

Preliminary Working Paper

**Please do not cite without author's permission**

Contact: [julien.grandjean@univ-lorraine.fr](mailto:julien.grandjean@univ-lorraine.fr)

## ***Gordon Tullock on Majority Voting: the Making of a Conviction***

Julien Grandjean<sup>1</sup>

### Abstract

This paper participates in the formation of the history of public choice theory. In particular, it will focus on the role of Gordon Tullock and the analysis of the simple majority decision-making process promoted in the famous *Calculus of Consent*, written along with James M. Buchanan. This paper shows that Tullock has already think about the issue of majority voting prior to the writing of his common book with Buchanan. Between 1959 and 1961 in particular, while Tullock was a postdoctoral fellow at the Thomas Jefferson Center for Studies in Political Economy and Social Philosophy at the University of Virginia and later Assistant Professor in the Department of International Studies at the University of South Carolina, he had an interesting interaction with James M. Buchanan and Anthony Downs about majority decision-making process in a democracy. This interaction that consists in a correspondence between Tullock, Buchanan, Downs and their editors can be found for a part in the Gordon Tullock papers of the Hoover Institution Archives. It gave birth to some major articles such as *The Problem of Majority Voting* by Tullock in 1959, *Why the Government Budget is Too Small in a Democracy* by Downs in 1960, *Problems of Majority Voting: In Defense of Majority Voting* by Downs and *Problems of Majority Voting: Reply to a Traditionalist* by Tullock in 1961. Our purpose is to highlight the interaction that forms the basis of these publications and shows the way Tullock matured his view about the majoritarian rule – one of the cornerstones of the public choice theory – at this time.

**Keywords:** Gordon Tullock, Anthony Downs, public choice, majority voting, logrolling, unanimity

**JEL codes:** B21, B31, D72

---

<sup>1</sup> Julien Grandjean is a PhD candidate at the Bureau d'économie théorique et appliquée, Université de Lorraine, France. The author would like to thank Sarah Patton of the Hoover Institution Library & Archives and Samuel Ferey for their help in finding documents, Marianne Johnson and Herrade Igersheim for their proofreading and the help provided to improve the paper.

The history of public choice theory and/or its founding fathers is the subject of a growing number of works from economists such as, inter alia, Boettke & Marciano (2015), Boettke & Palagashvili (2014), Fleury & Marciano (2018), Lemieux (2015), Marciano (2009), Medema (2013) or Wagner (2015); to other social scientists like the sociologist Milan Zafirovski (2001) or even the controverted historian Nancy McLean (2017). This paper participates in the formation of this history. It shows that even if Gordon Tullock is often in the shadow of James McGill Buchanan, in reality he had his own active research program and made a very important and individual contribution to the *Calculus of Consent*.

After a short career as an attorney-at-law in Chicago, Gordon Tullock was hired by the United States Foreign Service as a Vice Consul in the United States Consulate of Tientsin, China in 1947. He held many positions<sup>2</sup> in Asia and in the United States before resigning nine years later. The same year, Tullock became a research director at the Princeton Panel that exposed him to broader public policy issues and to the realities of interest group politics (Brady, 2000). In 1958, he joined the Thomas Jefferson Center for Studies in Political Economy at the University of Virginia as a post-doctoral fellow. “The principal publication of his fellowship year was a seminal paper on the relevance of logrolling to the problem of majority voting” (Houser & Rowley, 2012, p.13) while majority voting rule was supported by most political scientists and economists. His work in the field later gave birth to a book written along with James M. Buchanan, *The Calculus of Consent*.

Denis C. Mueller recalled in an article published in 2012 that this book, “one of the true classics in the public choice field” (Mueller, 2012, p. 47), was built upon four main points: a two-stage model of constitutional democracy, an inquiry into the optimal voting rule, an analysis of the simple-majority rule and the use of logrolling. The three last points are the

---

<sup>2</sup> For further details, see Houser & Rowley (2012).

ones in which we are most interested in the present paper since they in fact were already present in the mind of the two authors and especially in Tullock's before the writing of the book. To grasp the importance of these points in *The Calculus of Consent*, it is necessary to understand how they came to the mind of Tullock and how he matured them along the years. We will show that the theories recalled above are the result of years of thinking catalyzed by an exchange with some of his colleagues including James M. Buchanan and Anthony Downs.

Anthony Downs authored *An Economic Theory of Democracy* (1957); in which he tried to show that it is possible to study the way of taking decisions in a democracy with the tools used in economics. Doing so, he theorized the median voter theorem – already developed by Duncan Black – or the voting paradox. But *An Economic Theory of Democracy* is also a study of the democratic dynamism. Among the hypothesis used by Downs are simple-majority rule of decision-making, that is the fact that a decision can be accepted only if at least 50% + 1 of the voters accept it. At no moment did Anthony Downs question the simple-majority voting process.

Gordon Tullock read Downs's book and was inspired by him. He indicated this fact in several papers and letters that we will take into account later on. But a letter written by Tullock (1958 a) to Friedrich Hayek on June 3<sup>rd</sup> 1958 reveals that he knew him personally and exchanged with him. The proximity between Tullock and Downs is also recalled in a letter written to Duncan Black on December 11<sup>th</sup> 1958 in which he wrote that his "own principle work has been in "dynamics", along the same general line as Downs' *An Economic Analysis (sic) of Democracy*" (Tullock, 1958 b). But even if Gordon Tullock and Anthony Downs were working along the same line, the first was much more doubtful than the last concerning the efficiency of the majority rule. This idea, developed by Tullock in 1959, won't be matured until the publication of the *Calculus of Consent* along with James M. Buchanan in 1962. The

development of this idea will be done in two times. The first time corresponds to a self-reflection conducted by Tullock. The second time corresponds to the assertion of Tullock's thought pushed by an interesting exchange between Tullock, Buchanan, Downs and their editors.

## **1. The development of an idea: the inefficiency of simple majority voting**

The idea of majority voting's inefficiency was developed by Tullock throughout 1959 giving birth to two drafts; only one of them was reworked and published as an article, *Problems of Majority Voting*.

### **1.1. An inquiry into the functioning of majority voting**

The idea of the possible inefficiency of majority decision-making rule is at the center of an undated and unpublished paper entitled *Democratic Marginalism*<sup>3</sup> (Tullock, 1959 a).

In this draft, Tullock reminds the reader that when a choice is to be made between different options, an individual will aim at equalizing marginal cost and utility of every consumed unit. He then states that it should be the same for voters' behavior. Yet, "there is no reason, given the method used to make decisions in a democracy, to expect the outcome to even approximate this ideal" (*Ibid.*, p. 1).

In fact Tullock explains that in a democracy, the problem is that "majority is binding on the minority" (*Ibid.*) and it can result in a misallocation of the resources and to the creation of external costs, costs applied to people who don't receive any benefits from a voted decision.

---

<sup>3</sup> « Democratic Marginalism » is a 10 pages typescript including marginalia by James M. Buchanan. Even if the draft is undated, we think that it was written in late 1958 or early 1959, according to the correspondence of Tullock with editors and with Buchanan.

