Polycentrism and Gargantua*

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Abstract

How should governments publicly provide goods and services? One option is to do so polycentrically—through multiple, autonomous, local decision-making centers. Alternatively governments may organize public good provision monocentrically—through a singular, centralized, higher-level decision-making center. We call the former arrangement “polycentrism” and the latter one “gargantua.” This paper investigates the costs and benefits of polycentrism and gargantua. We argue that polycentrism is superior. Polycentric provision permits localities to discover and deploy the efficient scale of public good provision, small or large. Gargantua precludes small-scale provision as an option even when it’s efficient. To investigate our argument we consider governments’ consolidation of public education in the United States.

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1 Introduction

How should governments publicly provide goods and services? One option is to do so polycentrically—through multiple, autonomous, local decision-making centers. Alternatively governments may organize public good provision monocentrically—through a singular, centralized, higher-level decision-making center. We call the former arrangement “polycentrism” and the latter one “gargantua.”

This paper investigates the costs and benefits of these alternative arrangements for publicly providing goods and services. We argue that polycentrism is the superior arrangement. Gargantua’s alleged advantages over polycentrism—its ability to realize scale economies and to internalize externalities that would otherwise undermine efficient public good provision—are often illusory. They ordinarily exist only by ignoring local actors’ ability under polycentrism to contract public good provision with other localities or with higher-levels of government when scale economies and externality problems are significant and thus larger-scale public good provision is efficient. Once Coasean solutions to these problems are permitted, polycentrism is also able to realize larger-scale provision that capitalizes on scale economies and resolves externality problems when larger-scale provision is efficient.

However, gargantua’s disadvantage relative to polycentrism is very real. Polycentrism permits smaller-scale public good provision when the costs of more centralized provision trump its benefits, enabling the efficient scale of provision in this case too. In contrast, gargantua precludes smaller-scale provision in this case by imposing larger-scale provision where it’s

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1 In the analysis that follows we assume that government, as opposed to private suppliers, must provide the “public goods” in question. In reality many of the goods government provides don’t have strong publicness attributes. And, even when they do, a large literature shows that private suppliers can and have provided them. See, for instance, Anderson and Hill (2004); Beito, Gordon, and Tabarrok (2002); Benson (1989); Foldvary (1994); Friedman (1979); Leeson (2007a, 2007b, 2007c, 2007d, 2008, 2009a, 2009b).
inefficient. Only when larger-scale provision is efficient in all localities or when its inefficiencies in some localities are small enough to remain still smaller than the transaction costs of Coasean bargains between localities or between localities and higher-levels of government that could generate larger-scale provision by localities under polycentrism, is gargantua a superior arrangement for providing public goods and services. For many important publicly provided goods, at least, this situation seems unlikely. Here gargantua-style provision is likely to lead to destructive consequences that are inferior to those achievable under polycentrism.

To investigate our argument we consider government’s consolidation of public education in the United States. We find that gargantua-style provision of public education in America has failed to deliver superior education outcomes. The promise of lower cost education provision through scale economies under education gargantuan and improved education performance remain just that: promises. Although in some areas education has benefited from increased centralization, in most areas it hasn’t. Polycentric provision of public education in the United States would permit the majority of localities in which education has suffered from larger-scale provision to realize the superior benefits of smaller-scale provision instead. Equally important, it would permit the minority of localities in which education has benefited from larger-scale provision to rely on larger-scale provision.

Our analysis is most closely connected to Ostrom, Tiebout, and Warren’s (1961) seminal discussion about locally versus centrally provided public goods and has close parallels to the debate that emerged in the 1960s about public service provision in America’s metropolitan areas. In the years leading up to that decade, dissatisfaction with the status quo, which permitted significant decentralized public good provision, centered on the perceived inefficiencies and inequities associated decentralized public service provision (Aligica and Boettke 2009: 7-11).
Decentralization’s critics argued that multiple layers of service provision at state, county, city, and town levels created “too many governments and not enough government” (Ostrom, Tiebout, and Warren 1961: 831). As a 1970 report by the Committee for Economic Development stated the problem, “The present arrangement of overlapping local units is not serving the people well. Citizens... are confronted by a confusing maze on many—possibly a dozen—jurisdictions, each with its own bureaucratic labyrinth” (quoted in E. Ostrom 1972: 140).2

In response to these concerns, reformers called for greater centralization of public service provision. According to them, greater centralization at would remove the overlap and inefficiencies associated with decentralized government provision. Further, centralization would remove inequalities by distributing the costs of providing public services in a way that enhanced fairness (see Lineberry 1970).

