

## Electoral Formula and the Tunisian Constituent Assembly

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### **Abstract**

In 2011, Tunisia held the first post-Arab Spring election, for 217 members of its Constituent Assembly, by closed-list proportional representation. The electoral formula used, Hare Quota with Largest Remainders had enormous consequences for the outcome, in which the largest party was awarded less than a majority of seats and therefore has had to negotiate with other groups in drafting a constitution. This paper uses district-level data to demonstrate that, had the other most commonly used electoral formula been employed, the largest party would have been awarded a super-majority in the Assembly and been in a position to impose a constitution. Whether by design or not, the dispersal of power among alliances in the Assembly may well have been fortuitous for Tunisia at this “constitutional moment.” However, going forward, the incentives for party system fragmentation generated by the Hare Quota system could impede the development of Tunisian democracy, and reformers in that country should consider replacing that formula with a divisor system.

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## Introduction

On October 23, 2011, Tunisians went to the polls to elect the first constituent assembly following from the first uprising of the Arab Spring. The Assembly has 217 members, elected by closed-list proportional representation (PR) across 33 districts. Each voter cast a ballot for a list of candidates, and the distribution of seats across lists within each district was determined by an electoral formula widely known as the Hare Quota with Largest Remainders (HQ-LR). This brief report demonstrates that the choice of HQ-LR had enormous consequences for the outcome of the Constituent Assembly election.

The competitive field in Tunisia's 2011 election was unbalanced. The largest party, Ennahda, won 37% of the vote, more than four times the total of the next largest alliance.<sup>1</sup> Based on this result, the HQ-LR method awarded Ennahda 41% of the seats in the Assembly, or 4% above its vote share. This is not unusual. Virtually every electoral formula used to elect representative assemblies anywhere in the world rewards large parties with seat bonuses to some degree – usually, the larger the party, the larger the bonus. The Tunisian 2011 election is noteworthy in that, despite dominating the field of parties, Ennahda's seat bonus was not the largest. The bonuses of much smaller alliances were as large – and in one case, even larger – than Ennahda's in absolute terms, and thus many times larger in relative terms. Together, these seat bonuses for small alliances determined that Ennahda fell well short of a majority of the seats in the Constituent Assembly and, consequently, has had to negotiate with other alliances in the process of drafting a constitution. By contrast, had Tunisia chosen differently – specifically, had it chosen the other most common formula for converting votes to seats, the d'Hondt Divisor (D'HD) method – Ennahda would have won 69% of the Assembly seats and been in a position to impose a new constitution unilaterally.

The technical decision to use HQ-LR as opposed to D'HD (or any of the other formulas used less commonly among PR systems) to convert votes to seats greatly increased the number of lists winning representation and, in particular, diminished the representation of the largest party. This, in turn, determined that Tunisia's constitutional moment would be characterized by negotiation among diverse parties and groups rather than imposition by the dominant party. The extent to which the leaders who selected Tunisia's electoral formula anticipated this outcome is a fascinating question, and one well worth examination.<sup>2</sup> The decision may have been beneficial for Tunisia in the election of a Constituent Assembly, where inclusiveness ought to be a top priority. This note suggests, however, that the continued use HQ-LR may generate perverse incentives

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<sup>1</sup> Technically, the competitive unit at the district level in Tunisia's elections was a list of candidates. Lists could be registered by political parties, but also by movements, groups, blocs, fronts, alliances, etc. I refer to "lists" when discussing competition at the district-level, and to "alliances" as a generic term for coalitions of politicians who coordinate at the national level. Ultimately, however, I will also discuss the implications of such coalitions for the development of political parties and a party system in Tunisia.

<sup>2</sup> Stepan (2012) notes that, in April 2011, the Ben Achour Commission, composed of representatives from political parties and civil society groups, reached a broad consensus on a number of procedural matters related to the transition, including that elections to a Constituent Assembly should be fully proportional, rather than majoritarian. However, whether the Commission considered various electoral formulas within the broader phylum of PR, and made a conscious choice of HQ-LR rather than others, is not explicit.

that could impede the development of the political party system and hamper governability in Tunisia in the future. Whether by design or by good fortune, HQ-LR served Tunisia well at its “constitutional moment,” but a shift to D’HD could serve the country better going forward.

### **Hare Quota vs. d’Hondt Divisor**

In the world of PR, there are two main “families” of formulas for converting votes to seats: quota and remainders methods, and divisor methods. Within each family, there are various formulas, although Hare and d’Hondt are the clear “heads” of each family, used in more countries than all other variants combined. The logic of each approach is outlined briefly here.

