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ORIGINAL PAPER

On the extraordinary scholarly life and times of Gordon Tullock

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Abstract Gordon Tullock, who passed away at the age of 92 on November 3, 2014, ranks justly near the top of the list of the "founding fathers" of the public choice research program. Most widely known in the academy as coauthor of *The Calculus of Consent* (Buchanan and Tullock 1962), Professor Tullock was not named, unfairly in our joint opinion, as co-recipient of James Buchanan's 1986 Nobel Prize in Economic Sciences. A good case nevertheless can be made that Gordon earned Nobel laurels on his own account for groundbreaking contributions to the literatures on, among other topics of scholarly study, rent seeking, autocracy, bureaucracy, war and revolution, law and economics and bio-economics. This essay celebrates Gordon Tullock's major influences on the field of public choice, including his launching of *Public Choice*, the journal for which both of us have served as editors, and his impacts on scholars working at the many and obviously fruitful intersections of economics and political science.

Keywords Gordon Tullock · Major contributions · Editorship of public choice · Rents and rent seeking · Contests · Contest success functions · Conflicts · Bureaucracy · Autocracy · Law and legal procedure · Non-human societies

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1 Introduction

Gordon Tullock was a modern polymath. Evidently proud of the fact that he had taken only one course in economics (under Henry Simons) as a student at the University of Chicago's Law School (Tollison 1995, p. 355), Gordon thought (and would tell anyone who listened to him) that a one-quarter-long college class was all that anyone needed to master the principles of economics. More coursework may be required of lesser mortals, but it apparently sufficed for Gordon, a scholar once described by his colleague and collaborator James Buchanan (1987) as a "natural economist", that is, like someone born with the innate talent to play shortstop on a Major League Baseball team.

Tullock's long and storied career as a contributor to the many and varied scholarly literatures summarized in what follows began in earnest when he was appointed to a postdoctoral fellowship at the University of Virginia's Thomas Jefferson Center for Studies in Political Economy and Social Philosophy in 1958 (Tollison 1995, p. 355). His professional biography has been sketched many times since, most notably in Brady and Tollison (1991), Rowley (1991b), Rowley and Houser (2012), Shughart (2014) and in the various introductions to the ten-volume *Selected Works of Gordon Tullock*, edited by the late Charles Rowley (2004–2010).[1]

Gordon lectured and wrote incisively and deeply on a wide range topics that later became centerpieces of the research agendas of public choice scholars. Although his seminal rent-seeking insight (Tullock 1967b) and the simple contest-success function he later proposed (Tullock 1980a) stand out in that regard, the breadth of his contributions to the scholarly literatures he fathered are unmatched, as anyone who dips into his *Selected Works* or his curriculum vitae easily can verify.[2] He received an honorary doctorate (LL.D.) from his alma mater, the University of Chicago, in 1992; the Association for Private Enterprise Education's 1993 Adam Smith Award; and was recognized the same year at the annual meeting of the Western Economic Association International in Lake Tahoe. Given his wide-ranging intellectual interests, no one, including the authors of this essay, both of whom were fortunate to have known him well, can do full justice to Gordon Tullock as a man, as a colleague, as the targets of his sharp wit and probing questions about our own work, as well as the beneficiaries of his time, his insights and intellectual energy.

We shall try to do so nevertheless, beginning with Gordon's entrepreneurial efforts in launching on a proverbial shoestring *Papers on Non-Market Decision Making*, the forerunner of the academic journal now called *Public Choice*. The

[1] See also the four remembrances of Gordon by, respectively, Clark and Lee (2015), Congleton (2015), Tideman (2015), and Yandle (2015), all published in March 2015 as volume 162, numbers 3–4, of *Public Choice*. In a private communication with the first-named author of this essay, David Theroux, founder and president of the Independent Institute, described Gordon as "kind and generous". We share that assessment.

[2] A PDF version of Gordon's c.v., current as of October 2000 (containing Gordon's own summary of his career beginning with his appointment to the US Foreign Service) can be downloaded from the website of George Mason University Law School here: publicchoice.info/TullockTales/VitaGT.pdf.

discussion then proceeds by way of a summary of what we see as his major, often groundbreaking contributions to the analysis of conflicts (and conflict resolution), including his seminal rent-seeking insight; books and articles on non-democratic governments, bureaucracies and bureaucratic behavior; the common law versus civil law regimes; and his insights into the behaviors of nonhuman species. The essay ends with some personal observations about Gordon's idiosyncratic influences on our own scholarship.

Readers are forewarned that we will not devote much attention herein to *The Calculus of Consent*. That pivotal 1962 book already has been surveyed in detail many times by many scholars. As we mention briefly below, however, anyone who doubts that Gordon merited recognition as co-winner of James Buchanan's 1986 Nobel Prize is advised to read that volume's preface as well as Gordon's separately signed Appendix 2 ("Theoretical Forerunners").

2 Launching *Papers on Non-Market Decision Making*

Gordon Tullock was an intellectual entrepreneur of the public choice research program on top of his many scholarly contributions to it (Rowley 1991b). As noted above, Gordon began his academic life in 1958 as a postdoctoral fellow at the University of Virginia. Flushed with the initial success of *The Calculus of Consent* (Buchanan and Tullock 1962), a Committee on Non-Market Decision Making—the forerunner of today's Public Choice Society—was formed at the University of Virginia (UVA) soon thereafter. By 1966, Gordon had assembled enough acceptable draft versions of scholarly articles presented at the committee's early meetings or submitted to him by post to publish the first volume of a new journal titled *Papers on Non-Market Decision Making* (Rowley and Houser 2012, p. 16). After learning to his evident surprise that the University of Virginia Press would charge only $700 for the first print run, he planned to edit and produce one such volume annually as a book rather than as a more customary quarterly academic journal (Tullock 1991, p. 130).