A group of scholars led by Elinor and Vincent Ostrom challenged this view. According to these scholars it was misleading to see the metropolitan problem as a homogenous one—the urban problem—that could be solved through state-level centralization. The correct way to view the metropolitan problem, they argued, was as a set of multiple and different problems—problems each individual jurisdiction faced in its particular circumstance (see E. Ostrom 1972, 1983). The efficiency of different scales of government provision depended on the nature of the good or service in question and the context in which it would be provided.

This paper elaborates and extends the Ostrom group’s insights about using gargantua versus polycentrism to publicly provide goods and services. In particular we elaborate and extend these insights in the context of American public education provision. The debate over education provision began in the 1830s and came to head in the 1930s when school districts

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2 For more on the contributions of Vincent and Elinor Ostrom in this area, see Boettke and Coyne 2005; Aligica and Boettke 2009; Boettke 2010; Boettke and Aligica, forthcoming.
throughout the U.S. underwent a massive consolidation at the state level. Thus the education debate predated the metropolitan reform debate, which only took place several decades later. Because of this, the education debate remains comparatively unbenefted by the comparative political-economy considerations of gargantua versus polycentrism. Our hope is to help rectify this situation.

2 Providing Goods Publicly

2.1 Why Public Provision?

The economic justification for providing some goods and services publicly is some goods and services are non-excludable and non-rivalrous in consumption. Non-excludability means non-payers can’t be prevented from consuming the good. Non-rivalrousness means one person’s consumption of the good doesn’t reduce the amount of the good available for others to consume. When excludability isn’t possible, individuals have an incentive to free ride on others’ payment. This leads to the good’s underproduction.

When a good is nonrivalrous, the efficient price for it is zero. Even if he were to produce it, the good’s producer doesn’t have an incentive to price the good at zero. Rather his incentive is to put a positive price on the good. This leads to the good’s underconsumption. According to the traditional argument, if government takes over such a good’s provision, society can ensure that the efficient quantity of it will be produced and consumed.

The traditional argument identifies the conditions under which government provision may be sensible. But it doesn’t identify the level of government that should provide the good. The answer to that question requires understanding the relevant boundaries of exclusion. The
traditional dichotomy treats public goods as either fully divisible—i.e., excludable and rival—and thus as purely private—or fully indivisible—i.e., non-excludable and non-rival—and thus as purely public. However, as Buchanan (1965) points out, this dichotomy is overly restrictive. Goods and services have varying degrees of excludability and rivalrousness and thus varying degrees of privateness and publicness. Some goods, called club goods, are easily excludable but nonrival over some range of consumption until a congestion point is reached. Other goods, called common pool resources, are nonexcludable but highly rival in consumption.

The key factors driving a good’s privateness or publicness are its degree of divisibility and the size of the interacting group (Buchanan 1999). As divisibility and group size change, so do impure public good’s degrees of publicness. A good that has strong public characteristics at one level, for example at the level of the individuals in a town, may have strong private characteristics at another level, for example at the level of the town itself.

To see this, consider the case of a hypothetical rural town located one hundred miles away from its closest neighbor. Consider a good with potentially significant publicness characteristics, such that it’s a reasonable candidate for public provision, say police protection. First consider police protection in the rural town from the perspective of the town’s individual inhabitants. At the level of the town’s inhabitants, police services are likely to display significant public characteristics—significant non-excludability and non-rivalrousness in consumption.

Now consider police protection from the perspective of the town itself, as an aggregated entity. At the level of the town itself, police services will display significant private characteristics—significant excludability and rivalrousness. The town is isolated. Police protection provided within it doesn’t spill over onto neighboring towns, the closest of which is
one hundred miles away, as it may for neighboring residents within the town. Thus the benefits of providing police services are fully internalized at the town level.

Similarly, since the town is isolated, police services consumed within the town mean that fewer services will be available for the closest neighboring town to consume. The police have to travel one hundred miles to service the neighbor. This greatly reduces their effectiveness in responding to crime. This is a very different situation from the one in which the individuals who stand to benefit from police protection live right next to one another, as they do within the town, and thus one person’s consumption of police services has a much more muted effect on other town residents’ ability to consume those services. So, while police services may be indivisible within the town’s boundaries, at the town level they may be fully divisible.³

This example highlights the need to consider the good’s divisibility at different levels of public provision. When thinking about government provision of public goods, it’s not only important to consider whether a good or service should be provided publicly. Equally important, we must consider what governmental unit should provide the good or service. Considering the latter question requires us to determine the efficient scale of public provision. As we discuss below, that, in turn, depends on the cost/benefit conditions associated with alternative arrangements for public provision.

