

## JUDGING ATHENIAN DRAMATIC COMPETITIONS\*

**Abstract:** This paper presents a new model for how the voting worked at the Athenian dramatic competitions, and demonstrates its viability mathematically. Previous proposals have either failed to take full account of the ancient sources or have not considered all the possible permutations of judging results. As is generally recognized, ten votes were cast, but in most circumstances not all were counted. Sections I-IV consider the tragic competition at the Dionysia, in which three competitors vied for the prize. For the questions we consider, two likely cases are examined (when the votes are divided 4-3-3 and 5-3-2), then a random distribution covering all possible cases, and finally the situation when two competitors are favoured against a third (when the votes are divided 5-5-0, 5-4-1 and 4-4-2). Section I presents the proposal and situates it within the Athenian cultural context. Section II asks how many lots are typically drawn before a victory is obtained. Section III considers how other places are determined. Section IV introduces the question of ‘fairness’: does the person who receives the most votes actually win? Section V considers adjudication for comedies and at the Lenaia. Section VI considers dithyrambic competitions.

THE judging procedure for Athenian dramatic contests is not well understood. In this paper, we present a new model that we believe takes account of all the relevant data, which possesses the additional virtue of clarity of execution, so that a large festival audience can easily follow the proceedings as the winner is determined publicly. It differs in certain important respects from other interpretations, in particular those of Pickard-Cambridge, Pope, Csapo and Slater, and Wilson.<sup>1</sup> While these discussions are important, none presents a completely satisfactory judging model, leaving cases unanswered or producing a nontransparent system. We cannot know for certain what the process was, and several assumptions do need to be made along the way. However, the attempt to come to grips with the evidence to produce a coherent voting procedure does reveal much about Athenian attitudes towards competition and drama. In this light, we believe our proposal possesses a plausibility that can be measured mathematically: this can therefore provide a benchmark against which other proposals may be evaluated. The initial four sections of the paper focus on the tragic competition at the Dionysia in which there were three competitors. Section V discusses comedy and the Lenaia, and section VI considers dithyrambic competitions.

### I. THE JUDGING PROCEDURE

Our proposal, in brief, is this. Once the ten judges had been selected, one from each tribe, and the plays had been presented, each judge cast his vote by inscribing the name of one competitor – it is likely the name of the *didaskalos* (director) was used – on a tablet (τὸ γραμματεῖον, Lys. 4.3) and depositing it publicly in an urn. One at a time, five votes would be selected by the Archon Basileus and read aloud. If there was at this point a majority, that individual was said to have won the contest. If there was not a majority at this point, two more tablets were drawn. If there were still no clear victor, an eighth, ninth or tenth ballot could be drawn until a victory was achieved. Using this system, a single clear victor is always determined, which is not so if all votes were always reckoned: Pope rightly insists that it is important that ‘the verdict will have

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<sup>1</sup> A. Pickard-Cambridge, *The Dramatic Festivals of Athens* (2nd edn rev. by J. Gould and D.M. Lewis, Oxford 1988) 95-9; M. Pope, ‘Athenian festival judges – seven, five, or however many’, *CQ* 36 (1986) 322-6; E. Csapo and W.J. Slater, *The Context of Ancient Drama* (Ann Arbor 1995) 157-65; P. Wilson, *The Athenian Institution of the Khoregia. The Chorus, the City and the Stage* (Cambridge 2000) 98-102 and 346-7 nn.222-37. These works have been used throughout this paper.

been reached by a process that was public, rational, and quick' and that 'there would always have been a clear verdict, never a stalemate'.<sup>2</sup> The proposed process is quick, clear and transparent, all of which are important considerations given the volatility of the Athenian audience.<sup>3</sup> It further explains how it could be said proverbially of a decision that ἐν πέντε κριτῶν γούνασι κείται ('it lies in the laps of five judges'),<sup>4</sup> and also how Lucian could say that the decision is made by only ἑπτὰ ἢ πέντε ἢ ὅσοι δὴ ('seven, five, or however many').<sup>5</sup>

Many aspects of such a reconstruction need to be justified, and complete certainty about the process cannot be achieved. This proposal does, however, accord with a comprehensible ideology underlying the voting system. The use of lot – sortition – was well established in Athenian practice.<sup>6</sup> In one sense, lottery can be seen as a fundamentally democratic process, in which each individual has equal opportunity to participate.<sup>7</sup> Complete randomness for the initial selection of judges was curbed by having each tribe propose names of acceptable individuals: what the criteria were for this is not known and may have varied from tribe to tribe. Possible factors include a property classification (such as was used in choosing *chorégoi* (producers)), previous experience participating in the festivals (which most male citizens would have possessed in some degree), or some basic skills in literacy.<sup>8</sup> Secondly, sortition at the initial and subsequent stages of the process also serves as protection against corruption through either bribery or physical intimidation. Our sources make it clear that these were a serious concern,<sup>9</sup> and the presence of safeguards diminishes the value of any attempts to rig the result. Lottery may also be seen in theological terms, allowing the god to have some say in the selection of the winner, despite how the ten votes were cast. Dionysus as the ultimate theatrical arbiter – a role confirmed in the second half of Aristophanes' *Frogs* – can express his preference by allowing a play with fewer votes to be selected the winner. This might not seem completely equitable to a modern mind, but in antiquity it was an accepted and acceptable approach that would not provoke outcries of unfairness.<sup>10</sup> What weight the Athenians would have assigned these three influences – the democratic, the competitive and the religious – may indeed have varied from one individual to the next. All, however, were at work in the system to some degree.<sup>11</sup>

Great care was taken in the initial selection of judges, and, though precise details are not known, there is general agreement about the process: before the festival, each of the ten tribes would nominate a number of candidates, whose names would be put before the Boule for

<sup>2</sup> Pope (n.1) 324 and 325.

<sup>3</sup> Rightly Csapo and Slater (n.1) 159; Wilson (n.1) 98. For noise in the theatre generally, see Robert W. Wallace, 'Poet, public, and "theatrocracy": audience performance in Classical Athens', in Lowell Edmunds and Robert W. Wallace (eds), *Poet, Public, and Performance in Ancient Greece* (Baltimore and London 1997) 97-111, 157-63.

<sup>4</sup> Zen. 3.64 cites the proverb, making reference specifically to comic choruses. This restriction likely occurs because he is glossing a line of the comic poet Epicharmus. Hesychius, s.v. πέντε κριταί, evidently has no other source. The scholiast to Ar. *Av.* 445 draws the same conclusion. *P.Oxy.* 1611.34-7 indicates Lysippus in *Bacchae*, and Cratinus in *Ploutoi* (fr. 177 *PCG*) also said there were five judges in some context.

<sup>5</sup> Lucian, *Harm.* 2 (cited more fully in IIa below)

<sup>6</sup> See *OCD*<sup>3</sup> s.v. 'Sortition'.

<sup>7</sup> 'The use of the Lot carried with it the implication that all citizens were competent to hold these offices and that no special qualifications or experience were required...' (R.K. Sinclair, *Democracy and Participation in Athens* (Cambridge 1988) 195). This attitude further suggests that what was required of any individual selected

for an office by lot in terms of literacy was nothing exceptional. Any citizen should be able to fulfil the requirements of the position.

<sup>8</sup> Hesychius, s.v. διὰ πάντων κριτής, cited below, suggests that the ability to take notes during a performance was seen as desirable.

<sup>9</sup> Corruption and intimidation of the judges is alleged at [And.] 4.21; Dem. 21.5, 17, 65; Quint. 10.1.72; Ael. 2.8; Aul. Gell. 17.4. In the context of comedy, bribes are offered at Ar. *Eccl.* 1140-3, *Av.* 1102-17, and *Nub.* 1115-20; threats are offered in comedy at *Av.* 1102-07, *Nub.* 1121-30, and Pherecr. *Krapataloi* fr. 102 *PCG*.