UVA's economics department house of cards was then knocked down by administrative decisions there denying Gordon Tullock promotion to full professor on three separate occasions (Rowley and Houser 2012, p. 17).[3] As a result, core faculty members of the Thomas Jefferson Center departed for greener academic pastures—Buchanan to UCLA and Tullock to Rice University in Houston, Texas. Following an invitation extended to him by Charles Goetz, supported strongly by economics department head Wilson Schmidt, Gordon returned to Virginia in 1968 as a full professor on the faculty of Virginia Polytechnic Institute and State University (now "Virginia Tech") in Blacksburg. Goetz, Schmidt and Tullock then convinced Buchanan to join them a year later to form a new Center for Study of

[3] At the end of his postdoctoral fellowship at UVA, Gordon was appointed in fall 1959 to the tenure-track faculty of the University of South Carolina, where he remained until 1962. He returned to UVA as an associate professor that fall; the denial of Gordon's promotion to full professor there apparently was partly spiteful—he apparently had alienated members of UVA's political science department by berating them during luncheons at Charlottesville's Colonnade Club.

Public Choice, established in 1969.[4] Gordon's journal was renamed *Public Choice* about the same time, reportedly at the suggestion of political scientist William C. Mitchell (Simmons 2011, p. xiii).

Gordon served as the editor of *Public Choice* from that point on until May 1990, when he handed the reins over to Charles Rowley and Robert Tollison, the second-named author of this article, who thenceforth became the journal's joint coeditors for North America.[5] (Somewhat earlier, Gordon had named Friedrich Schneider of the Johannes Kepler University in Linz, Austria, as the European editor of *Public Choice* to assist him in handling the growing number of papers submitted for publication from that corner of the globe).

Before that changing of the guard, Gordon did "most of the refereeing himself" (Tullock 1991, p. 132). Tullock adopted that editorial *modus operandi* in part following his disappointment with the process of soliciting and reading the reports of the external referees he had selected personally,[6] but it also allowed him to place his footprint squarely on the profession. Until May 1990, Gordon read every manuscript submitted to his journal and made decisions unilaterally to reject, ask the author to revise and resubmit, or to accept it for publication.[7] With full control of the queue, Gordon was able to monitor and manage the journal's content, activities that displayed his strong bias toward helping launch the academic careers of younger scholars.[8] He explains that bias thusly:

> From time to time, I … decided that some particular subject should be encouraged; hence, I lowered my standards for that particular subject with the idea of making it obvious to bright young assistant professors that this is a particularly easy place to do research which will be published. And, then, as I [received] more articles, I would raise my cutting level again but I have meanwhile changed the total structure of the discipline. (Tullock 1991, p. 138)

Gordon's entrepreneurship is exemplified by the arrangements he made to finance three volumes of *Papers on Non-Market Decision Making* and the first issues of *Public Choice*, which he paid for out of small grants from the National

[4] The University of Virginia thereby earned the dubious distinction of forcing out two members of its economics faculty who later became Nobel laureates, James Buchanan and Ronald Coase. A second mass movement of the Center to George Mason University in Fairfax, VA, took place circa 1983.

[5] To be precise, joint coeditors for the "rest of the world" (i.e., beyond Western Europe), which at the time and for all practical purposes comprised Canada and the United States. See Rowley (1991a) and Shughart (2014) for more details on the transition.

[6] Such disappointment persists even in an age of online processing of manuscripts from initial submission to final editorial decision. The main bottleneck in the system befalls authors and editors when at least one external referee agrees to review a paper, but then misses the deadline for sending in his or her report.

[7] He solicited the advice of other scholars only rarely, usually by walking down the hallway to ask the opinion as to a paper's publishability of one of his colleagues in the Center for Study of Public Choice (Shughart 2014, p. 232).

[8] It is in recognition of Gordon Tullock's penchant for fostering the careers of "bright young assistant professors" that Springer, the current publisher of *Public Choice*, now funds the honorarium for a prize awarded annually to the author(s) of the best paper published in the journal every year by a younger scholar or scholars, the winner having been selected by the editors of *Public Choice* and announced at the annual meeting of the Public Choice Society, convened at various locations traditionally in March.

Science Foundation, fees charged to authors wanting to purchase reprints of their published articles, by taking advantage of the overhead resources of UVA and Virginia Tech, and from time to time digging into his own pocket (Shughart 2014, p. 231). When expenses rose beyond local capacities to defray them, he arranged for a friendly takeover of the journal by Martinus Nijhoff Publishers, then headquartered in Dordrecht, which subsequently was acquired by Kluwer Academic Publishers, also in Dordrecht, and then by Springer, a publisher headquartered in Heidelberg, Germany, with a global presence. Gordon transferred all of his rights to Martinus Nijhoff in the contract he initially negotiated with that publisher. That agreement ever since makes *Public Choice* unique in the world of academic journal publishing insofar as the journal's editors serve at Springer's pleasure and are paid modest honorariums by that company (under 5-year contracts), but it is also true that editorial appointments are influenced strongly, perhaps decisively, by the recommendations of the incumbent editor(s).[9] And unlike other academic journals, *Public Choice* is associated only loosely with its "parent" professional organization, namely the Public Choice Society, which succeeded the Committee on Non-Market Decision Making in conjunction with the journal's rebranding in 1969.

Gordon's colossal influence on the academic journal he launched is evident even now, memorialized by his appearance on the masthead as the "Founding Editor" of *Public Choice*. He not only "changed the total structure of the [public choice] discipline" through his editorial decisions emphasizing or downplaying certain areas of research by scholars working within the field, but, as we shall see, he also contributed mightily to the development of that field. In both of those roles, Gordon remained firmly anchored in the Virginian roots of public choice,[10] which remains true to two overarching ideas pioneered in that state: (1) "methodological individualism", meaning that choices are made by rationally self-interested individual actors, and not in any meaningful sense by monolithic or "organic" groups possessing a single mind, and (2) politics as an exchange process among and between such rational actors.[11]

Gordon's editorship of *Public Choice* was idiosyncratic, governed, as indicated above, by his own wide-ranging interests, but those idiosyncrasies shaped the journal's direction in at least three important ways. First, he published papers that

[9] The editors of *Public Choice* thus choose their successors in the same way as the presidency of the Public Choice Society customarily changes hands. The sole exception to the Society's norm transpired in 2006 when its rank-and-file members, at the suggestion of then-president Steven Brams, voted for the president who served the next two-year term. Voter turnout was abysmally low in that election (Brams et al. 2006). Given his familiarity with Anthony Downs's (1957) model of instrumental voting, low voter turnout would not have been a surprise to Gordon Tullock, who was delighted to proclaim to students and colleagues that he never voted, perhaps with an eye on demonstrating his own economic rationality. (Graffiti in the men's bathroom of the Center for Study of Public Choice on the George Mason University campus proclaims "Tullock votes!" The Society's traditional practice was restored when its "democratically" elected president appointed his successor. Both institutions conceivably are reflected in Gordon's longstanding scholarly interest in dictatorships and monarchies (see below).