#### Quota & Remainders Methods

The basic principle here is to set a “retail price,” in the currency of votes, at which seats in each electoral district may be “purchased” by lists. That price, or quota, is determined by dividing the total number of valid votes cast in a district by some number – in the case of the HQ-LR, the district magnitude (DM), or the number of seats at stake in the district.<sup>3</sup> Once votes are tallied, each list is awarded as many seats in the district as full quotas of votes it won. For each seat awarded in this manner, a quota of votes is subtracted from the list’s district total. If not all seats in the district can be awarded on the basis of full quotas, any remaining seats are allocated, one per list, in descending order of the lists’ remaining votes. These seats, then, are purchased for less than the retail price (or quota) for a seat. Lists that win seats on the basis of their remainders are, effectively, buying seats “wholesale.” The difference between purchasing seats retail versus wholesale under HQ-LR is critical to understanding Tunisia’s 2011 election outcome, and the prospect for perverse incentives that could undermine the development of a political party system in the years ahead.

Note that, under HQ-LR, it is virtually impossible for all seats in a district to be purchased at retail price – that is, unless the distribution of votes were such that every list won vote totals perfectly divisible by the district magnitude. Thus, the HQ-LR method almost guarantees that, within a given district, lists will pay different prices for seats they win. To mitigate this problem, electoral system designers sometimes reduce the size of quotas by increasing the divisor used to determine them. For example, the Droop Quota (DQ) is calculated as:

$$\text{Number of Votes} / (\text{District Magnitude} + 1)$$

The smaller quota allows for more seats to be bought at retail (and thus, fewer on the basis of remainders), mitigating the problem of inequities across lists in the purchase price of seats.<sup>4</sup>

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<sup>3</sup> The Hare quota is also known as the “simple” quota.

<sup>4</sup> Of course, reducing the size of quotas opens the possibility that votes could be distributed across lists in a manner that allows more full quotas to be won than there are seats available in the district (DM). The likelihood of breaking the seat budget in this way depends on the number of lists competing in the district and the distribution of votes among them, as well (obviously) of how low the quota is set. If votes are expected to be distributed across a wide array of lists, and if the quota is reduced only moderately, the chances of breaking the seat budget are remote. Nevertheless, any quota-and-remainders-based electoral rule that seeks to mitigate the price inequity problem by

### Divisors Methods

Rather than set a price in votes for the purchase of seats, divisors methods use the tallies of votes across lists to establish a matrix of quotients pertaining to lists, then allocate seats in descending order of quotients until all the seats in a given district are awarded. A hypothetical example illustrates. Imagine a district in which four lists – A, B, C, and D – compete and 1,000 votes are cast. The votes are distributed across lists as illustrated in the second row of Table 1: 415, 325, 185 and 75, respectively. The D’HD method proceeds by calculating a matrix of quotients by dividing each list’s tally by the sequence of integers 1, 2, 3, and so on. These quotients are shown in the successive rows of Table 1. Once the matrix is constructed, seats are awarded in the descending order of quotients. In this district, for example, if  $DM=5$ , then the distribution of seats would be A(2), B(2), C(1), D(0). By contrast, if  $DM=10$ , the distribution would be A(5), B(3), C(2), D(0).

[Table 1]

The initial intuition behind divisors methods may be slightly less obvious than with quota-and-remainders methods, but an advantage is that all seats are awarded according to a uniform principle. As with quota-and-remainders methods, one can imagine a rationale for altering the simplest version of the formula in order to achieve certain representational goals. For instance, calculating quotients by dividing vote tallies by the simplest sequence of integers (1, 2, 3 ...), as under D’HD, erodes the value of large tallies only gradually, allowing larger lists to accumulate seats before smaller lists win any. (Note, from the  $DM=10$  example, that List A wins its fifth seat before List D wins its first.) Thus, some electoral system designers aiming to encourage more inclusive outcomes recommend increasing the divisors by which quotients are calculated more rapidly (e.g. 1, 3, 5, ..., as under the St. Lague Divisors system), eroding larger tallies more precipitously, and letting smaller lists in the door to representation with relatively lower vote shares.

In short, either a quotas-and-remainders approach or a divisors approach can be modified from its simplest (HQ-LR and D’HD, respectively), in order to adjust the degree to which the formula rewards large versus small lists. The simplest quota system widely in use, HQ-LR, is relatively friendly to small lists because the quota (retail price) it sets to purchase seats is high. Lists that win enough votes to purchase seats at retail pay a steep price for doing so, and in turn have their tallies diminished rapidly, meaning that lots of seats tend to be awarded by remainders, at discount prices, and to lists that did not even necessarily secure any full quotas. By contrast, the simplest form of divisor system, D’HD, is relatively friendly to large lists because, in constructing the matrix of quotients by which seats will be awarded, it erodes the tallies of large lists more gradually than do alternative sequences of divisors. Thus, the simplest forms of the two approaches have *opposite* effects.