The situation is thus far from permitting the ideal allocation imagined above. Trying to answer this allocation problem, Tullock focused on the process of logrolling – vote trading – as “a method of matching marginal cost with marginal benefit” (*Ibid.*). Tullock explained that the traditional voting system does not take into account of the intensity of preferences. If a few voters really want a measure to be accepted and all the others are not interested in the issue and prefer not to vote for it, there is a major problem. Logrolling could take intensity into account because it’s based on reciprocity: a person can obtain something she really wants by promising that she will vote in favor of something that others really want. There is a problem however: when a decision is made, everyone is taxed in order to pay for it, even people that don’t benefit from the decision at all. In other words, everyone will pay “at a far higher rate than the marginal return on the benefits he receives would justify” (*Ibid.*, p. 3). There is a real waste of money and even if “the whole complex of [...] bills is bad for everyone, the fact that each one benefits someone a lot and hurts everyone an imperceptible amount would not save it” (*Ibid.*)<sup>4</sup>.

Actually, if the total amount of expenditure and taxes were proposed to the voters, they wouldn’t accept it. But the whole mass of bills is never proposed as a unit. Each item is considered separately. In this context, someone who votes against one measure will automatically attract votes against his own bills in the future. If he wants his bills to be voted up, he should vote in favor of all the others. In fact, a system requiring majority voting in order to make a decision only requires at least 50% of positive votes and not 100%. Thus any voter who would like to present a bill to the voting process would only have to bargain with 50% of the electorate. These 50% + 1 would then vote in favor of the bills they present and

---

<sup>4</sup> Note that we can already feel Buchanan’s shadow over Tullock’s thought. It’s not surprising when we know that the post-doctoral fellowship of Tullock in Virginia was permitted by Buchanan and led both of them to work together. The reflection developed here by Tullock – and basically his entire thought about majority rule and unanimity that we will see later – is very “wicksellian”. In 1896, Knut Wicksell wrote a public finance treatise in which he explains that simple majority rule can’t guarantee the allocation of benefits to everyone at the individual level and that unanimity would guarantee such an allocation. See Johnson (2016) on this point.

against all the others. Thereby, this majority would make everybody pay for its bills and the other 50% - 1 would be the oppressed minority.

However this apparent equilibrium isn't stable. It is obvious that people belonging to the minority, since they are paying for the majority's bills and earn nothing in return, will try to catch two members of the majority in order to turn the ship around. "A continuous process of trading support with each member trying to increase his own 'take' while maximizing the 'outgo' that he had to pay for it would result, and the result would be an expenditure much greater than the social optimum" (*Ibid.*, p. 6) thus there would be no stable majority. This problem "arises from the effort to divide revenues raised from general taxation among [...] groups" (*Ibid.*, p. 7). For Tullock, if the services to be funded were indivisible, it would be impossible to pay for it by taxes on rotating individuals. That's the problem of the free rider, raised by Mancur Olson (1971). There would be a real under-consumption, as opposed to the over-consumption seen before.

This first draft draws the foundations of Tullock's thought about majority voting and decision-making process. The marginalia added by James M. Buchanan are so encouraging that Tullock decided to address the issues raised in the draft in a better form in order to be published.

A first version of the article, "Problems of Majority Voting", was sent by Tullock to some of his colleagues including Buchanan and Downs. Buchanan answered back in an undated letter<sup>5</sup> saying that if the project was "exciting and stimulating, [...] it require[d] further work" (Buchanan, 1959, p. 1). In particular, Buchanan encouraged Tullock to develop the example

---

<sup>5</sup> Even if the letter is undated, we can think that Buchanan sent it between February and August 1959.

constructed around the funding of roads<sup>6</sup> in order to illustrate his theory. Among other remarks, he also developed the idea of a necessary unanimity rule when he explains that, at some point, members of the minority would be aware of the fact that they are paying taxes for something they don't benefit from and that, in order to pass bills, unanimity might be necessary (*Ibid.*). Anthony Downs made some suggestions that Tullock incorporated into his final version of the manuscript as noted in a letter addressed to Mary Jean Bowman, editor of *The Journal of Political Economy* (Tullock, 1959 b). Once the paper was sent to the journal, a referee designated by the editor suggested either to present and refer to mathematical proofs or not to mention it at all (Bowman, 1959, p. 2). The second choice was adopted and the final version was published in December, 1959.

“Problems of Majority Voting” reopened the issues already handled in “Democratic Marginalism” but with, as an application, the example propped by Buchanan. In this article, Tullock questioned the majoritarian decision-making process and how it forces the minority to accept the will of the majority. Stating that “little attention has been given to the actual process of decision-making or to the type of policy to come out of the process” (Tullock, 1959 c, p. 571), Tullock acknowledges in footnotes that Anthony Downs and Duncan Black pioneered the field in 1957 and 1958. His analysis was divided into two parts: a study of the operation of majority rule when logrolling is permitted and the same study when logrolling isn't permitted.

For Tullock, “since logrolling is the norm” (*Ibid.*), he starts with listing cases that don't allow this exercise, that is in case of a standard referendum or when secret ballots are used<sup>7</sup>. Apart

---

<sup>6</sup> Note that roads were important in the economic literature of the time since a major US highway program had just started. Buchanan was much interested into road maintenance at this time. For more details, see Marciano (2018).

<sup>7</sup> In the case of a referendum, there are too many voters so that each one « represents too small a part of the total electorate for [the bargain] to be worth the effort involved » (Tullock, 1959 c, p. 571). When secret ballots are used, it is « impossible to tell whether voting promises are carried out » (*Ibid.*)

from these two cases, logrolling is permitted when the electorate is small enough and when voters vote openly<sup>8</sup>. When these circumstances are met, two types of logrolling can occur: an explicit and an implicit one.

The explicit logrolling process consists in directly trading votes while the implicit version consists in building “complex mix of policies to attract support” (*Ibid.*, p. 572)<sup>9</sup>. Only the first type is discussed in the article. The problem already raised by Tullock in his draft and which is at the center of this paper is the fact that majority-voting process “ignores the various intensities of the desires of the voters” (*Ibid.*). It follows a real advocacy for logrolling, which could be Pareto improving for everyone’s satisfaction: since some people are passionate about a measure and some are indifferent, if the first could impose their view on the measure and the last be rewarded for their help, both could see their satisfaction increasing. For Tullock, “prohibiting such transactions is to prohibit a movement toward the optimum surface” (*Ibid.*). At this point, Tullock develops his example including farmers and roadwork. In this example – that we won’t recall here<sup>10</sup> – Tullock uses a theory that is familiar to Downs: the median voter theorem<sup>11</sup> to explain the behavior of farmers living along the roads to be maintained. This example leads to the same conclusion as the one developed in his draft: a majority will bend a minority and this majority won’t form a stable equilibrium since Kantian farmers will become aware of their subordination to the majority and hence will try to turn the ship around. It will cause the fact that, at the end, every farmer will reveal himself as a maximizer.