[10] The field fathered by James Buchanan and Gordon Tullock therefore sometimes is referred to as Virginia Political Economy (VPE), to distinguish it from important offshoots at the "Rochester [New York] School", most closely associated with the work of political scientist William Riker and his students, and at the "Bloomington [Indiana] School" connected with the workshop established there by the late Vincent and Elinor Ostrom, the last also a Nobel laureate in her own right.

[11] See on the latter theme, see Buchanan (1964) and Shughart and Thomas (2014).

could not find homes at other, better known academic journals (as a matter of fact, he sometimes told authors that he would accept their manuscripts for publication provided that the editors of at least two other journals had rejected them). Second, as a way of generating interest from prospective authors and readers of *Public Choice*, he from time to time published papers he found “interesting”, even if their analytical methods were not fully consistent with the “mainstream” public choice research program.[12] Third, with the same goals in mind, Gordon published papers submitted by graduate students and freshly minted assistant professors, even if they were offered to him in less than scientifically mature form. Gordon did not edit papers as assiduously as the first-named author of this essay and, given the state of the econometric technology of the day, along with his own preference for descriptive rather than formal empirical analyses, the early issues of *Public Choice* tend to be unsophisticated when evaluated in terms of their quantitative firepower.

But one should resist criticisms of Tullock’s editorship at the end of the twentieth century by the standards of academic journal editors at the beginning of the twenty-first. Whatever defects in his management of *Public Choice* can be identified anachronistically should not detract from his evident entrepreneurial success in launching a journal that now is at the top of the list of the most profitable publications on Springer’s social sciences list.

3 Gordon Tullock on rents, rent seeking and contest success functions

Until 1967, the belief was widespread among economists and legal scholars that the welfare costs of monopoly were confined to Arnold Harberger’s (1954) famous deadweight loss triangle. That welfare loss arises in neoclassical price theory from observing that, because a monopolist faces a downward-sloping demand schedule for its product,[13] a smaller quantity of output is produced than would be supplied by a hypothetical textbook industry comprised of perfectly competitive firms. Price consequently exceeds the monopolist’s marginal production cost and allocative efficiency thereby is impaired, not because the seller earns positive (above-normal) profits, but rather because the monopolist does find it profitable to sell units of output for which consumers otherwise would be willing to pay more than it would cost to produce. Potential gains from trade thus remain unexploited; consumer surplus is less than buyers would enjoy under “pure” competition wherein every producer expands output until price is equal to marginal cost and any abnormal short-run profits or losses have been eliminated.

[12] Although the public choice research program is by now fully integrated into the literatures of economics and political science (referred to customarily in the latter field as “rational choice” theories), *Public Choice* still receives a large volume of submissions from authors who fail to take the field’s assumptions and analytical methods to heart.

[13] A pure monopolist, by definition, is the *only* seller of a good or service having no close substitutes, as judged by prospective buyers. We are hard-pressed to think of an actual commercial enterprise, now or in the past, that fits the textbook definition. Neither Standard Oil of New Jersey, Microsoft Corp., nor Google, to name a few purported monopolists, ever controlled 100 % of any relevant antitrust market.

In the standard analysis of monopoly, the seller's profits are treated simply as income transfers from buyers to sellers having no impact on society's welfare, since monopolists, of course, are people, too. But paying attention exclusively to the Harberger triangle proved troubling to scholars and policymakers advocating vigorous governmental intervention (antitrust law enforcement and economic regulation) aimed at ferreting out and then taking steps to protect consumers from the "market failure" associated with monopoly. Crude estimates of the extent of welfare loss in the American economy, "crude" because based on very restrictive assumptions about price–cost margins and other relevant variables, suggested that the total deadweight costs of monopoly amounted to as little as 0.1 percent and no more than three percent of GNP (see Posner 1975). That low, even trivial figure prompted at least one prominent economist earlier to conclude that, "unless there is a thorough reexamination of the tools upon which these studies are founded … some one will inevitably draw the conclusion that that economics has ceased to be important!" (Mundell 1962, p. 622).

Tullock's (1967b) insight, later called "rent seeking" by Anne Krueger (1974), was that alert entrepreneurs rationally would invest real resources (money, time and effort) to gain access to available rents, of which a monopoly profit is one familiar example.[14] But rents are created anytime an industry's output somehow is restricted below the competitive level. Rents can arise naturally in markets served by a single producer of a good or service having no close substitutes;[15] rents arise more commonly when, in exercising its police powers, government intervenes into a market to limit output *artificially* to less than the quantity at which price otherwise would be equal to marginal cost. Examples of such artificial output restrictions abound: they include the protectionist international trade policies (tariffs and import quotas) studied by Tullock and Krueger, professional licensing and certification requirements limiting the entry of suppliers into, among others, the healthcare, legal, accounting and personal grooming industries; public regulation of the prices charged by "common carriers", such as motor carriers, commercial airlines and taxicab operators; and exclusive, governmentally granted franchises for public utilities and for the suppliers of voice, data and video transmission services. The list could be expanded ad infinitum and ad nauseam.

If only one or a few producers of particular goods and services will be granted supply rights in given jurisdictions or geographic areas, the prospect of earning rents elicits competition for privileged access to them. But, unlike the competition that arises in unfettered markets, competition for artificially created rents does nothing to expand the quantity of output available to the consumers of it and thereby lower its price (Buchanan 1980). Any and all resources invested in rent seeking thus are

[14] Other examples include most of the salaries of college football coaches, superstar athletes and headline entertainers, who earn rents because their talents are scarce and their supplies cannot readily be increased or, given current biotechnologies, cloned.

[15] Rents likewise can arise in a perfectly competitive industry, but under constant cost conditions, only in the short run. Because of easy entry into and exit from such industries, rents (above-normal economic profits) or losses cannot persist in the long run. The crucial distinctions between profit-seeking and rent-seeking behavior, including their very different social welfare implications, are discussed in Buchanan (1980).

wasted from society's point of view because such investments determine only the identity of the contest's winner without generating any material benefits for the consumers of the winner's product. In consequence and depending on how the contest is designed, the social costs of monopoly must be gauged, not by the size of Harberger's triangle, but by the trapezoid comprising that triangle plus at least some of the rectangle measuring the value of the total rents on offer (Tullock 1967b).