<sup>10</sup> In the New Testament, the successor to Judas is also selected by lot, after a shortlist has been produced (Acts 1: 21-6). It is in this context that we may best understand Proverbs 18: 18, evoked by Pope (n.1) 323: the Athenian judging process does not 'arbitrarily disenfranchise five tribes'. Rather, sortition places the ultimate decision out of the hands of (corruptible) humans.

<sup>11</sup> A complementary discussion of this issue is found in S. Jedrkiewicz, 'Giudizio "giusto" ed alea nei concorsi drammatici del V secolo ad Atene', *QUCC* 54 (1996) 85-101.

approval.<sup>12</sup> The names proposed by each tribe were sealed in separate jars by the *chorégoi*, and then kept on the Acropolis and guarded by the Treasurers.<sup>13</sup> On the day of the contest, a panel of ten judges would be selected by the Archon,<sup>14</sup> one from each tribe. It is probable that a different panel of judges would be used for each competition at the Dionysia. This explains both the reference at Dem. 21.18 to τοὺς κριτὰς τῷ ἀγωνί τῶν ἀνδρῶν ('the judges for the men's [dithyrambic] contest') and the reference to '40 judges' in *P.Oxy.* 1611.30-7.<sup>15</sup> An oath would then be administered to ensure honesty.<sup>16</sup>

There is no question of ongoing evaluation with each competitor being 'scored' immediately after each performance (as, say, in modern competitive figure skating or diving). Judges cast a vote for the best entry once they had seen all three. In *Eccl.* 1154-62, Aristophanes asks the judges not to fault him because his play was performed first, the order having been determined by lot. There was an apparent perception among some that there was an advantage to being freshest in the audience's – and the judges' – memory. Pope raises the possibility that the judges retired to discuss their verdict,<sup>17</sup> but this is neither needed nor desirable for transparency. Several sources refer to audiences attempting to sway the judges by their noise,<sup>18</sup> and this is best understood as taking place while the judges were casting their ballots, immediately following the final competitor's entry. Individual judges made individual decisions publicly, and the results were then selected publicly according to procedure.

Further disagreement exists as to whether judges wrote the name of one competitor, or ranked all three.<sup>19</sup> The only unambiguous evidence for ranking comes from Vitruvius, describing Hellenistic Alexandria, in a non-Athenian contest with seven judges.<sup>20</sup> Many have found corroboration in Aelian, *VH* 2.13:

ἐκρότου τὸν ποιητὴν ὡς οὐποτε ἄλλοτε καὶ ἐβῶων νικᾶν καὶ προσέταττον τοῖς κριταῖς ἄνωθεν Ἀριστοφάνην ἀλλὰ μὴ ἄλλον γράφειν.

They applauded the poet as never before and shouted that he should win and commanded the judges from above to write no other name but Aristophanes.<sup>21</sup>

Some have taken ἄνωθεν to mean 'at the top [of their lists]', but such a usage is unparalleled. This passage is rightly to be taken as evidence for special seats for the judges in the front row with the Archon Basileus, rather than as evidence for ranked preferences.<sup>22</sup> This interpretation also explains Ar. *Ach.* 1224, where Dicaeopolis asks to be brought to the judges: they are in the front row, with the Archon Basileus.<sup>23</sup> Listing preferences does not lead to transparency in the procedure: individuals in the audience would be unable to perceive who was winning as the

<sup>12</sup> Lys. 4.4.

<sup>13</sup> Isoc. 17.33-4. To tamper with the jars at this point was a capital offence.

<sup>14</sup> Plut. *Cim.* 8.7-9; Dem. 21.65, 39.10.

<sup>15</sup> Rightly Wilson (n.1) 347 n.231; see also G. Arrighetti, 'Il papiro di Ossirinco n. 1611 e il numero dei giudici negli agoni', *Dioniso* 45 (1971-74) 302-8. The use of different judges for each contest is also suggested by Plut. *Cim.* 8.7-9, with the unusual substitution of the ten *stratēgoi* for the judges of tragedy in 468, a measure which strongly suggests no special preparation or training of the judges occurred.

<sup>16</sup> Ar. *Eccl.* 1159-62; Pherecr. *Krapataloi fr.* 102; [And.] 4.21; Pl. *Leg.* 659a; Dem. 21.17, 65 and *Hypothesis II*; Plut. *Cim.* 8.7-9. Aeschin. *Against Ctesiphon* 232 indicates that judges making bad decisions could end up on trial.

<sup>17</sup> Pope (n.1) 323.

<sup>18</sup> Pl. *Leg.* 659a; Plut. *Cim.* 8.7-9; Ael. *VH* 2.13 (cited in the next paragraph); Luc. *Harm.* 2.

<sup>19</sup> Those who believe rankings were used include A.E. Haigh, *The Attic Theatre* (3rd edn, Oxford 1907) 34; Pickard-Cambridge (n.1) 97, and Jedrkiewicz (n.11).

<sup>20</sup> Vit. 7 pr. 4-7.

<sup>21</sup> Trans. Csapo and Slater (n.1) 163.

<sup>22</sup> Rightly Wilson (n.1) 347 n.220.

<sup>23</sup> Special seats are also attested for the judges in Alexandria, in Vit. 7 pr. 5. The judges therefore sat with the Priest of Dionysus, who was also in the front row (Ar. *Ran.* 297): for other indications of seating arrangements in the theatre, see Csapo and Slater (n.1) 298-301.

process was underway without the aid of detailed personal notes, and literacy in fifth-century Athens was not yet widespread enough for this to be plausible.<sup>24</sup> Modern means for assessing ranked preferences in elections have required either assigning a point-value for each ranking or adopting a single transferable vote, neither of which is attested in antiquity.

The strongest evidence for ranking comes from Plato, *Rep.* 580a-b, and seems to have been underappreciated by those discussing festival judging:

νῦν ἤδη ὡσπερ ὁ διὰ πάντων κριτῆς ἀποφαίνεται, καὶ σὺ οὕτω, τίς πρῶτος κατὰ τὴν σὴν δόξαν εὐδαιμονία καὶ τίς δεύτερος, καὶ τοὺς ἄλλους ἐξῆς πέντε ὄντας κρίνε...  
'Ἀλλὰ ῥαδία, ἔφη, ἢ κρίσις. καθάπερ γὰρ εἰσήλθον, ἔγωγε ὡσπερ χοροὺς κρίνω...

'Now is the time for you to play the part of the judge with overall authority and reveal your verdict. Of the five types ... which comes first, in your opinion, in the contest of happiness? Which comes second? You'd better grade all five of them.'

... 'It's an easy decision to make,' he said, 'because the order in which they made their entrance, like troupes of dancers on a stage, corresponds to how I rate them...'<sup>25</sup>

Glaucon ranks the five types of government under consideration in the order in which they have been discussed. The verb κρίνειν is twice used to mean 'rank': Waterfield's translation suggests that placing all of the contestants in order is an afterthought, but the Greek does not require this. How does this passage relate to the judging procedure of the festivals? The passage is not straightforward, and no clear interpretation has emerged. First, however, we may note that the explicit theatrical imagery (ὡσπερ χοροὺς) is added by Glaucon to the initial question: its explicit force merely says that the types of government have been discussed in sequence in the same way in which choruses appear in sequence and are (afterwards) judged. Nevertheless, it is natural to think that the simile emerges because the judging is somehow associated with festival judging, and so the association cannot be automatically denied. The true difficulty lies in the phrase ὁ διὰ πάντων κριτῆς ('the judge with overall authority'), which is otherwise unattested. Parallel expressions do exist but the meaning is nowhere explicit: it is, surely, a technical term for a judge of some sort of contest that existed in the fifth century (datable by a reference in Cratinus).<sup>26</sup> As Adam describes, Jebb related the passage to dithyrambic competitions and the inscriptional evidence suggests a ranking among those having been chosen as victors, but neither of these clearly explains the Platonic passage.<sup>27</sup> When Hesychius explains the phrase διὰ πάντων κριτῆς, he cites the Hellenistic scholar Boethus:

Βοηθός φησι ἐν τοῖς περὶ Πλάτωνος, ὅτι ὁ νομοθέτης ἐκέλευσε τοῖς κρίνουσι γράφειν τὰ κεφάλαια ἕκαστον.

