The Strange Budgetary Politics of Agricultural Research Earmarks

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This article explores how members of the House and Senate Subcommittees on Agricultural Appropriations use the appropriations process to earmark special grants for agricultural research projects without forming a majority logroll. It also shows how subcommittee members coerce the USDA into administering individual earmarked research grants even though the precise allocation of these grants does not have the force of law. This article makes an important contribution because it analyzes an institutional development within the appropriations process that has not been explored in the existing literature, and it examines the consequences that this development has had on the quality of USDA-funded agricultural research.

INTRODUCTION

Much of politics is distributive in nature. While an important function of the government is to provide public goods and solve market failures, it is clear that the power of the state is often used to redistribute scarce resources from one group to another. Indeed, in the United States the political system more often than not rewards elected officials who deliver narrow benefits to their constituents. Because most electoral districts are relatively small and reasonably homogeneous and because politicians face a reelection incentive, individual members of Congress are motivated to push for programs that generate narrow, well-defined benefits for their constituents but spread the costs across society as a whole. This is the essence of "distributive" or "pork-barrel" politics.

Within the American budgeting process, the term "earmarking" is frequently used to describe how members of Congress direct funds to specific projects that benefit their constituents. What exactly constitutes an earmark is a subject of some debate. For our

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purposes, an earmark refers to funds set aside within an account for a specified purpose. Earmarks are used in annual appropriations legislation to direct the availability of funds for specific projects or purposes. This is the definition that has been advanced by the Congressional Research Service.²

In a majoritarian democracy, no individual earmarked project that benefits a minority but spreads the cost across the population as a whole would ever receive majority support. This is the case because the costs of this project are borne by the majority while the minority receives all the benefits and pays only a fraction of the cost. Accordingly, politicians often find it in their interest to combine a number of earmarked programs that benefit minorities in a vote trade. This process of building a coalition through the *quid pro quo* exchange of votes is called logrolling. In the political science and economics literatures, the received wisdom is that logrolling is the mechanism behind how pork-barrel projects are supported in a majority rule legislature.³

In general, the empirical evidence suggests that logrolls that facilitate pork-barrel projects are larger than minimally necessary and also tend to involve members from both parties.⁴ Two hypotheses have been advanced to explain this norm of "universalism." One focuses on the need to develop stable coalitions.⁵ The larger the voting coalition, the less likely it can be fractured by an amendment. The alternative hypothesis emphasizes the desire for blame avoidance on the part of the majority party.⁶ By distributing benefits broadly, the majority party buys the support of the minority party.

More often than not, earmarks appear as individual line items in legislation. For example, in the recent "Safe, Accountable, Flexible, Efficient Transportation Equity Act" (more commonly known as the Highway Bill), over 5,000 individual transportation infrastructure improvement projects are included as line items. Once legislation is passed, all line items take on the force of law. Therefore, agencies have no choice but to administer these earmarked programs.

While this is the dominant paradigm advanced in the literature to explain distributive politics in the American system, it is not the only mechanism for delivering political pork.

^{2.} Sandy Streeter, "Earmarks and Limitations in Appropriations Bills," Congressional Research Service Report for Congress. Order Code 98-518 GOV (Washington, DC: CRS Report for Congress, 1999).

^{3.} See Thomas Stratman, "Logrolling," in *Perspectives on Public Choice*, ed. Dennis C. Mueller (Cambridge, UK: Cambridge University Press, 1997), 322–341. See also Ronald N. Johnson and Gary D. Libecap, "Transaction Costs and Coalition Stability under Majority Rule," *Economic Inquiry* 41, no. 2 (2003): 193–207.

^{4.} Ibid. See also Gordon Tullock, "Why So Much Stability?" Public Choice 37, no. 2 (1981): 189-205.

^{5.} See Kenneth A. Shepsle and Barry R. Weingast, "Political Preferences for the Pork Barrel? A Generalization," *American Journal of Political Science* 25, no. 1 (1981): 96–111. See also Barry R. Weingast and William Marshall, "The Industrial Organization of Congress: Or, Why Legislators, Like Firms, Are Not Organized as Markets," *Journal of Political Economy* 96, no. 1 (1988): 132–163.

^{6.} Steven J. Balla, Eric D. Lawrence, Forrest Maltzman, and Lee Sigelman, "Partisanship, Blame Avoidance, and the Distribution of Legislative Pork," *American Journal of Political Science* 46, no. 3 (2002): 515–525.

In this paper, we show that in the context of agricultural research appropriations an alternative mechanism is available. Each year, members of the House and Senate Subcommittees on Agricultural Appropriations earmark a portion of the allocation of agricultural research dollars through a system of "special grants" for specific research projects within their districts. The mechanism that supports this does not involve logrolling; in fact, Congress as a whole does not vote on the precise allocation of these special grants. Additionally, no individual special grant carries the force of law because they are not individual line items in the annual appropriations legislation. Yet, the U.S. Department of Agriculture (USDA), the agency that is responsible for administering these grants, faithfully executes them. In a majoritarian system, how does this arise and why is it sustained over time?⁷

We have two objectives in this paper. First, we explain how members of the House and Senate Subcommittees for Agricultural Appropriations can use the appropriations process to earmark special grants for agricultural research projects in their districts without having to form a majority logroll with the rest of Congress. Second, we demonstrate how these appropriators are able to coerce the USDA into cooperating with appropriators in carrying out these earmarks even though the agency would prefer not to do so.

The contributions of this paper are manifold. First, our paper describes an institutional development that has not been documented in the existing budgetary politics literature. It is widely recognized that the budget is the outcome of a political process, whose goal is to influence the allocation of scarce resources. Wildavsky furnishes a classic description of the politics of budgeting, with insight into the role of the parochial interests of members of Congress.⁸ However, he does not mention earmarking, and his discussion of the role of the appropriations committee assumes that the committee's job is to fashion a bill that will receive majority approval on the floor. Fenno provides valuable background information on the interaction between appropriations and authorizing committees, but Fenno also fails to mention earmarks, or the possibility of direct committee influence outside of the legislative process.⁹ Other scholarship on congressional committees also analyzes committees for their role in setting the agenda for their respective chambers.¹⁰ The focus of this literature is on how congressional

^{7.} We know of no other scientific program that is supported in the budgetary process through this mechanism. While many other scientific programs that are narrow in focus are introduced as line items at the last moment of the budgetary process, we are unaware of any other instance where the precise distribution of the line item is left to the agency as a set of recommendations that do not have the force of law. Hence, the process that we delineate in this paper is novel.