2.2 Gargantua and Polycentrism

There are two arrangements for providing public goods and services—monocentrically and polycentrically. What distinguishes these arrangements is where the monopoly over public decision making and coercion lies. Monocentric provision, or what we earlier called “gargantua,”

³ For numerous examples of the private provision of public goods along these lines, see Foldvary 1994.
is characterized by decision making and coercive capabilities vested in a single structure. For example, at the state level, monocentric provision would be provision by the state-level government. In contrast, polycentric provision consists of “many centers of decision-making which are formally independent of each other” (Ostrom, Tiebout and Warren 1961: 831). For example, at the state level, polycentric provision would be provision by smaller-level localities, such as municipalities.

Public good provision through gargantua has several potential benefits. First, gargantua can facilitate public goods-related plan execution when the desired plan is known. Since gargantua has a single, ultimate, central decision maker, coordination among the relevant plan executors is “automatic.” There’s little chance that executors will be uncertain about what plan they’re supposed to be following, derailing the plan’s execution.

Second, gargantua can easily overcome externality problems that many goods with strong publicness characteristics pose. Return to the hypothetical rural town from above. In that example geographic distance served as a boundary to exclude free riding between towns. But what about when towns are geographically close? In this case distance doesn’t “naturally” fence in the town’s benefits of producing police services. Now neighboring towns may be able to free ride on the town’s police services, resulting in underprovision. Gargantua can solve this problem by assuming the provision of police services for all towns.

Third, and closely related, gargantua can easily exploit the advantages of scale economies in the provision of certain goods with strong publicness characteristics. For example, significant cost savings may be available if police services are produced on scale much larger than that which the rural town requires. By assuming the production of police services for everyone, gargantua allows society to realize these scale economies.
Relying on gargantua to exploit these benefits isn’t free, however. Monocentrically providing public goods also presents significant potential costs. The first of these is the well-known costs of bureaucratic hierarchy. The same hierarchy that permits gargantua to execute public goods plans when the desired plans are known may also make gargantua less likely to figure out what desirable plans consist of.

As nonprofit entities, government bureaucracies are unable to economically calculate (Mises 1944). Thus they’re unlikely to discover solutions to economic problems of how to allocate resources in ways that make citizens better off. This failure plagues all government bureaucracies. But it becomes increasingly more severe as the size of the bureaucratic hierarchy that organizes government increases. The reason for this is closely connected to another cost of monocentrically providing public goods: the higher up in the levels of that hierarchy one goes, the more removed public decision makers are likely to be from the bulk of the citizens for whom they’re making decisions about public goods provision. Government in the local village can’t use profit and loss feedback to inform it about whether it’s providing the right number of bridges. But if the village is sufficiently small, common sense will be a reasonable guide. That logic breaks down if the state-level government, consisting of decision makers who may have never even been to the local village, must decide on the right number of bridges for the village instead.

There’s another reason gargantua’s centralized decision-making apparatus is likely to “get things wrong” when it comes to public goods provision. This, too, relates to the costs in terms of information loss that society incurs by monocentrically making decisions about public goods. As Tullock (1965) points out, when bureaucratic hierarchies become increasingly large, so does the information chain from the top of the hierarchy to its lower levels.\(^4\) This increases the

\(^4\) Niskanen (1971, 1975) models bureaucrats as (discretionary) budget maximizers, resulting in inefficiencies associated with the provision of goods and services.
probability that noise will infiltrate the chain of communication as information is relayed between the bureaucracy’s levels. Further, because of human cognition’s natural limits, hierarchy makes it less likely that bureaucratic superiors will be able to glean the relevant information their subordinates possess as the hierarchical chain of command grows longer.

Gargantua represents the maximal bureaucratic hierarchy in that it eliminates all potentially competing centers of decision making and subsumes those decision-making nodes under its singular, centralized umbrella. Thus gargantua is maximally prone to the inefficiencies of bureaucratic hierarchy. Ostrom, Tiebout and Warner (1961: 837) make a similar point when they note that gargantua “is apt to become a victim of the complexity of its own hierarchical or bureaucratic structure,” leading to inefficiencies and unresponsiveness to citizen demands.

