

## Knowing with Numbers

By Paul Jerome Croce

Look up from your reading. How many lights are there around you, how many coins in your purse or pocket? How many people are in the room with you? These are not questions of intellectual complexity. But expand the scene beyond the immediate setting subject to your casual scrutiny, and the simplicity erodes as the scale grows.

Just as Newton's laws remain true only as particular cases of Einstein's theories of matter and motion, the commonsense directness of the original questions only remains simple when the boundary definitions are assumed. What do you mean by "light," or by "room"? And, to borrow from a question made infamous by Bill Clinton: a lot depends on what "are" means. These nuances grow in importance on the mass scale, not only because it is harder to keep track of larger quantities, but also because the setting becomes impersonal, and so we need to trust the information gathered beyond our immediate ken. Take as your counting house a large diverse state and its pool of six million voters, and the task becomes a hall of mirrors. Welcome to Florida, Election Night 2000.

Of course, the peculiarities with numbers in Florida were not unique to this time and place. The close scrutiny of Florida came about only because the election was so close and the state's electoral votes would decide the winner. However, it takes a big celebrity event like this one to direct public attention onto the peculiar workings of large numbers.

For most people, counting is an elementary operation and the very

model of objectivity, and counting large numbers is only more of same. However, statisticians and scholars have learned the elusiveness of objectivity with big quantities. The post-election media and legal carnival was a shock course for the public in those same insights.

The lesson about numbers from this election is that, on the macro scale, there is no way to replicate the objectivity of those simple questions about your personal surroundings. This is not a reason to sneer cynically about ever knowing any truths. Instead, it is an opportunity to evaluate the methods experts have devised for dealing with that elusive objectivity.

Statistical methods emerged in the last few centuries to cope with society on a mass scale. Techniques for keeping track of people and things helped promote the marketplace growth of production and consumption, but they also exacted a cost: they brought impersonal interaction and demanded uniformity. Armed with the aura of objectivity, reliance on counting also came to serve as a means to cope with the breakdown of commonality and community in large, diverse societies. In divisive situations, numbers are our umpires. Flip Wilson defended himself by saying "The devil made me do it"; with our trust in numbers, we often let them do the decision-making for us. Statistics promise to filter out personal preference, ideology, and politics.

But statistics can't completely replicate simple counting, despite all promises and hopes. Because the statistical work of experts happens below public radar, most of us have been lulled into not noticing the subjective judgment calls that go into numerical calculations. And, of course, since it would be so nice if the counting really were as simple as direct objectivity, wishful thinking has played a role in the ignoring of complexities.

Hence the shocks of the seesaw election night. Few raised doubts about the predictions, first for Gore's victory in Florida and then for Bush's, all based on exit polls of a small percentage of the population. As with the controversial use of statistical sampling in portions of the census, techniques that include unbiased and immediate questioning, random sampling, and fair geographic and social distribution promised to erase uncertainty and project the final tally based on a small number of people interviewed. These statistical methods had worked effectively many times before, and, without forcing us to wait for the large lumbering facts of the total count, they provided speed.

The recent encounters with the peculiarities of large numbers do not suggest reasons to scrap statistical methods—which would be impossible without abandoning mass society itself—but to be more sober about them. They are useful tools, but like any tools they can be misused or taxed beyond their strength. After this bizarre episode of counting, the best lesson for the public and television producers alike would be to harbor a little skepticism about the certainty of numbers. A numerical truth can be much more elusive than it looks. A lot of subjective interpretation goes into every statistical result, yet for all that, it can still be very useful—not a fixed certainty, but just very useful. ●

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