^{8.} Aaron Wildavsky, The Politics of the Budgetary Process, 3rd ed. (Boston: Little, Brown, 1979).

^{9.} Richard F. Fenno, *The Power of the Purse: Appropriations Politics in Congress* (Boston: Little, Brown 1966).

^{10.} Steven S. Smith and Christopher J. Deering, *Committees in Congress* (Washington, DC: Congressional Quarterly Press, 1984).

committees manage to protect their proposed legislation from amending activity on the floor.¹¹

Second, our paper highlights how appropriators are able to use their power to coerce bureaucrats at the USDA to comply with their wishes. Previous work on the relationship between Congress and the bureaucracy argues that Congress can create adequate incentives to induce the bureaucracy to behave in a manner that Congress desires.¹² More precisely, this research program maintains that Congress has the means and the ability to create a system of incentives that leads the bureaucracy to comply willingly with Congress's chosen policy outcomes. However, this literature does not always clearly specify the mechanism through which Congress achieves its ends. In this paper, we make the mechanism transparent.

Finally, the incentives created by the system that we detail in this paper have had implications for the quality of science and the reputation of the USDA. Because appropriators have the ability and the incentive to use special grants to advance their electoral goals, the research projects supported through the special grants program tend to be narrow in focus and of poor scientific quality. The questionable quality of these projects has eroded the reputation of the USDA's extramural research program. Consequently, the USDA's overall research budget has remained stagnant.

The special grants program currently accounts for approximately 1 percent of the USDA's overall budget. This amounts to approximately \$100 million. While many might consider this a marginal program, according to Wildavsky, Congress has been involved in budgetary disputes over much smaller amounts.¹³ Therefore, the small size of this program is not indicative of its political impact.

This paper is structured as follows: We begin by detailing the essence of logrolling as a mechanism for supporting distributive politics. This is followed by a short history of the special grants program. We then examine the specific budgetary process that allows special grants to flourish and discuss the consequences of this program for the quality of science funded by the USDA.

THE LOGIC OF LOGROLLING

In the modern era, the budgetary process begins when the president submits his budget to Congress for its consideration, usually by the first Monday of February each year.

^{11.} Steven S. Smith, *Call to Order: Floor Politics in the House and Senate* (Washington, DC: Brookings Institution, 1989).

^{12.} Barry R. Weingast and Mark J. Moran, "Bureaucratic Discretion or Congressional Control? Regulatory Policymaking by the Federal Trade Commission," *Journal of Political Economy* 91, no. 5 (1983): 765–800; Barry R. Weingast, "The Congressional-Bureaucratic System: A Principal-Agent Perspective," *Public Choice* 44, no. 1 (1984): 147–188; Mathew D. McCubbins, Roger G. Noll, and Barry R. Weingast, "Administrative Procedures as Instruments of Political Control," *Journal of Law, Economics, and Organization* 3, no. 2 (1987): 243–277.

^{13.} Aaron Wildavsky, The New Politics of the Budgetary Process (Boston: Scott Foresman, 1988), 162.

Since 1974, the House and Senate Budget Committees have been responsible for adopting a budget resolution that sets total new budget authority and outlay levels for the fiscal years covered by the resolution. These budget resolutions are not legally binding. Instead, they set a general tone for the debate on individual budget and tax bill measures.¹⁴

After the budget resolution is adopted, Congress begins its real work. At this point, the House and Senate Appropriations Committees and their relevant subcommittees consider the president's budget. While each chamber only has one Appropriations Committee, there are a number of subcommittees that deal with specific agencies and issue areas. For instance, for Agriculture and its related agencies, there is one appropriations subcommittees in each chamber. Currently, there are a total of 10 appropriations subcommittees in the House and 12 in the Senate that have "property rights" over their specific issue areas.¹⁵

Among scholars of Congress, it is widely agreed that the committee system exists to facilitate specialization and to allow members of Congress to capture the gains from trade.¹⁶ On average, Congress considers approximately 8,000 different pieces of legislation per session, encompassing a vast array of issues ranging from taxation to the funding of medical research. For this reason, Congress finds it in its best interest to encourage specialization among its members in particular policy areas. To provide individual members of Congress with the incentive to invest their time and energies toward understanding specific policy areas, Congress grants these individuals jurisdiction over these policy areas. A key part of this jurisdiction is control over the legislative agenda. That is, committee members are gatekeepers who have the power to determine which legislative proposals get considered in their respective policy areas. Agenda control therefore furnishes the institutional foundation for committee and subcommittee property rights.¹⁷ Gains from trade can now arise because no individual member of Congress needs to be well informed about every policy area in order for Congress to make decisions. This frees up time and resources for members to consider other legislation. In particular, this allows each member of Congress to focus on issues that are important to herself and her constituents. Not surprisingly, members have an incentive to seek appointments to committees and subcommittees that present them with opportunities to deliver benefits to their constituents.

In the context of the House and Senate Appropriations Committees, one of the benefits of specialization and property rights is that it affords individual committee members

^{14.} Sandy Streeter, "The Congressional Appropriations Process. An Introduction," Congressional Research Service Report for Congress, Order Code 97-684 GOV (Washington, DC: CRS Report for Congress, 2004).

^{15.} See http://appropriations.house.gov and http://appropriations.senate.gov for details.

^{16.} See Weingast and Marshall. See also Thomas W. Gilligan and Keith Krehbiel, "Organization of Informative Committees by a Rational Legislature," *American Journal of Political Science* 34, no. 2 (1990): 53–64.