There is, however, a much more important, and fundamental, cost of providing public goods monocentrically: gargantua precludes local-level public good decision making when externality problems aren’t present or severe, scale economies don’t exist or aren’t significant, local knowledge is centrally important to adequately providing public goods, or for some other reason smaller-scale public good provision is efficient. Such cases are likely to be many if for no other reason than—issues of externality and scale economies aside—reasonable public goods provision will often need to reflect particular, unique circumstances in different local communities.

It may be obvious that all localities require some protection from foreign aggressors and what kinds of such protection they need. In such cases gargantua-style provision may make sense. But many, if not most goods with strong public characteristics that localities require, for example those relating to schooling, roadways, and even police, are likely to be locality-specific.
For example, it’s unlikely that every community in the United States will have the same education, infrastructure, or policing needs. Externality issues and scale economy problems may prevent localities from providing for such goods and services in the optimal fashion. But the fact that gargantua could in principle get these things “right” will be little consolation to localities if the basic package of goods and services gargantua delivers to them corresponds poorly to the package of goods and services they actually need.

Polycentric arrangements for providing public goods also involve both benefits and costs. These benefits and costs are the converse of gargantua’s benefits and costs. For example, polycentric public goods arrangements are more likely to reflect local needs, incorporate local knowledge, and face smaller bureaucratic obstacles than gargantua. There are several reasons for this. Polycentrism introduces competition between governmental units. Tiebout (1956) argues that jurisdictional competition allows citizens to “vote with their feet.” This creates an incentive for jurisdictional authorities to provide the mix of public good and services individuals desire. The more “poly” the polycentrism in the system is, the more jurisdictions there are to compete and thus the stronger the jurisdictional competition. Further, when the number of centers of governmental decision-making authority increases, the size of each jurisdiction gets smaller. This strengthens the threat that jurisdictional competition poses to public decision makers by lowering citizens’ cost of voting with their feet since alternative jurisdictions are nearby.

Closely related, polycentrism allows for self-governance by putting public goods-related decision-making power into the hands of local persons. The concept of polycentric orders is grounded in the assumption that individuals are “interested decision makers” who “select those strategies that are anticipated to enhance their net welfare potential” (V. Ostrom 1999: 57). By removing higher-level public officials as the final source of knowledge and authority, polycentric
orders permit local-level officials to better exploit dispersed, localized knowledge of “time and place” that Hayek (1945, 1960) noted was crucial good economic decision making.

Because polycentric orders foster Tiebout-style competition, they also give local public-good providers strong incentives to respond to consumer feedback. Under gargantua expansive bureaucratic hierarchy separates service providers and consumers, weakening this feedback loop. As Ostrom, Tiebout and Warren (1961: 837-8) put it, “the problem of gargantua, then, is to recognize the variety of smaller sets of publics that may exist within its boundaries.” However, given gargantua’s large bureaucratic apparatus, its neglect of smaller jurisdictions is “not easily resolved.”

Just as polycentrism’s benefits are the converse of gargantua’s costs, polycentrism’s costs are the converse of gargantua’s benefits. For instance, while making public good provision decisions locally permits for public good plans that more closely reflect localities’ particular needs, local public goods providers may be unable to take advantage of economies of scale or be undermined by externality problems if they act alone.

Polycentrism has one crucial, commonly neglected advantage over gargantua, however. And that advantage largely negates polycentrism’s apparent disadvantages relative to gargantua. Unlike gargantua, which only allows individuals to realize benefits when public goods are efficiently provided by higher-levels of government, polycentric ordering allows individuals to realize benefits when public goods are efficiently provided by lower-levels of government and, in many cases, when they’re efficiently provided by higher levels of government.

The reason for this is straightforward: polycentrism permits local governments to contract public good provision with higher levels of government when this is efficient. In contrast, gargantua precludes local governments from providing public goods at the local level when this
is efficient. Polycentrism’s decentralized public good provision arrangement allows decentralized public good providers to contract into centralized provision when this is desirable.

For example, above we discussed the situation in which, because of close geographic proximity, neighboring towns may face a free-rider problem when it comes to police services. One solution is for gargantua to assume the provision of police services for all towns. But polycentrism also provides a solution to this problem: the leaders of several towns may forge an agreement that delineates cost sharing in police services. Such inter-jurisdictional contracts permit local jurisdictions to internalize externalities. Of course such contracts won’t always be possible. For example, high transaction costs of negotiating such agreements may prevent a Coasean solution in some cases. But even here polycentrism permits a solution. Local governments may defer the provision of the good in question to higher levels of government. Polycentrism dominates gargantua because it provides more choices than gargantua, including the same kind provision that gargantua would achieve.