---

<sup>8</sup> These two circumstances can be found in small direct democracies or in representative assemblies.

<sup>9</sup> This particular case is handled in *An Economic Theory of Democracy* when Downs shows that in order to attract voters, political parties or candidates try to offer programs that can please a maximum of voters through the deployment of a wide political ideology. We have no clue that Tullock was directly inspired by Downs on this idea since there is no quotation of him in this part of the paper but the previous reference to Downs reveals that Tullock did read the book.

<sup>10</sup> We can just note that this example brings out two types of farmers: Kantians, who just take account of their own mending threshold, and maximizers, who try to adopt a strategy in order to get their road maintained while paying as little taxes as possible. Tullock then explains that maximizers will form a majority capable of bending the minority by imposing the burden of the taxes on everyone while only their roads are being maintained.

<sup>11</sup> The median voter theorem, though first developed by Duncan Black, is often attributed to Downs who used it as one of the most important theories bearing the entire model developed in his 1957 book.



This situation will bring an overinvestment. Thus a paradox will arise “each individual behaves rationally, but the outcome is irrational” (*Ibid.*, p. 575).

Coming to this “unsatisfactory result” (*Ibid.*, p. 576), Tullock tried to improve it<sup>12</sup>. The first method would be for “the members of a community [to] enter into an enforceable bargain under which they act according to the Kantian model” (*Ibid.*, p. 577) but “in the more general and realistic case where governmental units deal with a continuing stream of radically different projects, no such agreed formula would be possible” (*Ibid.*). This would “throw us back to making individual decisions with the use of logrolling” (*Ibid.*). In fact, even if it were possible, the future allocation would be decided at the simple majority, which would be worse than logrolling. Another method would be to require more than a simple majority to vote for any bill but it would increase the difficulty of negotiating a bargain. The last method taken into account by Tullock is the fact that taxes could be collected by some indirect method. But it would worsen the situation since people would vote for basically every bill presented. Thereby, no simple mean of improving the logrolling system seems to be applicable. This conclusion lead Tullock to state that “the system of majority voting is not by any means an optimal method of allocating resources” (*Ibid.*, p. 579).

## **1.2. Developments in the theory and implications for the Constitution**

---

<sup>12</sup> Let us note here that Tullock is aware of the fact that some objections can be made to his model. He addresses two of them. First, maximizers could face an ethical issue that will prevent them from following their strategy. But Tullock explains that the American system does not bear an ethical system capable of baring logrolling. Second, it would be possible that the farmers could realize that adopting a maximizing position would lead all other farmers to adopt the same position. A maximizing equilibrium would appear that would be worse than a Kantian equilibrium. Thus farmers, “on the basis of cold selfish calculation, [would] follow the Kantian system” (*Ibid.*). But farmers won’t act this way since, unless we could prevent every farmer to become a maximizer, there is always one person who will act this way and will be followed by the others.

By the time Tullock exchanged with Mary Bowman in August 1959, he wrote that he decided to circulate a mimeographed monograph<sup>13</sup> untitled *A Preliminary Investigation of the Theory of Constitutions* to some of his colleagues. The first part of the monograph provides the theory developed in the previous article about logrolling and majority voting rule. The novelty lies in the following parts. They deal with “possible mechanisms for compensation of the damaged parties” (Tullock, 1959 d, p. 19) that is a system that forces the minority to accept the will of the majority. Tullock explains the fact that if anyone were permitted to do anything he wishes, a lot of damages would occur to the others<sup>14</sup>. The contrary would be the situation where, before taking any decision, everybody should obtain everybody else’s permission<sup>15</sup>. The last case would be the one inflicting the less damages and thus would be the best situation. Unfortunately, bargaining is costly: it consumes time and resources “by imposing delays on various activities” (*Ibid.*, p. 20). The cost of bargaining increases with the number of people involved. From this, Tullock drew the following conclusion: the maximization of the social benefit would occur at a point where damages and costs are both moderate.

The government’s role is to provide rules that will allow this point to be reached and Tullock’s monograph is “concerned with the rules governing the conduct of this [government]” (*Ibid.*, p. 23), that is the Constitution. The first observation drawn by Tullock is the fact that “majority voting is rather unsatisfactory” (*Ibid.*, p. 24) and the following question is to know if another rule would work better. Tullock decides here to examine different decision-making rules increasing the number of voters required for any action each time – from 25% of the electorate to unanimity through simple majority or two-third majority – in order to pick the most satisfying one. The method of voting is also questioned: direct voting and election of representatives are analyzed. The conclusion for Tullock is that direct

---

<sup>13</sup> This monograph will constitute the sixth chapter of the *Calculus of Consent*, “the keystone chapter of the entire book” (Houser & Rowley, *op. cit.*, p. 14).

<sup>14</sup> For example, A could decide to dig B’s garden in order to bury his own garbage without B’s permission. It would however inflict a lot of damages to B.

<sup>15</sup> Of course the permission would only be given if the decision didn’t inflict any damage.

and indirect voting procedures raise the same problems of bargaining and lead to the same results. A difference is to be noted: if both lead to irrationality, indirect voting also leads to ignorance on the part of the voters since, once the representative is elected, some of them might disengage themselves from the issues to be discussed and since the representative might decide to hide things or misinform his electorate (*Ibid.*, p. 39).

An issue raised by Tullock concerning indirect voting is the fact that a politician, once elected by say 51% of the electorate in a simple majority voting system, will aim at being re-elected. He then has to please the 51% of the voters who trusted him and, above all, to do nothing for the 49% remaining since it would increase taxes on his voters. A circulation of voters between the two groups would appear just like it would appear in a direct voting system. The bargain in this case is just not direct. Since a party or a candidate would confine all benefits to the majority that elected him, which is a problem, “constitutional rules to prevent it would appear to be desirable” and “the rule that immediately springs to mind is requiring more than a simple majority in either the local election or in the voting in the legislature” (*Ibid.*, p. 41)<sup>16</sup>.

The most extreme situation is the requirement of unanimity. Even if this kind of rule imposes severe bargain costs, it would be the only rule able to protect any minority from getting too much injured.

Of course, all of this is applicable to political projects designed to benefit minorities at the expense of the majority. But there also are political projects designed for general benefit. In this second case, “the disadvantage of simple majority rule is much less obvious” (*Ibid.*, p. 43). Here, another rule must be found but the central issue is to determine what the correct result should be.