The simplest formulas, moreover, are by far the two most commonly used among countries that elect their legislative assemblies by list PR. Table 2 shows the distribution of democratic countries employing each formula as of the early 2000s for elections to

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reducing the size of the quota must provide some mechanism of handling the seat budget problem, if it should arise.

their lower or only legislative chamber.<sup>5</sup> The largest number of countries uses HQ-LR, but nearly as many use D'HD, and a further set employs both formulas, distributing seats at the initial district level by full Hare Quotas, but then foregoing the use of remainders to award seats in those districts; instead aggregating lists' district remainder votes in "super-districts," and distributing additional seats by D'HD at this higher tier.

[Table 2]

Note that many other features of electoral rules, besides formulas, shape the relative prospects for large versus small lists to win seats. District magnitude (DM) is critical here (Taagepera and Shugart 1989; Cox 1997). Under any PR formula, lower DM favors larger lists, while higher DM reduces the vote share needed to win representation, opening the door to representation by smaller lists. Many of the countries listed in Table 2 also employ legal thresholds that establish a minimum vote share lists must win to be eligible to win seats, thus discouraging smaller parties and alliances and favoring larger ones.<sup>6</sup> Creating upper-tier districts for the aggregation of remainder votes, as in the countries using both HQ-LR and D'HD, avoids price inconsistency between seats purchased by full quotas versus remainders, but the opportunity to purchase seats at a discount is relatively more important to small lists than to large ones.

In short, there are various ways to tilt the field of electoral competition in ways that affect the relative prospects for larger versus smaller lists. Using the HQ-LR method was one decision among many, but it was potentially important, particularly in conjunction with the low-to-moderate DMs used in the Tunisian election and the unbalanced distribution of support among the lists competing. The next section illustrates why and how this was the case.

#### **Tunisia's 2011 Election: HQ-LR and simulated D'HD outcomes**

Constituent Assembly delegates were elected from 33 districts – 27 in Tunisia plus 6 for Tunisians voting abroad throughout Europe, the Americas, and the Middle East. Districts elected between 1 and 10 members, but most districts elected 5 or more, with the expatriate districts accounting for those that elected just a handful. Figure 1 illustrates the distribution of DM across districts in the 2011 election.

[Figure 1]

Across all 33 districts, 560 distinct groups registered lists to compete. The vast majority of these lists – over 400 – were unique to a single district, and many more competed in only a handful of districts. Figures 2 and 3 illustrate this pattern, showing first the full

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<sup>5</sup> Countries electing all their legislators in single-member districts (SMDs), such as the United States, the United Kingdom, India, France, and many others are not included. For countries using mixed systems combining SMD elections for some seats with list PR for others, the formula used for the list PR seats is indicated.

<sup>6</sup> Legal thresholds may apply at the national level (e.g. Israeli parties must win 2% of the vote nationwide to be eligible for any representation) or the district level (e.g. lists in Costa Rica that do not win at least one half a full quota in a given district are ineligible to be awarded seats by remainder in that district) or both (e.g. Argentine parties that win 3% nationwide are eligible to win seats in any district, but failing that, a list must win 8% of the votes in a given district to be eligible for seats in that district, regardless of its rank order in the D'HD quotient matrix.

distribution of districts contested by the full set of lists, then the distribution with all those lists that contested in just a single district excluded. Only four alliances – Ennahda, Congress for the Republic, Ettakatol, and the Democratic Modernist Pole – managed to contest all 33 of the districts, including those for Tunisians abroad. Two more – the Progressive Democratic Party and Popular Petition – contested 32 districts, and six others contested more than 25.

[Figures 2 and 3]

To evaluate the impact on the election outcome of the decision to use HQ-LR, I take the following approach:

1. Collect complete district-level data on the distribution of votes across lists.
2. Calculate the distribution of seats according to the HQ-LR method.
3. Calculate the distribution of seats according to the D'HD method.
4. Compare the distributions.