Similar logic applies when local governments confront problems stemming from scale economies. In some cases it may be efficient to centralize the provision of public goods or services to reduce costs. For example, cost savings may be available by providing police services on a larger scale—i.e., if they’re centralized. One solution is for gargantua to assume the provision of police services in order to take advantage of economies of scale. Another, more sensible, solution is for some local jurisdictions to exit the police service business and contract this service out to others. Again there’s no guarantee that local governments would reach such an agreement. But also again, if they can’t, local governments always have the option to contract with higher levels of government for this service instead.
Gargantua provides a solution to certain kinds of problems that may plague public goods provision when those goods are locally provided—centralization. But it does so in a way that creates problems for public goods provision in cases when centralization isn’t sensible. In contrast, polycentrism permits the “best of both worlds.” It enables a centralized solution when this is desirable. But it also enables a decentralized solution when this is desirable instead. Gargantua adopts a one-size-fits-all approach. Polycentrism allows for that size when it does fit, but allows for other sizes when it doesn’t.

Crucially, unlike gargantua which locks localities into a particular scale of public good provision, polycentrism allows localities to adjust this scale as their needs change over time. If a locality changes demographically or the technology of providing certain public goods changes, what once made sense to provide for at one level of government may now make sense to provide for at another. The fluidity built into polycentrism’s system of public good provision allows it to change when the efficient level of provision changes because of evolving circumstances. Gargantua’s rigidity precludes this.

This isn’t to say that gargantua can never, at least in principle, be superior to polycentrism. It can be. Under polycentrism localities must negotiate with one another and with higher levels of government to contract into the efficient public good provision arrangement. If the inefficiencies that gargantua creates in imposing its one-size-fits-all arrangement on localities are smaller than the transaction costs localities incur through such bargaining under polycentrism, gargantua may remain more efficient.

In practice informational and dynamic considerations strongly militate against this possibility, however. Gargantua, recall, must have a reasonable idea about the mix of public
goods and services localities need. However, it’s unclear where information about this is to come from if decision making occurs at single node, far removed from many localities.

Further, even if gargantua appears superior to polycentrism from a static perspective, from a dynamic perspective it may not. As conditions of taste, technology, and demography change, so will the desirable mix of public goods and services and the efficient unit of government of their production. Thus even if large-scale, centralized production makes sense today, it may not tomorrow. And gargantua provides no clear mechanism whereby it might adapt to such changes. Dynamic inefficiencies in the face of such changes are likely to dwarf gargantua’s static efficiencies even when the latter exist.

When gargantua imposes more centralized, larger-scale public good provision where decentralized, smaller-scale provision would be more efficient, damaging consequences result. The provision of publicly provided goods suffers and, along with it, the array of activities those goods are supposed to support. Centralization hinders the very activities it hoped to promote.

3 Education Gargantua

3.1 The Rise of Centralization

Public education in the United States provides an instructive case with which to examine our argument about polycentrism versus gargantua as alternative arrangements for providing public goods. Until the early 19th century education in America was “highly decentralized, unstructured, and very diverse. There was no system and governance was personal, local, and diffuse” (Cooper, Fusarelli, and Randall 2004: 138-9). In the 1830s a movement to standardize education to improve education performance and socialize children properly emerged (Cooper, Fusarelli,
Progress toward centralization was slow. But by the 1920s it was widely accepted that increased centralization was critical to modernizing education (Ravitch 2000). Beginning in the 1930s, school districts were consolidated with the intention of professionalizing education through a centralized bureaucracy at the state level (Tyack 1974: 126-176). The underlying idea was that centralizing education at the state level would allow experts to scientifically manage education, creating better educational outcomes at lower cost (Berry 2006/2007: 50).

Education experts provided several justifications for school consolidation. All of them related to improving education outcomes (Cubberly 1922; Berry 2007; Berry and West 2008). First, experts argued that centralization would make administration more efficient, reducing the number of administrators involved in education. This would eliminate unnecessary costs from education, making education cheaper. Second, experts argued that centralization would allow teachers to take advantage of specialization within grades and subject areas, improving student performance. This was considered especially important since many local schools before consolidation were one-teacher schools that didn’t separate children into different grades. Third, education experts argued that centralization would allow the education system to take advantage of economies of scale, providing better education at lower cost.

