The Naked Emperor

Politics without Romance in The Calculus of Consent

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Published more than a half-century ago, *The Calculus of Consent: Logical Foundations of Constitutional Democracy* (Buchanan and Tullock 1962) is one of a handful of pathbreaking contributions to the then contemporary literatures of economics and political science that launched the public-choice research program and its subfield of constitutional political economy.[1] It has remained in print ever since, most readily available nowadays as volume 3 of *The Collected Works of James M. Buchanan* (Buchanan and Tullock [1962] 1999) and as volume 2 of *The Selected Works of Gordon Tullock* (Buchanan and Tullock [1962] 2004).[2] The *Calculus* was one of the main works cited in awarding the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel to James McGill Buchanan in 1986.

The purpose of this article is to summarize the main lessons one can learn by reading (or rereading) *The Calculus* and to apply those lessons to the twenty-first

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1. Six other classics are Downs 1957; Riker 1962; Arrow [1951] 1963; Olson 1965; Niskanen 1971; and Black [1958] 1987, collecting articles Duncan Black published in the 1940s and 1950s.

2. For this essay, we used the 1965 edition published by Ann Arbor Paperbacks, and all page references are to that edition.

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century's particular circumstances of time and place. As will become apparent, Buchanan and Tullock laid out three foundational principles that have guided the public-choice scholars who followed their lead: (1) *methodological individualism,* the idea that the outcomes of decisions made collectively must begin with individual actors because only individuals (and not groups) make choices; (2) *behavioral symmetry,* insisting that the same behavioral model of human action must apply to all decision makers regardless of the institutional setting (public or private) in which they interact; and (3) *politics as exchange,* meaning that the analysis of collective decisions properly focuses on interpersonal trading to capture mutual benefits, not on the optimization of predetermined theoretical objective functions (see also Buchanan 1964).

It is important to emphasize at the outset that *The Calculus* was concerned not with understanding the results of collective decisions on ordinary, day-to-day political issues, such as whether to allow same-sex marriages, to legalize the consumption of marijuana for medical or recreational purposes, to raise or lower tax rates, or to expand or contract spending on defense, entitlement programs, or any other public-sector budgetary line item. Rather, Buchanan and Tullock thought deeply about the rules under which those decisions (and many others) would be made if assigned to the collective-choice domain instead of being left in the hands of individuals.[3] In so doing, they developed what essentially is a Madisonian perspective on government in which rational individuals agree unanimously behind a "veil of ignorance" or "veil of insignificance" on the constitutional provisions that will constrain the popular passions both of the people and of their elected representatives in order to avert the tyranny of the majority that the Founders feared above all.[4]

Using the theoretical construct of the "veil of insignificance" and the classic behavioral assumptions of rational-choice theory, Buchanan and Tullock were able to explain certain regularities in the structure of democratic political systems without resorting to the naive assumption of benevolence among public officials then pervading both popular and academic discourse. By conceptualizing political decision-making processes as rules designed to minimize the sum of decision-making costs and the external costs imposed by winning coalitions on minorities (discussed later), *The Calculus* provides insights into the properties of logrolling (vote trading), bicameral legislatures, representative government, norms against explicit vote buying, and many other institutions familiar to students of democratic government.

3. "Collective action is viewed as the action of individuals when they choose to accomplish purposes collectively rather than individually, and the government is seen as nothing more than the set of processes, the machine, which allows such collective action to take place" (Buchanan and Tullock [1962] 1965, 13).

4. James Madison writes in *Federalist No. 10* that "[a] common passion or interest will, in almost every case, be felt by a majority of the whole . . . and there is nothing to check the inducements to sacrifice the weaker party, or an obnoxious individual. Hence it is, that democracies have ever been spectacles of turbulence and contention; have ever been found incompatible with personal security, or the rights of property; and have, in general, been as short in their lives, as they have been violent in their deaths" ([1787] 2001, 46).

The Method of *The Calculus*

The methodology underpinning Buchanan and Tullock's analyses in *The Calculus* is now accepted widely by public-choice economists and rational-choice theorists more broadly. Indeed, rational-choice approaches to the study of politics now dominate the political science literature, almost wholly displacing the discipline's earlier descriptive and largely normative methods. At the time of publication, however, the conceptual framework of *The Calculus* was a novel and jarring departure from that adopted by democratic theorists circa 1960.

