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ANIMATED MAPPING: BRINGING ELECTIONS BACK TO LIFE
by Daniel Dorling

Computer Graphics Can Make the Mapping of Election Results Eye- Catching and Informative. It Is Time, Says Daniel Dorling, That Television Companies Realised the Full Potential of Animated Mapping

In recent years, election results have become more exciting. It is not that political parties have become interesting or that the contests are more closely fought than before. Rather it is that television companies have discovered that computer graphics can break up the tedium of an otherwise monotonous election night.

In the 1992 election, for example, BBC presenter John Snow was positioned in front of a computer-generated swingometer. A virtual camera performed a spin as it flew over the red, blue and yellow of the election surface of Britain. In the safe Conservative seat of Bexhill and Battle, a few hundred people changed their voting pattern. The high-tech swingometer twitched, but at the end of the night the virtual camera banked sharply to show how a large swathe of the country remained blue. All very attractive--but not very useful.

For a start, the swingometer--a two-party pendulum made famous by the broadcaster Robert Mackenzie in the 1960s--is redundant now that British politics has become more than a two- party race. Also, the traditional map that is used to show the distribution of seats is misleading because it ignores the fact that all constituencies are equally important in determining the result. Because Conservatives traditionally do better in rural areas, the map will be dominated by blue regardless of who wins the election; urban constituencies, areas in which other parties generally do better, appear as mere dots on the map. Finally, the animated 3D bar charts used to illustrate the vote-share is of limited use--a great deal of computer wizardry is used to show just three simple results in one seat at one election.

There are, however, more informative ways of illustrating election results, which political scientists, geographers and statisticians have been using for many years. All these methods can be adopted, embellished and animated by television to provide not only eye-catching, but also a more accurate picture of what is happening on election night.

One simple and effective cartographic device which is commonly used in mapping election results is a cartogram. Cartograms do not use an equal land area projection nor conventional mapping symbols. In the cartograms shown here,* each constituency is represented by a hexagon of the same size and coloured according to the party which came second at each election. Cartograms can be used to show the constituency winners, but looking at the runners-up is more interesting because it gives an indication of who may win at the next election and of where they are likely to do best.

A comparison of cartograms of general election results from 1955 up to the last election clearly illustrate how the old two- party system in Britain has evolved: while two parties dominated in 1955, the 1992 cartogram* shows that five parties were runners-up in a large number of constituencies (see diagrams which show three of the 11 election results*). For television, this series could be animated to encapsulate the geography of the rise in electoral competition over nearly 40 years. This would be done by rapidly fading from one image to the next to show how the red and blue constituencies have retreated geographically over time, while yellow areas have emerged in southern Britain, green in Scotland and purple in Northern Ireland. The actual changes have been far more complicated than this, which is why animation is needed.

Another effective way of illustrating the swing of votes in a three-party contest is to use a triangle. By representing each constituency as a coloured arrow, the share of vote for each party can be read from its position in the triangle. On the diagram opposite,* the tail of the arrow is positioned to show the relative share of votes in 1987; its head is positioned according to the share of votes it won in the 1992 election. These arrows can be placed on a cartogram to show how the vote has changed in each constituency.

And just as cartograms can be animated for television, so too can these triangles. Constituency arrows would appear to swim around the screen as the geography of the vote changes between **elections**. Through this animation, the viewer gains a clearer idea of patterns of voting behaviour; if the swings are part of a longer-term trend, arrows move across the triangle like flocks of birds.

Television companies might argue that these examples of animated cartography are too complex for the average viewer to understand. But today's viewers are much more sophisticated than their parents who were happy to watch a cardboard pendulum be pushed across the screen. It is true that it will take some time to explain the graphics. But when have television viewers ever had more time, than when they are waiting for the slow trickle of results to come in on election night.

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