Boethus says in his *On Plato* that the lawgiver [= the Archon] told the judges each to write the main points [of each dramatic entry].

<sup>24</sup> This is not how we would wish to understand Ar. *Ran.* 1114, as some might, for which see A.H. Sommerstein, *Frogs* (Warminster 1996) 256. However, a passage in Hsch. s.v. διὰ πάντων κριτῆς, cited below, does suggest that judges could make notes during the performance of plays. Perhaps then the whole antistrophe, *Ran.* 1109-18, refers not to the audience generally, but to the judges in particular (as representatives of the audience?): ἐστρατευμένοι γάρ εἰσι (1113 'they're old campaigners', trans. Sommerstein), familiar with the theatre (so Sommerstein 255-6 and H. Erbse, 'Dionysos'

Schiedsspruch in den Fröschen des Aristophanes', in Δώρημα Hans Diller zum 70. Geburtstag (Athens 1975) 45-60, at 55).

<sup>25</sup> Trans. R. Waterfield, *Plato: Republic* (Oxford 1993) 325-6.

<sup>26</sup> See J. Adam, *The Republic of Plato* (2nd edn, Cambridge 1963) 373-6, who draws together relevant sources, including inscriptions, and rightly insists that ὁ διὰ πάντων κριτῆς must be a technical term. At 340-1 he assumes judges at dramatic festivals ranked competitors.

<sup>27</sup> Adam (n.26) 375-6.

It seems most natural to understand τὰ κεφάλαια as ‘main points’, i.e. the Archon has instructed the judges to take notes during each performance in order to counter any inclination to privilege only the most recently viewed play – a result we have seen that Aristophanes fears in *Eccl.* 1154–62. Boethus’ citation is relevant to this passage in Plato, therefore, precisely because Glaucon does favour the first ‘entry’, kingship. It is relevant to Hesychius because he understands ὁ διὰ πάντων κριτής to be ‘the judge through all the proceedings’. This does not solve all the difficulties, but it does suggest that ranking victors was not a necessary component of the judging procedure. It was, perhaps, something that judges did naturally during the course of the competition as part of the notes that they took (on the off-chance that one of the competitors was disqualified?), but it does not indicate that it was a factor in how the vote was cast.

Comparison with the other Athenian voting procedures is perhaps instructive. In both the courts and the assembly, those casting votes did so between alternatives. The courts counted ballots (*psêphophoria*), and the jurors were issued bronze disks: ‘[v]oting involved the use of two different tokens, one for the accused and one for the accuser, and two urns, one for the token reflecting the judge’s preference and one for the “spoiled” vote’.<sup>28</sup> The Assembly used a show of hands (*cheirotomia*): ‘[w]hen the people voted on a single proposal, first the ayes and then the nays were asked to raise their hands; and similarly, when the choice was between two proposals, the chairman asked first for those supporting proposal A and then for those supporting proposal B’.<sup>29</sup> Our proposed procedure for voting in the dramatic competitions is therefore closer to standard Athenian practice than a system of rankings, which has no Athenian parallel. This does not mean that a system could not accommodate multiple candidates. Two passages in Plato’s *Laws*, 755c-d and 763d-e, suggest quite elaborate systems were conceivable for the election of officials that were nevertheless transparent – i.e. easily comprehensible by those in attendance and producing a clear winner – and determined by a show of hands.<sup>30</sup> Similarly, only one name was written on an *ostrakon*. It is most in accord with Athenian practice, therefore, for a festival judge to select a single individual as deserving the prize.

Which individual’s name was inscribed? Any dramatic production requires the participation of many people working together: ‘In the act of adjudication, no distinction was made between the performance of the team of *khoros*, actors and poet and that of the *khoregos*’.<sup>31</sup> Certainly, as the final victor was announced, it is possible that all of these individuals might be named, perhaps in the same form as would later be inscribed on the victorious choregic monument. It is improbable, however, that the *chorêgos* was the name written by the judges. The name written was either that of the poet or the *didaskalos*. Typically, this was the same individual, though we know from the career of Aristophanes that this was not always so. As we have seen, Aelian says that the judges for the *Clouds* were incited by the audience to write ‘Aristophanes’, but in that play he was both poet and director and, as it turns out, achieved only third place, despite the audience’s pressure.<sup>32</sup> This does suggest, at any rate, that the name of the *chorêgos* was not inscribed. Given the unusual circumstances of production for Aristophanes’ *Wasps*, in which the poet entered two plays that had separate directors, himself and Philonides, and the fact that separate *didaskaloi* are recorded for certain other plays, perhaps there is some reason to believe that the judges wrote the name of the director.<sup>33</sup> This would also explain why Euripides is identified as

<sup>28</sup> C. Carey, *Trials from Classical Athens* (London and New York 1997) 17.

<sup>29</sup> M.H. Hansen, *The Athenian Assembly in the Age of Demosthenes* (Oxford 1987) 41–2, and 41–4 generally.

<sup>30</sup> Hansen (n.29) 44–6 applies Plato’s procedures to the selection of officials in Athens.

<sup>31</sup> Wilson (n.1) 99.

<sup>32</sup> *Hypothesis II to Nub.*, and see *Nub.* 575–6, 610–11, *Vesp.* 1036–47.

<sup>33</sup> For Aristophanes using a separate *didaskalos*, see D.M. MacDowell, *Aristophanes and Athens. An Introduction to the Plays* (Oxford 1995) 34–6. For the unusual situation of *Vesp.*, see 34 n.12. At *Eq.* 516, Aristophanes has the chorus say that producing comedies is χαλεπώτατον ἔργον πάντων (‘the hardest task of all’). To this we might compare the prominence given to film directors in title credits and at the Oscars.

*didaskalos* (and not *poiêtês*) on the victory monument of Socrates of Anagyrous.<sup>34</sup> However, as Csapo and Slater emphasize, ‘one must keep in mind that the prize was not awarded to a play but to a production: though the poet and the *choregos* each won separate prizes, a single decision determined the success of both together’.<sup>35</sup>

Not all the votes cast were read, as is made clear by Lys. 4.3 (cited in section VI) in which the speaker claims that a particular judge’s vote was not read. Does it follow from this that votes were identified as coming from individual judges? That is how Csapo and Slater read the passage, but it is not a necessary inference.<sup>36</sup> The rhetoric of the passage could derive from a claim by the judge to have voted for a certain tribe, made either at the time or leading up to the present trial. Lysias implies that unread votes were not read and were destroyed, and if so there would be no way to disprove such a claim. It is more likely that votes were anonymous, though no doubt in extraordinary circumstances it may have been possible for a judge to be identified with a particular ballot. That not all the votes were read explains to a large degree the amount of confusion surrounding the issue of the number of judges. The initial selection of five ballots seems guaranteed by the repeated use of the number, discussed above. This is preferable to the first-past-the-post system suggested by Pope, who argues that the victor was the first competitor to receive five votes, which in many circumstances would fail to produce a victor at all.<sup>37</sup> With an initial selection of five ballots by which a victor might be chosen, it was truly said that the decision ‘lies in the laps of five judges’. At times, though, those five did not produce a clear result. In those circumstances, we believe, two more votes were drawn. It is in this way that we differ from the system implied by Csapo and Slater.<sup>38</sup> This avoids the creation of a three-way tie by the drawing of the sixth lot.<sup>39</sup> It also provides an explanation for the odd phrase in Lucian, ‘seven, five, or however many’.<sup>40</sup> If there were still no clear victor at seven votes,<sup>41</sup> then one vote at a time would be drawn until victory was achieved. How often such efforts would be needed is explored in section II.

It is in this light that we can fully explain the joke made by the chorus at *Birds* 445-7:

ὄμνυμ’ ἐπὶ τούτοις, πᾶσι νικᾶν τοῖς κριταῖς  
καὶ τοῖς θεαταῖς πᾶσιν ...  
εἰ δὲ παραβαίην, ἐνὶ κριτῇ νικᾶν μόνον.