The average district at the time included only two schools (Berry and West 2008: 3). Thus to achieve these goals required more than just consolidating schools within districts. It required consolidating the districts themselves.

The consolidation movement’s goal to centralize education at the state level was effective. Between 1930 and 1970 consolidation eliminated nine of every ten districts. Further, nearly two-thirds of schools in operation in 1930 were closed by 1970 (Berry 2007: 49). Figure 1
illustrates this great consolidation and the attendant emergence of education gargantua. It depicts the number of school districts between 1931 and 1975 when consolidation occurred at its briskest pace.

**INSERT FIGURE 1 HERE**

In 1931 there were more than 127,000 school districts in the United States. In 1975 there were less than 18,000. Since 1970 consolidation has continued, albeit at a much slower pace. Between 1970 and 2007 the number of districts contracted 22 percent.

The great consolidation between 1930 and 1970 was far from frictionless. Locals often resisted it because their local schools played a central role in the vibrancy of community life. Indeed, one of consolidation’s costs was the erosion of an important source of social cohesion (Reynolds 1999: 61; Berry and West 2008: 3). Resistance to consolidation was resolved through a combination of financial incentives provided by state governments to their local counterparts and through forced redistricting by redrawing of boundaries leading to the merging of existing schools (Berry 2006/2007: 54, Berry and West 2008: 4). The result was a shift in control over education from the local to the state level. This included the replacement of local funding with state funding for education, as well as a shift away from localities and toward states in decision making over education-related issues such as school accreditation, curriculum, and teacher certification (Strang 1987, Berry 2006/2007: 54). To get a sense of this shift, consider Figure 2, which depicts funding sources for public education in the U.S. between 1920 and 1980.

**INSERT FIGURE 2 HERE**
Between 1920 and 1980 the share of education funding coming from state governments more than doubled. Over the same period the share of education funding coming from local governments contracted concomitantly. The absolute share provided by the federal government remains small compared to that provided by state and local governments. But it’s important to note that as of 1920 the federal government was a nearly nonexistent source of education funds. Thus the percentage increase in federal funding over this period is large, further highlighting the increasing centralization of American education.

3.2 Education Gargantua’s Performance

The school consolidation movement was clearly successful in shifting control over education from lower to higher levels of government. But did centralization deliver on the promise of improved performance at lower costs?

To get a sense of how education gargantua’s fared in terms of this promise, consider Figure 3. That figure plots spending per student in U.S. public education between 1919 and 2006. One of education gargantua’s promises, recall, was lower cost because of economies of scale.

The data are unequivocal. Expenditures per student increased from $443 per student in 1919 to over $10,000 per student in 2006. In terms of lowering cost, education gargantua clearly failed. But, of course, increased expenditures may be worthwhile if they led to increased performance. How has education gargantua fared here?
Not well. Student test scores and national graduation rates display no surge over time to correspond to surging education spending per student over the years. Both national math and reading scores, for example, have remained flat between 1970 and 2006. The average freshman graduation rate for public schools has fallen slightly from 78.7 percent in 1969 to 75 percent to 2008. Over the same period education expenditures per student rose from $4,489 to over $10,000—a more than 120 percent increase.

Figure 4 illustrates this failure graphically. It depicts the number of school districts in the United States between 1971 and 2006 and average freshman graduation rates for public schools per $1,000 of student expenditure over the same years.

**INSERT FIGURE 4 HERE**

Our graduation data begin in 1969, well after school consolidation started in the 1930s. Still, they provide important insight into education gargantua’s performance. Today’s graduation rates are affected by consolidation that took place decades ago. If consolidation was able to deliver on its promise of higher performance at lower costs, we should be able to observe that outcome decades after consolidation began. Further, consolidation was still taking place during this period. Between 1970 and 2006 the number of school districts fell by 22 percent. So if consolidation has improved education performance per dollar spent on that performance, that improvement should be evident here. Unfortunately for education gargantua, it isn’t. As Figure 4 illustrates, education performance per dollar is falling as consolidation is rising. As education becomes more centralized, it costs more to achieve the same—or a slightly lower—graduation rate.
Figure 5 presents a similar graphical analysis. It plots the number of school districts and national reading and math exam points per $100 of per student education spending between 1970 and 2003.

**INSERT FIGURE 5 HERE**

Our data here begin in 1970 when the National Assessment of Educational Progress (NAEP) started keep tracking of what’s commonly called the “nation’s report card.” The data are clear. The number of school districts falls significantly over the period. Unfortunately, so do reading and math scores per $100 of per student education spending over the same period.