A couple of methodological concerns bear mentioning here. First, the standard reservation with regard to any simulated outcome based on electoral rules that were not used in practice is that, had different rules been employed, political actors – leaders and citizens alike – may have behaved differently, precisely in response to the incentives the rules generate. With some rules, the effect, and the incentives, are obvious. For example, imposing a 5% legal threshold at the national level, as in Germany, clearly discourages smaller parties, creating obvious and compelling disincentives for would-be leaders to register, or for voters to support, any lists except those expected to win wide support. The difference between HQ-LR and D'HD, by contrast, is more subtle, depending on a set of parameters (outlined in the previous section of this paper) almost certainly not appreciated by voters, and perhaps only murkily grasped by political elites. In the context of Tunisia in 2011, then, where voters and politicians alike had little experience with competitive elections and no prior experience with the rules employed for the Constituent Assembly contest, my premise is that behavior under D'HD would not have differed from behavior under HQ-LR. The same leaders who registered lists under HQ-LR would have done so had the elections been run under D'HD, and voters would have expressed the same preferences with their ballots. We cannot know for certain, of course, the extent to which this counterfactual applies, but the simulation rests on this premise.

Second, it is worth noting the source of the district-level data on which the simulated results are based. The data were collected during the period from December 15-31, 2012, from the website of Tunisia's Independent Higher Authority of the Election (the French acronym is ISIE) – and specifically, from the “District Records” (الدهيئات محاضرة) (الفرعية) pages of the “Results” section of the site. Although some sections of the ISIE site are available in both Arabic and French, the pages with district-level results were available only in Arabic. Moreover, during the window of time when the data were being collected, the site itself was reconfigured and the location of the district-level data shifted. In short, the data on which the analyses presented here are based did not descend to the author on stone tablets, unchanging and infallible, but they are the best that are publicly available. Readers familiar with the Tunisian Constituent Assembly will note that the electoral results widely reported after the 2011 election had Ennahda winning 89 of 217 seats. My own result for Ennahda under HQ-LR is 90 seats. For other parties and alliances, my totals correspond exactly to those reported in other

sources (IFES 2011; Al Jazeera 2011), except that those sources lump a group of small lists that won one seat each together, making it impossible for me to identify with certainty the minor list that was awarded the one seat to offset my one surplus Ennahda seat.<sup>7</sup>

The bottom line, however, is that, using the district-level data available on the ISIE site, I was able to reproduce almost exactly the seat distribution under HQ-LR, the electoral formula employed in the 2011 election. I then produced simulated results as if the election had been conducted using D'HD, and also the main alternative quota-and-remainders formula (Droop), and the most common alternative divisors formula (St. Lague). All four sets of results are summarized in Table 3, which shows all the alliances that won any seats under either rule, in descending order of their share of the vote nationwide. The top ten alliances won representation under HQ-LR, whereas the top seven would have done so under D'HD. Beyond this, however, the correspondence between national-level rank (in the left-hand column) and representation is less consistent. Many locally based lists that won relatively few votes nationwide had enough votes concentrated in a particular district to pick up a single seat, particularly under HQ-LR.

[Table 3]

The core inquiry here is how the choice of formula affects which alliances are favored, and by how much, in the translation of votes to seats. At the national level, an alliance's seat bonus is the difference between the share of seats it is awarded and the share of the overall vote it won. Figure 4 illustrates this concept graphically, showing vote shares (blue bars), seat shares under HQ-LR (red bars), and seat shares under D'HD (green bars) for all the lists that won representation in the Constituent Assembly. For an alliance with more seats than votes, the difference between the length of the red bar and the blue bar represents the size of its seat bonus in the election as it was conducted. The difference between green and blue bars shows the bonus an alliance would have earned under D'HD -- or its seat penalty, if the blue exceeds the green.<sup>8</sup>

[Figure 4]

The crux of the difference between HQ-LR and D'HD, however, is in how the two systems treat large versus small alliances, and the aggregate effects on the latter, in particular, are obscured in the thicket of tiny bars in Figure 4. Figure 5 remedies this by

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<sup>7</sup> In the interest of full transparency and scientific collaboration, the district-level data on which this analysis is based are available on my website in machine-readable format. Also available is a STATA do-file with the programming code for producing the HQ-LR results, the D'HD simulation (as well as simulations for Droop Quota and St. Lague Divisors), and all the figures presented in this report. Other researchers are encouraged to download the data and the code, replicate my results, and offer any corrections or improvements they might be able to identify.

<sup>8</sup> Total shares of votes and seats add to 100%, so for every bonus there must be a corresponding penalty. The vast majority of the 560 groups that competed and won any votes, won no representation. Were these represented in Figure 4, each would have a blue bar (most would be miniscule) and no corresponding red or green bar. In addition, the sixteen lists included in Table 3 that won no representation under the D'HD simulation have blue bars and no corresponding green bars, connoting seat penalties.

plotting this difference between the seat bonuses for each alliance under the two systems against the alliance's national vote strength. Each data point in Figure 5 represents an alliance's seat bonus under HQ-LR minus its bonus under D'HD. Thus, points above zero (colored green) represent alliances that did better under HQ-LR than they would have under D'HD; those below zero (colored red), by contrast, would have fared better under D'HD than they did under HQ-LR; whereas the blue points represent alliances whose bonus (or penalty) was equivalent under both rules. The X-axis in Figure 5 is reversed, such that reading from left to right moves from larger alliances to smaller, and is shown on a log scale to avoid clustering the abundant observations with small vote totals all on top of each other.