^{17.} Kenneth A. Shepsle and Barry R. Weingast, "The Institutional Foundations of Committee Power," *American Political Science Review* 81, no. 1 (1987): 85–104.

an opportunity to earmark federal funds for projects that benefit their constituents. An important goal for most members of Congress is to win reelection to office.¹⁸ A key element of every candidate's reelection strategy is to claim credit for services or programs that generate benefits for the voters in her district. Pork-barrel projects clearly serve this function. By definition, a pork-barrel project provides narrowly defined benefits to particular groups, which allows individual legislators to claim credit for "bringing home the bacon." Because the appropriations subcommittees have property rights over the allocation of funds within specific policy areas, appropriators have considerable discretion over how public funds are allocated.¹⁹

Unfortunately for legislators, it is unlikely that any pork-barrel project on its own will command majority support in Congress as a whole. Because the costs of any pork-barrel project are spread across the nation as a whole while the benefits are concentrated on a few, individual members of Congress do not have an incentive to vote in favor of projects that benefit another member's constituents. As this is the case, it is necessary for legislators to cooperate in order to pass projects that benefit minority interests. Cooperation usually takes the form of a vote trade that consists of members supporting each other's preferred projects in exchange for reciprocal support. Appropriators by themselves do not comprise a majority within Congress. Hence, even though appropriators have property rights over appropriators to bring bacon home to their districts, it is necessary for them to build a majority coalition that allows other members to bring bacon home as well.

Given the nature of the exchange, however, individual members have an incentive to renege on this agreement. Indeed, legislators recognize that vote trading alone is not credible. This is because once a member wins majority support for her pet project, she has an incentive to withdraw her support for other members' projects as such a move would leave her and her constituents better off. Any legislator could find herself in the unenviable position of being on the losing end of this bargain. Therefore, members of Congress have an incentive to solve this bargaining dilemma. More often than not, this is

^{18.} David R. Mayhew, *Congress: The Electoral Connection* (New Haven, CT: Yale University Press, 1974), 52–53.

^{19.} As noted by James Savage, appropriations subcommittee chairpersons do not always use their authority to obtain pork for themselves and are sometimes able to use their authority to prevent pork. Savage calls these individuals "saints." According to Savage, under Gramm–Rudman–Hollings 302(b) allocations, setting a ceiling on total spending makes it difficult for members of Congress to obtain pork because amendments need to be revenue neutral. For our purposes, this is not relevant because these rules are no longer being enforced. Additionally, there is no evidence that "saints" of the kind that Savage discusses have ever chaired the subcommittee on agricultural appropriations. Indeed, the evidence that Savage presents suggests that even during the period when Gramm–Rudman–Hollings was in effect, earmarking at agriculture continued apace. See James D. Savage, "Saints and Cardinals in Appropriations Committees and the Fight against Distributive Politics," *Legislative Studies Quarterly* 16, no. 3 (1991): 329–347.

accomplished by bundling together a number of projects that have minority support in a single piece of legislation. This process is known as logrolling.²⁰

From the perspective of economic efficiency, logrolling can facilitate good or bad outcomes.²¹ On net, it is often unclear whether a program that generates narrow benefits to particular constituencies is necessarily undesirable. As far as efficiency is concerned, all that matters is total benefits less total costs, not the distribution of those benefits and costs. Some have argued that the pork-barrel politics that logrolling supports is needed to build majority coalitions in support of public interest legislation that improves efficiency.²² In these instances, some of the individual pork-barrel projects that are supported by a logroll may be inefficient, but the overall net effect of the broader policy less the costs of these inefficient projects may still be positive.²³

An issue area where logrolls are frequent is legislation related to federal highway funding. For example, in the current Highway Bill, there are over 5,000 earmarked projects. Other issue areas where logrolls are common include defense authorizations and appropriations as well as rivers and harbors legislation. In each of these areas, broad coalitions are formed to support very narrowly defined projects that individually enter as line items and therefore have the force of law.

23. While we are agnostic, in general, about the efficiency of logrolling and the pork-barrel politics it supports, the preponderance of evidence indicates that special research grants at the USDA are of low scientific quality. The National Academy of Sciences as well as other scientific research organizations have reviewed the scientific merits of special grants on numerous occasions. In each of these cases, there was a consensus that the quality of science funded through this program was of dubious quality and narrow in focus. Additionally, the evidence does not suggest that earmarked grants were used to build broader coalitions in favor of some public interest legislation. In fact, as we shall demonstrate, special grants are not needed to build a coalition in favor of the broader agricultural appropriations bill. Indeed, the overall agricultural appropriations bill is enacted in spite of these research earmarks. Hence, on net, it appears that the special grants program is costly to society. See the following reports: National Research Council, Report of the Committee on Research Advisory to the United States Department of Agriculture (Washington, DC: National Academy of Sciences 1972); National Research Council, Investing in Research: A Proposal to Strengthen the Agricultural, Food, and Environmental System (Washington, DC: National Academy of Sciences, 1989); National Research Council. National Research Initiative: A Vital Grants Program in Food, Fiber, and Natural-Resources Research (Washington, DC: National Academy of Sciences 2000); National Research Council, Publicly Funded Agricultural Research and the Changing Structure of US Agriculture (Washington, DC: National Academy of Sciences 2002); National Research Council, Frontiers in Agricultural Research: Food, Health, Environment, and Communities (Washington, DC: National Academy of Sciences, 2003); Research, Education, and Economics Task Force of the United States Department of Agriculture, National Institute for Food and Agriculture: A Proposal. http://www.ars.usda.gov/research/ research.htm.

^{20.} See Stratman. See also John A. Ferejohn, Pork-Barrel Politics: Rivers and Barbors Legislation, 1947–1968 (Stanford, CA: Stanford University Press, 1974).

^{21.} James M. Buchanan and Gordon Tullock, *The Calculus of Consent: Legal Foundations of Constitutional Democracy* (Ann Arbor: University of Michigan Press, 1962).

^{22.} John W. Ellwood and Eric M. Patashnik, "In Praise of Pork," *Public Interest* 110, Winter (1993): 19–33. See also Diana Evans, *Greasing the Wheels: Using Pork Barrel Projects to Build Majority Coalitions in Congress* (Cambridge, UK: Cambridge University Press, 2004).

As it turns out, however, logrolling is not the only mechanism through which porkbarrel politics can be supported. In the context of agricultural research funding, appropriators, because of the position they occupy within the budget process, can induce the USDA to deliver political pork without the force of law. Additionally, due to the institutional structure of the budgetary process, agricultural appropriators do not always have to form a majority coalition. This mechanism is very much at odds with the majoritarian principles that underlie congressional decision making.²⁴ Before elucidating the logic behind this mechanism, it is necessary to spend some time outlining the history and the institutions involved in agricultural research funding.

