Methods for analysing Hobart City Council voting orientation: 2011 edition

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The object of the article is to assess which aldermen vote in a manner most similar to which other aldermen. This is mainly assessed using a contingency table showing the percentage of contested motions on which each pair of aldermen agreed.

Definition of contested motion

A contested motion is any motion on which two or more aldermen appeared on each side of the voting. Lone dissents and motions lapsed for want of seconder are excluded. Lone dissents are excluded because an alderman's willingness to bother registering a lone dissent is more related to political style than ideology. Motions lapsed for want of seconder are excluded for a similar reason and also because an alderman who fails to second a motion may still have voted for it if it was put to a vote.

Multiple motions on same issue

Often on an issue multiple motions will be moved at the same meeting. For instance some amendments may be moved followed by a substantive motion, or a motion may be defeated followed by a successful motion supporting the opposite outcome. In these cases if the voting lineups on two motions on the same issue are either exactly the same or exactly the same in reverse, then they are treated as one motion. If there is any meaningful difference (even a single alderman voting differently or being absent instead of present) then they are treated as different.

If multiple motions are moved on the same issue at different meetings they are always treated as distinct motions.

Previous ratio model and its minor limitations

In the previous two assessments aldermen were assigned to groups (eg "left" and "right" or "blue" and "non-blue") and ratios calculated based on average agreement with the members of each group.

These ratios were a fairly good indicator, and many indicators will give about the same results, but I am always striving for improvement. Minor issues with the previous ratio system included:

- If one "side" of Council had at least two aldermen in it who were much more moderate than any alderman from the other "side", then the ratio would exaggerate the extent to which they leaned to that side because they would each be included in each other's averages.
- The difference between aldermen assigned to different "sides" could become understated because the ratios were not based on comparing agreement rates with exactly the same list of aldermen. For instance in comparing Valentine

with Haigh in the 2007-9 council, Valentine's non-blue ratio is based on agreement with the three Greens plus Ruzicka, while Haigh's is based on agreement with the three Greens, Ruzicka and Valentine.
- The ratio took no heed of whether aldermen within a group were more likely to agree with the more extreme or the more moderate aldermen within it.

New ratio model

The current model compares aldermen in pairs using a ratio that always compares like with like. This is done as follows:

- At first the aldermen are placed in a rough order down the page based on the old ratio, calculated using a provisional assignment to the two groups "blue" and "non-blue". The initial ordering and provisional assignment are irrelevant (so long as they are vaguely plausible) as the system is self-correcting.
- For each pair of aldermen who are next to each other in the provisional order, a ratio is found for each alderman. This ratio normally consists (but see below) of the alderman's average agreement percentage with the aldermen below them in the order, divided by the alderman's average agreement percentage with the aldermen above them in the order.
- The "above" and "below" groups must each contain at least two aldermen for each comparison. Thus, for aldermen near the ends of the order, the "above" group contains at least the two topmost aldermen other than the pair in question, while the "below" group contains at least the two lowest other than the pair. When considering the first and second aldermen from the top, the "above" group is aldermen 3 and 4 from the top and the "below" group is aldermen 5-12 (or 5-13 for the 2009-11 Council). When considering aldermen 2 and 3 in the rough order, the "above" group is aldermen 1 and 4. When considering aldermen 6 and 7, the "above" group is 1 to 5 and the "below" group is 8-12 (or 8-13 for 2009-11).
- If the two aldermen who are being compared are correctly ordered compared to each other, then the ratio for the lower alderman will exceed that for the higher alderman. Starting from the top and working down, for each case where this is not true, that pair of aldermen is swapped and all ratios recalculated.
- The process of swapping continues until the aldermen are sorted from one end to the other so that no alderman is out of place.
- At this point all the ratios between pairs of successive aldermen are multiplied together starting from 1 for the topmost alderman. The results are then scaled to a scale of green-2 (for the most green alderman) to 1 (centre) to blue-2 (for the most "blue" alderman). So, for instance, a figure of green-1.25 indicates a centrist alderman who leans mildly towards the Greens.

The 2005-7 and 2007-9 Councils were also recalculated using this model.

Minor amendments for various reasons

- In the 2009-11 Council there is little data for Elise Archer as she was elected to State Parliament not far into her second term. When ratios for other

aldermen are calculated, their agreement percentage with Elise Archer is given ¼ of the weighting used for other aldermen.

- It is necessary to use a notional agreement figure for Hayes and Elise Archer in the 2009-11 Council although they were never on Council together. The figure used is 75%, based on average agreement percentages of both with politically similar aldermen.
- In the 2005-7 Council, the placement of aldermen Valentine and Haigh in the order is incredibly close. If the exact system discussed above is used for that Council then agreement with Valentine contributes fully to finding ratios for the two Greens while agreement with Haigh contributes nothing. However the two Greens differed considerably in that Council in their agreement percentages with Haigh and Valentine. Therefore, Haigh is moved into the "above" group when calculating ratios involving the Greens in that Council, but agreement percentages with Haigh and Valentine are weighted at half normal value.
- In the 2005-7 Council, there is a major gap on any sane measure from the Greens to Ruzicka (3) and then from Ruzicka to Haigh and Valentine. Using any alderman below Ruzicka in the "above" group when comparing positions 2 and 3 mutes this difference by including an alderman who Ruzicka was much closer to than the Greens were in that Council and drags all of Ruzicka, Haigh and Valentine closer to the Greens' position than they were. Therefore in computing the ratio from position 2 to position 3, only position 1 is used as the "above" group and positions 4 and below are used as the "below" group.

Assessing and adjusting for the polarisation level of each Council

With the councillors sorted as described above, ratios of green-2 and blue-2 are automatically assigned to the most "extreme" aldermen. But this is not necessarily fair when comparing different terms of Council since some Council terms are more polarised at the ends of the spectrum than others. The polarisation of each Council term is found by dividing the total of the five highest agreement percentages by the total of the five lowest. Agreement percentages involving Alderman Archer in the 2009-11 term are excluded for insufficient data.

By comparing these ratios across different Council terms it is possible to say the 2005-7 and 2007-9 Councils were both about 18% more extreme than the 2009-11 Councils. This is adjusted for by stretching the range of values to 2.18 at each end instead of 2.

Pretty pictures!

The two-dimensional Principle Components Analysis graphs were produced using BiPlot, a nifty piece of PCA software freely available from <u>VirginiaTech Department of Statistics</u> . Each alderman was assumed to agree with themselves 100% of the time (although I recall one ex-aldermen who would frequently change his mind halfway through a sentence, then change it back if another former alderman glared at him.)