<sup>34</sup> IG I<sup>3</sup> 969 (= SEG 23 (1968) 102), about which see Wilson (n.1) 130-6. We likewise infer that the herald’s announcement preceding the play was directed at the *didaskalos* and not the poet. The form of the announcement is given by Ar. *Ach.* 11: εἰσαγ’, ὦ Θεόγνι, τὸν χορόν (‘Bring on your chorus, Theognis’).

<sup>35</sup> Csapo and Slater (n.1) 157.

<sup>36</sup> Csapo and Slater (n.1) 158, 163.

<sup>37</sup> Pope (n.1). Csapo and Slater (n.1) 158-9 argue persuasively against his interpretation. In a tightly run race – exactly the circumstance when the judges are needed most! – where the ten votes are split between competitors 4-3-3 or when two competitors are favoured against a third such as when the votes are split between competitors 4-4-2, Pope’s system would fail to produce a clear victor, or provide any mechanism for determining second place. These cases represent 37.3% of the ways that votes might occur in a random distribution, far too much for a viable system. The discrepancy increases further when there were five competitors, as in the comic competition, about which see section V. In effect, Pope’s system reckons all the votes: this removes the democratic, competitive and religious benefits offered by counting only a portion of the ballots.

<sup>38</sup> Csapo and Slater (n.1) 159: ‘as many more as necessary to break a tie ... with a clear winner emerging by the time the eighth ballot is chosen’.

<sup>39</sup> If after five votes had been drawn, the split was 2-2-1 for the three competitors (as it would have to be if more votes needed to be consulted), drawing a single ballot could produce a 2-2-2 result. At least by drawing two following the initial five, an ‘upset’ result (i.e. going from 2-2-1 to 2-2-3) is clear and decisive.

<sup>40</sup> Pope (n.1) is the only scholar to reckon with this passage seriously. His solution is that the variable number represents the variation of numbers of tribes over time: ‘in Lucian’s day there were thirteen tribes, and if there was a judge for each tribe, then seven judges, not five, will have been needed for an unbeatable vote’ (326). Although a clever interpretation of Lucian, Pope’s solution requires that one competitor will have always obtained at least five of the ten votes cast, which will not produce a victor when the votes are divided 4-3-3 or 4-4-2.

<sup>41</sup> I.e. if at five votes, they were divided 2-2-1, and with two more votes the result were 3-3-1 (i.e. one vote for each of the frontrunners had been drawn).

I swear on the heads of all these people [gestures to audience], that I will win by all the judges and all the spectators ... If I transgress, may I win by only a single judge.<sup>42</sup>

Peisetairos has asked the chorus to swear to a peaceful settlement; instead it swears an oath in which the victory conditions of the dramatic contest are the proposed benefit and penalty. Consequently, the oath is sworn not by particular gods but ἐπὶ τούτοις, which Csapo and Slater take to mean the audience, but may equally be understood, with a more precise gesture from the actor, to mean the judges themselves (with the spectators being added apparently as an afterthought in line 446, following the successful laugh at line 445). The best result Aristophanes can imagine, presented as the benefit for successfully fulfilling the oath, is to win ‘by all the judges’ – i.e. to be selected in all five of the votes initially drawn, which is the most decisive victory possible (and, presumably, rare enough to be a humorous circumstance). Since defeat is unthinkable for the comic competitor, the worst possibility is presented *para prosdokian* as winning ‘by only a single judge’. Dunbar interprets line 447 to mean ‘by three to two’.<sup>43</sup> We believe the context demands a much more nerve-racking possibility for the competitors, going beyond the initial five votes selected to seven or more, and attaining victory only then. In all cases where eight, nine or ten ballots are reckoned, it is only possible to win by a single vote.

Given this proposal, three questions arise concerning the likelihood of a particular result: how many of the ten lots are typically drawn is addressed in section II; how second and third place are determined is addressed in section III; a modern standard of ‘fairness’ – how often the play receiving the most votes cast actually wins – is the subject of section IV. By considering these each in turn, it is possible to further clarify the workings of our proposed model.

## II. HOW MANY LOTS ARE DRAWN?

It is reasonable to ask how often the results would be determined by the time five lots were drawn, and how often it was necessary to proceed to seven, eight, nine or ten. To answer this is not straightforward, however, and depends on assumptions concerning the likely tendency of the judges. Here and in section IV, we propose to consider three possibilities from which general conclusions may be drawn. First (a), we will consider two cases that may be seen as being a likely distribution of votes. The first test case occurs when all competitors receive roughly equal favour and the votes are divided 4-3-3. This is the tightly run race where one presumes judging is most crucial. It is our belief that this was the usual situation in the highly competitive festival. However, not all will share this view, and so we also examine what happens when one competitor is given a slight edge, and the votes are divided 5-3-2. From these initial two test cases, we are in a position to take a step back and consider (b) a random distribution, in which each competitor is as likely as another to receive a vote, and (c) those situations in which two competitors are favoured against the third. It should be obvious that if one competitor regularly won by a significant margin, only five ballots would typically be used: if one has received eight, nine or ten votes from the judges, one will always win by the initial draw of five. We believe this is unlikely to have been the usual case, in part because of the care that the *polis* exhibited in preserving the integrity of the judges, and in part because of the frequent mention of upsets in the results (discussed further in section IV).

<sup>42</sup> Trans. Csapo and Slater (n.1) 162.

<sup>43</sup> N. Dunbar, *Aristophanes. Birds* (Oxford 1995) 307.

a. *Two likely cases*

Our first test case is in many ways the most interesting. If the three competitors received about an equal number of votes (which may or may not mean that the plays were roughly on a par with one another), a usual result when ten votes were cast would be 4-3-3. We have seen that Pope's proposal is unable to handle this result, since no competitor has five votes. It is also only in this case that, rarely, all ten votes needed to be reckoned: i.e. if the initial five ballots were divided 1-2-2, and if by seven the ballots were 1-3-3, then ten would need to be drawn to attain the final result of 4-3-3. As we shall see, when the votes are divided this way all ten ballots will need to be counted 4.3% of the time. The 4-3-3 case is also relatively straightforward mathematically. While it is not possible to describe all the mathematics used in this paper in full, in the appendix we have presented working for this case, which should allow others to replicate our results. It must be emphasized, however, that our use of discrete probability to solve these problems would not have been possible in ancient Greece. We believe the modern mathematical solution demonstrates precisely what an ancient audience would have perceived as a just system on an intuitive level.

What we are measuring is the number of ways the votes can be drawn according to our system when they have been cast in a particular way. When one competitor has four votes, and each of the others has three, there is a possibility that any one will win. Regardless of who the victor is, though, a winner will be determined after the initial drawing of five votes 42.8% of the time (108/252). The victor will be determined by seven votes 47.1% of the time (33/70). Eight ballots will need to be counted 2.9% of the time (1/35), as will nine. All ten will need to be used 4.3% of the time (3/70). That is to say, seven ballots will be used more frequently than five, and the use of eight, nine or ten is comparatively infrequent. In this context, it is hard not to think of Lucian's statement in *Harm.* 2:

ἐν τοῖς ἀγῶσιν οἱ μὲν πολλοὶ θεαταὶ ἴσασι κροτῆσαι ποτε καὶ συρίσαι, κρίνουσι δὲ ἑπτὰ ἢ πέντε ἢ ὅσοι δὴ.

In the contests the mass of the audience know how to clap and hiss, but the judges are seven, five, or however many.<sup>44</sup>

Lucian is writing in the second century AD, but his description of the conversation between Timotheus and Harmonides is set in Classical Athens and may be based upon a traditional account. As described in section I, the unusual phrase at the end of this passage is unexplained by anyone except Pope, who sees instead a recognition that the number of Athenian tribes changed between the fifth century BC and Lucian. However, in this case, where the three competitors receive approximately equal support from the judges, the order makes perfect sense without invoking a diachronic perspective: Lucian's narrative is presenting the possibilities in what is a diminishing order of likelihood – seven (47.1%), five (42.8%) or however many (10.1%).