HISTORICAL BACKGROUND

Federal support for agricultural research prior to the mid-1960s took the form of block grants to the land grant universities, colleges, and extension offices (Hatch Act of 1887 as amended in 1955 and the Smith Lever Act of 1914), narrowly defined contracts for specific research outputs (Agricultural Research and Marketing Act of 1948), and grants to non-profit organizations for basic research (Public Law 85-934 of 1958). At the request of the USDA, the House of Representatives, in the early 1960s, began hearings for the second time on new legislation to expand the authority of the USDA to make grants for agricultural research. In the previous year's session, the House refused to consider an expansion of the USDA's grant-making authority. At the persistence of the USDA, the House eventually succumbed and decided to hold hearings on H.R. 7155. Under Section 2 of H.R. 7155, the secretary of agriculture was authorized "to make grants, for periods not to exceed five years' duration, to State agricultural experiment stations, colleges, universities, and other research institutions and organizations and to Federal and private organizations and individuals for research to further the programs of the Department of Agriculture."

The USDA's authority to make grants for agricultural research was enhanced by this proposed legislation in two significant ways. First, H.R. 7155 expanded the pool of potential grant recipients. Under PL 85-934, only nonprofit organizations could receive USDA research grants. Second, H.R. 7155 was also intended to broaden the scope of potential research projects that could be funded by the USDA. In his testimony to the House Subcommittee, Dr. George W. Irving Jr. of the USDA's Agricultural Research Service, stated:

[T]his legislation would broaden [our] authority \ldots to do research by grants other than basic research \ldots . The reason for this is that we now have no authority to make grants for research in the applied research field.

^{24.} We recognize that in some instances supermajorities are necessary and that not all decisions require a simple majority. For instance, supermajorities are required to overcome filibusters in the Senate. However, once an appropriations bill is reported out of the conference committee, the rules of the Senate prevent budgetary legislation from being filibustered. Hence, majoritarian principles are still important.

We believe that this authority is definitely needed in the Department of Agriculture to avail ourselves of a pool of research talent that exists in profitmaking [*sic*] organizations. We believe that it is desirable to have it, so we can tap the capabilities, imagination, resourcefulness of individuals in such organizations who can contribute to the agricultural research program.²⁵

Again, the initial reaction of the House to this expansion of USDA grant authority was that it was unnecessary. Indeed, the USDA, in its testimony, had to convince committee members of the need for this additional authority. In response to Dr. Irving's testimony, an incredulous Mr. Harvey of Indiana asked, "I hope you will pardon me if I seem to be puzzled, but what I am getting at is, are you not getting along pretty well right now?"²⁶ In response, Dr. Irving replied, "We are getting along very well right now. I think that the difference here is that we would be given even greater flexibility in the deployment of our research funds with the authority here requested."²⁷

Dr. Irving's major concern was that the USDA was too constrained by contract authority. "The scientists in the universities, in the research institutions in the country, are unwilling in many instances to be tied down by a plan of work as specific as we need to write it into a contract... The requirements there ... are that you cannot have a contract unless, you know when it starts and when it is finished."²⁸ Mr. Harvey continued by asking whether the USDA desired this additional grant-making authority to expand the amount appropriated for research, or to make the current funding more flexible. Dr. Irving replied by assuring Mr. Harvey that the USDA was merely seeking to utilize existing research funds more efficiently.

H.R. 1755 was enacted as PL 89-106 and published in U.S. Statutes at Large on August 4, 1965 (see Appendix 1). No roll-call vote was taken. An examination of the *Congressional Record* suggests that this legislation was uncontroversial. Accordingly, it would appear that the USDA was able to convince the skeptics on Capitol Hill of the need for this expanded authority.

With the passage of the law, it became necessary for the secretary of agriculture to develop rules governing the administration of these research grants. While Congress has amended PL 89-106 since 1965, the original budget authority created by this law is what allows appropriators to fund special grants. Prior to 1977, no specific protocol was established for the administration of these grants. In the 1977 Farm Bill, PL 89-106 was amended to encourage the secretary of agriculture to establish a "pseudo-peer review" process to vet special grant proposals. The USDA's current interpretation of PL 89-106 can be found in 7 U.S.C.S. § 450i (2004). In this current version of the law, grants cannot

^{25.} U.S. House of Representatives, To Facilitate the Work of the United States Department of Agriculture: Hearing before the Subcommittee on Departmental Oversight and Consumer Relations of the Committee on Agriculture, House of Representatives (Washington, DC: Government Printing Office, 1963), 18.

^{26.} Ibid., 20.

^{27.} Ibid., 20.

^{28.} Ibid., 21-22.

exceed three years' duration. Additionally, under section 5, subsection A of 7 U.S.C.S. § 450i (2004), the secretary "shall make a grant under this subsection for a research activity only if the activity has undergone *scientific peer review arranged by the grantee* [italics added] in accordance with regulations promulgated by the secretary." In practice, this means that the scientist receiving the grant chooses his own reviewers. This is in contrast with a truly competitive peer-review system, where decisions over reviewers are made by an impartial third party. Hence, even in its most recent incarnation, PL 89-106 is not a competitive grants program. It is not surprising, therefore, that there is a widespread consensus in the academic community and even within Congress that the science supported by PL 89-106 is of marginal value.²⁹

Although PL 89-106 was enacted in August 1965, there is no mention of the grantmaking authority created by this legislation until the 1969 Agriculture and Related Agencies Appropriations Bill. Interestingly, only the Senate appropriators invoked the authority granted under PL 89-106; the House appropriators did not mention it, nor was it explicitly referenced in the conference report.³⁰ In what may be considered the earliest "special grants" made under this authority, appropriators from the Senate earmarked \$1,000,000 for cotton research and \$400,000 for soybean research.

From these humble beginnings, special grants have become an increasingly important component of USDA agricultural research funds. As shown in Table 1, between 1970 and 1975, special grants increased from approximately \$4 million to \$19 million in constant dollars. By 1990, over \$38 million was spent on special grants. In 2002, special grants amounted to nearly \$33 million. As a share of USDA support for extramural agricultural research, special grants increased from 2 percent in 1970, to 10 percent in 1975, and 15 percent in 2002. While this may not seem like an alarming trend, in comparison with the amount of money that is granted by the USDA through the truly competitive peer-review process, these numbers are striking. The growth in competitive peer-review grants is closely mirrored by the growth in special interest grants. As a share of federal agricultural research spending by the USDA, competitive grants increased from 5 percent in 1980 to 18 percent in 2002. These figures should be contrasted with the other major federal science agencies, namely the National Science Foundation (NSF) and the National Institutes of Health (NIH), where only 1 and 6.8 percent, respectively, of these agencies' budgets were earmarked in 2002.³¹ Hence, while science in general has embraced competitive peer review as the preferred mechanism for allocating research funds, it would appear that the USDA has embraced peer review and special grants to roughly the same degree.