---

<sup>16</sup> In this case, the bargaining cost would approximate the cost of the electoral campaign and the expense of running the legislature (Tullock, 1959 d, p. 42). Note that Tullock reminds the reader that all the conclusions drawn in this paper are correct only if “minority on a given project feel more strongly than the majority, that there are a number of such projects, and that the majorities and minorities are not identical in each case” (*Ibid.*)

Since “the Kantian system developed in the first chapter does not apply” and since Tullock is “unable to find any other rule which could be called correct” (*Ibid.*), he decides to examine a rule developed in Anthony Downs’s *An Economic Theory of Democracy*: the median voter rule. The problem is that “trying to find the exact center of the opinion distribution has the disadvantage that it would prohibit any measure which was opposed by 51% of the population, no matter how feeble their opposition or how strongly the other 49% wanted it” (*Ibid.*, pp. 43-44). In other words, the median voter theorem doesn’t take account of the intensity of preferences. The only way to solve this problem is to be able to compare the different intensities of the voters and to realize a new distribution that is the distribution of the intensity. Unfortunately, there is no way to determine everyone’s intensity of preferences. Thus the median intensity can’t be found, leaving the problem unsolved.

Tullock admits that in the cases of equal intensities for all the voters or of randomly distributed intensity, his “logrolling model will not work and the Downs model applies” (*Ibid.*, p. 45), even if it doesn’t involve compensation<sup>17</sup>. However, Tullock notes that the existence of compensation wouldn’t change the conclusions of this model. Yet the model is not free from defect. The linear model developed by Downs<sup>18</sup> seems to bother Tullock. Indeed, it requires general agreement at the relative positions of the various proposed policies yet it is necessary that the preferences can be arrayed. In some cases, preferences can be independent of each other. What is questioned here is the transitivity adopted by Downs, that is that fact that “if one voter prefers A to B and B to C, then another voter who likes C best will prefer B to A” (*Ibid.*, p. 54). Tullock explains that a voter can like C better yet preferring A to B but that case cannot be depicted on a line. If Charles Dodgson, Duncan Black or

---

<sup>17</sup> In the case of “policies which harmed society more than they helped through concentrated injury to the minority, the compensation principle not only insures a more equitable distribution of the benefits of various measures, it also rules out a number of undesirable policies which would be adopted if compensation were not required” (Tullock, 1959 d, p. 47). By compensation, Tullock means a system that rewards voters that are hurt by the bills or policies decided in order to compensate the damage. This compensation can be thought as a monetary compensation or as a promise to vote for another policy or even as another kind of gift.

<sup>18</sup> Downs explains that preferences can be distributed along a line and that voters will always prefer a policy close to his own position on the line to a policy which is further away on the same line.

Kenneth Arrow have tried to work on incompatibility of preferences, their works have lead to “mathematical difficulties which has tended to lead to the conclusion that voting can hardly provide a sensible conclusion in this case” (*Ibid.*).

Compensation would however allow the problem to be slough off: taking the Condorcet paradox into account, if compensation was permitted – unless there is a case of equal intensity of preferences, which is unlikely to happen – the paradox would vanish thanks to the bargaining that would take place and that would shift from the paradoxical situation to the selection of a policy. The problem is that “logrolling can itself result in paradoxes if voting is confined to a choice between two candidates” (*Ibid.*, p. 56)<sup>19</sup> hence “the number of candidates for office should not be legally or institutionally limited” (*Ibid.*, p. 57). Thus the simple majority system, which – following Black’s “dynamics” of election process as quoted by Tullock – confine elections to two parties is leading to confusion and complicated electoral campaigns. To generalize this problem, Tullock explains that all rules made to artificially restrict choices lead to “most inappropriate results” (*Ibid.*, p. 61). This is the case for “the Rules of Order<sup>20</sup> in use in most modern democracies [which] have as their objective the reduction of all issues to a series of simple yes-no votes” (*Ibid.*).

From this whole analysis, Tullock extracted several conclusions:

The first one is that rather than being taxed for unsolicited government activities, these activities should be made available only for people willing to pay for them. Two problems arise: the government has built a monopoly that is inefficient – permitting competition would

---

<sup>19</sup> Tullock develops this point (p. 58) with an example: let’s assume that the electorate is composed of 7 voters, that the majority voting system is used and that there are two candidates A and B. If A offers benefits for voters 1 to 4 and B offers benefits for voters 4 to 7, then the voter 4 will be indifferent between A and B. The result of the election is thus undetermined. Now if B decides to give benefits to 4 only, 4 will vote for B but voters 5 to 7 too since they won’t have nothing with A neither but that giving benefits to voter 4 only will be less costly in terms of taxes. B should win the election. But if B is the first to reveal his strategy, A has plenty of possibilities to defeat B. He can decide to promise benefits to every voter but 4 or to nobody or even to voters 1 to 3 plus voter 5, etc.

<sup>20</sup> The Rules of Order or Robert’s Rules of Order are a body of rules of procedure for deliberative assemblies. In other words, they constitute the rules necessary for the proper running of the assembly.

be far better<sup>21</sup> – and consumers may act like free riders<sup>22</sup> concerning certain goods and services for whom we can't divide the profits between payers and non-payers.

The second one concerns the following question: who should vote on various issues? In the road maintenance example, Tullock explains that farmers should constitute small governmental units in order to facilitate the bargains. But what is the size of a proper unit? Local roads are used by local people but can also be used by people coming from distant areas. Then, even if we can find the proper unit size for road maintenance, is this unit suitable for other issues requiring a vote? Let's recognize that it's the case. Will the same unit be as useful over the years? One certainty is the fact that the size of the unit is to be set in terms of "the likely spread of external costs and economies" (*Ibid.*, p. 67). But these questions vanish with the following conclusion.

The third one concerns the voting rule. Following Tullock's reasoning, "if we have a good voting rule, it is relatively unimportant whether we have chosen our governmental unit wisely" (*Ibid.*, p. 69). But in the same time, he adds that "a wise choice of government unit would make it unnecessary to spend much energy on designing the best voting rule" (*Ibid.*). The difficulties encountered in these two fields make it unlikely to reach such a level of perfection. Thus a good Constitution should not provide a unique rule but a set of different rules applicable to different situations (*Ibid.*, p. 70). Even if "majority rule has achieved practically mystical standing in the minds of many political scientists" (*Ibid.*, p. 71), we must be able to think of its replacement by some rule requiring less than the majority in order to permit the passing of bills defended by minorities. The majority voting system "draws much of its attractiveness from the existence of the Rules of Order" (*Ibid.*, p. 74) and thus is a pure

---

<sup>21</sup> Tullock notes that "problems of local government has been based on the mistaken view of government as a producing agent rather than the collection of consumers which it in fact is" adding in footnotes that "this particular point is one where [his] indebtedness to Dr. James Buchanan is most obvious" (Tullock, 1959 d, p. 67).

<sup>22</sup> Tullock doesn't use the exact term "free rider" but the behavior he is describing corresponds to Mancur Olson's free rider, developed in 1971 in *The Logic of Collective Action*.

artificial pattern distorting the preferences of the voters. Tullock hammers that it can be changed since any procedure that produces a solution must be examined and can be thought as as good as any other. The best rule will just be the one that minimizes the costs while maximizing the benefits and this rule depends on the situation (p. 76). For Tullock, there couldn't be a single rule.