The same does not hold, however, in another likely result, which will serve as our second test case in this set. As soon as one performance begins to receive an increased number of votes, the weighting returns to only five votes being needed. Let us change only one of the votes of the ten. In the case where the votes are divided 5-3-2 (which is the most frequent division in the random distribution), the victor is decided after five ballots 58.3% of the time (7/12), and after seven ballots an additional 34.5% of the time (29/84). Eight ballots are needed 4.8% of the time (1/21), and nine are needed 2.4% of the time (1/42). If, then, Lucian directly or indirectly has access to accurate information concerning the Classical Athenian situation, we may have additional support for the usual circumstance in dramatic competitions having been a close race between three competitors.

<sup>44</sup> Trans. Csapo and Slater (n.1) 163.

*b. Random distribution*

The instance of a tightly run race between three competitors (represented by a 4-3-3 result) seems the most likely circumstance in the highly competitive context of the City Dionysia. We have seen that spectators would call out to the judges to encourage them to vote in a particular way, and there were a number of factors that the city introduced in order to ensure a level playing field for competition. Nevertheless, such a circumstance cannot be proved, and for any given year there are a number of variables that today we cannot hope to isolate but which nevertheless may have affected how the judges voted. It therefore seems prudent also to consider a completely random distribution of votes. This is not to say that the votes themselves were random, i.e. not related to the quality of the performance, in whatever way quality might have been judged by each individual. Rather, given the large number of variables at work, let us assume that there is no basis on which to determine how the votes might be cast, and that for each judge any play is as likely to receive his vote as any other.

The total number of combinations that this involves is very high: there are  $3^{10}$  ways that the votes might be cast (i.e. 59,049), more than a thousand times more than any Athenian is likely to see occur at a given festival within his lifetime. Nevertheless, the figures are roughly comparable to what we have seen with the 5-3-2 case. With a random distribution, the result is determined in five votes 63.0% of the time ( $37,179/3^{10}$ ). It is determined in seven votes 28.8% of the time ( $17,010/3^{10}$ ), in eight votes 5.5% of the time ( $3240/3^{10}$ ), in nine votes 1.8% of the time ( $1080/3^{10}$ ), and in ten votes 0.9% of the time ( $540/3^{10}$ ).

From this we may observe two things. First, the proposed system of voting is able to address the full spectrum of possibilities that may have arisen during a competition. When taken as a totality, the system still produces a result typically by the time five votes are read ('it lies in the laps of five judges') and usually by seven. Secondly, however, we may observe that such a random distribution is in itself unlikely. There are a number of factors that can influence the result, and though it may not be possible to isolate them all, there are cases (notably 4-3-3) where the excitement for the audience produced by this system of reckoning votes is enhanced, as seven ballots become the most usual means of determining a winner (thereby perhaps explaining Lucian's phrase) and the use of ten ballots becomes a possibility.

*c. Two competitors favoured*

As we have seen, it is necessary to make assumptions about the types of results that one is likely to receive in order to determine the effectiveness of a proposed voting system. In section IIa, we examined two likely ways the votes might be cast (4-3-3 and 5-3-2) and in section IIb, we have considered a completely random distribution of all possible results. Obviously, the first group is a subset of the second: it represents 46.9% of the total number of ways votes might be cast ( $(12,600+15,120)/3^{10}$ ). That is, the situation described in section IIa represents almost half of the random sampling described in section IIb. However, it is possible to examine a third situation that some might consider likely: that two competitors were typically favoured against a third. If we examine those instances where the two leading contenders are tied or separated by a single vote – 5-5-0, 5-4-1 and 4-4-2 – we have another test case that represents 30.0% of the total number of ways votes might be cast ( $(756+7560+9450)/3^{10}$ ). In these instances, the results are determined after the initial selection of five ballots 64.6% of the time ( $11,466/17,766$ ).<sup>45</sup> It is determined in seven votes 23.3% of the time ( $4140/17,766$ ), in eight votes 10.1% of the time ( $1800/17,766$ ), and in nine votes 2.0% of the time ( $360/17,766$ ).

<sup>45</sup> With 5-5-0, it is always determined by the initial five ballots; with 5-4-1, it is determined in five ballots 76.2% of the time ( $16/21$ ); with 4-4-2, it is determined in five ballots 52.4% of the time ( $11/21$ ).

## III. HOW ARE OTHER PLACES DETERMINED?

Given this procedure, it might reasonably be asked how second and third place are determined, since these are regularly recorded in the *hypotheses* and *scholia* examined in section I. There is a sense in which these positions matter less, since there are no actual prizes attached. One would nevertheless hope for a similarly clear and straightforward system. The most obvious possibility, given that only one name was inscribed by the judges, is that a dramatic entry came second when it had the second highest number of votes at the time when the winner was determined. This possibility, though, is not without its problems.

Let us return to the initial two test cases, considered in section IIa. In the 4-3-3 case, by the time that the winner is determined, second and third places may be determined by a separation of votes only 25.0% of the time. This number rises to 50.0% in the 5-3-2 case, but this is still not regular enough that it may be seen as representing an adequate solution, especially since the 4-3-3 case represents 21.3% of the random distribution, and the 5-3-2 represents 25.6%. Clearly there needs to be a mechanism for determining second and third place in the tragic competition for the regular situation when such places do not exist by a separation of votes. Indeed, this is a problem for any model of the judging procedure. What is needed is a means to determine second place for every possible outcome, and not only for some; in mathematical terms, we wish to change it from a partial order (in which we cannot always compare two things) to a total order (in which we can).

There are two straightforward ways that second place can be determined that brings us (almost) to a total order. We will take it as granted that if, after the determination of first place, one of the remaining competitors had more votes than the other, then that entry was said to have come second. However, since this is not always going to be the case, one of the following systems is likely to have been used.

1. If the two remaining competitors have had an equal number of votes selected, then the first to have reached that point is given priority.<sup>46</sup> If the two remaining competitors have no votes, then ballots are drawn until a winner emerges.
2. If the two remaining competitors have had an equal number of votes selected, then ballots are drawn until a winner emerges. If no winner emerges (i.e. all the remaining ballots are for the competitor already selected as coming first), then the first to have reached that point is said to have come second.

It will be seen that both possibilities involve the application of the same two rules, but in a different order. We believe the first of these is preferable for three reasons. First, it might be asked whether the selection of additional ballots as a usual practice after a winner had been determined was sufficiently interesting for an audience. The former alternative is always quicker in its determination of second place. Second, it might be hard to imagine how the second system would come into existence, since in many cases all ten ballots would need to be considered before it was known that the Archon needed to look at the order the initial votes had been cast. This would seem to remove the value of sortition from the process, considering only some of the votes. That is to say, if the second method were the means of determining second place, it is unlikely that the means of determining first place that we have proposed would ever come into existence. Lastly, the second system may reveal an alternate winner to that chosen by the lots already drawn. None of these is an acceptable outcome.

<sup>46</sup> Because the votes were removed individually from the urn in the public view, the order of the selection could be automatically preserved.

There remains one circumstance in which second place would not seem to be determinable by either of these methods (or, indeed, by any straightforward method), and that is when the votes are cast all for the same competitor, 10-0-0. In such a circumstance, the winner would be determined by the five initial votes. Since neither of the other competitors had any votes, additional ballots would be drawn. When all ten ballots were shown to be in favour of the first competitor, there would be no means of determining second place. Possibly this is the result Aristophanes imagines at *Birds* 445-6, cited in section I. Such a result may be seen to be improbable<sup>47</sup> (especially if the partisanship attested for the dithyrambic competition was also present in the tragic, and one could at least count on a single vote from one's fellow tribesman), but it does mean that our method for determining first, second and third place cannot always produce a total order. For this reason, while the first system described above does seem workable in virtually every instance, it remains possible that the purpose of a figure such as ὁ διὰ πάντων κριτής ('the judge with overall authority', Pl. *Rep.* 580 a) was to cast an additional vote for second place. It might equally be thought that, given such a decisive victory, the Athenians would accept that subsequent places did not need to be awarded.