[Figure 5]

The largest alliance, Ennahda, did far worse under HQ-LR than it would have under D'HD, and the Initiative Party List also fared slightly worse, capturing 2.3% of seats under HQ-LR compared with a simulated 3.7% of seats under D'HD for its 3.2% overall vote share. The big gains that Ennahda (and to a much lesser extent, the Initiative) failed to capture under HQ-LR were distributed across fully 21 other alliances that won more representation under HQ-LR than it would have under D'HD.<sup>9</sup>

The most remarkable characteristic of the windfall of seat bonuses generated by HQ-LR, dramatically illustrated in Figure 5, is the extent to which it accrued to small rather than large alliances. This distributive effect resulted from a confluence of Tunisia's moderate DMs, with its Goliath-versus-multiple-Davids structure of competition. The high HQs drained the coffers of the only large alliance – Ennahda – that regularly paid full price for its seats, opening the way for the smaller contenders to buy seats at wholesale prices and rack up seat bonuses. Under D'HD, by contrast, Ennahda's big lead over all other contenders would have eroded only slowly, and it would have captured not just a majority of all seats, but a supermajority of 69%, allowing that one party to dominate the process of writing and approving a new charter of government.

### **Lessons from other countries and other formulas**

A broader comparative perspective can shed light on the extent to which the Tunisian outcome was exceptional, and on what would be the implications of adopting alternative electoral formulas. Figure 6 illustrates the relationship between vote shares and seat bonuses from the most recent parliamentary elections in twelve countries that rely on list PR for their lower chamber elections and do not employ legal thresholds. The countries included are:

- HQ-LR: Brazil, Costa Rica, El Salvador, and Panama;
- D'HD: Colombia, Cape Verde, Dominican Republic, Finland, Guatemala, Portugal, Switzerland, and Uruguay.

[Figure 6]

The two panels of Figure 6 show a broadly similar relationship between vote share and seat bonuses in D'HD and HQ-LR systems. Under both formulas, there is a positive relationship between vote share and seat bonus – smaller parties tend to be penalized (i.e. negative bonuses) and larger parties get bigger bonuses. Under both formulas, that

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<sup>9</sup> Three other lists would have won a single seat under either rule.



positive relationship is subject to diminishing returns, although that relationship appears to be more pronounced under HQ-LR than D'HD, even across the narrower range of vote share values in the HQ-LR systems.<sup>10</sup> This is due to the ability, under HQ-LR, of small parties to rack up relatively large bonuses by purchasing seats only at discounted prices on the remainders market.

Figure 7 shows analogous graphs for the Tunisian 2011 election, but in addition to the showing the results under HQ-LR, and simulated results under D'HD, it also shows simulated results under the most common *alternative* quota-and-remainders formula (Droop Quota) and divisors formula (St. Lague). Beginning with the top left panel, The pattern of seat bonuses that actually applied under HQ-LR is similar to the pattern from other countries, although the bonuses earned by the alliances that won less than 10% of the vote were larger than would have been expected based on the comparative data because the smaller lists dominated the market for remainder seats. Of Ennahda's 90 seats, it purchased 62 on the basis of full Hare Quotas, and 28 on the basis of remainders. Of the other 127 seats in the Constituent Assembly, divided among 25 other parties, alliances, and local lists, only 14 were purchased on the basis of full quotas, and the remaining 113 were awarded wholesale, by remainders.

[Figure 7]

The top right panel of Figure 7 shows the pattern of seat bonuses that would have applied had the Droop Quota with Largest Remainders formula been applied in Tunisia, rather than Hare Quota. The results are subtly different, as illustrated in Table 4. Had Droop been used, Ennahda's seat total would have risen to 97, and a few of the other moderate-sized lists would have done about the same as under HQ-LR, while some of the smaller lists would have been reduced in size slightly, or shut out altogether. Because Droop would reduce the retail price paid to purchase seats by full quotas, the number purchased at retail goes up, and the number awarded by remainders declines somewhat. But note two things here. First, even under Droop, most of the seats in the Constituent Assembly would still have been awarded by remainders. Second, the increase in seats purchased at retail is entirely due to Ennahda. The price reduction implied by Droop did not enable a single additional seat to be purchased at retail among any of the smaller alliances. Thus, the move from using the Hare Quota to the Droop Quota, within a remainders-based system, would not reduce at all the incentives for small alliances to gear their electoral strategies toward hunting for discounted seats on the remainders market.