James Buchanan was trained as an economist at the University of Chicago, studying and writing his doctoral dissertation there under his influential mentor Frank Knight (Buchanan 2007). Gordon Tullock held a law degree from Chicago; he was proud of having taken only one quarter-long course in economics (from Henry Simons) while an undergraduate at the same institution, often remarking later that a single course surely was enough for anyone to master the principles of economics (Shughart and Tollison 2016). Although Buchanan (1987) called Tullock a "natural economist,"[5] the two approached their joint project from distinct perspectives, as can be seen on reading their separately signed appendices to *The Calculus*.[6]

The Calculus lays out "a theory of collective choice" (Buchanan and Tullock [1962] 1965, 3), to be separated analytically from the theory of individual choice in ordinary market settings studied by economists. In the former, the costs and benefits of any decision or choice are shared by (two or more) decision makers;[7] in the latter, costs and benefits by and large are borne directly by a single actor. Collective choices require agreement by the members of the collective before any action can be taken. A key contribution by *The Calculus* is to recognize that groups of decision makers, whether conceived of as "the state," voters, legislatures, committees, social classes, or any other body, are not unitary actors with preferences and motivations "independent of the individual human beings claiming membership" in the group (Buchanan and Tullock [1962] 1965, 11). So the analysis of collective choices must start not with an organic group possessed of a single mind but with the preferences and objectives of the group's individual members, each of whom is "likely to have different aims and purposes for the results of collective action" (4). If the group itself is not monolithic—has no "general

5. Although trained in Chicagoan "price theory," Buchanan did not apply that label to himself: "I am not, and have never been, an economist in any narrow meaning" (2007, 17, 39–40).

6. Among other things, Buchanan's appendix 1 in *The Calculus,* titled "Marginal Notes on Political Philosophy" (Buchanan and Tullock [1962] 1965, 307–22), distinguishes sharply between the "classical conception" of choices taken collectively, which involves somehow identifying the people's "will," and the "individualistic approach or method" adopted in *The Calculus,* which "tends to obliterate any logical distinction or difference between the 'public' and the 'private' sectors of human activity" (316). Tullock's appendix 2 (323–40), "Theoretical Forerunners," locates "the true intellectual roots" of *The Calculus* in "statistics, game theory, and modern decision theory" (323). Indeed, Tullock was one of the first scholars ever to apply concepts from those disciplines to what he called "the strict theory of politics" (323).

7. "The chooser-voter will, of course, recognize the existence of both the benefit and the cost side of any proposed public [i.e., collective] action, but neither his own share in the benefits nor his own share in the costs can be so readily estimated as in the comparable market choices" (Buchanan and Tullock [1962] 1965, 38).

will"—the problem then becomes how to aggregate or combine individual preferences, which are assumed to be "rational" in the economic sense,[8] into a collectively taken choice. That is the *methodological individualism* of *The Calculus*.[9] It therefore becomes obvious, although it was not necessarily obvious prior to the book's publication, that collective-choice outcomes hinge on the "specific rule" adopted for aggregating or combining individual group members' preferences (Buchanan and Tullock [1962] 1965, 35). Will collective choices be taken by one person (i.e., a dictator), or is agreement by a plurality, a simple majority, a supermajority, or *all* of the group's members (i.e., unanimous consent) required? It turns out, as we shall see, that collective-choice outcomes depend critically on the decision-making rule in place. And, except for the limiting cases of dictatorship and unanimity, "no longer is there a one-to-one correspondence between individual choice and final [collective] action" (Buchanan and Tullock [1962] 1965, 37).