^{29.} See the various reports cited in footnote 23.

^{30.} Congress, House, Committee on Appropriations, "Department of Agriculture and Related Agencies Appropriations Bill, 1969," 90th Congress, 2nd session. 1968, H. Report 1335; Congress, House, Committee on Appropriations, "Department of Agriculture and Related Agencies Appropriations Bill, 1969," 90th Congress, 2nd session 1968, H. Report 1795.

^{31.} See National Research Council, Frontiers in Agricultural Research, p. 71.

	Formula	Competitive Grants	Special Grants	Contracts and	Total
Year	Funds			Other Support	
A. In thou	sands of constant	nt dollars $(1984 = 1)$	00)		
1970	143,227	0	4,075	17,974	165,276
1975	150,461	0	19,520	21,721	191,702
1980	146,995	11,505	11,246	60,728	230,474
1985	174,937	10,701	18,956	34,244	238,838
1990	154,606	25,140	38,394	44,462	262,602
1994	144,571	42,201	46,668	58,728	292,168
2002	120,980	42,817	33,669	35,901	233,367
B. In perce	entages				
1970	87	0	2	11	100
1975	78	0	10	12	100
1980	64	5	5	26	100
1985	73	5	8	14	100
1990	59	10	15	16	100
1994	50	14	16	20	100
2002	52	18	15	15	100

 TABLE 1

 USDA Support for Agricultural Research, 1970–2002

Source: Data from 1970 until 1994 were taken from Table 2 of Economic Research Service, *Agricultural Research and Development: Public and Private Investments under Alternative Markets and Institutions*, AER 735 (Washington, DC: United States Department of Agriculture, 1996) with authors' calculations. Data for 2002 were taken from the Current Research Information Service Web site. See *http://cris.csrees.usda.gov/*.

The implementation of the special grants program did not increase the USDA's flexibility, as the agency had hoped it would. As we will show, while the nominal discretion of the Department was increased by special grants, the actual disposition of that discretionary authority came to rest with the appropriations subcommittees of the House and Senate. This outcome is entirely at odds with the intent of PL 89-106, as revealed in the hearings and in the language of the bill.

HOW SPECIAL GRANTS ARE SUPPORTED IN THE APPROPRIATIONS PROCESS

Unlike most earmarks, special grants are not dependent upon the formation of a majority logroll within Congress. Instead, because of the nature of the budgetary process, agricultural appropriators are presented with an opportunity to insert their preferred research earmarks into the notes to the conference report that reconciles the differences between the House and Senate Agricultural Appropriations Bills. As we will show, it is the agenda control that appropriators enjoy over appropriations legislation, combined with the fact

that appropriations legislation emerging from conference cannot be amended by either chamber, that allows grants that are authorized by PL 89-106 to be funded.

In the context of agriculture, the House and Senate Subcommittees on Agricultural Appropriations each propose an appropriations bill to their respective chambers. After these bills are debated, amended, and passed by the House and Senate, the differences between the two bills must be reconciled in a conference committee. While authorization for PL 89-106 is usually included by either the House or the Senate in their original bills, no line-item total or individual special grants are ever detailed in either the House or Senate bills. Appropriators realize that special grants probably would not receive majority support because their benefits are narrowly defined and their costs are diffused. Appropriators recognize that if funding for PL 89-106 were included and special grant programs were enumerated in their original appropriations bills, members of the House or Senate who are not appropriators would either offer amendments to remove special grants entirely or expand the number of grants funded to benefit their own constituents. For appropriators, neither outcome is optimal.

Accordingly, the way appropriators use the budgetary process to get special grants funded without having to share the pork in a majority logroll or run the risk of having special grants eliminated altogether is to wait until the conference report to include a line-item amount for PL 89-106. The details of the individual research projects that are funded under PL 89-106 are included in the notes to the conference report, which does not have the force of law. The committees produce compromise legislation that is commonly known as the conference report. While each chamber votes on the conference report, the notes to the conference report are never voted on and are simply recommendations to the relevant agency. Appropriators are able to insert their preferred earmarks into the report because the only members who attend the conference committee are agricultural appropriators from both chambers.³² In conversation with members of the subcommittees and their professional staff, the authors were informed that all the agricultural appropriations subcommittee members attend the conference committee proceedings and each subcommittee member has an opportunity to submit into the notes her preferred earmarks. Within the agricultural appropriations subcommittees, no logroll is necessary because each member has an opportunity to insert her chosen research priorities. Indeed, under the standing rules of the House and Senate, there are no regulations governing which members of the conference committee get to include their suggestions in the notes to the conference report.³³ Finally, because the line item included in the legislation emerging from conference cannot be amended, there is no opportunity for other members of Congress who are not agricultural appropriators to either enlarge or kill the program without rejecting the entire agricultural appropriations bill. To reject the legislation would be costly to most of Congress, because important programs like

^{32.} Streeter, "The Congressional Appropriations Process."

^{33.} Walter J. Oleszek, *Congressional Procedures and the Policy Process*, 6th ed. (Washington, DC: National Academies Press, 2004).

food stamps, agricultural price supports, and block grants to universities and colleges are included in this bill. These programs deliver important benefits to constituents across the nation as a whole. Therefore, most individual members do not have an incentive to vote against this legislation because too much is at stake. Agenda control, combined with the institutional rules governing the budgetary process, are therefore key to the success of the special grants program. In other words, because appropriators are able to wait until the very end of the appropriations process before inserting research earmarks, and because there is no opportunity for members of Congress to amend the legislation once it has left the conference committee, appropriators can guarantee that their preferred research projects will be funded.

