



The Quintilian School in the history of Social Choice: an early tentative step from plurality rule to pairwise comparisons

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Abstract

We present two texts from Roman Empire times that add two early appearances to the stream of the history of Social Choice Theory. One is from the School of Rhetoric of Quintilian (35–96), a contemporary of Pliny the Younger, who developed an early criticism of Plurality rule and, in search of a better method, sketched a choice by pairwise comparisons. The other is from Aulus Gellius (160–180), who used the term “aporia” applied to a voting problem while commenting on a voting by Plurality that yielded counterintuitive or seemingly illogical results. These early analyses and critiques of Plurality rule reveal the flaws of a system that, despite its intuitive or spontaneous appeal, has evident failures that have triggered theoretical reflection from remote times. The two texts also show how paradoxical and problematic situations serve as powerful incentives for reflection and advancement of knowledge and can trigger attempts to address and refine voting and election methods to find more robust and fair alternatives.

1 Introduction: another appearance in the underground stream

It has been said that the history of Social Choice Theory "has spasmodically appeared and disappeared, like an underground stream that wells up from time to time" (McLean 2015b, 156).

According to this metaphor, the stream would have its origin with Pliny the Younger (105 AD) and, since then, it would have appeared five times: the first,

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with Ramon Llull (1299); the second, with Nicholas Cusanus (1434); the third, the "Golden age of Social Choice," led by Jean-Charles de Borda (1784) and Nicolas de Condorcet (1785); the fourth, by Charles L. Dodgson (a.k.a. Lewis Carroll, 1876) and E. J. Nanson (1882); the fifth, in the twentieth century, represents the establishment of Social Choice as a proper scientific discipline, beginning with Black (1958), Kenneth Arrow (1951), Amartya Sen (1970), and all the rest.¹

In this article, we present two texts that add two more early appearances to the stream of the history of Social Choice Theory. One is from the School of Quintilian (35–96), a contemporary of Pliny, who developed an early criticism of Plurality rule and, in search of a better method, sketched a choice by pairwise comparisons. The other is from Aulus Gellius (160–180), who used, for the first time, the term "aporia" applied to a voting problem while commenting on a voting by Plurality that yielded seemingly illogical results.

In Sect. 1, we introduce Quintilian's text, place it in its historical context, and evaluate its importance in the history of Social Choice Theory. In Sect. 2, we do the same for Gellius' text. Section 3 concludes. The English translations of the two full texts are provided in the Appendix.

2 Quintilian's Declamation 365

The newly found text is part of the *Minor Declamations* attributed to Quintilian. The main hypothesis suggest that the book is composed of the lecture notes of a "Rethor" (Shackleton Bailey 2006; Winterbottom 1984). A Rhetor was an instructor in a school of Rhetoric or Oratory. More specifically, these lessons were intended to teach how to argue on legal matters. The cases discussed in the manual did not necessarily have to be real, and most of them were not. The *Minor Declamations* originally included 388 numbered cases, of which 145 survive. Each Declamation presents a particularly "difficult case": a father who kills one of the twins to save the other, someone who poisons an adulteress, a stepmother accusing her stepdaughter under torture, etc. Declamations were used in the schools of Rhetoric to train students in the art of arguing and counter-arguing, not to learn laws. That is why the described situations are almost always paradoxical, macabre, extreme.

We focus on Declamation 365, which presents the case of a trial "because of violence". Out of seven judges, three vote for a sentence of "death," two for "exile," and two for "stigma." The accused argues that only three of the judges want death, compared to four who want him to live, therefore "the largest part" is four to three. The Rhetor replies that three judges clearly constitute the "largest part", and therefore the penalty should be death.

¹ The text by Pliny was discovered for Social Choice by Farquharson (1969). Llull has three texts, discovered by Iain McLean (1990) and Hägele & Pukelsheim (2001), and reinterpreted by Colomer (2013). Cusanus was first discovered, unconsciously, by Sigmund (1963), and later by McLean (1990). See also McLean and Urken (1995) and McLean (2015a, b).