The monograph was sent to James M. Buchanan and Anthony Downs. If Tullock and Downs shared some ideas and thoughts privately, the last told Tullock that he was actually “preparing a reply to [...] “Problems of Majority Voting”” (Tullock, 1960 a), even if he already has proposed some modifications to the article prior to its publication as we have seen earlier. At the same time, Tullock and Buchanan started the writing of their common book.

## **2. Buchanan and Downs as two enzymes of Tullock's thought**

While Downs was preparing his answer to Tullock's article – answer composed of two parts resulting in two different publications (1960 and 1961) – Buchanan and Tullock started the writing of their common book.

### **2.1. Downs's two steps answer and Buchanan's dictum**

The first step lied in an article published in *World Politics* (1960) entitled “Why the Government Budget is Too Small in a Democracy”. In this article, Downs aims at understanding the misallocation of resources coming from the ignorance of the electorate. He explains that the political tactic drives the government to arrange “all proposed expenditures [...] in descending order of their vote-gain potential and all proposed revenue collection [...]

in ascending order to their vote-loss potential” (*Ibid.*, p. 542) since voters vote for the party whose policies “they believe will benefit more than those of any other party” (*Ibid.*)<sup>23</sup>. The thesis is that “rational ignorance among citizenry leads governments to omit certain specific types of expenditures from their budgets which would be there if citizens were not ignorant” (*Ibid.*, p. 544). During an electoral campaign, information is central: voters have to be well informed about the whole issues encountered by the country and all the propositions made by the different candidates. But information is costly in money and time since it takes a lot of time to be informed about government policies. Since getting some information is costly and since people know that their own vote has nearly zero weight in the global election, there is few chances to get people to inform themselves about government actions that don’t affect them directly. Thus people can overestimate or underestimate certain costs or benefits. Downs explains that if voters “see benefits more clearly than costs, the actual budget may tend to exceed the “correct” budget” (*Ibid.*, p. 546). The opposite situation happens if they see costs more clearly.

Downs answers back to Tullock in his development. He explains that “while almost every man agrees with a majority of his fellows in regard to some policies, he also finds himself in a minority regarding others” and that “it is the presence of these revolving majorities that prevents men from attaining equilibrium with governments” (*Ibid.*, p. 549). The government must then offer policies that will please a majority and policies that will please other majorities and even “some pleasing only to a minority with intensive feelings concerning them” (*Ibid.*). Pleasing a minority may seem to contradict the will of the politicians to be reelected but this is possible by the fact that they propose a mixture of these different policies as a whole. Thus intensity of preferences is taken account of even with majority voting rule. This is made possible by the fact that policies and bills are not voted at one time but

---

<sup>23</sup> Note that Downs’s article assumes a two-party system since “proofs are too complicated to be presented in an article of this length” (Downs, 1960, p. 542) for multi-party systems.



understood to be in groups. This is in total contradiction with Tullock's theory of voting on different issues separately.

Concerning the possibility of logrolling, Downs explains that, in order to maximize its political support, the government takes account of all the wills of the majority and the minority when planning the budget. Thus the government carries out logrolling and citizens don't enter into bargains. Logrolling is incorporated into the process. Once again, this is a possibility only because political parties work upstream in order to propose packages of policies to the voters. Here is the answer to Tullock's paper<sup>24</sup>.

The second part of Downs's answer lied in "Problems of Majority Voting: In Defense of Majority Voting" (1961), published in the *Journal of Political Economy*. In this article, Downs explicitly wants to answer to Tullock. He explains that Tullock's goal was to "illustrate certain problems which he believes arise from the use of simple majority voting in democracies" (Downs, 1961, p. 192), using an "ingenious model" (*Ibid.*). The problem for Downs is that this model doesn't fit reality, and he states that all the problems raised by Tullock are not actually due to majority voting.

To counter Tullock, for whom different rules including rules requiring more than the simple majority of the voters must be thought, Downs explains that in a democracy, each voter should have the same weight in front of the ballot box. But the fact is that when a supermajority is required, the vote of each member of the minority is more important than the one of each member of the majority<sup>25</sup> and "all rules other than the majority rule have this same defect" (*Ibid.*). Furthermore, Downs criticizes Tullock's model:

---

<sup>24</sup> Note that Downs doesn't refer to Tullock's paper. The only reference to Tullock lies in a footnote where it is written that "many ideas [...] were developed in discussion with Gordon Tullock, to whom [Downs is] much indebted" (Downs, 1960, p. 560).

<sup>25</sup> Downs gives an example of this: "if a majority of two-thirds is required for passage, then opposition by 34 per cent of the voters can prevent the other 66 per cent from carrying out their desires. In effect, the opinion of each

The first sticking point concerns one of the assumptions: Tullock states that people receive individual benefits that they can balance with the attached costs. Downs notes that in reality, “most of the proposals which voters pass upon benefit very few voters directly” (*Ibid.*). Spending like jails, mental hospitals, and other institutions benefit to the community as a whole. In this case, logrolling is ineffective because such expenditures are frequently accepted.

The second sticking point lies in the conclusions reached by Tullock when he explains that every farmer pays more taxes for the maintenance of all roads than what he gets from the repairing of his own road. Downs states that Tullock’s reasoning, if it was applicable to reality, is wrong in the sense that majority voting is not the cause of the misallocation of the resources. In order to find the origin of this mistaken conception, Downs decides to examine the conditions that support Tullock’s model. Seven conditions<sup>26</sup> are raised and, for Downs, only two of them “are actually operative in most real-world democracies” (*Ibid.*, p. 194). Since citizens don’t vote directly nor on a continuing series of acts and since they don’t bargain directly with each other<sup>27</sup> or are called upon to vote on programs rather than isolated acts, only the discrimination and the majority assumption are valid. The fact is that the seriatim assumption, which is “the main pillar of [Tullock’s] reasoning” (*Ibid.*), is excluded by Downs. For him, this assumption is the real cause of the conclusions raised by Tullock. In reality, voters don’t vote directly upon individual acts, they first elect representatives whose role will be to vote upon them. Representatives, wanting to be reelected, will try to avoid

---

member of the 34 per cent minority is weighted the same as the opinion of 1,94 members of the 66 per cent majority” (Downs, 1961, p. 192).

<sup>26</sup> The seven conditions are the following: discrimination assumption (everybody pay taxes but spending can target specific people), referendum assumption (voting is a direct process), seriatim assumption (the road maintenance is not considered as a complete program but as individual projects), logrolling assumption (voters are able to bargain with each other), majority assumption (majority is required to pass any act), multiple-activity assumption (an important number of acts are put to a vote) and exclusiveness assumption (every project is voted one at a time).

<sup>27</sup> For this point, see the discussion made about the first paper published by Downs that contains a first part of the answer intended for Tullock.

putting too many taxes on the heads of their voters, and will thus try to limit the number of bills passed. This behavior prevents the majority from becoming net losers (*Ibid.*, p. 195).