Empirically, it is fairly straightforward to show that no logroll occurs between members of the House and Senate Agricultural Appropriations Subcommittees and the rest of Congress over the distribution of special grants. Presumably, the other group within Congress that would be most interested in agricultural special research grants are members of the Agriculture Committees. If a logroll existed between appropriators and authorizers over the distribution of special grants, then both authorizing and appropriations committee membership should be correlated with the distribution of research grants. To test this hypothesis, we collected state-level data on the value of special grants allocated to each state for several fiscal years and matched this data with information on authorizing and appropriations committee membership. Specifically, we regressed the real value (in thousands of dollars) of special grants received in a given state in a given year on a series of binary variables indicating whether or not the state had a representative on the House or Senate Agriculture Committees and the House or Senate Agricultural Appropriations Subcommittees. State and year fixed effects were also included to control for unobserved heterogeneity at the level of states and for each year. When possible, we also included the value of peer-reviewed National Research Initiative (NRI) grants as a regressor to control for the level of interest in agricultural research in a given state.

Ordinary least squares regression results are shown in Table 2. From the table, it is clear that while appropriations subcommittee membership is positively and significantly related to the value of earmarked special grants allocated at the state level, Agriculture Committee membership is not. This evidence would imply that no exchange or logroll exists between authorizers and appropriators over the distribution of special grants. Authorizers do not apparently benefit from the special grants program. Instead, it "pays to be an appropriator" because appropriators capture the benefits of this program.

Alternatively, one might imagine a logroll taking place between agricultural authorizers and appropriators over special research grants and some other agricultural policy issue. We do not believe that such a logroll exists. First, the anecdotal evidence we have accumulated through close readings of the available testimony and the historical record does not suggest that such a vote trade takes place. Second, and most importantly, because the only check the rest of Congress has on the special grants program is to reject the entire agricultural appropriations bill, it makes no sense to

TABLE 2

	(1) Not including NRI	(2) Including NRI
Constant	182.26 (97.89)*	237.30 (105.30)**
House Appropriations Subcommittee Membership	230.42 (89.32)**	231.88 (87.54)***
Senate Appropriations Subcommittee Membership	305.43 (112.61)***	316.48 (114.41)***
House Agriculture Committee Membership	129.06 (107.33)	136.37 (105.30)
Senate Agriculture Committee Membership	- 151.49 (94.95)	- 128.85 (95.12)
Peer-review agricultural research grant allocation		$-0.23 (0.10)^{**}$
(NRI)		
Adjusted R^2	0.72	0.73
<i>F</i> -statistic	12.46***	12.61***
Ν	250	250

Relationship between Subcommittee Membership and Earmarked Special Grant Allocations at the State Level for Even-Numbered Fiscal Years, 1994–2002

Notes: Year-fixed effects and state-fixed effects are included but not reported.

^{***,***}, and ^{*}denote statistical significance at the 1, 5, and 10 percent levels, respectively.

conceive of the special grants program as being supported by a larger logroll. As discussed earlier, when conference reports are brought to the floor in either chamber, there is no opportunity to amend them. This means that the only way Congress can remove special grants is to reject the entire bill in an up or down vote. Because of the broad nature of the agricultural appropriations bill, it is extraordinarily costly for individual members to oppose this legislation simply because they do not approve of special grants. Hence, Congress's unwillingness to check the special grants program should not be interpreted as evidence of a logroll between appropriators and the rest of Congress. Rather, it is evidence of the fact that it is simply too costly for Congress to reject the entire bill.

Having established how special grants are included and funded in appropriations, why does the USDA faithfully execute these individual research projects given that they do not have the force of law? One possible explanation is that the USDA concurs with the scientific priorities furthered by these special grants. The available evidence does not support this explanation. First, USDA officials have indicated in written and oral testimony that these programs are of marginal scientific value and the agency would prefer not to fund them. For instance, in response to House member Barbara F. Vucanovich's (R-NV) question regarding the USDA's proposal to reduce funding for special grants, the USDA replied, "From our standpoint, low priority grants include those projects that focus on concerns of a narrow local area or sector and which have not been evaluated through a rigorous, competitive award process."³⁴ Second, in annual appropriations

^{34.} U.S. House of Representatives, Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations for 1995 (Washington, DC: Government Printing Office, 1994), 496.

audits, senior USDA officials frequently recommend the discontinuation of these special grants. Indeed, in 1991 hearings on agricultural appropriations, Senator Quentin Burdick (D-ND) commented on the agency's "perennial proposal to eliminate special research grants.³⁵ Thus, USDA compliance cannot be explained by the agency sharing the same preferences as appropriators.

An alternative hypothesis is that appropriators are able to coerce the USDA into carrying out its preferred special grant allocations. Because appropriations is an annual process and appropriators have property rights over the USDA's budget, appropriators can credibly threaten the agency with a smaller budget if the agency fails to implement special grant proposals detailed in the notes to the conference report. Two pieces of evidence support this view. First, one USDA official admitted to the authors that the Department has never failed to carry out a suggested special grant proposal. This suggests that the appropriators' threat has real bite. Second, each year, either the House or the Senate audits the USDA to make sure that the special grant proposals that are included in the notes to the conference report are in fact carried out. If appropriators and the agency shared the same preferences, no annual audit would be necessary. Hence, we believe the evidence to be consistent with this alternative hypothesis.

We noted earlier that when legislative logrolls support pork-barrel policies, they are generally larger than minimally necessary. This norm of "universalism" (i.e., the tendency to build coalitions that are larger than 50 percent plus 1) arises out of the need to form a broad-based stable coalition or because of a desire on the part of the majority party to share the negative political consequences of pork-barrel politics.³⁶ With respect to special grants for agricultural research, no logroll is necessary; therefore, a universalistic norm never arises. Coalition stability is not an issue because no logroll occurs, but appropriators in the majority party may still wish to avoid the negative consequences associated with political pork by distributing some special grants in minority party districts. Thus, distributing special grants across party lines within the appropriations subcommittee provides appropriators with some political cover.

This, however, is not the only means by which appropriators can provide themselves with political cover. Indeed, agricultural appropriators often claim that the special grants program ameliorates inherent inefficiencies in the competitive peer-review process. Specifically, appropriators believe that the competitive peer-review process has been captured by a network of established scientists and that scientists, because they are so specialized, do not consider the big picture when it comes to setting priorities for the research enterprise. In other words, the claim is that scientists have neither the incentive nor the information to allocate scarce research dollars efficiently.

^{35.} U.S. Senate, Agriculture, Rural Development, and Related Agencies Appropriations for Fiscal Year 1992 (Washington, DC: Government Printing Office, 1991), 41.

^{36.} See Shepsle and Weingast, "Political Preferences." See also Balla et al.