A second fundamental principle of *The Calculus* is to assume "man to be a utility-maximizer in both his market and his political activity" (Buchanan and Tullock [1962] 1965, 23). That assumption of *behavioral symmetry* stood in sharp contrast to the mindsets of orthodox political scientists, who took it for granted that individuals, once faced with choices beyond the pale of market institutions, would be animated by behavioral objectives other than their own self-interests. More to the point, politicians and bureaucrats were conceived of as putting aside the narrow priorities of *Homo economicus* in favor of being guided principally by the "common good" (Buchanan and Tullock [1962] 1965, 100)—that is, this mindset followed "the presumption that political agents respond to considerations of 'public interest' rather than to incentives imposed on them by constituents" (Buchanan 2007, 11). Buchanan and Tullock's (1962) insistence that all human behavior—in or out of collective-choice settings—ought to be explained by the same rational-choice model drew sharp criticism, but it closed the behavioral gap that had plagued (and in many quarters still plagues) the analysis of politics.[10]

"Collective action must be beneficial to all parties" (Buchanan and Tullock [1962] 1965, 24). And, to reiterate, collective action requires *agreement* (46) among the diverse individuals responsible for choosing the course of action to be pursued.

8. "[T]he individual is guided by the desire to maximize his own utility and . . . different individuals have different utility functions" (Buchanan and Tullock [1962] 1965, 25–26).

9. Mancur Olson (1965) fruitfully exploits the same approach in his analysis of the determinants of successful and unsuccessful lobbying for political favors by special-interest groups in democratic polities.

10. "No one seems to have explored carefully the implicit assumption that the individual must somehow shift his psychological and moral gears when he moves between the private and social aspects of life. We are, therefore, placed in the somewhat singular position of having to defend the simple assumption that the *same* individual participates in both processes against the almost certain onslaught of the moralists" (Buchanan and Tullock [1962] 1965, 20, emphasis in original). Buchanan observes that a typical media reaction to the announcement of his 1986 Nobel Prize was that "any fool knows that public choosers seek to promote their own interests" (2007, 165). More thoughtful critics worried that widespread acceptance of "cynical" public-choice principles would undermine democratic processes (see Brennan and Buchanan 1988).

Reaching such agreement implies treating politics as an *exchange process*—"horse trading" or compromise, if you will—rather than as either the top-down decisions of the elected representatives of the "people" or the maximization of some hypothetical social welfare function that aggregates the preferences of the collectivity's members in a way that preserves the transitivity (or consistency) property of an individual's utility function.[11] Exchange, in turn, "immediately calls attention to the institutional structure of political decision making" (Buchanan 2007, 74), shifting it away from the economist's usual preoccupation with the "optimal" allocation of resources under scarcity conditions.

In short, *The Calculus* explains the sharp differences between the outcomes of market processes and the outcomes of political processes by reference to differences in the institutions (incentives and constraints) within which decisions are made rather than to the motivations of the individuals faced with making those choices.

The Economic Logic of Constitutional Democracy

Buchanan and Tullock's primary aim in *The Calculus* was to explore "the individual's choice among alternative rules for reaching political decisions, rules to which he, along with others, would be subject to in subsequent periods of operation" (Buchanan 2007, 13). To do so, they constructed a two-stage model of collective action. In the first, preconstitutional stage, individuals choose the rules of the political game behind a "veil of uncertainty," a thought experiment paralleling the work of John Rawls (1971). Such rules would constrain their choices in the second stage of "in-period" or day-to-day politics. The "veil" construct mutes the narrow self-interests of the rule choosers because no individual can "identify how any particular rule will precisely affect his own position in subsequent rounds of play" (Buchanan 2007, 13). As such, "the individual will find it advantageous to agree in advance to certain rules (which he knows may work occasionally to his own disadvantage) when the benefits are expected to exceed the costs" (Buchanan and Tullock [1962] 1965, 7). The model's suppression of *Homo economics* at the preconstitutional stage gains traction when it is recognized that "collective choice is a continuous process, with each unique decision representing only one link in a long chain of social action" (Buchanan and Tullock [1962] 1965, 37), "with chance or stochastic elements entering at almost every cut in time" (Buchanan 2007, 37). Analogies to rule choices in ordinary games, such as poker, are obvious:

11. Buchanan and Tullock's project "challenged the whole enterprise that aimed at constructing a 'social welfare function.'" Their "simple query was: Why should anyone expect that separate individual preferences could be aggregated into a consistent social ordering?" (Buchanan 2007, 208). Kenneth Arrow ([1951] 1963] famously proved axiomatically that such a consistent social ordering is "impossible" in the absence of a dictator, whose own choices become "society's" choices. *The Calculus* does "not employ any 'social-welfare function' to bring some organic conception [of society] in by the back door" (Buchanan and Tullock [1962] 1965, 13).