The contest success function (CSF) initially proposed by Tullock (1980a) assumed that the dollar value of the "prize" (rent) was common knowledge to all "players" (contestants), the number of contestants, N, was fixed (at two or more),[16] all players were risk neutral, and their winning and losing "bids" would not be returned by the contest's organizer, who was assumed to be unbiased and therefore reliably would award the prize to the highest bidder. Under those conditions and assuming further that two contestants, A and B, choose to play the game, A's probability of winning is

$$P_A = \frac{A^r}{A^r + B^r},$$

where the exponent r can be thought of representing the "production technology" that transforms bids into the players' individual chances of winning. (P_B is determined analogously.) If $r = 1$, the contest reduces to a simple lottery. Using numerical analysis, Tullock (1980a, pp. 100, 101) shows that with two players and a prize worth \$100, each player's optimal bid (i.e., the one that maximizes both players' chances of winning simultaneously at 50 %) is \$25.[17] In that setup, rent seeking dissipates only half of the available rent—a total of \$50 is spent to capture \$100. Tullock, however, went on to show that different numbers of players and different values of r can yield even less rent dissipation (if $r < 1$, rents never are fully dissipated, irrespective of the number of contestants), exact dissipation (with two players, each bids \$50 if $r = 2$, for instance), or over-dissipation ($r > 2$ for any number of players, with rent dissipation becoming more extensive as N increases).[18]

As a matter of fact, if one offers to transfer a \$20 bill to the student who submits the highest bid for it in a one-shot classroom game, the total bid in a class enrolling only 12–15 students typically exceeds \$60 and often is greater than \$150, meaning that the contest-organizing instructor can expect to net \$40 (or as much as \$130) if the students are told at the outset that their individual bids will not be refunded. We warn that instructors should not ask students to play such a game and actually

[16] Game-theoretic models of oligopolistic markets, models that have much in common with Tullock's (1980a) analysis of rent seeking, also usually assume that the number of players (firms) is fixed ex ante. See Higgins et al. (1985) for an extension of the Tullock rent-seeking contest that allows players to enter until the available rent is fully dissipated (in potential entrants' ex ante expectations) and for some further analysis of the exponent r in the equation below.

[17] The same 50 % chance of winning could also be "purchased" if each player bids \$50, but such outlays are inefficient in the sense that it would be irrational to double one's bid and still expect to win only half of the available rent.

[18] The extent of rent dissipation, D, in Tullock's model is determined by $D = \frac{Nx}{V} = \frac{N-1}{N}$, where $N > 1$ is the number of contestants; x is player i's bid and V is the value of the contested rent. Setting $r = \infty$ leads to an "all-pay auction" (Hillman and Samet 1987; Hillman and Riley 1989) in which rents are fully dissipated (i.e., $D = 1$) whenever $N \geq 2$.

pocket the difference between the total of the bids and the value of the $20 "prize", except for the purpose of explaining why the optimal individual bid is $0. Retribution from department heads and deans can be anticipated otherwise. Over-dissipation of rents evidently is not just a theoretical possibility.

Tullock's (1980a) model of rent seeking has been embellished and extended many times since.[19] Although that model was presented (as it has been above) in terms of cash bids for a prize of predetermined and known value, monetary transfers (bids or bribes paid to the contest's designer) do not add to the social cost of monopoly or any other artificial output restriction; income simply is redistributed away from the rent seekers into the pockets of the contest's organizer. The most important implication of Tullock's model is instead found in contests that require rent seekers to invest real resources (time and effort) into winning the prize on offer. Those real resources carry with them opportunity costs that deflect rent seekers from devoting attention to productive activities promising to enhance society's total wealth toward activities that are privately beneficial, in an expected value sense, but socially wasteful. Studying to pass an exam to fill a limited number of positions in the civil service is rational for the selectees, but possibly a complete waste of time and energy for people sitting for the test who are not offered government jobs. The social costs of rent-seeking activities are reduced to the extent that private benefits are generated as byproducts of the time and effort invested in winning the prize. It therefore is not necessarily irrational for high school or college athlete to strive to acquire the skills necessary to be drafted by a professional sports team or for a musician to aspire to become a member of a high-profile symphony orchestra. Small differences in performance can lead to large differences in compensation (Frank 1996).

Firms competing for the right to be awarded licenses to operate radio or television stations "in the public interest" hire lawyers and lobbyists to support the applications they submit to the Federal Communications Commission (Coase 1959); those resources could have been deployed in other, more socially productive activities, such as negotiating private contracts or designing effective advertising campaigns that arguably reduce transaction costs, increase economic efficiency and thereby expand the nation's wealth. Institutions that award rents in return for cash payments (bribes) to the contest's organizer thus do not reduce social welfare by as much as contests that award them to the rent seeker who makes the "best" case for winning by hiring the best and brightest lawyers, lobbyists and marketing agencies.

Rent seeking likewise can result in the worst of all possible worlds, as Tullock (1975) previously had observed: the winning bidder(s) may fall into a "transitional gains trap" in which industry output is restricted artificially, consumers thus end up paying higher than competitive prices, but producers earn only normal rates of return on their investments. Consider New York City's regulation of entry into the taxicab business, requiring taxicab operators to buy a city-issued "medallion" to operate legally. The market price of such a medallion, the number of which has not been expanded since regulation was introduced there during the Second World War,

[19] See, for example, Tollison (1982), Congleton et al. (2008), Hillman (2013), Shughart and Thomas (2015) and Congleton and Hillman (2015) for summaries of the relevant theoretical and empirical literatures.

sometimes has approached $1 million. That purchase price roughly equals the present discounted value of the future stream of rents that taxicab operators can expect to earn by carrying passengers for hire.[20] As such, a medallion's owner can anticipate only a normal rate of return on his or her investment, even though regulators strictly have limited the number of taxicabs operating on New York City's streets and taxicab fares therefore exceed the free entry, competitive market level.