[Table 4]

Now consider the two simulated outcomes under D'HD and the St. Lague Divisor method, on the right-hand side of Figure 7. The most striking about D'HD is the bonus of over 30% that would have accrued to Ennahda. Among list PR systems, as the comparative data in Figure 6 underscore, this would be an inordinate bonus.<sup>11</sup> The distortion is a product of a combination of Tunisia's moderate district magnitudes with the enormous imbalance in electoral strength between Ennahda and all other

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<sup>10</sup> Arithmetically, any positive returns would have to diminish, given that a party that wins 100% of the vote cannot win more than 100% of seats.

<sup>11</sup> Bonuses on this magnitude are not unheard of in single-winner systems, like the UK, Canada, India, and the United States, but they are extremely rare under list PR systems.

contenders. The series of D'HD divisors eroded Ennahda's vote tallies slowly enough that, in five of the smaller districts, it won every seat, and many more it won all but one or two. As the comparative data show, winner's bonuses on this scale are unusual among list PR systems generally, including D'HD. Yet the prospect of winner's bonuses can be modified within divisor-based systems by altering the sequence of divisors. As the bottom right panel of Figure 7 shows, Ennahda's winner's bonus would still have been substantial, at 18%, but far less than under D'HD had the St. Lague Divisor formula been used.

The simulations point to a set of considerations that should be relevant to Tunisian political reformers as the country looks ahead, past the Constituent Assembly and toward the development of a functioning democracy. Given Tunisia's district structure and the initial distribution of support among the main political parties, a divisor-based formula would create incentives for small parties and alliances to seek common ground with compatible groups, and to coalesce into larger alliances in order to capture electoral economies of scale. A quota-and-remainders-based formula – whether HQ-LR or Droop – creates no such incentives. Indeed, for alliances more apt to win seats by remainders than by full quotas – which is to say, all but Ennahda – coalescing is a step in the wrong direction. In the Tunisian context, under HQ-LR, small competitors can turn voter support into seats most efficiently by remaining separate.

The incentive for political movements to atomize under quota-and-remainders systems not merely an abstraction from the feverish imagination of political scientists. For example, Colombia used HQ-LR throughout much of the late 20<sup>th</sup> Century, and for historically idiosyncratic reasons, also allowed political parties to run multiple lists within the same district. The result was a hyper-proliferation in which even large parties would split into scores of factional lists in order to win seats by remainders. The practice came to be known as Operation Wasp (*Operacion Avispa*, in Spanish) because it was more effective to fight electoral battles as a swarm of tiny micro-lists than by uniting as a party under a single banner. But although Operation Wasp made sense as a short-term electoral tactic, its larger effects were widely regarded as corrosive to Colombian parties. The hyper-factionalization that served their district-level electoral purposes presented obstacles to unifying behind common policy platforms and to effective governance. In 2004, Colombia reformed its electoral system, replacing the HQ-LR formula with D'HD, and requiring each party to run a unified list at the district level.

### **Concluding thoughts**

It is particularly important, at constitutional moments, for systems of representation to disperse power and foster inclusiveness (Carey 2009). The use of the HQ-LR formula had precisely that effect in Tunisia's 2011 Constituent Assembly elections. Furthermore, although the process of building democratic institutions is always arduous, there are signs that Tunisia's constitutional designers, in a context of negotiation and compromise, have made good initial decisions on many important counts (Fish and Michel 2012). But the distribution of support among alliances from that initial election may not represent the ideal as Tunisia moves from its constitutional moment toward all the governing moments to follow. In particular, reformers should consider whether to sustain the incentives for "remainders hunting," and thus the fragmentation of alliances, that the HQ-LR formula could encourage. In subsequent elections, vote fragmentation across lists will likely diminish. Many of the hundreds of lists that gained almost no traction among voters in 2011 will likely not persist. The incentives against coalescing under HQ-LR, however, are strongest not for the absolutely hopeless lists, but for those that can capture vote

shares large enough to contend for remainders seats but not large enough to contend to govern. Sustaining incentives for such alliances to go it alone electorally could stunt the development of Tunisia's parties. The D'HD formula would have produced a distorted result is applied in 2011, but D'HD – or perhaps another divisor-based formula that does not generate incentives for remainders hunting – should be considered by forward-looking Tunisian electoral reformers.