2.1 Historical context and dating

Patently, Quintilian's *Declamation 365* is very similar to Pliny's *Letter XIV* of *Book VIII*, which has been considered the beginning of Social Choice Theory (McLean 2015a, 16). In both, a case of violence is being judged. In both, the number of alternatives $M=3$, and they are almost the same: death/exile/acquittal for Pliny; and death/exile/stigma for the Quintilian *Declamation*. Both Pliny and the author of the *Declamation* assume a categorical vote by each judge and defend that the winner must be supported by the largest part.

We know that Pliny and Quintilian were close friends. Quintilian was Pliny's teacher, and one of Pliny's letters was addressed to Quintilian. With so many coincidences, and considering that during 1,200 years, from Pliny to Llull, there are no more known documents in the history of Social Choice, it cannot be assumed that both texts have an independent origin. So, the question arises, who was the first, Quintilian or Pliny?

Quintilian (35–95 AD) lived some years before Pliny (61–112 AD). It would be logical then to think that *Declamation 365* precedes Pliny's *Letter XIV*. However, some elements suggest that the *Declamation* may be posterior. The episode narrated by Pliny is accurately dated: it is a Senate vote from the year 105. We know it because the vote refers to the death of the Consul Afranius Dexter, on June 24th of that year (Sherwin-White 1966, 461).

Unfortunately, we don't have the same level of certainty with Quintilian. Two major collections of *Declamations*, "The Major *Declamations*" and "The Minor *Declamations*" are attributed to him. *Declamation 365* belongs to the "Minor" collection. Scholars believe that the author was not Quintilian himself but someone from his school, or from some school of Rhetoric (Winterbottom 1984, XIII; Hornblower et al. 2012, 421). That is why they frequently use the term "pseudo-Quintilian". Here we will use "the Quintilian School", assuming the author was a Rhetor and that the School of Quintilian lasted several decades after his death. This way, our analysis will support the philological hypothesis that the author of the *Minor Declamations* could not have been Quintilian, who died ten years before 105.

There are several Social Choice elements denoting that *Declamation 365* may be based on Pliny's letter. Pliny describes a Senate vote. His letter has always been somewhat confusing (Whitton 2010, note 3), and offers several interpretations, as we will see. Here we offer the one given by Riker (1986, 83). The usual procedure in the Roman Senate was to vote between two alternatives ($M=2$). The voting was physical, with senators moving and positioning themselves around the senator leading one of the two positions, the greatest group winning. However, in a specific vote, Pliny, who was ruling the chamber, changed the procedure and presented three alternatives for voting, $M=3$. The vote was about what to do with the slaves of Consul Afranius Dexter, who had been found dead in his house under unclear circumstances. It could have been suicide, he could have ordered his slaves to kill him, or they could have killed him themselves. Three possibilities were raised for those slaves: acquittal, exile, or death. Riker calculates that the senators would be divided approximately as follows: 45% for acquittal, 35% for exile, and 20% for death. Pliny, who advocated for acquittal and was aware of the strength of each group, proposed

that a vote be held among the three alternatives, and the one with the most votes would win. This is what we would call "Plurality rule" today. This change in procedure caused understandable turmoil but it was carried out. Pliny expected to win, but the supporters of "death" strategically voted in favor of the "exile" alternative, their second preference. The slaves were exiled.

Several reasons lead us to believe that the School of Quintilian drew inspiration from Pliny's text. Firstly, Pliny's case is a real one, while the School case is hypothetical. Secondly, Pliny himself, for pedagogical purposes, transforms in his letter the Senate vote into a trial with three judges, one in favor of death, another for exile, and another for acquittal. It is not difficult to imagine that such a legal case became one of the "difficult cases" used in the School. Thirdly, the recipient of Pliny's letter is Ticius Aristo, a prominent Roman jurist who undoubtedly would have had connections with the School of Quintilian, since oratory was one of the skills taught to legal practitioners in Rome. Moreover, the unusual vote that Pliny triggered in the Senate must have been known and discussed in Rome by the political elites of the time, and it is reasonable to assume that it would have reached the School through various other means. Lastly, it hardly makes sense to assume the opposite, that is, that Pliny changed a Senate vote because he had read the Declamation and wanted to turn one of the school's difficult fictional cases into an institutional reality.²

Therefore, our hypothesis is that the innovative institutional decision that Pliny generated in the Senate was seized upon by the school and transformed into one of the difficult cases through which Rhetoric was taught to future jurists of the Empire. That re-elaboration, as we will see next, stimulated reflection on voting procedures; in other words, made progress in Social Choice Theory.