Yet representatives are facing the same problems in the assembly as the voters if they have to vote directly. In order to discuss this point, Downs considers the unpublished *Preliminary Investigation* in. Here, the whole territory is divided into various districts electing a representative by majority voting. The representatives represent the voter's interests at the assembly where fifty-one per cent of them could form parliamentary blocs to only approve the acts they cherish<sup>28</sup>. But once again, the blocs formed at the assembly wouldn't be stable because minorities would try to reverse the situation by making foolproof promises to some members of the majority. Bills will be passed by revolving majorities and the result will be the very same as the one from direct voting process.

However, Downs notes that electoral competition exists in the legislative government but not in the direct voting process. When the representatives come back to their districts with a bad result, the loss concerns their utility. But political activity is also affected, and if one can deal with a loss of utility, political defeat is much more severe so representatives can't be just resigned (*Ibid.*, pp. 196-197). The only possible solution drawn by Downs in this case is for the representatives to "pass a law which prohibits discriminatory expenditures" (*Ibid.*, p. 197) stating "the same standard of road repair [to] be administered to all roads, just as the costs of these roads are levied against all citizens" (*Ibid.*). Representatives would be able to return to their district without the fear of presenting a record of loss. Thereby, the legislative model can have two outcomes: either chronic instability or anti-discrimination laws. Downs to conclude: "in neither case are Tullock's generalized conclusions valid" (*Ibid.*).

---

<sup>28</sup> Then only a minority composed of 26 per cent of the voters will receive benefits while 74 per cent will receive nothing. Yet everybody pays the taxes.

At the same time, Tullock and Buchanan “began their collaboration, expanding Tullock’s manuscript, “A preliminary investigation of the Theory of Constitutions”, into *The Calculus of Consent*” (Tideman, 2015, p. 236). Indeed, “the bulk of *The Calculus of Consent* was written by Buchanan and Tullock during the course of the academic year 1959-1960” (Houser & Rowley, *op. cit.*, p. 15). This collaboration led the two authors to exchange a lot and these exchanges helped Tullock to strengthen his view about majority voting. The role of James M. Buchanan was already seizable in Tullock’s “wicksellian” way of thinking and more directly in the marginalia of *Democratic Marginalism* and in the letter addressed to Tullock concerning the first draft of *Problems of Majority Voting*. But their collaboration increased their intellectual proximity. The letters exchanged between the two authors concerning their respective appendices are particularly indicative of the strengthening of Tullock’s conviction. For instance, in a letter dated from June, 1960, Buchanan reminded Tullock that their common work aimed at searching for solutions to some political games and for “the “optimal” set of “political rules of the game”” (Buchanan, 1960). Once again, Tullock was invited not only to observe and understand the way politics works but also to question different forms of voting rules in order to find the best ones. Furthermore, Buchanan established a strategy: Tullock and himself had to admit that previous economists have done a good job in the field but that themselves would work further since they understood the importance of the raised issues. Doing so, it would “not make Black, Arrow, or Downs angry, but it [would] convey to the critical and intelligent outsider the major advance of [Buchanan and Tullock] work over theirs” (*Ibid.*). In a letter addressed to Buchanan the day after, Tullock agreed on the strategy and, answering to one of Buchanan’s critiques, explained that in his mind, “it [would] always be possible to deduce another combination of measures which would be unanimously preferred to the one actually selected” (Tullock, 1960 b), stressing out the importance of unanimity. Buchanan was well aware of the importance of unanimity. In *Social Choice*,

*Democracy, and Free Market* (1954), Buchanan, referring to Wicksell, already explained that in order to prevent a given majority in power to compel the minority, the principle of unanimity should be adopted (Buchanan, 1954, p. 120). He added that “in a very real sense collective choice cannot be considered as being reached by voting until relatively unanimous agreement is achieved” (*Ibid.*, p. 121).

On this point, Buchanan seems to have had a lot of impact on Tullock’s thought. Tullock himself mentioned the unanimity rule in his previous papers since Buchanan told him to study it in his comments to the first draft of *Problems of Majority Voting*. In addition, Buchanan suggested, in the letter we just mentioned, that they should “mention Wicksell as one who did see the problem” (Buchanan, 1960) and that “mention could be made of [Buchanan’s] Law and Economics paper” (*Ibid.*). In other words, Buchanan suggested a literature in which him and Tullock should include their common work. In the final version of Tullock’s Appendix<sup>29</sup> to the Calculus, he cites Buchanan and, for the first time, Wicksell.

This influence is part of the strengthening of Tullock’s conviction about simple majority voting. This conviction was developed by Tullock in two different papers.

## **2.2. Tullock admits he changed his mind**

In a footnote present on the first page of his paper, Downs told the reader that Tullock read the first draft of the article and gave comments that “resulted in the elimination of several errors from the final version” (Downs, 1961, p. 192). But Tullock also discussed this answer with his editor in order to prepare his own answer to Downs’s papers.

On August 3<sup>rd</sup> 1960, Tullock told Mary Jean Bowman of the *Journal of Political Economy* that Downs had him read the first draft and that it contained an answer to his *Problems of*

---

<sup>29</sup> In his letter to Tullock, Buchanan explained that “the signing separately of the Appendix would have the advantage of allowing [Tullock] to be somewhat more personal in [his] treatment of [his] own work” (Buchanan, 1960). Thus even in the most personal part of the book, Tullock kept the direction proposed by Buchanan.

*Majority Voting* but also to his *Preliminary Investigation*. Since the latter was unpublished, Tullock found difficult to formulate an answer to Downs without entering a debate about a paper that readers couldn't read. Another problem for Tullock was that the journal in which Downs published his first answer – *World Politics* – had “an editorial policy against publication of comments on its articles” (Tullock, 1960 c). Thus Tullock wished to propose an answer to Downs in the *JPE*.

Harry G. Johnson, also editor of the *Journal of Political Economy*, provided an answer to Tullock, asking him “not to reproduce part of [his] unpublished and now obsolescent monograph” (Johnson, 1960 a) but rather to “make the controversy self-contained by confining it to points rising out of [his] article” (*Ibid.*). Johnson justified his request by the fact that Downs has already drawn a model from the monograph in his own paper. He added that he has also asked Downs to revise his paper and that Downs's revised paper would be enclosed so that Tullock could have a clue about the final version.

In a letter dated October 14<sup>th</sup> 1960, Tullock specified the arguments he wished to develop in his answer to Downs. Over all, being aware of the fact that “being against majority voting in the present climate of opinion is almost as bad as being against motherhood” (Tullock, 1960 d, p. 1), he wouldn't want the readers to misunderstand his thought on this point. In this letter, he explains that even if “Downs never actually says that [...] his opposition to the prevailing majority vote theory of democracy is based on the models he attacks” (*Ibid.*), he fears that readers might assume this. He attempts to clarify this point. In addition, Tullock wants to show that Downs is mistaken about one of his conclusions concerning the fact that the whole budget of the government could be too large. He swears that “Downs is the only person among all those with whom [Tullock] has discussed the article who has drawn the conclusion that the article proves “The government budget as a whole will be too large”” (*Ibid.*).