Several empirical studies systematically explore school consolidation’s relationship to a variety of measures of school performance. Berry and West (2008) analyze the effects of changing school and district size resulting from consolidation on average adult wages for white men born between 1920 and 1949. They find that those educated in larger schools earn lower mean wages as adults. Berry (2006/2007) analyzes the relationship between education consolidation and education outcomes as measured by adult wage inequality and finds that the consolidation movement had no effect on wage variation.

Several state-level studies consider school size’s relationship to various measures of education performance and find mixed results. Andrews, Duncombe, and Yinger (2002) review seven of these studies. According to them, only one study finds increasing returns to scale in schooling. The other six find decreasing returns to scale. Walberg and Fowler (1987) analyze the relationship between student achievement and district size in New Jersey. Ferguson (1991) carries out a similar study for Texas. Both studies find a negative relationship between education
performance and district size. However, Sebold and Dato (1981) find a positive relationship between education performance and district size in their study of California high schools.

Considered nationally, the evidence on public education performance bodes poorly for education gargantua. Overall, education gargantua hasn’t led to better performance at lower cost as the advocates of consolidation suggested it would. For most localities the significant costs of monocentrically providing education at the state level overwhelm centralization’s potential benefits. Many of these costs result from the increasing size of bureaucracy required to administer larger districts and schools discussed above.

Recall that one of the justifications for gargantua was that it would diminish jurisdictional overlap by centralizing administration. Education administration was indeed centralized. But that centralization wasn’t costless. It required additional bureaucracy that generated new costs in terms of more red tape, less flexibility, longer information chains, and a weakened link between public good provider and consumer.

Consider a 2001 report based on national surveys of school superintendents and principals (Farkas et al. 2001). According to that report, 88 percent of school administrators surveyed said that “keeping up with all the local, state and federal mandates handed down to the schools takes up way too much time” (2001: 9). Over half (54 percent) of superintendents, and slightly under half (48 percent) of principals said they “must work around the system” to “get things done the way they want” (2001: 10). 81 percent of superintendents and 47 percent of principals said that “when talented superintendents leave the field, they are most likely to do so because they are ‘frustrated by politics and bureaucracy’” (2001: 8). Similarly, in a 2003 report of Colorado superintendents, 67 percent of superintendents surveyed said that “meeting state and
federal mandates” was one of the top five factors inhibiting their effectiveness (Colorado Association of School Executives 2003: 4).

School administrators identified other bureaucratic costs of centralization too. According to the 2001 report discussed above, only 24 percent of superintendents and 32 percent of principals said they have “enough autonomy to ‘reward outstanding teachers and staff.’” Similarly, only 28 percent of superintendents and 32 percent of principals said they have sufficient authority to remove “ineffective teachers from the classroom” (Farkas et al. 2001: 12).

Another bureaucratic cost of centralization in the education context is that larger bureaucracies make the lines of accountability less clear. This emerges because of multiple and overlapping, principal-agent problems that create blurry demarcators of oversight and responsibility or erase those demarcators altogether (Chubb and Moe 1988; Savas 1987).\(^5\) Besides breeding bureaucratic inefficiency, unclear lines of accountability can also breed corruption (see McCluskey 2005).

The evidence considered above suggests that such costs of education centralization swamped centralization’s benefits for most localities. However, centralization’s unhelpful effect on education performance overall doesn’t mean that centralization hasn’t had a helpful effect on education performance in some cases, such as that which Sebold and Dato (1981) find in California. If centralization is in appropriate in most cases but appropriate in a few, this is the pattern we would expect to observe. Education gargantua is foisting a public good providing

\(^5\) In contrast to the view that bureaucracy is the cause of the poor performance, there’s a literature which argues that poor performance is the cause of increased bureaucracy (Smith and Meier 1994). From this standpoint bureaucracy is an indicator of school effectiveness because it shows responsiveness to issues and problems (Smith and Meier 1994, 1995). To the extent that it is true, larger bureaucracy is the ultimate result meaning that larger schools must still face the costs of bureaucracy discussed here. Indeed, even proponents of this alternative view concede that bureaucracy is correlated with poorer school performance (see Smith and Meier 1994). For a discussion of these issues and an empirical test see Meier, Polinard and Wrinkle (2000). Also see, Marlow 2001.
arrangement on everyone that is sensible for a minority. Thus, while that minority benefits, overall, the result is worse outcomes, not better ones.