2.2 Contribution to Social Choice Theory

As mentioned, Pliny's letter is somewhat ambiguous, and several scholars have made various interpretations. Specifically, (Riker 1986) and (McLean et al. 2008) assume that Pliny changed the voting system from $M=2$ (binary) to $M=3$ (ternary). Others suspect that Pliny manipulated the order of binary votes (Urken 2004, 400). Some interpret that "with some dexterous procedural arguments, he (Pliny) succeeded in forcing the proponent of death to stand down" (Whitton 2010, 110).

Independently of that, considering that in the history of Social Choice, "traditional or historical definitions of problems are often redefined within the frameworks of contemporary mathematical models" (Urken 2004, 400), several ideas from the discipline have been identified in Pliny's text. These include the concepts of "Condorcet winner" (which would be exile), agenda manipulation, and sophisticated

² This hypothesis also explains some minor variations between both texts. For example, the Declamation simply mentions "a case of violence", without further details. Additionally, one of the three alternatives is changed. Pliny advocated for the "acquittal" of the slaves, but the Declamation replaces that alternative with "stigma." Since they were discussing the punishment for a case of violence, the alternative of "acquittal" would not make sense in Quintilian School. However, it made sense for Pliny, who believed that the consul had committed suicide.

voting. In the text of the Quintilian School, one can also observe other early contributions to Social Choice Theory.

First and foremost, we find the first theoretical criticism of the procedure known today as Plurality rule, by which each voter votes for one candidate and the candidate with the highest number of votes is elected.

The offender argues on three occasions: "Shall I die when only three wanted me to perish?", "Four jurors did not want me to die", "Most of them [*plures*] did not want me to die". In normative terms, what all those claims are saying is that the decision of the Court is not "fair" because it fails to correctly represent the will of the judges. The allegation boils down to the fact that more judges do not desire death than do, yet, contradictorily, the decision of the Court is "death."

Some of the criticism may result from the language ambiguity of the word "plures" in Latin, which parallels the ambiguity of the word "most" in English. According to standard dictionaries, "most", like "plures", has two different meanings: On the one hand, it is defined as "the largest number," "the greatest quantity," "more than anyone else," or other expressions equivalent to plurality. On the other hand, it is also defined as "the majority," meaning more than half. The problem is that an alternative may receive the largest number of votes than any other, but still be short of a half.

Alongside this critique of Plurality rule, we also find, in second place, an early outline of the procedure we now call "pairwise comparisons", which would produce either a Lull-Copeland winner or a Condorcet winner. The discussion starts with this sentence: "Can it be doubted that the stronger part is that which when compared yields to neither, beats both?" (*Dubitari potest valentiozem esse partem quae composita neutri succumbit, utramque superat?*).

Then, the Rhetor, in response to the offender's arguments, defends the Plurality winner as if it would also be the winner by pairwise comparisons. The extended fragment reads: "I have three who pronounce death. Bring forward those who pronounce exile: I win. Bring forward those who pronounce stigma: equally I win. Can it be doubted that the stronger part is that which when compared yields to neither, beats both?".

Certainly, neither the offender nor the Rhetor cannot speak with our words. We see "voters," "scales of preferences," and a property we call "majority." They lack these concepts, and therefore these terms. They only have "sentences," "parts" or groups of votes, and "the largest part." That is why the accused always defends himself by modifying the division of the parts. Yet, Plurality rule by categoric vote does not allow to change the parts once they are formed. And once formed, it is clear which is "the largest part." That is the Rhetor's defense.