More generally, rents will be captured only at the outset of a regulatory regime that restricts output artificially and limits entry into the regulated industry. The initial winner(s) of the contest will capture some or all of the rents when first made available (which prospect supplies incentives to engage in rent seeking in the first place). The gainers, more specifically, are the owners of the specialized assets used to produce the regulated firm or industry's product. But if incumbent rent recipients later sell out to successors, the future stream of rents will be capitalized into the price at which the assets are bought and sold. The successors' rates of return no longer will be extraordinary, even though output is less than the competitive level and prices are artificially high.

That "dead" hand of monopoly (Buchanan and Tullock 1968) hampers efforts to deregulate artificially created output restrictions, no matter how well intended. Tullock's (1967b) lesson is that governmental monopolies should not be granted in the first place (see Shughart 1999 and the references cited therein). He well could have been awarded a Nobel Prize for that path-breaking contribution to the economics literature. Its impact can be gauged by consulting the books and journal articles cited above.[21] A Google search for "rent seeking" returns 12,300,000 "hits"; while such searches inevitably count words and phrases multiple times, Gordon's place in the history of economic thought obviously is assured.

4 Conflicts and conflict resolution

Gordon Tullock's separately signed Appendix 2 to *The Calculus of Consent*, titled "Theoretical Forerunners" (Buchanan and Tullock 1962, pp. 323–340),[22] supplies an early indication of his interest in the theory of games (at that point, he may have been one of the few social scientists ever to have read Von Neumann and Morgenstern ([1944] 1953) and his thinking about applying it to problems of collective choice. In summarizing some of the main results up to that time in analyses of two-person games, Tullock (Buchanan and Tullock 1962, pp. 325, 326) emphasizes "the similarities between it [game theory] and economics", but notes

[20] Because medallions represent transferrable property rights with very long useful lives, they have much in common with perpetuities, a type of bond (a "consol") having no term to maturity. Let A be the annual payment (coupon) received by the bondholder and i the market rate of interest; the bond's present market value at any point in time is $P = \frac{A}{i}$. If A is thought of as the taxicab operator's annual rent, that stream of rents is fully capitalized in the medallion's market price.

[21] The academic database JSTOR lists 61,125 search results for "rent seeking"; EconLit counts 662 occurrences of "rent seeking" in the titles and texts of scholarly books and articles since 1969.

[22] Buchanan's Appendix 1 is titled "Marginal Notes on Political Philosophy" (Buchanan and Tullock 1962, pp. 307–322).

one important difference between the two: "Game theory studies the behavior of individuals in a 'game' within given rules. Economics does the same, but the end or purpose of the investigation in economics is to choose between alternative sets of rules".

Tullock's familiarity with game theory bore fruit during his first academic year (1958–1959) at UVA's Thomas Jefferson Center. As described in the preface to *The Calculus of Consent*, he completed a "preliminary analysis of the logrolling process in democratic government", submitted it for publication in June 1959 to the *Journal of Political Economy* and saw it in print by the end of the calendar year (Tullock 1959).[23] During the summer of that same academic year, Tullock also completed preliminary versions of papers that subsequently became core theoretical chapters of *The Calculus*, the more noteworthy of the two being "A Preliminary Investigation of the Theory of Constitutions", which developed into Chapter 6 ("A Generalized Economic Theory of Constitutions") of that path-breaking book. That chapter relies on two costs of collective decision making, namely "decision-making costs", which rise as the number of people whose agreement is necessary before collective action can be taken, and "external costs", conceived of as the costs imposed on out-groups by the decisive set of voters, to derive an "optimal majority" or "k-rule", where k is the fraction of voters empowered to choose a course of action with which everyone, including members of the out-group minority, must comply. Tullock's second manuscript on "Simple Majority Rule" eventually became Chapter 10 of *The Calculus of Consent* (Buchanan and Tullock 1962, p. viii). Chapters 11 ("Simple Majority Rule and the Theory of Games") and 12 ("Majority Rule, Game Theory, and Pareto Optimality") also benefited from Gordon's talents in applying game theory to politics.

In addition, however, his game-theoretic flair helped Gordon launch literatures on the sources of (and possible ways of resolving) conflicts between individuals and groups of individuals, the rent-seeking games summarized in the previous section representing one obvious example. One of Gordon's key and unappreciated contributions to that literature is a 1974 book titled *The Social Dilemma* (Tullock [1974] 2005).[24] In that initially self-published volume, Gordon set himself the task of trying to understand the costs and benefits faced by individuals in choosing between joining a rebellion against an incumbent governing regime, remaining loyal to and actively supporting that regime, or sitting idly by on the sidelines. If such a revolution succeeds in forcing the current regime out of power, the rebels, especially those who join the rebel group early on, will share disproportionately in the spoils of victory. On the other hand, the rebels face retaliation, perhaps execution, if the rebellion fails. "Innocent" bystanders may at worst be the victims of collateral damage or, at best, see no changes in their pre-revolution economic or political circumstances. For Gordon, rebellion thus is an economic decision for distinct rational actors, consistent with VPE's methodological-individualistic approach to the analysis of collective action.

[23] Journal editors nowadays can only dream about such short turnaround times! On logrolling, see also Tullock (1970).

[24] The 2005 Liberty Fund volume combines selections from *The Social Dilemma* and Tullock's equally insightful *Autocracy* (Tullock [1987] 2005), published originally by Martinus Nijhoff/Kluwer Academic Publishers and summarized further below.

Gordon's unique style of thinking about civil wars and international conflicts portrayed them as contests over access to scarce and thus valuable resources, whether those resources were in the form of crude oil, diamonds, or other sources of wealth for the individuals or groups able to gain control over them by threatening or actually deploying force against their opponents. War preparations plainly are costly for aggressors and their potential targets, both directly in terms of the budgetary outlays necessary to equip and train soldiers, sailors and aircrews, and indirectly in terms the forgone values of those resources in alternative (civilian) uses. War itself can be even more costly because it inevitably destroys physical and human capital. Warfare nevertheless can be a rational choice if expected gains exceed expected costs. Of course, such ex ante expectations can turn out to have been mistaken ex post, but Tullock emphasizes that it is the relative military prowess of nations or of governing regimes and opposition groups that influence heavily ex ante choices leading to war or peace. Gordon Tullock never lost sight of his Virginian intellectual roots and, so, he saw decisions about invading another country or of resisting a foreign invasion in benefit-cost terms, that is, in the context of individual actors weighing rationally expected gains against expected losses.