The annual hearings on agricultural appropriations provide ample evidence of this belief among appropriators. For instance, in 1992 Senator Dale Bumpers (D-AR), asserted, "As I am sure you are aware, I have been highly critical of the old boy network utilized in the peer review process, and will continue to work until I have helped reform the system."³⁷ This quote suggests that scientists are not impartial observers but in fact tend to support research that helps themselves and their friends. This is in sharp contrast with how the scientific community views the peer-review process. At the NSF and NIH, for instance, it is widely believed that the purpose of third-party peer review is precisely to provide scientists with a neutral mechanism for evaluating research proposals. Bumpers' claim is that this is a farce because scientists have a strong incentive to simply help themselves.

The other claim that is made by appropriators is that politicians possess an informational advantage over scientists in selecting which research proposals to fund. Among scientists and the public, there is a belief that decisions about which research projects to support should be made by experts in their respective fields because only experts have the ability to evaluate the quality of scientific research proposals. Modern agricultural science is a very complex endeavor encompassing diverse fields like genomics, proteomics, and computational biology. An advantage of the peer-review process is that funding decisions are made by individuals who possess expertise in these and related areas. While it is widely agreed that Congress should play an important role in establishing the overall research goals of different publicly funded research communities, it is unclear whether it should be involved in the selection of specific research projects. Hence, the view that appropriators possess an informational advantage over scientists turns the conventional wisdom on its head. As evidence of appropriators' perspective, consider Senator Bumpers prepared a statement for the record for the appropriations hearings for fiscal year 1999:

I realize that USDA makes use of peer review and other scientific community based groups to set funding priorities and to determine which projects will get attention and which will not. However, it seems that USDA accepts the premise that only they have access to research stakeholders who have any sense of research priorities. With all due respect to my friends in the research community, let me point out that scientists tend to spend much of their time looking through microscopes. Sometimes, it is important to have a more global view of research priorities which can be lost in the often discipline-specific world of science. I suspect that if you ask an agronomist where the research priorities are, he would likely suggest in the field of agronomy. If you ask the same question of a specialist in animal science, you would get a different answer.³⁸

Concerns have been expressed by other Senators on the appropriations subcommittee about the myopia of the USDA's belief in the superiority of peer-reviewed science. For

^{37.} U.S. Senate, Agriculture, Rural Development, and Related Agencies Appropriations for Fiscal Year 1993 (Washington, DC: Government Printing Office, 1992), 233.

^{38.} U.S. Senate, Agriculture, Rural Development, and Related Agencies Appropriations for Fiscal Year 1999 (Washington, DC: Government Printing Office, 1999), 131.

example, Senator Thad Cochran (R-MS), in response to the USDA's proposal to terminate funding for most special research grants, replied:

[H]ave you [USDA] assessed the implications of what the practical results of all this would be in terms of benefits for production agriculture? ... What are the practical consequences? What if we just approved that and shocked the heck out of you, the President, and the people who are responsible for submitting this ridiculous proposal to the Congress? What if we just shocked you and said, OK. Would you bear the responsibility for it? Would you go out and explain to people what this means in practical terms? What does it mean?³⁹

A similar sentiment was expressed by Senator Slade Gorton (R-WA), who submitted the following question to the USDA on special grants:

The [special] research grants are all but zeroed out in CSREES's [Cooperative State Research, Education and Extension Service] budget. Does USDA understand the importance of regional research? For example, rice research cannot be conducted in Washington state just as apple research cannot be conducted in Arkansas. Does CSREES understand the importance of NOT nationalizing research programs?⁴⁰

These quotes illustrate that members of the appropriations subcommittee truly believe that they have an informational advantage over the scientific community when it comes to decisions about the distribution of funds across various agricultural research proposals. This provides appropriators with the justification to earmark funds for projects within their districts.

CONSEQUENCES OF THE SPECIAL GRANTS PROGRAM

Earmarked special research grants have clearly come to play an important role in the USDA's extramural research budget. While earmarking has been a political boon to appropriators and certain scientists, since the early 1970s, the scientific priorities by established by the special grants program have been questioned by a number of groups. Indeed, for the last 30 years, the entire process of earmarking agricultural research has come increasingly under attack.⁴¹

Perhaps the most vocal and persistent critic of the special grants program has been the National Research Council (NRC) of the National Academy of Sciences. Even though the special grants program is small relative to the entire USDA budget, the NRC has nevertheless published five reports, each of which has lamented the lack of peer review

^{39.} Ibid., 169–170.

^{40.} Ibid., 436.

^{41.} For a broader perspective on the politics of earmarked science in America, see James D. Savage, *Funding Science in America; Congress, Universities, and the Politics of the Academic Pork Barrel* (Cambridge, UK: Cambridge University Press, 1999).

and the rise of earmarked research at the USDA's Cooperative State Research Education and Extension Service (CSREES). For instance, in the Pound Report, the National Academy wrote:

A serious hazard here is decision without adequate information and judgment. Allocations for research limited to a given commodity [crop] may become so large as to create an imbalance that will lead to lower overall scientific quality. Perhaps a more serious disadvantage, however, is the earmarking of money for research that no one can define or for which no scientists are equipped or interested. It is unlikely in this case that the money will be effectively spent.⁴²

The National Academy is not the only group within the scientific community that has criticized the special grants program. Indeed, many other groups have encouraged the USDA and its congressional supporters to rely more on peer-review mechanisms for distributing research funds. For example, the *Report of the Research, Education, and Economics Task Force of the USDA* (otherwise known as the Danforth Report of 2004) as well as *Science for Agriculture: Report of a Workshop on Critical Issues in American Agricultural Research* (the so-called Rockefeller Report) both argue that the special grants program is ineffectual and promotes poor science that focuses on very narrow research issues.⁴³

There is ample evidence to indicate that special grants are of marginal value. Yet they persist. Why does Congress continue to fund such a program? The answer is that appropriators clearly benefit from its continued existence because it allows them to bring pork home to their districts. Moreover, as detailed earlier, appropriators have the power to do this. Because grants can be targeted to particular research projects, appropriators have an incentive to procure special grants for their districts because they can claim credit for making this money available for a local research project.⁴⁴ Credit claiming is a very powerful reelection tool because it allows incumbent candidates to demonstrate what they have done for their constituents. Thus, we should expect the persistence of the special grants program because appropriators have the incentive and the power to ensure that it continues.⁴⁵

Clear examples of credit claiming by agricultural appropriators in the context of the special grants program abound. Consider what Senator Bumpers of Arkansas had to say about the germplasm center in his state:

I had to fight like a saber-toothed tiger to get the rice germplasm center put in Stuttgart, AR, where about 43 percent of the rice in this country is grown, because it was going to go to Idaho,

^{42.} National Research Council, Report of the Committee on Research Advisory, 23.