#### IV. DOES THE PERSON WITH THE MOST VOTES WIN?

As seen in section II, a competitor with eight, nine or ten votes would always win the competition. It was possible to win the competition with as few as three of the ten votes: for example, if the votes were 7-3-0 (or 6-3-1 or 5-3-2), the competitor who had placed second would have all his ballots drawn in the initial five 8.3% of the time that the votes were cast with this split. That is to say, even if this were the division of votes in every year of competition, such a result would still occur only once every decade for a given competition. As discussed in section I, many in the audience would be content that such an occasional result indicated the preference of the god. This may be perceived by some to be frequent enough to be worrying, though, and so it is worth noticing that there are many accounts of what were perceived to be unfair results in the late fifth century.

Between 431 and 414, we may identify five supposed upsets among our extant plays at the Dionysia, with the defeats of Euripides' *Medea* (which placed third, after Euphorion and Sophocles),<sup>48</sup> Sophocles' *Oedipus Tyrannus* (which placed second after Philocles),<sup>49</sup> Aristophanes' *Clouds* (which placed third after Cratinus and Ameipsias),<sup>50</sup> Euripides' *Trojan Women* (which placed second after Xenocles),<sup>51</sup> and Aristophanes' *Birds* (which placed second after Ameipsias, with Phrynichus coming third).<sup>52</sup> Indeed, it used to be commonplace to bewail such '[v]erdicts of this indefensible character', since '[n]ow and then, of course, things went wrong'.<sup>53</sup>

<sup>47</sup> Of a random distribution, it represents an outcome that occurs  $3/3^{10}$  times, i.e. 0.005% of the time.

<sup>48</sup> Eur. *Med.*, *Hypothesis* of Aristophanes the Grammarian.

<sup>49</sup> Soph. *OT*, *Hypothesis* II, citing the authority of Dicaearchus. Strictly speaking, it is not known that *Oedipus* was presented at the Dionysia rather than the Lenaia, though to our knowledge this has not been doubted.

<sup>50</sup> Ar. *Nub.*, *Hypothesis* II. In this case, at least, recent scholarship has suggested that the best play did indeed win the prize. Cratinus' *Wine-flask* (*Pytinê*), containing the playwright's self-mockery and wholehearted appropriation of earlier Aristophanic criticism, seems to have been a *tour de force* for its playwright: see M. Heath, 'Aristophanes and his rivals', *G&R* 37 (1990) 143-58; K. Sidwell, 'Poetic rivalry and the caricature of comic poets: Cratinus' *Pytine* and Aristophanes' *Wasps*', in A. Griffiths (ed.), *Stage Directions. Essays in Ancient Drama in*

*Honour of E.W. Handley* (BICS Suppl. 66, London 1995) 56-80; W. Luppe, 'The rivalry between Aristophanes and Kratinos', in D. Harvey and J. Wilkins (eds), *The Rivals of Aristophanes. Studies in Athenian Old Comedy* (London 2000) 15-21; and R. Rosen, 'Cratinus' *Pytine* and the construction of the comic self', in Harvey and Wilkins (this note) 23-39.

<sup>51</sup> Ael. *VH* 2.8. The Suda s.v. Νικόμαχος, indicates further that at one time Euripides was defeated by someone called Nicomachus, but no more can be said than this.

<sup>52</sup> Av., *Hypothesis* I. Since there are no extant fragments of Ameipsias' *Revellers*, and there are of a *Revellers* of Phrynichus, it is likely that Phrynichus has entered two plays in the Dionysia of 414, as Aristophanes had done at the Lenaia of 422 (see n.33, above, and A.H. Sommerstein, *Birds* (Warminster 1987) 1 n.1).

<sup>53</sup> Haigh (n.19) 35; Pickard-Cambridge (n.1) 99.

Our view is that in none of these cases should the result be seen as aberrant. There are many factors that may affect the success of a play. In addition to the possibility of bribery, intimidation and other forms of corruption (which in practice are not likely to have a great effect on the result and serve more as an excuse for the unsuccessful playwrights than as a primary obstacle to success), any number of variables may affect the success of a given play. These include the many factors involved in production (including the expenditures of the *chorégos*, ability of the actors and the quality of the chorus), external variables, such as the weather and political mood in the city, and, in the case of tragedies, the quality of the other plays in the tetralogy. However, in addition to these factors, we may also include the judging procedure itself: just because a play received the most votes does not mean that it was going to win, and since Lys. 4.3 assumes that unread votes were not preserved, it is likely that one would never know what the complete tally was. That is an integral part of the lottery procedure: the person with the most votes does not always win. However aggrieved we might feel at this, and however aggrieved a comic playwright might claim to be, it was not an extraordinary result.

What this means is that we are never safe to draw conclusions about the nature of the dramatic competition based on the placing of a given play. For example, Euripides placed second to Sophocles in 438.<sup>54</sup> Since Euripides' tetralogy included *Alcestis*, this may not be a surprising result, since it was not a satyr play, as was expected for a fourth-place play. However, the nature of the judging procedure means that nothing certain can ever be concluded from how a particular play placed: at best, Euripides may have earned seven votes to Sophocles' three and placed second, and at worst he may have earned one vote to Sophocles' nine. Each of these may be an unlikely result, but the nature of the voting procedure prevents any firm conclusions from being drawn.

*a. Two likely cases*

Given this, it is perhaps surprising that when we look at the closest possible result, 4-3-3, the individual with four votes will still be declared the winner 61.9% of the time (13/21). Indeed, this is the lower limit, and any other distribution of votes will produce a better result. Thus, in the 5-3-2 case, the individual with five votes will be declared the winner 85.7% of the time (6/7). Even in these close cases, the competitor with the most votes does usually win, and these cases represent 46.9% of all the possible ways votes might be cast.

*b. Random distribution*

If we consider the whole spectrum of possibilities, the competitor with the most votes wins in 82.6% of the cases (48,759/3<sup>10</sup>). There is therefore an overwhelming preponderance of 'fair' victories created by this system, and, as we have noted, every possible result does determine a victor. While upsets will occasionally occur (as Dionysus expresses his preference), the use of sortition will generally prevent the audience being aware of this.

*c. Two competitors favoured*

The final set of test cases produces an even clearer result. When two competitors are favoured against a third, there is often a tie for first place at least in the way the votes are cast, as in the 5-5-0 case and the 4-4-2 case. Since in such circumstances, the third-place contender cannot win, as he is unable to achieve the required three ballots drawn, in these circumstances we can affirm that an individual with the most votes always wins. When we include the third possibility in this set, the 5-4-1 distribution, we see that a person with the largest number of votes cast wins 85.8% of the time (15,246/17,766).

<sup>54</sup> Eur. *Alc.*, *Hypothesis*.

All of the preceding discussion applies to those circumstances where there are three competitors vying for the votes of ten judges, which was the situation at the tragic competition at the Dionysia. By examining various likely test cases as well as a random distribution, we have demonstrated why our proposal works better than others that have been proposed, while still maintaining the virtue of straightforward transparency for the audience watching the voting as it takes place. There are many ways the data can be presented, and we have attempted to anticipate objections that might be raised. With this in mind, we conclude with another means of presenting the information, but this time from the perspective of an individual competitor. Given a random distribution, if a competitor has a fixed number of votes, what are his chances of winning in our system? Or, more precisely: how often does a competitor with a certain number of votes win, over all the scenarios involving that number of votes when weighted by the number of times this scenario can occur in the random distribution? The results are as follows.

<i>Votes received</i>	<i>Wins x of the time</i>	
1	0.0%	
2	0.0%	
3	16.1%	(31/192)
4	49.9%	(335/672)
5	77.5%	(521/672)
6	92.6%	(311/336)
7	97.9%	(47/48)
8	100.0%	
9	100.0%	
10	100.0%	

This produces an exponential curve that demonstrates to what extent the system continues to favour a competitor who receives the most votes. The possibility for an upset remains, particularly in the instance of the tightly run race when the votes are divided 4-3-3.

