoff, 1984).

Once the objectives of the local principals are defined by this kind of analysis, we would have to analyze the range of incentives and sanctions that these principals can exercise over the local health administrators. These incentives and sanctions, which can complement or undermine those of the central principals, can be related to the local sources of funds, the capacity to hire and fire administrators, corruption, professional recognition, etc. A major incentive of these local principals will be in the provision of additional local funding. If the local political process allows significant contributions from local own-source revenues (which are not already earmarked by the decision space), then the dynamics suggested by the local fiscal choice literature may be useful to examine. In any case, local principals with considerable additional resources are likely to have greater influence vis a vis the principals in the "center" and the conflict in objectives may become more pronounced. An alternative situation may be one in which local resources allow local principals to dictate particular innovations that are not available to centrally directed localities or to poorer localities without sufficient additional resources to assign. We will address this latter issue below.

4.3 Capabilities of the Agent

The capabilities of the agents may also be an important set of variables in defining the agents' response to the principal. There are a variety of characteristics that might influence the capacity of agents to make decisions that are likely to be responsive to the objectives of the principal. We will focus on the issues of human resource capabilities, socio-economic characteristics, size, and social capital. First, the human resources available at the level of the agent may condition the ability of the agent to make decisions

within the decision space allowed. Communities with few professionals or those with the wrong professional mix, may not perform as well as others with a similar decision space. There are some studies on the relationship of technical capability to organizational performance which can be used to develop hypotheses on this issue (see Scott, 1987). It will be interesting also to compare locally recruited professionals to those who are recruited through the national centralized system. In some cases, the staff in the newly decentralized unit is the same as the local staff of the Ministry. This is the case in many deconcentrated forms of decentralization and may also be the case in devolved forms where the regional staff is simply transferred from the Ministry of Health to the provincial governor's office. This transfer may bring appropriate skills that would be lacking in newly created offices, but it also transfers the structure, culture and routines of a highly centralized institution.

Socio-economic characteristics of the local municipality or province might also affect the capacity of the agent to implement innovations. Those communities with a larger local resource base may be able to assign local resources to complement those of the intergovernmental transfers. As the local fiscal choice literature suggests, this source of inequity makes the central government's role in redistribution more important. Higher socio-economic status may also bring a larger pool of trained personnel and other advantages which strengthen its capacity to implement what the principal desires. However, wealthier communities also may have more political power in the national political process and can refuse to accept the directions, incentives and sanctions that the Ministry of Health might impose.

The size of the local government unit might also be a factor that influences the capacity of local government to make decisions. In Poland, the size of cities was deemed to be so important that only large cities were given wider decision space over primary care facilities. Size may also be related to political power if combined with wealth or a large electorate.

Using Putnam's analysis of social capital, we might hypothesize that communities with denser networks of civic organizations will have greater social capital which will strengthen their capability to choose innovations and implement health programs effectively. If we can obtain data on civic organizations in different localities we can examine this hypothesis. Alternatively, Putnam suggests a dichotomy between clientalism, which is based on vertical relationships of "instrumental friendships", and social capital, which is a broad-based community trust. Putnam has used surveys to identify the areas where community members feel that clientalism is strongest as one indicator of the lack of social capital.

5. Applying the Framework to Case Studies in Latin America

This discussion has presented a general framework for analysis which starts with the concepts of the principal agent approach and expands this approach to include the new

concepts of decision-space and innovation. It then lays out a large menu of possible relationships and hypotheses derived from a variety of theories and empirical studies that can be examined within the overarching framework. This presents a broad research agenda with many possible topics for investigation. The selection of feasible research for the studies in Latin America will depend on several factors: 1) the content of the formal and informal decision space allowing choice at the decentralized levels; 2) the range of different local innovations and centrally directed choice that is implemented; and 3) the availability of data on choice, incentives, capacity and performance.

I propose that each study begin with a formal map of decision space allowed to decentralized entities. Where data on innovations, incentives and performance exist at the national level, studies of multiple cases or of all localities should be developed, however, it is likely that only through selected case studies of a limited set of municipalities or provinces will the relevant data be available. The case studies should be selected on the basis of innovations that have been identified by knowledgeable experts in each country. An open ended survey instrument should be developed to identify:

- the actual "informal" decision space
- the incentives and sanctions that are available to, and have been used by, the principal
- the information and monitoring tools
- the capabilities of the local agent
- the role, interests and incentives of local principals
- performance indicators

6. Policy Implications of the Decision Space Approach

The Decision Space approach has some direct implications for policy choice at the central level as well as at the local government level.

If we begin with the assumption that as technical advisors to national governments we are giving policy advice to the central authorities, we want to be able to advise them on how to shape the decision space for local governments so that these governments will make choices that are more likely to achieve the desired levels of performance. The Decision Space Approach will give us some idea of how much discretion over what kinds of functions is likely to lead local authorities to make choices that will achieve central government objectives. How wide should the decision space be so that the central resources are used appropriately, or matched appropriately by locally generated revenues? Should discretion over local salary levels be wide or narrow to improve the efficiency of the work force? Should local authorities be allowed to choose different mechanisms for dividing financing and provision, or should they be forced to make only one or two choices?

We could then examine the role of incentives and sanctions used by the Ministry of Health to shape the choices of local health administrators. How have intergovernmental transfers been used to achieve the goals of health reform? What has been the role of perverse incentives for deficit spending? Have there been cases of central intervention of local health administrations? How have career and professional incentives been used? With preliminary answers to these questions we could then recommend improved use of these incentives and sanctions, tailoring them to achieve indicators of performance.

The approach also might suggest that some choices should be limited to local governments with specific characteristics -- for instance, only governments which are likely to have sufficient administrative capacities. It may also be important to assure that local participation mechanisms are in place for the poor to have a voice in decision making.

The Decision Space approach, drawing on a principal agent analysis, also suggests that the center should focus on developing appropriate tools and indicators so it can efficiently monitor the behavior of local governments and apply sanctions or incentives appropriately. The studies could show how lack of key data inhibits the ability of the Ministry to get local governments to achieve its objectives.

In order to address these policy issues our central research questions that emerge from the Decision Space Approach can be summarized as:

- What is the effect of larger decision space on the taking of innovative decisions?
- What is the effect of centrally controlled incentives and sanctions on the choices of local health administrations?
- What explains why some local health administrations implement innovations and others do not?
- Do these innovative decisions make a difference in performance?

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