When the rules are being determined, "who can know how the cards will fall?" (Buchanan 2007, 13).

Because "it is rational to have a constitution" (Buchanan and Tullock [1962] 1965, 81)—that is, a set of rules governing postconstitutional collective choices—what decision-making process governs rule choices at the preconstitutional stage? Influenced by Knut Wicksell (1896),[12] *The Calculus* adopts unanimous consent as its gold standard because only unanimity guarantees Pareto optimality, a situation in which no one can be made better off without someone else being made worse off. In other words, the requirement of unanimous consent means that a rule proposed at the constitutional stage objectionable to one person would be vetoed by that person—everyone must agree to the rule for it to be approved.[13] The set of unanimously agreed-to rules (the constitution) essentially determines which activities or decisions will remain solely in the hands of private individuals, will be assigned to "voluntary, but jointly organized behavior," or will be carried out by "collective or government action" (Buchanan and Tullock [1962] 1965, 51). Put differently, what will be the sphere of voluntary private human action, and what will be the domain of coercive collective action?

A Cost Approach to Collective Choices

One of the centerpieces of *The Calculus* is its "cost approach" to answering those important questions. Buchanan and Tullock divided those costs into two parts so as to determine the optimal collective decision-making rule, also known as the k-majority rule, where k is defined as the fraction of the group, N, whose agreement is pivotal, and n is the number of individuals in the decisive subset of N. In short, $k = n/N$. Note that n may be 1 (dictatorship), N (unanimous consent), or any number of people between 1 and N; crucially, all N individuals must comply with the k-majority's decisions.

The optimal k-majority minimizes the sum of collective *decision-making costs* and the *external* cost of such decisions. Decision-making costs—the time, effort, and expense of negotiating a collective agreement—are smallest with dictatorship ($k = 1/N$) because in that case one person is empowered to decide for all; no preference aggregation therefore is necessary: the dictator's preferences become "society's" preferences. Decision-making costs then rise continuously as n rises and reach a maximum with a rule of unanimity ($k = N/N = 1$) because in that case if one person withholds his or her consent (i.e., vetoes the choice of $N-1$ others), no collective action can be taken.

12. Buchanan himself translated a portion of Wicksell's doctoral dissertation from German into English as "A New Principle of Just Taxation" (Wicksell 1958).

13. Unanimous consent, as a decision-making rule, is equivalent to insisting that the individuals advantaged by a particular collective choice compensate those who are disadvantaged by it, "if compensation is interpreted as that payment, positive or negative, which is required to secure agreement" (Buchanan and Tullock [1962] 1965, 91). Moreover, "without side payments, there is nothing in any voting rule to insure [*sic*] that collective decisions will move the group to the Pareto-optimality surface or that such decisions will keep the group on the surface if it is once attained" (188).

The *external costs of collective decision making* are the reductions in welfare that the members of the decisive majority (which with plurality rule may be less than half of N) impose on others disadvantaged by the collective choice. Those losses may be pecuniary (e.g., the minority is subject to disproportionate taxation to finance programs or policies benefitting the majority) or nonpecuniary (e.g., the majority adopts a social policy to which the minority objects strongly). In any case, external costs are highest with dictatorship (one person chooses for all) because the dictator indulges his or her own preferences without regard for the preferences of the regime's subjects. External costs then decline continuously as k increases, falling to zero under a unanimity rule because any person harmed by the proposal, absent appropriate compensation, will veto it; the proposal thus is defeated.