^{43.} See Research, Education and Economics Task Force. See also Rockefeller Foundation, *Science for Agriculture: Report of a Workshop on Critical Issues in American Agricultural Research* (New York: Rockefeller Foundation, 1982).

^{44.} Mayhew, 52–53.

^{45.} Indeed, the evidence presented in Table 2 demonstrates that appropriators are the primary beneficiaries of the special grants program.

which did not have one single rice plant, simply because they had another germplasm center out there. 46

Senator Bumpers was also quite enthusiastic about the special grant funding the Dale Bumpers Small Farm Research Center:

And I think about the poultry center for excellence, which will become and is becoming one of the greatest scientific centers on increased production, safety, and everything of poultry—I will not belabor the point, but Dr. Horn was just down in Boonville, AR, at the Dale Bumpers Small Farm Research Center and saw for himself the kind of really magnificent work that research center is doing.⁴⁷

Thus, because of the electoral incentive that they face, appropriators have every incentive to deliver special grants to their districts and claim credit for them.

The persistence of the special grants program has had other consequences. While social rates of return on agricultural research in general remain very high, overall funding for agricultural research has been largely stagnant for the last 20 years.⁴⁸ Between 1983 and 2003, the USDA's research budget increased by only 0.7 percent per year in real terms. This is in sharp contrast with the research budgets of the NIH and the NSF, which grew at average annual rates of 5.37 and 2.43 percent, respectively, over the same period.⁴⁹ These numbers indicate that Congress as a whole is reluctant to increase federal funding for research at the USDA. A likely explanation for this reluctance is that members of Congress simply do not trust the appropriations process for agricultural research. As discussed earlier, there is a widespread consensus that earmarked special grants do not support good science. Indeed, in reading the National Academy reports, it is hard to escape the impression that the persistence of this program has tainted the USDA's reputation as a research agency. Accordingly, both the president and the majority of legislators who are not on the appropriations subcommittee for agriculture are comfortable with limiting the growth of the agricultural research budget in order to contain the effects of this program, even though the social benefits of increased funding for agricultural research are substantial.

Finally, the process surrounding the special grants program is at odds with the majoritarian principles that underlie congressional decision making. Because appropriators can wait until the end of the appropriations process before explicitly including special grants in appropriations legislation, the rest of Congress has no opportunity to check the actions of appropriators unless it is willing to pay the enormous political cost of rejecting the overall agricultural appropriations bill. This conflicts with the thrust of budgetary

^{46.} U.S. Senate, Agriculture, Rural Development, and Related Agencies Appropriations for Fiscal Year 1998 (Washington, DC: Government Printing Office, 1998), 698.

^{47.} Ibid., 698.

⁴⁸ For estimates of the social rates of return to agricultural research, see Bruce L. Gardner, *American Agriculture in the Twentieth Century: How It Flourished and What It Cost* (Cambridge, UK: Cambridge University Press, 2002), 184–185.

^{49.} See Research, Education, and Economics Task Force, p. 52.

reform since the 1970s, whose goal has been to limit systematically appropriators' discretion and to make the process more transparent. As the *Federalist Papers* make clear, the American system of government was created with checks and balances in mind. Checks and balances arise because of a separation of powers and the creation of veto points within Congress. While committees have property rights, the ability of other members of Congress to offer amendments furnishes a check on the power of all committees. Owing to the particular way in which the appropriations process works with respect to earmarked special grants, appropriators can circumvent these veto points and short circuit the democratic process.

CONCLUSION

The literature on distributive politics assumes that logrolling is the basic mechanism through which pork-barrel policies are delivered. As we have shown, this is not the only way that legislators can earmark funds for narrow projects that benefit their constituents at the expense of society as a whole. In the context of agricultural research, appropriators have an opportunity and an incentive to earmark funds for local projects without having to form a majority logroll with the rest of Congress. This allows appropriators to claim credit in their districts for bringing the pork home, increasing the likelihood of re-election. Because these earmarks are not individual line items in appropriations legislation, they do not have the force of law; therefore, it is necessary for appropriators to coerce the USDA to implement these research projects. We show in this paper that appropriators are able to secure the USDA's cooperation because they are able to use the appropriations process to punish the USDA if it fails to execute these earmarks. Hence, this paper elucidates how property rights, agenda control, and the appropriations process combine to present appropriators with an opportunity to circumvent majoritarian principles to further their own political goals.

We also show that the incentives created by this special grants system have had significant implications for the quality of science funded through the USDA's extramural research portfolio. Numerous independent groups have been skeptical of the mechanism through which special grants are allocated; these same groups have also been critical of the quality of the science that special research grants support. As a consequence, the reputation of the USDA as a research agency has been called into question and Congress as a whole has been unwilling to increase the agency's research budget, even though the social rates of return to agricultural research remain very high and the budgets of other research agencies have expanded. Therefore, it is not unreasonable to conclude that the special grants program, while a boon to appropriators, has been costly to science and the USDA.

NOTES

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APPENDIX 1. PUBLIC LAW 89-106

AN ACT

To facilitate the work of the Department of Agriculture, and for other purposes.

Sec. 2. The Secretary of Agriculture is authorized to make grants, for periods not to exceed five years' duration, to State agricultural experiment stations, colleges, universities, and other research institutions and organizations and to Federal and private organizations and individuals for research to further the programs of the Department of Agriculture. Each recipient of assistance under this section shall keep such records as the Secretary shall prescribe, including records that fully disclose the amount and disposition by such recipient of the proceeds of such grants, the total cost of the project or undertaking in connection with which such funds are given or used, and the amount of that portion of the costs of the project or undertaking supplied by other sources, and such other records as will facilitate an effective audit. The Secretary of Agriculture and the Comptroller General of the United States or any of their duly authorized representatives shall have access for the purpose of audit and examination to any books, documents, papers, and records of the recipients that are pertinent to the grants received under this section.

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