However, beyond the letter of the law, another pulse beats: the pulse of the actual preferences of the voters, rather than the parts formed by the system. This intuition of a scale of preferences was present in Pliny, who, at one point in his letter, states that "an acquittal approaches rather nearer a sentence of exile than a sentence of death does" (Pliny 1900, 278).

In the Quintilian Declamation, the accused claims also refer to preferences. He always talks in volitional terms: "Shall I die when only three wanted me to perish?", "Four jurors did not want me to die", "Most jurors did not want me to die". In all

three pleas, the verb used is "to want." What he is expressing in an incipient manner is that the real will (or preference) of the judges has not been properly reflected in the collective decision. And that is what Social Choice Theory is about.

If we strictly adhere to Plurality rule, there are only three parts, and one of them is undoubtedly the largest. Only when we assume voters' preferences and assume that such preferences have not been accurately captured in the sentences, we are able to criticize the procedure. The technical solution to this problem will not occur until Lull in 1299. Lull introduces preferences, and so transcends the bare idea of "part."

When collective decision-making is not composed solely of parts but of preferences, then "the largest part" is no longer the sole criterion. Only then can another criterion arise, one which we now call "majority." Locke would be the first major canonical author to use the term "majority". Before Locke, the term did not exist, and everyone, including Hobbes, used "the largest part" (Urdánoz 2019). When there are only parts, the largest part wins, and there is no problem. When we assume preferences, everything becomes more complex. With $M=2$, this problem remains hidden, because the two parts are also the two preferences. With $M=3$, the problems arise. The text from the Rhetor is aware of this.

That is why we find, in third place, a clear advancement in formalization and theorization. Pliny describes a fact and merely tries to justify his position. The Rhetor transforms what happened in the Senate into a strict voting problem: 7 judges/voters, 7 votes, and a result of 3–2. The law does not necessarily require two parts, as the winner is "what the larger part decides," not "which of two", as it explicitly assumes that $M > 2$. Also, the formula: "the stronger part is that which when compared yields to neither, beats both".

This advance in theorization comes because the Quintilian Rhetor's text is not driven, like Pliny's, by the desire for one of the alternatives to triumph. Pliny acknowledges that he was in favor of the acquittal of the slaves. His entire letter is an attempt to justify his maneuver in the Senate. But there is not a will like that behind the text of the Rhetor. In his fictional story, the alternative of "acquittal" is replaced by that of "stigma," signaling that the Rhetor is not interested at all in the specific *material* issue, but rather in the theoretical or *formal* circumstance it entails. Contrary to what the Rhetor claims, in the Roman Empire, in both the Senate and trials, the voting method was binary, with $M=2$, never with $M=3$ (Russell 1933, 117). The Quintilian Rhetor invents or supposes a law with $M=3$ because, even though such a law does not exist, it generates a problematic scenario. He is theorizing about a voting method and the possibilities it entails, rather than describing something real.

3 The Attic Nights of Aulus Gellius

The second text is fragment 15 from Book IX of the work "The Attic Nights" by Aulus Gellius. It is a book of the type scholars call "miscellany". It is composed by numerous and heterogeneous anecdotes, teachings, dialogues, or lessons. The work consists of twenty books, although book eighth is lost. Each of these books contains

different chapters or fragments. Each fragment, totaling around four hundred, is a standalone unit.

There is no particular order or structure; the fragments simply follow one after another. The topics covered are vast and diverse, ranging from philosophy, ethics, logic, rhetoric, history, biography, arithmetic, geography, politics, religion, law, and more. Gellius's work has been instrumental in preserving fragments of classical authors, which he copied almost verbatim, and which otherwise would not have reached us. This is why it is greatly appreciated by classical scholars (Rolfe 1927, xvi–xvii). Scholars have dated the publication of the book around the year 177 (Holford-Strevens 1977, 109).