The total expected costs of collective choice are represented by the (vertical) summation of decision making and external costs, yielding a U-shaped curve with a unique minimum at the optimal k-majority (see Buchanan and Tullock [1962] 1965, 71, fig. 3).[14] Several important implications follow from the cost model presented in *The Calculus*. First, nothing in the analysis implies that k^*—the optimal collective-decision rule—is a simple majority (approval by $N/2 + 1$).[15] Second, the cost model does not imply that the same rule is optimal for all collective decisions (Buchanan and Tullock [1962] 1965, 73). The configuration of the decision and external costs of collective choice determine k^* on a case-by-case basis: if the costs of reaching agreement are high relative to external costs, simple majority rule may be cost minimizing, or perhaps even a less-inclusive plurality rule may then be optimal. However, if decision costs are low relative to external costs, agreement by a more inclusive "qualified majority" (e.g., a k equal to two-thirds or three-quarters) may be necessary to minimize the total costs of collective decisions. Third, Buchanan and Tullock's cost model speaks to the proper domain of collective choice, drawing a line between it and the sphere of private action: when the external costs of collective decisions are very high—as, for example, is true of fundamental civil rights, such as freedom of speech, of religion, of peaceable assembly, or of the press—it may be optimal to assign action to the private, voluntary sphere rather than subjecting the collective decisions to democratic decision making at all.[16] Last, independently of decision costs and the motivations of a collectivity's individual

14. Total expected collective-choice costs are minimized at the point where the marginal increase in decision costs occasioned by adding one more person to the decisive majority is just offset by the marginal decline in external costs.

15. "On a priori grounds, there is nothing in the analysis that points to any uniqueness in a rule that requires a simple majority to be decisive. . . . [It] would seem very improbable that this rule should be 'ideally' chosen for more than a very limited set of collective activities" (Buchanan and Tullock [1962] 1965, 81). Put differently, "at best, majority rule should be viewed as one among many practical expedients made necessary by the costs of securing widespread agreement on political issues when individual and group interests diverge" (Buchanan and Tullock [1962] 1965, 96).

16. Limiting the range and extent of collective choice is one of the key points that some of Buchanan and Tullock's critics miss (e.g., MacLean 2017): a well-designed constitution not only establishes rules for collective decision making but also provides much more inclusive rules for issues in domains more vulnerable to prohibitively high external costs—for example, the U.S. Constitution's First Amendment, which reads "Congress shall make no law . . . ." Furthermore, contra Nancy MacLean (2017), "each person counts equally" in collective decision-making processes.

members, any rule falling short of unanimous consent will impose external costs on people who are not in the decisive majority. Because those costs are apt to be smaller if the group by which collective choices will be taken is smaller, *The Calculus* supplies a theoretical justification for the decentralization of collective decision making—that is, a federal system of government (Buchanan and Tullock [1962] 1965, 113–14).

The development of the foregoing economic logic for nonunanimous decision rules represents one of *The Calculus*'s major theoretical advances, even though some of those decisions will be "'non-optimal' in the Pareto sense" (Buchanan and Tullock [1962] 1965, 94). *The Calculus* applies similar logic to some additional characteristics of modern democratic governments.

Some Extensions of the Model

Because the participation of all citizens in collective decisions (direct democracy) generally is infeasible beyond the borders of small towns, democratic polities elect representatives to make choices on their behalf (Buchanan and Tullock [1962] 1965, 213). Representation delegates collective decision making to smaller groups of legislator-choosers, but the basic decision-making and external-cost approach of *The Calculus* applies to the analysis of legislative outcomes: the elected representatives' preferences (which may or may not mirror their constituents' preferences) are diverse and must be aggregated somehow to yield approval for or defeat of legislative proposals. The rules under which legislative voting takes place (simple or qualified majority) matter a great deal; so, too, do the basis of representation (population, geographical, or functional), whether the legislature is unicameral or bicameral, and the institutional conventions under which legislators can trade votes ("logroll") on the separate issues before them.

Buchanan and Tullock were among the first political economists of the second half of the twentieth century to think deeply about the influence of special-interest groups on political processes ([1962] 1965, 283–95). Because such groups tend to have intense preferences regarding one or a few particularistic policy proposals, are well organized, and therefore have comparative advantages in bringing pressure to bear on legislators driven by electoral imperatives, "the behavioral premise that calls for the legislator to follow a selfless pursuit of the 'public interest' or the 'general welfare' as something apart from private economic interest is severely threatened" (Buchanan and Tullock [1962] 1965, 283). To return to the beginning of this essay, *The Calculus* here echoes the concerns expressed by James Madison in *Federalist No. 10* about the malignant influence of "faction" on democratic polities.[17]

17. Given the theory and considerable evidence of pressure-group influence produced by the several generations of public-choice scholars schooled in the analytical lessons of *The Calculus,* it might be said that most democratic political systems in modern times have become "tyrannies of the minority."