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Table 1. Illustration of the D'HD method in a hypothetical district.

| List  | A     | B     | C     | D    |
|-------|-------|-------|-------|------|
| Votes | 415   | 325   | 185   | 75   |
| 1st Q | 415.0 | 325.0 | 185.0 | 75.0 |
| 2nd Q | 207.5 | 162.5 | 92.5  | 37.5 |
| 3rd Q | 138.3 | 108.3 | 61.7  | 25.0 |
| 4th Q | 103.8 | 81.3  | 46.3  | 18.8 |
| 5th Q | 83.0  | 65.0  | 37.0  | 15.0 |
| 6th Q | 69.2  | 54.2  | 30.8  | 12.5 |

Table 2. Use of HQ and D'HD across list PR countries.

| PR Countries using ... |                    |                                     |  |
|------------------------|--------------------|-------------------------------------|--|
| HQ-LR                  | D'HD               | HQ and D'HD<br>(in different tiers) | Other formulas<br>(e.g. including Droop<br>Quotient, St. Lague<br>Divisor, etc.) |
| Albania                | Argentina          | Austria                             | Denmark  |
| Armenia                | Bolivia            | Belgium                             | Hungary  |
| Benin                  | Bulgaria           | Estonia                             | Latvia   |
| Brazil                 | Cape Verde         | Greece                              | New Zealand  |
| Costa Rica             | Chile              | Netherlands                         | Norway   |
| El Salvador            | Colombia           |                                     | Poland   |
| Georgia                | Croatia            |                                     | Slovakia   |
| Germany                | Czech Republic     |                                     | South Africa   |
| Honduras               | Dominican Republic |                                     | Sweden   |
| Indonesia              | Ecuador            |                                     |  |
| Israel                 | Guatemala          |                                     |  |
| Italy                  | Finland            |                                     |  |
| Lithuania              | Japan              |                                     |  |
| Mexico                 | South Korea        |                                     |  |
| Namibia                | Mozambique         |                                     |  |
| Nicaragua              | Paraguay           |                                     |  |
| Panama                 | Peru               |                                     |  |
| Philippines            | Portugal           |                                     |  |
| Romania                | Spain              |                                     |  |
| Senegal                | Switzerland        |                                     |  |
| Slovenia               | Turkey             |                                     |  |
| Sri Lanka              | Uruguay            |                                     |  |
| Taiwan                 |                    |                                     |  |
| Thailand               |                    |                                     |  |
| Ukraine                |                    |                                     |  |
| Venezuela              |                    |                                     |  |

Sources: Colomer 2004; Nohlen 2005.

Figure 1. The distribution of DM across districts in Tunisia's 2011 election.

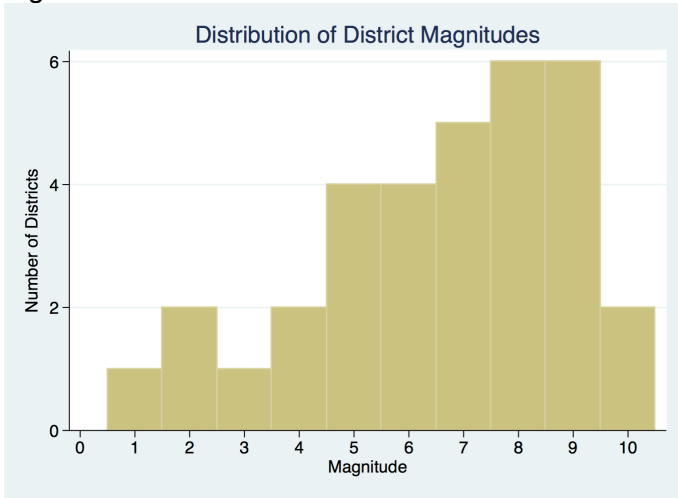


Figure 2. Number of districts in which alliances competed.

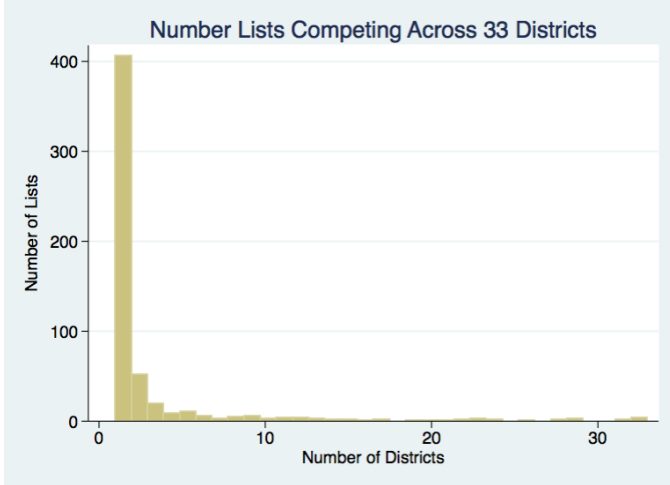


Figure 3. Number of districts in which alliances competed (excluding alliances that competed only in a single district).