Two other letters were exchanged between Tullock and his editors. In the first letter, Harry G. Johnson urged Tullock in November of 1960 to “write [his answer to Downs] out in a form directly relevant to the interest of the present debate, without boring and confusing the reader” (Johnson, 1960 b). In other words, Johnson wanted Tullock’s answer to be clear and short. In the second letter, dated from November 11<sup>th</sup>, 1960, Tullock answered the editor, enclosing the last version. But the letter that accompanied the documents revealed that his opinion about majority voting had matured. Indeed Tullock admits that “at the time [he] wrote [his] article, [he] had no idea that majority rule could, in practice, be improved” and that he “had made some discoveries which resulted in [him] changing [his] mind” (Tullock, 1960 e). This statement is however immediately followed by the fact that it “has nothing to do with the model which Downs draws” (*Ibid.*). Tullock then admits that he can “no longer simply say that [he] does not oppose majority voting since [he] has changed [his] mind on this point” (*Ibid.*). The letter closes with Tullock thumbing his nose at Johnson, saying that he could present his new position on the subject but wouldn’t do so since the last letter he received from Johnson indicates that he wouldn’t have enough space. The answer finally came to be published in the *JPE* in 1961 under the title “Problems of Majority Voting: Reply to a Traditionalist”.

While the answer prepared by Tullock is in itself a frontal attack of Downs, who is presented as a “traditionalist” (Tullock, 1961 a, title) the article in itself starts with Tullock explaining that he will address the three main objections of Downs: technical objections about the model, traditional statement about majority voting and the size of the budget.

Concerning the first category – the model complaint – Tullock recalls that Downs “quite correctly points out that the method of electing representatives violates the seriatim assumption and, consequently, that their election does not fit the model presented in [the] article” (*Ibid.*, p. 200) but that, as Downs himself recognized, he also relaxed this assumption

in his own model. Thus “it would appear that the model developed in “Problems of Majority Voting” fits the activities of legislatures” (*Ibid.*). One of the first objections of Downs is therefore eliminated. Tullock comes to the fact that Downs turned to one of the models developed in the *Preliminary Investigation*, without explaining the choice of this particular one. Tullock think that this particular model isn’t appropriate for Downs’s purpose while some others, also contained in the unpublished draft were much more convenient. Tullock recalls that Downs draws two possible conclusions and only keeps one: the fact that representatives can pass a law against discriminations in expenditure. Even if Downs is “more enthusiastic about the possibilities” (*Ibid.*, p. 201), their positions are equivalent. A second objection is thus eliminated. In other words, Tullock explains that Downs’s model is inadequate and reminds that, as seen in his unpublished paper, “democratic political institutions are extremely various and require almost equally various “vocabulary” of the models for their analysis” (*Ibid.*, pp. 201-202) and that some additional models are available in his monograph and that more are to come in *The Calculus of Consent*, which is “in press” (*Ibid.*, p. 202). We understand that at this moment, Tullock is absolutely certain that simple majority voting is inefficient and that a set of different rules corresponding to different issues must be adopted. We won’t be able to find a unique model corresponding to every issue at the same time.

Concerning the second category, Downs’s so called traditional argument in favor of majority voting, Tullock tackled Downs claiming that he doesn’t present the whole line of reasoning that led him to think about possible new rules, nor does he talk about the alternatives. Tullock adds that, in revealing the weaknesses of the present system, he didn’t had in mind the fact of recommending alternatives. In fact, “at the time [he] wrote the article, [he] had no idea of suggesting any changes in voting rules: the recommendation for further research at the end of the article was [his] single constructive idea” (*Ibid.*). More than that, the violent defense of



majority voting by Downs is problematical since, even if majority rule is simple and may procure an equality concerning the weight of each voter's voice, "careful analysis has uncovered a series of serious mathematical difficulties which make the traditional view which Downs presents untenable" (*Ibid.*, pp. 202-203) at least until Arrow and Black's problems get solved.

The third and last category concerns the size of the government budget. Downs, according to Tullock, is persuaded that Tullock's conclusion is that the government budget as a whole is too large. But Tullock to answer that even if in the special case of road maintaining it is true, a generalized model wouldn't necessarily conduct to the same point.

Two months later, Tullock published an article entitled "An Economic Analysis of Political Choice" in an Italian journal, *Il Politico*, in which he comes back to this new field. He tries to give to the readers who are unfamiliar an overview of the possible issues discussed.

Starting with his now famous example of road repairing, Tullock directly explains that in order to limit external costs, people must agree about projects to be put to the vote. Once again, he shows that increasing the number of people required would reduce the amount of the external costs (Tullock 1961 b, p. 235). Still it would bring bargaining costs that can be divided in two different types of costs: the ones linked to loss of desirable opportunities and the ones linked to the consumed resources in the bargaining process. At no moment is simple majority voting taken into account since such an analysis is available in his 1959 paper and since Tullock made a discovery that "simple majority voting led to external costs" (*Ibid.*, p. 236). Tullock has one certainty: simple majority voting not only can be replaced but must be replaced. He further notes that "only by requiring unanimous agreement [...] could we make certain that the cost to the "decision-makers" and the real cost coincided, and hence eliminate over-investment" (*Ibid.*). Once again we can feel here the shadow of Buchanan's thought on

Tullock's mind. Tullock ends this kind of introduction to his and Buchanan's thinking by stating that they "have a good theoretical system for simple direct democracy governments" (*Ibid.*, p. 240) that can be extended to representative democracy by developing complex models which permits "analysis of existing constitutions and their comparison with other existing or proposed organizational structures" (*Ibid.*). Thus in this article, Tullock completely excludes the simple majority voting system of his study and reveals his and Buchanan's will of working at the constitutional level regarding governments.

### **3. Conclusion**

One of the most important contributions of the *Calculus of Consent*, the questioning of simple majority decision-making rule, was developed by Gordon Tullock years before the writing of his book with James M. Buchanan. If he first had the idea that simple majority rule could be questioned; Anthony Downs's criticisms and his work with James M. Buchanan acted like as many enzymes to Tullock's thought. He has then been able to assert his thought on the point thanks to their exchange. Buchanan gave a literature and a lot of ideas to Tullock while Downs forced him to think more about what became a conviction and the ways of demonstrating his thought as well as explaining them to be correctly understood. The basic idea of questioning simple majority system became a necessity since other ways of taking collective decision could be more effective according to the questions to be asked to the people and according to the context. And since such possibilities exist, there is no doubt in the mind of Tullock that they absolutely should replace simple majority voting rule.

## References

**Black, D. (1971 [1958])** *The Theory of Committees and Elections*, Cambridge University Press.

**Boettke, P. & Marciano, A. (2015)** “The Past, Present and Future of Virginia Political Economy”, *Public Choice*, 163(1-2), pp. 53-65.

**Boettke, P. & Palagashvili, L. (2014)** “James Buchanan’s Contributions to Constitutional Political Economy, Institutional Analysis and Self-Governance”, *The Journal of Law, Economics and Policy*, 10(3), pp. 649-667.