The fragment IX, 15 has been described as "not admitting any classification" (Nettleship 1883, 404). But the meaning is clear enough from the perspective of Social Choice. It narrates the following anecdote: Julianus, a prestigious Roman rhetor, is on vacation in Naples. There, an arrogant and haughty young man, the son of a wealthy family, seeks to impress him with his oratory skills. The young man asks to be presented with "controversiae," that is, the fictitious legal cases discussed in the schools of rhetoric. Such exercises were common in rhetorical education to stimulate critical thinking and the ability to argue effectively on various subjects. However, Julianus and his colleagues don't hold the young man in high regard, so they propose "a topic for debate that was not logically constructed, of the kind which the Greeks call *ἄπορος*, and in Latin might with some propriety be termed *inexplicabile*, that is, *unsolvable*" (Gellius 1927, 205). In other words, Julianus and his colleagues deliberately set the young man up with a challenge that does not have a clear solution or a logical construction. They are teaching him a lesson in humility.

The selected exercise is, once again, the one with the seven judges. This time we do not know anything about the crime. The judges have to decide, by plurality, among three punishments for the accused. Two judges vote for exile, two for a fine, and three for death. The result is death, and the accused appeals.

The young man, unaware that he has fallen into a trap, listens to the case and, without realizing it, speaks nonsensically for a long time, defending the most diverse and extravagant positions regarding the case. Julianus feels embarrassed, and once everything is over, he plays on words, hinting that the young man did not grasp anything and that the controversy overwhelmed him.

3.1 The first "aporia" in Social Choice Theory

The most relevant aspect of the fragment is the term used in the title, "On the kind of debate which the Greeks call *ἄπορος*". The literal translation of the Greek word *ἄπορος* into English is "aporia." Gellius translates it into Latin as "inexplicabile" (unsolvable). The fact that he justifies his translation ("might with some propriety be termed") indicates that there was no clear word to refer to the problem posed in the voting. Gellius' text refers to a voting system that can yield counterintuitive or seemingly illogical results. In the example provided, it seems clear that the death penalty does not accurately represent the judges' collective will.

Two things seem evident. First, the inconsistency of the voting by the seven judges was known in the Schools of Rhetoric, and rhetors held it in their body of knowledge. Julianus and his friends are already aware of the difficulty of the case, and that's why they can use it as a "trap" for the insolent young man.³

Second, this kind of inconsistency (the text suggests that there might be more) was classified with a specific name (ἄπορος, inexplicable) as a distinct subclass. By giving a specific name to such cases, Julianus and other rhetoricians acknowledged their uniqueness. This represents an advancement in comparison to Pliny, who "shows awareness of strategic manipulation under successive binary and ternary voting, but not of voting paradoxes" (McLean 2015b, 156).

Today the term commonly used for this type of problem is "paradox." However, in its current sense, the term "paradox" only appeared in English in the sixteenth century.⁴ The field of Social Choice theory is rich in paradoxes, with some of the most famous being Condorcet's paradox, the voting paradox, and the liberal paradox. A paradox highlights something contrary to common belief or expectation, but unlike "contradictions," paradoxes do allow for resolution. In fact, they incentivize the advancement of reflection and, therefore, of science.⁵

4 Conclusion

It seems that the first theorization in the history of Social Choice, after its inception with Pliny's maneuver, took place in the schools of Rhetoric of the Roman Empire.

The episode of Pliny is from the year 105, the Declamation is probably a bit later. Gellius is from the year 177. Over several decades, there was an incipient reflection within the rhetorical schools about a problem arising from a voting system.

The specific reflection that connects the dots between Pliny's episode and the Declamation ended up shaping what they called "aporia" and we probably would now call a "paradox". This inconsistency was already known by rhetors in the ancient world.

What such reflection pointed out was an evident contradiction or problem with the Plurality voting method. If we observe closely, the historical sequence remains consistent. The initial appearance of the stream of Social Choice—now formed by Declamation 365 and Gellius—represented a critique of Plurality, just as the episode with Pliny had prompted it. The same pattern emerges with the second and third appearances—Llull and Cusanus—as they sought to

³ Although this difficulty was already known by rhetors in the ancient world, its legacy, which reached Pufendorf (Pufendorf 1672, 650), was lost afterward. Lately, there has been a growing interest in Pufendorf in the field of Social Choice history (Gaertner 2005; Lagerspetz 1986; Pasquino 2010). Pufendorf is probably the best bridge we have between modernity and the Greco-Roman antiquity. Delving further into his writings will undoubtedly offer valuable insights to future scholars.