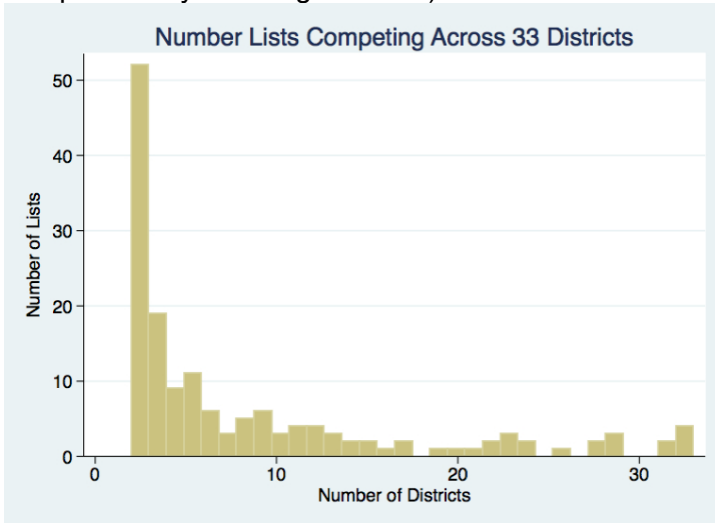










Figure 7: Seat bonus by vote share in Tunisia's 2011 Constituent Assembly election, by various PR formulas.

Table 4. Seats awarded by full quotas and by remainders under HQ-LR and DQ-LR

| LIST                                  | Hare       |           |       | Droop      |           | Total |
|---------------------------------------|------------|-----------|-------|------------|-----------|-------|
|                                       | Full Quota | Remainder | Total | Full Quota | Remainder |       |
| Ennahda                               | 62         | 28        | 90    | 77         | 20        | 97    |
| Congress for Republic                 | 3          | 26        | 29    | 3          | 27        | 30    |
| Ettakatol                             | 4          | 16        | 20    | 4          | 17        | 21    |
| Popular Petition                      | 4          | 22        | 26    | 4          | 22        | 26    |
| Progressive Democratic Party          | 0          | 16        | 16    | 0          | 13        | 13    |
| Initiative Party List                 | 3          | 2         | 5     | 3          | 3         | 6     |
| Democratic Modernist Pole             | 0          | 5         | 5     | 0          | 4         | 4     |
| Prospects for Tunisia Party           | 0          | 4         | 4     | 0          | 3         | 3     |
| Tunisian Worker's Party-RA            | 0          | 3         | 3     | 0          | 1         | 1     |
| Free Patriotic Union                  | 0          | 1         | 1     | 0          | 1         | 1     |
| People's Movement                     | 0          | 2         | 2     | 0          | 2         | 2     |
| Movement of Socialist Democrats       | 0          | 2         | 2     | 0          | 1         | 1     |
| Maghrebi Liberal Party                | 0          | 1         | 1     | 0          | 1         | 1     |
| Independent Voice                     | 0          | 1         | 1     | 0          | 1         | 1     |
| National Social Democratic Party List | 0          | 1         | 1     | 0          | 0         | 0     |
| New Constitutional Party              | 0          | 1         | 1     | 0          | 1         | 1     |
| Loyalty List                          | 0          | 1         | 1     | 0          | 1         | 1     |
| Independent List                      | 0          | 1         | 1     | 0          | 1         | 1     |
| List for Tunisian National Front      | 0          | 1         | 1     | 0          | 1         | 1     |
| Hope List                             | 0          | 1         | 1     | 0          | 1         | 1     |
| Progressive Struggle Party            | 0          | 1         | 1     | 0          | 0         | 0     |
| Social Struggle List                  | 0          | 1         | 1     | 0          | 1         | 1     |
| Justice and Equality Party            | 0          | 1         | 1     | 0          | 1         | 1     |
| National Cultural Unionist Party      | 0          | 1         | 1     | 0          | 1         | 1     |
| Independent Justice                   | 0          | 1         | 1     | 0          | 1         | 1     |
| Loyalty to the Martyrs List           | 0          | 1         | 1     | 0          | 1         | 1     |
| TOTALS                                | 76         | 141       | 217   | 91         | 126       | 217   |