**Bowman, M. J. (1959)** Correspondence with Gordon Tullock concerning the publication in the *Journal of Political Economy* of “Problems of Majority Voting”, Gordon Tullock papers, Box 42, Folder 5, Hoover Institution Archives.

**Brady, G. L. (2000)** “Gordon Tullock: His Development as an Unconventional Economist, 1947-1962” in Fishback, P. V., Libecap, G. D. & Zajac, E. (Edts.) *Public Choice Essays in Honor of a Scholar: Gordon Tullock*, Springer, pp. 151-168.

**Brady, G. L. & Tollison, R. D. (1991)** “Gordon Tullock: Creative Maverick of Public Choice”, *Public Choice*, 71(3), pp. 141-148.

**Buchanan, J. M. (1954)** “Social Choice, Democracy, and Free Market”, *Journal of Political Economy*, 62(2), pp. 114-123.

**Buchanan, J. M. (1959)** Correspondence with Gordon Tullock concerning “Problems of Majority Voting”, Gordon Tullock papers, Box 42, Folder 3, Hoover Institution Archives.

**Buchanan, J. M. (1960)** Correspondence with Gordon Tullock concerning a draft appendix for their common book, Gordon Tullock papers, Box 42, Folder 3, Hoover Institution Archives.

**Buchanan, J. M. & Tullock, G. (1971 [1962])** *The Calculus of Consent: Logical Foundations of Constitutional Democracy*, Ann Arbor Paperbacks, The University of Michigan Press.

**Congleton, R. (2013)** “On some neglected, but profound, contributions of Gordon Tullock” in Lee, D. R. (ed.) *Public Choice, Past and Present: The Legacy of James M. Buchanan and Gordon Tullock*, Studies in Public Choice, Springer.

**Downs, A. (2013 [1957])** *Une Théorie Économique de la Démocratie*, Éditions de l’Université de Bruxelles.

**Downs, A. (1960)** “Why the government budget is too small in a democracy”, *World Politics*, 12(4), pp. 541-563.

**Downs, A. (1961)** “Problems of Majority Voting: In Defense of Majority Voting”, *Journal of Political Economy*, 69(2), pp. 192-199.

**Fleury, J-B. & Marciano, A. (2018)** “The Sound of Silence: A Review Essay of Nancy MacLean’s *Democracy in Chains: The Radical Right’s Stealth Plan for America*”, *Journal of Economic Literature*, 56(4), pp. 1492-1537.

**Houser, D. & Rowley, C. K. (2012)** “The life and times of Gordon Tullock”, *Public Choice*, 152(1), pp. 3-27.

**Johnson, H. G. (1960 a and b)** Correspondence with Gordon Tullock concerning the publication by the *Journal of Political Economy* of Tullock’s answer to Downs, Gordon Tullock papers, Box 42, Folder 5, Hoover Institution Archives.

**Johnson, M. (2016)** “Wicksell and Pareto in Public Choice”, working paper prepared for the History of Economics Society Session at the ASSA Meetings, San Francisco.

**Lemieux, P. (2015)** “*The State and Public Choice*”, *The Independent Review*, 20(1), pp. 23-31.

**MacLean, N. (2017)** *Democracy in Chains: The Deep History of the Radical Right’s Stealth Plan for America*, Viking.

**Marciano, A. (2009)** “Buchanan’s Constitutional Political Economy: Exchange vs. Choice in Economics and Politics”, *Constitutional Political Economy*, 20, pp. 42-56.

**Marciano, A. (2018)** “From Highway to Clubs: Buchanan and the Pricing of Public Goods” in Wagner R. E. (Edt.), *James M. Buchanan: A Theorist of Political Economy and Social Philosophy*, Palgrave MacMillan.

**Medema, S. (2013)** “Creating a Paradox: Self-Interest, Civic Duty, and the Evolution of the Theory of the Rational Voter in the Formative Era of Public Choice Analysis”, *Oeconomia*, 3, pp. 61-85.

**Mueller, D. C. (1991 [1989])** *Public Choice II: A revised edition of Public Choice*, Cambridge University Press.

**Mueller, D. C. (2012)** “Gordon Tullock and Public Choice”, *Public Choice*, 152(1), The intellectual legacy of Gordon Tullock, pp. 47-60.

**Tideman, T. N. (2015)** “Remembering Gordon Tullock”, *Public Choice*, 162(3), pp. 235-238.

**Tullock, G. (1958 a)** Correspondence with Friedrich A. Hayek about the writing of a book combining politics and economics, Gordon Tullock papers, Box 87, Hoover Institution Archives.

**Tullock, G. (1958 b)** Correspondence with Duncan Black concerning dynamics and stability, Gordon Tullock papers, Box 12, Folder 13, Hoover Institution Archives.

**Tullock, G. (1959 a)** *Democratic Marginalism*, Gordon Tullock papers, Box 42, Folder 3, Hoover Institution Archives.

**Tullock, G. (1959 b)** Correspondence with Mary Jean Bowman concerning the publication of “Problems of Majority Voting”, Gordon Tullock papers, Box 42, Folder 5, Hoover Institution Archives.

**Tullock, G. (1959 c)** “Problems of Majority Voting”, *Journal of Political Economy*, 67(6), pp. 571-579.

**Tullock, G. (1959 d)** *A Preliminary Investigation of the Theory of Constitutions*, Gordon Tullock papers, Box 388, Hoover Institution Archives.

**Tullock, G. (1960 a)** Correspondence with Mary Jean Bowman concerning the publication by the *Journal of Political Economy* of “Problems of Majority Voting”, Gordon Tullock papers, Box 42, Folder 5, Hoover Institution Archives.

**Tullock, G. (1960 b)** Correspondence with James M. Buchanan concerning a draft appendix for their common book, Gordon Tullock papers, Box 42, Folder 3, Hoover Institution Archives.

**Tullock, G. (1960 c)** Correspondence with Mary Jean Bowman concerning the publication by the *Journal of Political Economy* of a possible answer to Downs, Gordon Tullock papers, Box 42, Folder 5, Hoover Institution Archives.

**Tullock, G. (1960 d and e)** Correspondence with Harry G. Johnson concerning his answer to Downs, Gordon Tullock papers, Box 42, Folder 5, Hoover Institution Archives.

**Tullock, G. (1961 a)** “Problems of majority voting: Reply to a traditionalist”, *Journal of Political Economy*, 69(2), pp. 200-203.

**Tullock, G. (1961 b)** “An Economic Analysis of Political Choice / Un’ Analisi Economica Della Scelta Politica”, *Il Politico*, 26(2), pp. 234-249.

**Wagner, R. (2015)** “Gordon Tullock: A Conspectus on His Life’s Work”, *History of Economic Ideas*, 23, pp. 11-21.

**Zafirovski, M. (2001)** “Administration and Society: Beyond Public Choice ?”, *Public Administration*, 79(3), pp. 665-688.