⁴ "Paradox", in Merriam-Webster.com dictionary. Retrieved July 25, 2023, from <https://www.merriam-webster.com/dictionary/paradox>.

⁵ Duncan Black, for example, affirmed that the name "Paradox of Condorcet" was inappropriate. Following Lewis Carroll, Black advised calling them "cycles" since there is nothing paradoxical about them (Black 1958, 46).

improve medieval elections of popes, abbots and emperors, where Plurality had originated evident problems. Similarly, the fourth appearance, the *Golden Age*—Condorcet, Borda, Morales—remains unaware of the previous stages and starts anew.

In each occurrence, the critique and analysis of the Plurality system remain consistent, indicating its inherent weaknesses and limitations in various historical contexts. The continuous attempts to address and refine voting and election methods throughout the ages reveal the persistence of the challenges posed by Plurality and the desire to find more robust and fair alternatives. As scholars explored new approaches in different periods, they unknowingly revisited and reevaluated the issues that had emerged centuries earlier, aiming to progress toward a more satisfactory and effective collective decision-making framework.

Plurality rule operates as a sort of "intuitive" or "spontaneous" voting system, whose evident failures trigger theoretical reflection. Its intuitiveness lies in the assumption that, when there are more than two options, the natural course of action is to apply the same procedure, that is, a single vote and the option with the most votes wins, i.e., the "maior pars". However, this intuition conceals the numerous flaws inherent in Plurality. It is only when these flaws come to light that reflection emerges. As has been stated, "a prerequisite of Social Choice is to understand that decisions among more than two options are potentially problematic" (McLean 2015a, 16). The history of this intellectual stream is completely consistent with this assertion.

The fact that the first steps of Social Choice were taken in the rhetorical schools of antiquity is not surprising. These schools taught the discipline now known as "logical argumentation," cultivating subjects such as mathematics, jurisprudence, and political knowledge. This bears resemblance to the topics explored today in Social Choice, Public Choice, and Political Science. Both then and now, paradoxical and problematic situations serve as powerful incentives for reflection and the advancement of knowledge.

Appendix

Declamation 365

We reproduce the translation into English by D. R. Shackleton Bailey: Quintilian (ascribed), *The Lesser Declamations*, Cambridge: Harvard University Press, 2006. On the two occasions in which the translation uses the modern term "majority", we refer to the original Latin word *plures*. It is worth noting that the discursive structure is somewhat unusual in our current practices. The text presents a somewhat disordered opposition of reasons, without making it very clear at what point each person starts speaking. However, the underlying problem becomes clear enough in the reading.

Seven jurymen in a case of violence

In a case of violence let there be seven jurors. Let the defendant suffer what the largest part of the jury decides. Two were for stigma, two for exile, three for death. Death is demanded.

Declamation

“What the largest part of the jury decides,” it says. I conceive that the greater part is that in which more are of the same persuasion, pronounce the same punishment, take the same oath. That this is true, learn from the very words of the law: “What penalty?”; it speaks not of several punishments but of one; for indeed a single guilty man cannot bear more than one punishment. Examine other words too: “Decides,” it says. Don’t you think it covers a single utterance of a single consentaneous part? “What penalty it decides”; that is, what kind of punishment it pronounces as its choice, what penalty it wants imposed on the guilty man.