Gordon's intellectual legacy in this area of study is most visible in the subsequent work of, for example, the late Jack Hirshleifer (2001), an important contributor in his own right to the analysis of legal disputes as well as to broader questions of war and peace. As a natural extension of his model of rent seeking, Gordon Tullock was instrumental in helping launch the modern literature on conflict and conflict resolution, for which students of civil war, international war and terrorism should be (and are) grateful.

5 Bureaucrats

Tullock (1965)[25] was the first major contributor to the public choice literature analyzing the incentives facing—and the consequential behaviors of—the "civil servants" employed by the executive branches of local, state and federal governments, created, according the conventional wisdom, for the purposes of carrying out the stated wishes of their political sponsors. Although the arguments in that book ultimately were superseded by William Niskanen's (1971) better-known analysis of bureaucracy and the literature that followed in Niskanen's wake, Gordon paved the way forward.

Before 1965, the first modern student of public sector bureaucracies, Max Weber ([1922] 1978), characterized such agencies as formal hierarchical organizations, staffed by expert administrators holding tenured, lifetime jobs; receiving compensation set by law; and tasked with supplying public goods and services evenhandedly to the citizenry at no explicit charge. That description encapsulated the ideals of the intellectuals of the Progressive Era, who for many years had sought to reform the corruption-prone "spoils system" then in place. In that status quo, state governors and US presidents filled posts in executive branch bureaus with their cronies, campaign contributors and other key political operatives. A professional,

[25] Republished in 2005 as vol. 6 of Rowley (2004–2010).

specialist and apolitical set of agency managers and rank-and-file staffers who carried out legislative mandates efficiently and effectively would replace that system, with merit substituting for political connections, or at least it was hoped. As President Woodrow Wilson, one of the leaders of the movement that endorsed civil service reform, wrote well before his first electoral victory in 1913,

> The field of [public] administration is a field of business. It is removed from the hurry and strife of politics; it at most points stands apart even from the debatable ground of constitutional study. It is a part of political life only as the methods of the counting-house are a part of society; only as machinery is part of the manufactured product. (Wilson 1887, pp. 209, 210)

Gordon Tullock (1965) and, 2 years later, Anthony Downs (1967) questioned such wishful thinking. Bureaucrats are human beings, too, after all, and for Gordon they therefore must be animated more by their own self-interests than by attending to vague notions of the public's interest. Gordon's thinking about bureaucracies was influenced deeply by his observations as a US State Department officer posted to China. Tullock concluded from his experience that bureaucrats mainly want to please their superiors, since doing so helps to advance their governmental careers. By moving up their agency's organizational chart, they gain more administrative responsibility, raise their compensation, become more familiar with the nuts and bolts of governmental processes, and raise their profiles on Washington's cocktail-party circuit. Such experience and the human capital that goes with it translate into higher salaries in the private sector after leaving the civil service. As such, "there is no necessary conflict between action that will advance the 'purposes' of an organization, and action that will advance the career of a single member of that organization" (Tullock [1965] 2005, p. 23).

Tullock (1965, p. 177) recognized that the incentives facing individual bureaucrats inevitably would generate an "over-expanded bureaucracy". A vicious cycle of inefficiency, further agency growth and more inefficiency would be driven by bureaucrats' rational pursuit of the benefits to them personally of working in or commanding an ever-larger executive-branch agency. Gordon's foray into the economic theory of bureaucracy was criticized sharply by William Niskanen as being too casual and anecdotal, but as informal as Tullock's analysis may have been, subsequent discussions between him and Niskanen crystalized the latter's thinking about the motives of public sector bureaucrats, with which he too had had personal contact as a senior executive of the Ford Motor Company.[26]

Niskanen asked: what do bureaucrats maximize? In his early work, he (Niskanen 1968, 1971, 1975) concluded that their chief goal was agency budget-maximization for reasons similar to those advanced earlier by Tullock (larger budgets mean more agency employees; more vertical layers of organizational hierarchy and, hence, more opportunities for promotion; bigger office buildings; more visible public profiles for top agency officials within the government as a whole; and so on). That

[26] Niskanen had resigned from Ford as a result of a dispute with top company managers following his principled refusal to support governmental imposition of import restrictions on foreign automobile manufacturers.

budget-maximizing objective could be achieved, in Niskanen's view, because the experience gained in managing day-to-day bureau operations endowed upper-level bureaucrats with informational advantages over less-well-informed members of key congressional committees who voted to appropriate funds to finance bureau activities and, in the Senate, to confirm presidential nominees to top agency positions. That informational asymmetry between the bureaucracy and Congress enabled bureaucrats to make take-it-or-leave budget offers that, lacking detailed knowledge of agency operations and having no price or profit signals by which to evaluate bureaucratic performance, Congress would be obliged to accept.

Niskanen (2001) later modified his fundamental assumption. Rather than being motivated by the goal of maximizing the total agency budget, bureaucrats instead were portrayed as being more concerned with the size of their agency's "discretionary budget"—the difference between congressional appropriations for the bureau and the amount actually required to serve the bureau's "clients". Niskanen's change of focus recognized that in addition to being beholden to policy-relevant congressional budget and oversight committees, each agency has a fairly well defined clientele to whose demands it also must cater. These various legislatively authorized programs must be carried out and the targeted beneficiaries served at some threshold level, if only to minimize complaints of bureaucratic nonperformance, ineptitude and inefficiency that generate headlines and cause agency officials to be summoned to hearings to explain their bureau's bad press.[27]

So, in Niskanen's (2001) revised way of thinking, bureaucrats want two things, namely a baseline budget that allows them to fulfill the agency's programmatic responsibilities in ways that minimally satisfy its clients plus a discretionary budget above and beyond the threshold that can be spent to advance their personal interests in promotion, perks, visibility and other on-the-job benefits they consume themselves. In any case, bureaucrats have incentives to spend their annual budgets in full, regardless of the consequences of that behavior for notions of "efficiency". A bureau that does not do so faces the threat of a reduction in funding in the next budget cycle.