This situation contrasts starkly with the one we would expect polycentrism to produce. Under polycentrism, which gives localities greater choice, district and school size would be much smaller in most cases—those cases currently suffering under inappropriately large district and school size mandated by gargantua. But in those cases where larger district and school size is appropriate—those cases currently benefiting under the larger scale mandated by gargantua—localities would create arrangements through contracting with other units of government at the same level or above them that produced the gargantua-imposed status quo.

Whether the benefits of bigger districts or schools outweigh the costs of bigger districts or schools depends on the particular case in question. Yet the debate over such questions, at least in popular circles, insists on viewing education as a homogenous problem with a homogenous solution. A recent *New York Times* headline that read “4,100 Students Prove ‘Small is Better’ Rule Wrong” illustrates this nonsensical thinking. Polycentrism’s superiority to gargantua lies precisely in its recognition of the fact that for education, as for other public goods and services, there are many problems and many solutions—not one of each—and in the fact that it permits people to find and adopt the solutions to their particular problems that make the most sense.

4 Conclusion

Our study of polycentrism and gargantua leads to several general conclusions. First, our analysis suggests that there’s no single, homogenous solution to issues of public provision because there’s no single, homogenous problem of public provision that individuals face. The advocates of greater centralization usually point to efficiency to defend centralization. Centralization, they
claim, will improve provision and lower costs. But their claim neglects the crucial fact that the conditions that may make for efficient large-scale provision in one situation may make for efficient small-scale provision in another. Imposing a homogenous solution on a heterogeneous problem is likely to create as many, and quite possibly more, inefficiencies than it eliminates.

Second, and closely related, our argument highlights that debates over scales of public provision miss the point when they focus on specific cases of success and then extrapolate based on the conditions associated with those cases. The polycentric approach emphasizes the fact that, left to their own devices, people will select the scale of provision that best satisfies their demands. In some cases this will result in smaller-scale provision. In others it will result in larger-scale provision.

Finally, our analysis identifies a crucial feature of polycentrism that accounts for its general superiority to gargantua in public providing goods and services: polycentrism allows for both smaller- and larger-scale provision. It allows citizens to discover what public goods arrangements are sensible given their conditions and provides them the means to secure those arrangements regardless of their scale. In contrast, gargantua constrains provision to larger scales by removing the possibility of smaller-scale provision.

Gargantua is only superior to polycentrism when the transaction costs involved in localities bargaining to the efficient scale of public goods provision under polycentrism are larger than the social costs gargantua creates by imposing inefficiently large-scale provision on all localities. The more heterogeneous local conditions are, the more frequent that smaller-scale provision is efficient, and the more frequently that changes in conditions necessitating a shift from one scale of public provision to another occur, the more likely it is that polycentrism will be superior to gargantua.
The public provision of education in the United States illustrates each of these implications. The treatment of state-level education as a homogenous solution to the education problem resulted in consolidation. The issue is not that consolidation provides no benefit, but rather that it neglects the fact that conditions vary across locales. In some cases conditions may dictate that large-scale provision may be efficient, but in other cases conditions may dictate that smaller-scale provision is efficient. Polycentric education allows for both of these possibilities while education gargantua limits the possibility of smaller-scale provision.
References


Touchstone.


Number of U.S. School Districts, 1931-1975

FIGURE 1
Source: 1931 from Department of Education, all other data from National Center for Education Statistics 2010, Table 86.
FIGURE 2
Source: National Center for Education Statistics 2010, Table 172.
Expenditures per Student (Constant 2007/2008 $), 1919-2006

FIGURE 3
Source: National Center for Education Statistics 2010, Table 182.
Number of School Districts and Average Freshman Graduation Rate for Public Schools (per $1,000 of per student expenditures in 2007/8 constant $), 1971-2006

FIGURE 4
Source: National Center for Education Statistics 2010. District Data, Table 86; Expenditure Data, Table 182; Averaged freshman graduation rate for public schools, Table 103. Note: Gaps in district numbers due to incomplete data.
Number of School Districts and Reading/Math Exam Points
(per $100 of per student expenditures in 2007/8 constant $), 1970-2003

FIGURE 5
Source: National Center for Education Statistics 2010. District Data, Table 86; Expenditure Data, Table 182; National reading scores 17 yr olds, table 116; National math scores 17 yr olds, Table 132. Gaps in exam scores due to periodic exams.