“But four jurors,” he says, “did not want me to die.” You are now telling me what penalty they passed over, not what they decided. But the law demands their definite verdict. For what would you be saying if they had not pronounced yet, if they had said that they were not clear as to your punishment? Would you count their votes? By no means. I have already stated the words of these three: what words shall I state for these four? That they are in doubt, don’t know what to pronounce, still therefore in suspense? Why do you demand a dismissal if the judge is deliberating? “Most [*plures*],” he says, “did not want me to die.” Then you should pronounce what they do want. I want to state their verdict, recite it as prosecutor to these jurors, so that they have something to go by. “Two,” he says, “sentence me to exile, two to stigma.” “So now you are making a plurality [*plures*] from one part, now by dividing the group, which if united would hurt you, you extinguish it.” Two pronounce exile, two stigma, do you want me to unite those who divide themselves? Go back now to the words of the law, as a little while ago. “The penalty,” it says, “which the larger part of the jurors decides.” “Part” we understand as brought under the same number, joined by verdict as by group. Otherwise, if you are allowed to mingle and join those who disagree, why do you separate these three? For just as these dissent from those four, so those four are at odds among themselves. So, you cannot unite those who do not vote the same. Compare those who do vote the same. I have three who pronounce death. Bring forward those who pronounce exile: I win. Bring forward those who pronounce stigma: equally I win. Can it be doubted that the stronger part is that which when compared yields to neither, beats both? For what if those four were split into as many verdicts? Would you then set them against me as a single part? Doubtless no one of them would stand with my three, but no one of them would be joined to another. Would you make a single block out of four votes? By no means. But what difference does it make whether the disagreement is by twos or by

units? Equally it cannot be numbered as a part if it is divided into parts. What if two pronounced stigma, two exile, two death, and one (as often happens) abstained? Unquestionably the votes would be equal. So if they are equal with one subtracted, are they not superior with one added? But so you know the law does not necessarily require two parts, look at the words: "what the greater part decide," it says: not "which of two."

Finally, gentlemen, I must be brief. What penalty ought the defendant to suffer if you leave out the death penalty? What penalty? Exile, I suppose. So, when four votes will not yield to three, shall five succumb to two? Or stigma? But the unfairness is the same. What will you do in this controversy of punishments? You can't suffer both. If you bear the stigma, you must stay in the country; if you are expelled, you leave the country.

"What then?" he says? "Shall I die when only three wanted me to perish?" What about it? Is it so unfair that you die, when you have confessed and even in your own judgment are eminently deserving of execution? For what shall we reserve you? Evidently you will be a splendid example to our citizens: your way of life is such that it was possible for you to be convicted.

Aulus Gellius IX, 15

We reproduce the translation into English by John Carew Rolfe: Aulus Gellius, *The Attic Nights of Aulus Gellius*, Cambridge, Harvard University Press; London, William Heinemann, 1927.

§ 9.15 On the kind of debate which the Greeks call ἄπορος.

With the rhetorician Antonius Julianus I had withdrawn to Naples during the season of the summer holidays, wishing to escape the heat of Rome. And there was there at the time a young man of the richer class studying with tutors in both languages, and trying to gain a command of Latin eloquence in order to plead at the bar in Rome; and he begged Julianus to hear one of his declamations. Julianus went to hear him and I went along with him. The young fellow entered the room, made some preliminary remarks in a more arrogant and presumptuous style than became his years, and then asked that subjects for debate be given him. There was present there with us a pupil of Julianus, a man of ready speech and good ability, who was already offended that in the hearing of man like Julianus the fellow should show such rashness and should dare to test himself in extempore speaking. Therefore, to try him, he proposed a topic for debate that was not logically constructed, of the kind which the Greeks call ἄπορος, and in Latin might with some propriety be termed inexplicable, that is, "unsolvable." The subject was of this kind:

"Seven judges are to hear the case of a defendant, and judgment is to be passed in accordance with the decision of a majority of their number. When the seven judges had heard the case, two decided that the defendant ought to be punished with exile; two, that he ought to be fined; the remaining three, that he should be put to death. The execution of the accused is demanded according to the decision of the three judges, but he appeals."

As soon as the young man had heard this, without any reflection and without waiting for other subjects to be proposed, he began at once with incredible speed to reel off all sorts of principles and apply them to that same question, pouring out floods of confused and meaningless words and a torrent of verbiage. All the other members of his company, who were in the habit of listening to him, showed their delight by loud applause, but Julianus blushed and sweat from shame and embarrassment. But when after many thousand lines of drivel the fellow at last came to an end and we went out, his friends and comrades followed Julianus and asked him for his opinion. Whereupon Julianus very wittily replied "Don't ask me what I think; without controversy this young man is eloquent."