In short, the naïve Progressive Era idea was that a corrupt and inefficient public bureaucracy, staffed by the political cronies of powerful chief executives, appointed by and beholden to them for their well-paid sinecures, sometimes allowing them to keep at least some of the revenue collected from their clients,[28] could be reformed by replacing the spoils system with a technocratic, apolitical and professional civil service, selected by competitive, merit-based procedures, granted tenure for life and compensated according to a predetermined pay scale. The image of robotic bureaucrats fulfilling administrative mandates handed down by public-interest-

[27] Bureaucratic failures can—and often do—lead to pleas for bigger budgets. On the other hand, as Morris Fiorina (1977) observes, bureaucratic sluggishness, the "red tape" associated with formal, one-size-fits-all rules and procedures, and outright ineptitude supply the Members of Congress with a convenient scapegoat when their constituents complain.

[28] It was for that reason that the post of customs collector for the Port of New York was for many years a much sought-after plum. Likely as a result of his earlier experiences in that position, including removal from the job by President Rutherford B. Hayes, President Chester A. Arthur became a staunch advocate of civil service reform, ultimately signing the Pendleton Act in 1883, which required appointments to federal jobs to be based on merit. Source: http://www.history.com/topics/chester-a-arthur; last accessed May 9, 2015.

driven legislators was undermined utterly by the many public choice scholars who followed the intellectual trail Gordon Tullock blazed. "Civil servants" in those models are not in any meaningful senses different from the stylized rational actors of neoclassical economic theory. They, like all human beings, are motivated primarily by their own objectives for maximizing present and future incomes, promotions in place, status and other personal rewards.

Niskanen apparently got his idea that executive-branch agency heads make all-or-nothing budget offers to Congress from Gordon Tullock. But Niskanen ultimately erred in assuming that bureaucrats are better informed than legislators about agency operations and the budgetary funding necessary to fulfill their legislative mandates. Analyses of bureaucratic performance engage principal-agent models in which public sector agencies serve multiple agents—including their congressional "sponsors" (the members of specialized oversight committees) as well as the clienteles to which they are beholden, such as farmers having strong interests in the policies promulgated and enforced by the Department of Agriculture. Later work in the public choice tradition reports evidence that bureaucrats respond to changes in the policy preferences of the members of key congressional oversight committees (Faith et al. 1982; Weingast and Moran 1983) and aggrieved constituents (McCubbins and Schwartz 1984); such evidence lends support to a more complex model of bureaucratic behavior than implied by Niskanen's bureau-dominance model.

Many bureaucrats undoubtedly work long hours, are patriotic and want to pursue their personal conceptions of the "public interest". But when push comes to shove, the public choice model points in a different direction. No matter how well intentioned individual bureaucrats may be, they must serve many masters, including their agency's clientele, the members of relevant congressional oversight committees, who are driven by their own vote motives, and of other special interests, including at times that most unorganized of interest groups, the taxpayers. It should therefore be no surprise that the ideals of the Progressive Era's reformers largely have gone unfulfilled. It is thanks to Gordon Tullock that scholars began asking why that is so.[29]

6 Autocrats

Gordon Tullock observed frequently that human experience with democratic forms of government is very rare. Ordinary people have been ruled in most times and places by monarchs, dictators or despots of various, but not usually benevolent, stripes.[30] Gordon read widely in history, including that of Greece and Rome, and

[29] See Wilson (1989) for a political scientist's modern analysis of bureaucracy, inspired in part by the contributions of Tullock and other public choice scholars who followed his lead.

[30] For simplicity's sake, we use the term "autocrat" to refer to any head of government not elected to that post by popular vote. Constitutional monarchies exercising mainly ceremonial functions, such as England's Queen Elizabeth II and the future successors to her throne, obviously represent exceptions to our terminology. It is worth noting in that regard that some members of the Scottish National Party want to call England's current queen "Elizabeth I", since the original Queen Elizabeth ruled prior to the union of England, Wales and Scotland in 1707.

brought the perspective he developed from the knowledge he acquired thereby to think and write about the problems facing the leaders of non-democratic regimes in, first, gaining power and, second, holding on to it (see, especially, Tullock [1987] 2005, 2001). In *The Social Dilemma*, Tullock ([1974] 2005) focused on the costs and benefits facing a regime's opponents in choosing whether or not to mount a rebellion or civil war; here we summarize at Gordon's analyses of analogous dilemmas from the top down, that is, from the point of view of the incumbent, unelected leaders of non-democratic governments.

Gordon began by noting that autocrats must climb "a slippery pole" to gain power and then grasp that pole firmly to remain in power. The successful autocrat thus often finds it necessary to defeat other contenders for preeminence in his or her climb to the commanding heights of the governing regime and then must be wary of and stand ready to fend off later rivals. In order to accomplish those two objectives, the autocrat must assemble and sustain an effective supporting coalition. Solving that problem requires playing one opposing faction against another, shifting potential challengers to various high governmental posts frequently to stop them from creating stable centers of adversarial power, and, perhaps what is most important, establishing clear lines of succession. The leaders of non-democratic governments should not, in Tullock's view, designate heirs too early, since the designated successor thereby is motivated to assassinate the incumbent ruler. On the other hand, if the throne is thrown open too many successors, those rivals may try to kill one another, allowing the most ruthless and despotic of them to rise to power.[31] Those tradeoffs prompt Tullock (2001) to explain why primogeniture and hereditary monarchies historically have been the most effective, i.e., longest surviving, institutional forms of non-democratic governance.

Historians have studied monarchies and other autocracies extensively, but applying descriptive rather than analytical approaches to the subject matter. Gordon Tullock can be faulted for his work in this area of study, as he can be in his writings on bureaucracy and other collective choice processes. But his influence on the literature here (see, e.g., Wintrobe 1998) and elsewhere are beyond doubt. No one other than Gordon even thought systematically at the time about asking or even trying to answer questions about the origins of dictatorships and democracies.