## V. COMEDY AND THE LENAIA

So far our discussion had considered only cases where there were three competitors for a prize, as was the case in the tragic competition at the City Dionysia. By necessity, given the scarcity of any information, it has been necessary to use data from other competitions, but it seems safe to assume a largely uniform judging procedure across festivals and contests wherever possible. In the absence of any indication to the contrary, it is likely the judging procedure did not differ significantly from one festival to another, and our model should also be valid for the comic competition at the Dionysia and the Lenaia, in which there were typically five competitors,<sup>55</sup> and for the tragic competition at the Lenaia, in which there were two (at the Lenaia, tragic competitors did not enter a tetralogy, but a dilogy, two tragedies with no satyr play), and for the competitions of the actors.

<sup>55</sup> It is often argued that for some of the years during the Peloponnesian War, the number of comedies was reduced to three. For a recent and judicious survey of the evidence and the arguments on both sides, see I. Storey, 'Cutting comedies', in J. Barsby (ed.), *Greek and Roman Drama. Translation and Performance* (Drama 12,

Stuttgart 2002) 146-67. For the years (if any) where the number of comedies was reduced to three, regardless of whether they were presented in a single day or spread out over three days, the voting procedure would be as described in sections I-IV.

To deal with these in reverse order, the actor's competition, once it was introduced,<sup>56</sup> could have been adjudicated immediately after the selection of the winning entry, or the two could even have been judged simultaneously, with judges casting a vote for best entry (writing the name of the *didaskalos*) and for best acting (writing the name of the lead actor)<sup>57</sup> before any votes were read aloud. The number of competitors for the acting competition is always the same as for the principal contest, and the procedure need not differ. In the case of two competitors in the tragic competition at the Lenaia, a decision would always have been made in the initial draw of five ballots regardless of how the votes were cast, with the split inevitably being 3-2, 4-1 or 5-0. With five competitors in the comic competitions, of course, some of the possible scenarios are included in the discussion above: whenever two of the five competitors do not receive any votes, the analysis is almost identical to that when there are only three competitors – e.g. the case 5-3-2-0-0 is mathematically identical to 5-3-2, although the weighting in the random distribution will differ. However, the presence of five competitors also increases the chances for a split, and one might imagine (as, indeed, do Csapo and Slater) a result of 2-2-2-2-2 as a particular stumbling block. While not a likely outcome (assuming a random distribution of votes, it will occur only 1.2% of the time), the mere possibility of the result can cause unease for those seeking to understand the voting procedure. Further, there exist *testimonia* that demonstrate that all places were ranked, and not only the first three.<sup>58</sup>

Despite these obstacles, the voting procedure suggested for three competitors in sections I-IV works as well when there are five competitors. As before, it is not obvious what a typical pattern of vote distribution might be, but it is striking that given a random distribution of votes cast, the first place is still determined in the initial five votes 67.4% of the time (6,578,125/5<sup>10</sup>); indeed, this is more often than it is determined with three competitors, where we saw the percentage was 63.0%. Determining placings other than first could be accomplished in the manner suggested in section III. Certainly, if fewer than four of the five competitors have not received votes by the time first place is determined, subsequent ballots could be drawn. It is also possible that two or more entries might receive no votes, in which case determining all the placings becomes impossible. Is it possible in such circumstances that only three places (for example) were ever determined? The evidence often invoked to suggest a reduction in the number of comedies performed during certain years of the Peloponnesian War need indicate no more than this.<sup>59</sup>

## VI. DITHYRAMB

The dithyrambic competition with ten competitors is even more complicated, and not enough is known about the genre of dithyramb for anything certain to be said. Nevertheless, in principle the same voting system should work. The best evidence for dithyrambic judging comes from Lys. 4.3-4:

<sup>56</sup> An overview of relevant dates is found in Pickard-Cambridge (n.1) 124-5. The prize for actors at the City Dionysia was introduced c. 449.

<sup>57</sup> In the same way that one name is used as shorthand in the adjudication procedure for the play itself (not the name of the *chorêgos*, but that of the *didaskalos*, as argued in section I), so in the acting competition the name of the lead actor is used as shorthand for the team of three performers, which may at times have included the playwright. However, '[o]nly the protagonists could form contracts with the archon, receive payment from the state, or win the actor's prize' (Csapo and Slater (n.1) 223).

<sup>58</sup> Ar. *Plut. Hypothesis*, *I.G.Urb.Rom.* 216.2-6 (= *IG*

XIV 1097), *I.G.Urb.Rom.* 218.6-13 (= *IG* XIV 1098), *P.Oxy.* 2737, all of which may be found in Storey (n.55) 146-8, 150-1.

<sup>59</sup> The *Hypotheses* to Ar. *Ach.*, *Eq.*, *Nub.*, *Vesp.*, *Pax*, *Av.*, and *Ran.* list only three competitors (see Storey (n.55) 148-9). Because we cannot say what a likely distribution of votes might be, we cannot determine if this is an unreasonably high proportion of Aristophanes' eleven plays. If one were to pursue this argument, it would suggest that the comic competition even with five competitors tended to present two or three that were significantly stronger than the rest.

ἐβουλόμην δ' ἂν μὴ ἀπολαχεῖν αὐτὸν κριτὴν Διονυσίοις, ἵν' ὑμῖν φανερός ἐγένετο ἔμοι διηλλαγμένος, κρίνας τὴν ἐμὴν φυλὴν νικᾶν· νῦν δὲ ἔγραψε μὲν ταῦτα εἰς τὸ γραμματεῖον, ἀπέλαχε δέ. καὶ ὅτι ἀληθῆ ταῦτα λέγω, Φιλίνος καὶ Διοκλῆς ἴσασιν· ἀλλ' οὐκ ἔστ' αὐτοῖς μαρτυρῆσαι μὴ διομοσαμένοις περὶ τῆς αἰτίας ἧς ἐγὼ φεύγω, ἐπεὶ σαφῶς ἔγνωτ' ἂν ὅτι ἡμεῖς ἤμεν αὐτὸν οἱ κριτὴν ἐμβαλόντες καὶ ἡμῶν ἕνεκα ἐκαθίζετο.

I wish he had not been excluded by lot from serving as a judge at the Dionysia, which would have shown you that he was reconciled to me, and gave his verdict in favor of my tribe. In fact, after writing this on his voting tablet, he was excluded by lot. Philinus and Diocles know that I am speaking the truth about this, but they are not allowed to testify, because they have not sworn the oath concerning the charge on which I am the defendant. Otherwise you would have known for certain that we were the people who proposed him as judge and that he took his seat because of us.<sup>60</sup>

Reference has been made to this passage in previous sections for four reasons: it records that judicial candidates were nominated, that judges wrote their votes on a tablet, that not all votes were read, and that unread votes were not kept (so as to be able to be entered into evidence). Whereas we saw that in the dramatic competitions the name of the *didaskalos* was most likely the name inscribed, in this case it is clearly the name of the tribe. This shows that it describes the dithyrambic competition, in which we see the tribe was said to win, and, we may presume, audience encouragement would take the form of shouting the name of one's own tribe.<sup>61</sup>

There are obstacles to a clear interpretation of this passage, however. The defendant offers no corroboration for the prosecutor's vote, but instead names two individuals who could corroborate but are not doing so. That both these other men along with the speaker might have originally proposed the prosecutor as judge is also suspicious. The defendant is trying to suggest that relations were harmonious with the man accusing him of attempted murder. There is an implication that one nominates individuals to serve as judge who will vote for a particular tribe regardless of the quality of the chorus. Is this mere cynicism, or a reflection of the usual practice, i.e. that the natural split in the dithyrambic competition was 1-1-1-1-1-1-1-1-1-1? If that were the case, then the first ballot drawn might as well be called the winner. An inscription relating to the Thargelia (*IG II<sup>2</sup> 1153*) shows that in the fourth century a judge could vote for his own tribe and be commended for doing so.<sup>62</sup> Wilson argues that the defendant was serving as *chorégos* for his tribe, having attained the liturgy through the protracted process of *antidosis* (*Lys.* 4.1-2).<sup>63</sup> That at least explains why the speaker was nominating individuals to serve as judges, and why the prosecutor's vote would show reconciliation. If this were so, perhaps Philinus and Diocles were the other festival *chorégoi* from that tribe. However, that is not the only way to understand the Lysias passage. The speaker's use of the singular – 'my tribe' (τὴν ἐμὴν φυλὴν) instead of 'our tribe' – is unusual. Could one propose judges to be nominated by other tribes? The speaker's concision and his efforts to avoid having to produce any corroboration for his claims concerning the nature of the judge's vote prevent anything approaching certainty.