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Declarations

Conflict of interest The authors have no competing interests to declare that are relevant to the content of this article.

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References

- Black D (1958) *The theory of committees and elections*. Cambridge University Press, Cambridge
- Colomer JM (2013) From 'Ars Electionis' to Social Choice Theory. *Soc Choice Welfare* 40(2):317–328
- Farquharson R (1969) *Theory of voting*. Yale University Press, New Haven, CT
- Gaertner W (2005) De jure naturae et gentium: Samuel von Pufendorf's contribution to Social Choice Theory and economics. *Soc Choice Welfare* 25(2–3):231–241
- Gellius A (1927) *Attic Nights*. Harvard University Press, Cambridge, Mass
- Hägele G, Pukelsheim F (2001) Lulls' writings on electoral systems. *Studia Lulliana* 41:3–38
- Holford-Strevens L (1977) Towards a chronology of Aulus Gellius. *Latomus* 36:93–109
- Hornblower S, Spawforth A, Eidinow E (2012) *The Oxford classical dictionary*. Oxford University Press, Oxford
- Lagerspetz E (1986) Pufendorf on collective decisions. *Public Choice* 49(2):179–182
- McLean I (1990) The Borda and Condorcet principles: three medieval applications. *Soc Choice Welfare* 7(2):99–108
- McLean I (2015a) The strange history of Social Choice. In: Heckelman JCM, Miller NR (eds) *Handbook of Social Choice and voting*. Edward Elgar Publishing, Gheltenham
- McLean I (2015b) The strange history of Social Choice, and the contribution of the Public Choice Society to its fifth revival. *Public Choice* 163(1/2):153–165
- McLean I, Urken AB (1995) *Classics of Social Choice*. Macmillan, London

- McLean I, Lorrey H, Colomer JM (2008) Social Choice in Medieval Europe. *Electron J Hist Probab Stat* 4(1):1–23
- Merriam-Webster. (n.d.). Paradox. In: Merriam-Webster.com dictionary. Retrieved July 25, 2023, from <https://www.merriam-webster.com/dictionary/paradox>
- Nettleship H (1883) The Noctes Atticae of Aulus Gellius. *Am J Philol* 4(4):391–415
- Pasquino P (2010) Samuel Pufendorf: majority rule (logic, justification and limits) and forms of government. *Soc Sci Inf* 49(1):99–109. <https://doi.org/10.1177/0539018409354476>
- Pliny (1900) Letters (W. Melmoth, Trans.). Hinds, Noble & Eldredge, New York
- Pufendorf S (1672) Of the law of nature and nations. Translated by B. Kennett, with notes of J. Barbeyrac. London: Printed for Walthoe et al. (fourth edition, 1729)
- Riker WH (1986) The art of political manipulation. Yale University Press, New Haven
- Rolfe JC (1927) Introduction. In: *Attic Nights*. Harvard University Press, Cambridge, pp XI–XXV
- Russell A (1933) The procedure of the senate. *Greece Rome* 2(5):112–121
- Shackleton Bailey DR (2006) The lesser declamations (ascribed to Quintilian). Harvard University Press, Cambridge
- Sherwin-White AN (1966) The letters of Pliny: a historical and social commentary. Oxford University Press, Oxford
- Sigmund PE (1963) Nicholas of Cusa and medieval political thought. Harvard University Press, Cambridge
- Urdániz J (2019) La forja del principio de mayoría en la modernidad. De Hobbes a Chuck Norris. *Anuario Filosofía Del Derecho* 36:495–517
- Urken AB (2004) The origins of Social Choice Theory. In: Rowley CK, Schneider F (eds) *The encyclopedia of public choice*. Springer US, Boston, pp 725–727
- Whitton C (2010) Pliny, Epistles 8.14: Senate, Slavery and the Agricola. *The Journal of Roman Studies* 100:118–139
- Winterbottom M (1984) The minor declamations ascribed to Quintilian. Walter de Gruyter, New York

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