Modern Relevance

James Buchanan ([1979] 1999) once called the public-choice research program "politics without romance."[18] By applying economic reasoning to the study of democratic political processes, *The Calculus* launched public choice and its subfield of constitutional economics as areas of scholarly study under the umbrella of "Virginia political economy" (Buchanan 2007, 93–107). Since its publication in 1962, *The Calculus* has accumulated roughly 12,500 citations on Google Scholar. The book's continued relevance therefore ought to be obvious. We nevertheless conclude with a snapshot of the literature it has spawned and of a few contemporary issues to which it speaks.

Buchanan is known as a "contractarian" in terms of his views on the emergence of the state as a governing institution.[19] In *The Calculus,* he and Tullock model "the individual's choice among alternative rules for reaching political decisions" (Buchanan 2007, 13); those rules become a constitution. The constitutional "moment" takes place behind a Rawlsian veil of uncertainty, "opening up the potential for [unanimous] agreement on rules . . . in accordance with some criterion of generality rather than particularity" (Buchanan 2007, 14).

Buchanan and Tullock's two-stage model of politics is conceptual. Is it realistic? A cursory review of the notes taken by James Madison at the Constitutional Convention convened in 1787 clearly demonstrates that the delegates brought with them to Philadelphia knowledge of their own positions within the income distribution and the particular interests of the states they represented (Beard [1913] 2019). Agreement eventually was reached nonetheless—not by unanimous consent, of course, but by a qualified majority of those in attendance. More recent research lends support to the "constitutional-contractarian methodological framework" of Virginia political economy (Buchanan 2007, 106). Early empirical applications focused on the rules governing homeowners' and condominium associations (e.g., Sass 1992). Constitutional economics also has been found apt in explaining the "pirate codes" of piracy's "Golden Age" (1716–26) (Leeson 2009) as well as the governing rules of prison gangs (Skarbek 2014) and Hell's Angels (Piano 2017).

Much of the second volume (about 430 pages) of the recently published *Oxford Handbook of Public Choice* (Congleton, Grofman, and Voigt 2019) is devoted to constitutional political economy. The essays in that volume cover a broad set of issues relevant to current debates about policy and collective-choice rules, ranging from alternative ways of counting votes and judicial review of legislation to parliamentary

18. More recently, Buchanan wrote that "my surprise is . . . at the failure of other economists to have acknowledged the simple and the obvious. . . . I have felt embarrassment of sorts at being placed in the role of telling my far more clever [*sic*] peers that the emperor really has no clothes" (2007, 154–55).

19. "Almost by definition, the economist who shifts his attention to political process while retaining his methodological individualism must be contractarian" (Buchanan 2007, 14–15).

versus presidential systems, the logic of revolutions, and the supranational governing institutions of the European Union (on the last, also see Vaubel 2013).

The Calculus merits a position at center stage in proposals to abolish Electoral College voting for U.S. presidential candidates or to adopt state-level changes in the method of allocating such votes (see Miller 2012 for a comprehensive analysis of the Electoral College). For example, the State of Oregon's legislature decided in 2019 to mandate that its electors cast their ballots on behalf of the candidate winning the national popular vote, thus overriding Oregonians' own presidential preferences. Voter turnout rates could be affected positively or negatively by that policy change (Cebula 2001), but Buchanan and Tullock (1962) remind us that the Founders never intended the United States to be a democracy.[20] A constitutional republic is supposed to be cumbersome and slow to change because it operates under rules that limit the range and extent to which the collectivity can impose its preferences on those who disagree with—and suffer the costs of complying with—the collective's "will." "The whole problem analyzed here [i.e., simple majority: $k = N/2 + 1$] can be eliminated by changing the rule which compels the minority to accept the decisions of the majority without compensation" (Buchanan and Tullock [1962] 1965, 145).

Constitutions lay out the rules under which the game of politics is played. If those rules can be revised easily, and if the Constitution is treated as an organic document that evolves at the whims of ever-changing majorities, it is *not* a set of rules limiting the sphere of collective action and of affording maximal scope for private action, as the Founders and Buchanan and Tullock envisioned it to be.

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20. As a matter of fact, at the time of the founding, the only popularly elected federal public officials were the members of the House of Representatives.

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