7 Gordon Tullock's other important contributions to the public choice literature

As mentioned at the outset, Gordon Tullock was trained as a lawyer at the University of Chicago's Law School and so it was natural for him, if not other scholars, to become interested in comparing and contrasting common law versus civil law regimes. The latter legal system originated in France's Napoleonic Code; its legacy still can be seen there and in the dispute-resolution procedures of Scotland

[31] Such ideas call to mind Hayek (1944, pp. 134–152), in a chapter of *The Road to Serfdom* titled "Why the Worst Get on Top". See Coats et al. (2015) for application of the same framework to explain why corrupt politicians tend rise to the top in democratic polities.

as well as in the State of Louisiana. Civil law processes are not adversarial, as in common law nations, but instead are inquisitorial. Opposing parties' arguments are submitted to a professional (bureaucratic, civil servant) judge, appointed to his or her position and promoted up the court system's hierarchy on the basis of "merit" (i.e., demonstrated knowledge of the civil code).

Such institutional differences were bread and meat for Gordon Tullock; *The Logic of the Law* and *Trials on Trial* supplied opportunities for presenting the results of his own study and the conclusions he drew from it (Tullock 1980b, 1987).[32] Insofar as he identified serious errors in many of the rulings handed down, especially so in trials before juries of the accused person's "peers",[33] Gordon was highly critical of the English common law tradition.

Tullock's intellectual curiosity ranged widely. In addition to the books and journal articles he wrote already mentioned, Gordon extended the economic approach to modeling and explaining human behavior into sociobiology and into the economics of nonhuman societies, including ants, termites bees, birds, and even sponges and slime molds.[34] His aim was to see how far the familiar prisoners' dilemma game could usefully be brought to bear in explaining the tradeoffs between cooperation and conflict in species whose members were not normally considered to be rational actors. Even more so than Gary Becker (1974), who extended neoclassical economics into the realms of crime and punishment, racial discrimination, marriage, divorce and the family, Gordon was an economic imperialist. Although his impact on the literature of bioeconomics is perhaps less weighty than in the many other areas of scholarly study to which Gordon contributed and in some cases pioneered, his influence on the work of Janet Landa (1986, 2013; Landa and Tullock 2003) is unmistakable.

Gordon also wrote on monetary economics (Tullock 1956); the "optimal" discount rate for public "investment" projects (Tullock 1964); the nature of scientific methodology (Tullock 1966); Kenneth Arrow's ([1951] 1963) proof of the impossibility of a social welfare function (Tullock 1967a); the economics of crime (Tullock 1969); the idea that "good" public policies are pure public goods, which is why so few of them have been advanced (Tullock 1971a); charitable impulses (Tullock 1971b, 1984); truthful revelation of individual preferences for public goods (Tideman and Tullock 1976); the distribution of income (Tullock 1983); and many other topics too numerous to mention.

Gordon also collaborated with Richard McKenzie to publish a widely adopted collection of short essays intended as a supplementary text for principles of economics students, bringing the rational actor model to bear on "popular" topics, such as sexual behavior, the obesity "epidemic", the price of popcorn at movie theaters and ever rising college tuition charges. First published in 1975, that volume was reissued only a few years ago in a sixth edition (McKenzie and Tullock 2012). Tullock, in all his writings, was, to reiterate, faithful to the economic model of

[32] Selections from both volumes are reproduced in Tullock (2005). Also see Tullock (1997).

[33] The term "peers" refers to lords and other nobles of the British realm, whose guilt or innocence was thought to be beyond the ken of mere commoners. See Allen (2012).

[34] Tullock (1994) summarizes most of that line of research, but also see Tullock (1971c). Tullock's many writings in the area of bioeconomics are reprinted in vol. 9 of Rowley (2004–2010), under the title *Economics without Borders*.

rational human behavior and to his Virginian roots. No aspect of human or nonhuman behavior was beyond Gordon's reach.

8 Concluding remarks

The decade of the 1960s in the United States and in much of the western world was a period of considerable social unrest, triggered by popular opposition to the Vietnam War and widespread sympathy for the emergent civil rights movement. Gordon Tullock matured intellectually during those years as a result of his association with the Thomas Jefferson Center at the University of Virginia and his collaboration with future Nobel laureate James Buchanan.

As we mentioned at the outset of this article, owing to his major contributions to the theoretical edifice underpinning *The Calculus of Consent* (Buchanan and Tullock 1962), we think that Gordon well deserved a share of the Nobel Prize awarded to Buchanan in 1986. His overlooking by the Swedish Nobel committee was as unfair as the multiple rejections of his manuscript on "The Welfare Costs of Tariffs, Monopolies, and Theft" by, among others, the *American Economic Review* and the *Southern Economic Journal* (Tollison 1995, p. 359). On the other hand, Tullock (1967b) joins a long list of similar rejections of later frequently cited articles, including many authored by future Nobel laureates (Shughart 2014).

Gordon's writing style has been criticized as being too informal and less than fully analytical, at least by the standards of mathematical economists who engage in highly abstract theory. The expositional styles of Gordon's journal articles and books can be explained by the fact that, to our knowledge, he recorded everything in wrote on a Dictaphone, or whatever the current technology happened to be, for later transcription by the invaluable Betty Tillman or a secretary (yes, such people once did exist!) employed by the Center for Study of Public Choice. Nor was Gordon an assiduous copyeditor of his own work, often passing typed manuscripts on to graduate students, along with instructions to add footnotes or references to them. Lack of attention to details is why reading Gordon is like listening to him talk, often jumping from topic in directions that followed his line of thought or his current reading list.

Gordon could be "prickly" in his personal interactions with colleagues and students, unless the listener(s) knew that he directed verbal barbs only at people he considered worthy of his attention. Gordon did not suffer fools gladly, but fools usually received only a silent treatment. Gordon attended every meeting of the Public Choice Society and the Southern Economic Association until he became too feeble to travel on his own unless accompanied by his sister and her husband, who lived in Tucson, Arizona, or his long-time friend and colleague Gordon Brady. He sat front and center at every paper panel at those meetings he could attend, usually leaning back in his chair. But woe betide any presenter after Gordon dropped his chair's front legs loudly on the carpet—an insightful comment or criticism was then launched for everyone in the audience to hear.

We feel privileged to have known Gordon well in many of our own professional capacities, including service as his colleague at the Center for Study of Public

Choice and as his successors as editors of the journal he founded. We lost a friend and the economics profession lost an idiosyncratic but fertile mind when Gordon passed away on Election Day eve 2014. Gordon once toasted Duncan Black with a line he took from his experience as a US Foreign Service officer in China: "You are the father of us all". That is a fitting epitaph for Gordon himself.

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