Even with ten competitors, however, given a random distribution of votes (is this likely?), a winner emerges using our proposed system after only five votes 59.0% of the time (5,896,000,000/10<sup>10</sup>). There remains the difficulty in determining second and subsequent places. Since for one tribe to receive more than one vote means that another remains unranked, it is uncertain on what basis Plutarch can have his interlocutors debate 'Why the chorus of the phyle

<sup>60</sup> Trans. S.C. Todd, *Lysias* (The Oratory of Classical Greece 2, Austin 2000) 54-5.

<sup>61</sup> The effect of this would of course be heightened if tribes tended to sit together, either by regulation (a possibility doubted by Pickard-Cambridge (n.1) 270 and

David Wiles, *Tragedy in Athens. Performance Space and Theatrical Meaning* (Cambridge 1997) 37) or by custom, which is more likely.

<sup>62</sup> Wilson (n.1) 34 and 347 n.234.

<sup>63</sup> Wilson (n.1) 100-1.

Aiantis at Athens is never judged last'.<sup>64</sup> Given the lack of information, any confidence concerning the judging of dithyramps eludes us.

In the end, the system used for judging Athenian dramatic competitions cannot be proved. The merits of any proposal can, however, be measured mathematically and weighed against the scattered testimony from antiquity. An examination of more and less likely test cases can also point to trouble spots in a given proposal. We believe our proposal accounts for the evidence and the key test cases better than its rivals. It provides a system that can work for all the Athenian festival contests in a way that is transparent for the spectators and in accord with Athenian voting procedures elsewhere. The process of examining how such a procedure could work brings us to a better understanding of a number of issues at the heart of the Athenian dramatic festivals.

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APPENDIX

For the benefit of the reader, we now present the analysis for the case where the votes are divided such that competitor *A* is awarded 4 votes, competitor *B* is awarded 3 votes, and competitor *C* is awarded 3 votes. Other calculations are analogous. First, however, we review some background material.

If we have a set of *n* objects and wish to choose *k* of them then the number of ways to do this is given by the binomial coefficient  $\binom{n}{k}$ , where

$$\binom{n}{k} = \frac{n!}{k!(n-k)!}$$

and  $n! = n \times (n-1) \times (n-2) \times \dots \times 3 \times 2 \times 1$ .

**Example**

Given the set of letters  $\{a,b,c\}$  the number of ways of choosing two of them is

$$\binom{3}{2} = \frac{3 \times 2 \times 1}{2 \times 1 \times 1} = 3,$$

the choices being  $\{a,b\}$ ,  $\{a,c\}$  and  $\{b,c\}$ .

If we now have *m* sets of objects  $n_1, n_2, \dots, n_m$ , and wish to choose  $k_1$  objects from the first, ...,  $k_m$  objects from the last, the number of ways of doing this is

$$\binom{n_1}{k_1} \binom{n_2}{k_2} \dots \binom{n_m}{k_m}.$$

<sup>64</sup> Plut. *Mor.* 628A-629B, *Quaest. Conv.* I. 10. See Paul A. Clement and Herbert B. Hoffleit, *Plutarch's Moralia VIII* (Cambridge, MA 1969) 94-103; citation from 95.

**Example**

Given two sets of letters  $\{a,b\}, \{c,d\}$  the number of ways of choosing one from each set is

$$\binom{2}{1}\binom{2}{1} = 2 \times 2 = 4$$

the choices being  $\{a,c\}, \{a,d\}, \{b,c\}$  and  $\{b,d\}$ .

Lastly, if we wish to compute the fraction of time we obtain a desired outcome in a given scenario the formula is (the number of possibilities of obtaining the desired outcome)/(the total number of possibilities) or equivalently (the total number of possibilities - the number of possibilities of *not* obtaining the desired outcome)/(the total number of possibilities).<sup>64</sup>

We are now in a position to begin our analysis in the situation where competitor *A* obtains 4 votes, competitor *B* obtains 3 votes and competitor *C* obtains 3 votes.

Our first task is to determine what fraction of the time the competition is resolved in 5 votes. The total number of ways of choosing 5 votes from the 10 votes cast is  $\binom{10}{5}$ , and a winner is declared unless two competitors have 2 of their votes drawn, and the third only 1. Thus the fraction of time the competition is resolved in 5 votes is

$$\frac{\binom{10}{5} - \binom{4}{2}\binom{3}{2}\binom{3}{1} - \binom{4}{2}\binom{3}{1}\binom{3}{2} - \binom{4}{1}\binom{3}{2}\binom{3}{2}}{\binom{10}{5}} = \frac{108}{252}.$$

Before we continue, note that if scenario *a* occurs  $\frac{p}{q}$  of the time and if scenario *b* occurs  $\frac{r}{s}$  of that fraction of time, then scenario *b* occurs  $\frac{p}{q} \times \frac{r}{s} = \frac{p \times r}{q \times s}$  of the time.

Our next task is to determine how often the competition is resolved in 7 votes. For this to occur the competition will not have been resolved in 5 votes, so in particular two competitors (say *A* and *B*) will have had 2 of their votes drawn already and the third (say *C*) only 1. This scenario will occur

$$\frac{\binom{4}{2}\binom{3}{2}\binom{3}{1}}{\binom{10}{5}} = \frac{54}{252}$$

of the time. From the remaining 5 votes, 2 votes are drawn and the total number of possible ways of choosing 2 votes from 5 is  $\binom{5}{2}$ . A winner is declared unless 1 of the remaining 2 votes for *A* is chosen, and the remaining vote for *B* is chosen. The fraction of time this occurs is

<sup>65</sup> To convert a fraction to a percentage, simply convert it to a decimal and multiply by 100.

$$\frac{\binom{5}{2} - \binom{2}{1}\binom{1}{1}}{\binom{5}{2}} = \frac{8}{10}.$$

Thus, the fraction of time there is resolution in 7 votes when initially  $A$  and  $B$  have 2 votes drawn and  $C$  has 1 vote drawn is  $\frac{54}{252} \frac{8}{10} = \frac{6}{35}$ . Similarly, if initially  $A$  and  $C$  have 2 of their votes drawn and  $B$  has 1 vote

drawn, there is again resolution in 7 votes  $\frac{6}{35}$  of the time. A similar calculation yields that if initially  $B$

and  $C$  have 2 of their votes drawn and  $A$  has 1 vote drawn, there is resolution in 7 votes  $\frac{9}{70}$  of the time.

Consequently, the competition is resolved in 7 votes

$$\frac{6}{35} + \frac{6}{35} + \frac{9}{70} = \frac{33}{70}$$

of the time. We leave it to the reader to similarly confirm that the competition is resolved in 8 votes  $\frac{2}{70}$  of

the time, in 9 votes  $\frac{2}{70}$  of the time, and in 10 votes  $\frac{3}{70}$  of the time.

Finally, we may ask what fraction of the time the votes are divided such that competitor  $A$  is awarded 4 votes, competitor  $B$  is awarded 3 votes, and competitor  $C$  is awarded 3 votes. First observe that the total number of ways 10 votes can be cast for 3 plays is  $3^{10}$ . In addition, the number of ways to award  $A$  4 votes,  $B$  3 votes and  $C$  3 votes is

$$\binom{10}{4} \binom{6}{3} \binom{3}{3} = 4200,$$

since we need to choose 4 judges to vote for  $A$ , choose 3 of the remaining 6 judges to vote for  $B$  and choose the remaining 3 judges to vote for  $C$ . Hence the votes are split this way  $4200/3^{10}$  of the time.