

INFORMATION SOCIETY FOR ENLIGHTENED VOTING*

Solomon Passy

1. Introduction. Among the millions of words uttered and written on the subject of democracy, Winston Churchill's are among the most famous: "Democracy is the worst form of government except all those other forms that have been tried from time to time." [4] The occasion of the remark – it was made on 11 November 1947, when the great wartime leader spoke for the opposition in Britain's House of Commons – is a reminder of how far the world has since travelled. Yet the passing of six decades notwithstanding, mankind is still subservient to the classical dogma embodied in Churchill's phrase: that democracy is synonymous with universal suffrage.

It was always open to question. But today, new and evolving technologies enable us to discard it – not to abolish democracy (who would want to do that?), but to enrich democracy with more effective, more innovative and more moral forms of enlightened government across the world.

2. The all-seeing eye. It is clear that, as Winston Churchill implied, elections are an ineffective method of government. The reason is that, in the form they have come to take, they do not serve the principal target of public development: a continual and sustained improvement of the quality of life of each succeeding generation. This quality of life can be expressed via a number derived from complicated formulae which take into account the most important objective benchmarks in the development of a country. They include economic prosperity, education and literacy, healthcare and life expectancy, infant mortality, external

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and internal security, the environment, individual freedoms and rights, internet penetration. To increase this quantity is a particularly intricate task, especially as taking care of one benchmark can damage another (e.g., a rise in pensions pushes up inflation).

When we go to the ballot-box, we do not have a truth-detector to judge objectively which of the contesting parties will lead us towards the target and at what speed, which is cheating us and how much. So we cast our vote in the dark, on other grounds—preference, prejudice, mood, image, fancy.

The dangers of such involvement of human psychology are obvious. The gap between objective reality and subjective choice is democracy's gift to populism. It can become wider when (as in many parts of Europe today, for example) the circumstances of people's lives are becoming harder. Democracy has quite often committed suicide through elections for lack of information.

The scientific discoveries of the 20th century are categorical here (Kenneth J Arrow's work for example). An uninformed voter is unable to make a reasonable choice between petty immediate interest and the long-term interest of the coming generation. We voters are not chess grandmasters: we can either see just one or at best two moves ahead, or do not play chess at all. This is why we are afraid of backing a politician who would sacrifice a queen so as to win the game after five moves. The good news is that the world voter is becoming increasingly aware that it is precisely the blind election that blocks his or her choice.

There are other renowned studies (some in collaboration with or influenced by Arrow) that demonstrate the incompatibility of the electoral system with reasonable democracy: Paul A Samuelson (1970), Gerard Debreu, and Amartya Sen among them. A number of writers extended the diagnosis while proposing rudiments of solutions that could lead closer to the target: for example, Leonid V Kantorovich and Tjalling C Koopmans (1975), and Leonid Hurwicz, Eric S Maskin and Roger B Myerson (2007).

The techniques available in Winston Churchill's day were helpless in evolving anything better than blind elections. His compatriot Alan Turing was in the next decade to formulate the principles of the modern computer; though even he was hardly aware of the potential of his discovery. (For more information on the topic see [7].) Now, however, computers can offer tests and strategies to evaluate the views, capabilities or intentions of a politician or a party and the extent to which they lead to the target. The voter has the right to know. The time is ripe for global www.e-democr@cy.

3. The three stages. There are three steps. The first, anticipated by Plato, is currently in Google's pipeline. To make life easier for the voter, a computer simulator tests in advance a leader or a party team's fitness for the job. Thus, every party will be brought to earth and compelled to promote managers instead of canvassers, algorithms instead of campaign slogans, formulae instead of speeches.

This will be extended to an electronic game whose components are the nearest approximation to state governance; and some sort of "electronic field" for competitions. Governments have the right to improvise only within certain limits, beyond which experiment turns into disaster. The first step of e-democr@cy shows the voter those teams that are well aware of these limits—itself a solid insurance against failure. The voter is then free to choose from among them. This should be straightforward: the military have long introduced e-exercises, and Google is working on a truth-superdetector of this kind.

The key question arising here is: who formulates the task? There are various options: for example, it could be a panel composed of all living winners of the equivalent of the Nobel Prize in economics, or a committee from these selected by the Royal Swedish Academy of Sciences. Swedes have proved that they know perfectly well what quality of life is all about. Such an approach would adhere to Plato's precept for the citizens of the ideal state: stick to mathematics, come what may. (For more information about Plato's views on mathematics see [1].)

The second step, anticipated by Gottfried Leibniz, will make *www.e-democr@cy* even more interesting. The aspirants to govern over the next four years (ministers, parliamentarians and others) must compete through a gladiatorial tournament between the parties in the electronic arena.

The target computer will be an impartial umpire. Leibniz's ideal is the guiding light at this stage: "When there are disputes among persons, we can simply say: *Calculemus!* [Let us calculate], without further ado, to see who is right."¹ Disputes can thus be reduced to objective calculations.

Even now, after all, competitive examinations are held for admission to secondary schools and universities, the senior civil service, for the military and police, for fighter-pilots. The idea is as old as the world. The first recorded political competition, in the form of a simulated war, was the battle between David and Goliath. It is time that VDUs and joysticks are enabled to help voters

¹The famous *calculemus* of Leibniz appears in several places of his writing; this is the most frequently quoted; variants are found in the *Preface* to his *New Essays on Human Understanding*, and in *Dissertatio de Arte Combinatoria* (1666). See [3], p. 14; [2], p. 134.

before they come to grips with complicated technology such as ballot-boxes and ballot-papers. Ultimately, these innovative gadgets will supersede the existing voting paraphernalia.

The question arises: should the criteria that apply to selection of politicians be extended to voters too? Moreover, should the computer at some later stage be charged with choosing politicians on the voters' behalf? Or will this limit people's fundamental democratic rights to participate in government, if such a thought is conceivable?

The third step, anticipated by artificial intelligence, is the most advanced of all. It involves the target computer being charged with running part of the affairs of the state alongside a government and a parliament elected according to the second principle. Now comes the time of the voter—our time. This is because the computer will be proposing a number of different but equally appropriate solutions, and the informed voter will merely have to pick one of these. Here every election is correct, safe, and to the point. Elections will continue to perform their psychotherapeutic functions; for, as Montesquieu said, political liberty is the citizens' tranquillity of spirit [5].

What remains to be decided is: who will exercise daily control over the computer? The answer: another, more powerful computer (which verifies the work of the first one). Indeed, to entrust government to two computers which calculate (respectively) twenty and forty moves ahead is indeed twenty and forty times better than if it were given to two parties looking one or two moves ahead. If NASA computers can remote-control unmanned spacecraft [6], why shouldn't university-based teams remote-control the state?

4. The machine's heart. It is evident that `www.e-democr@cy` will turn the political class from a rhetoric club into an enlightened minority. The important thing is that we voters, who are in a majority, will be able to make an informed choice among the right targets instead of making an uninformed choice from among the wrong means.

The march of the new information society against populism will meet with the fiercest resistance from the old political class; it will also find its most natural ally in young e-voters, aware of their long-term interest. We all revere the democracy as well as the physics and geometry that evolved in ancient Greece. Over the last couple of centuries, physics and geometry were demythologised,

allowing them to make remarkable progress in Europe, America, and across the world. Now it is the turn of democracy to follow suit.

What comes next; what are steps four, five and six? The answer is surely to look outward. The world is full of unresolved conflicts: from Kosovo to Darfur, Sri Lanka to Israel–Palestine, India–Pakistan to Somalia, Georgia–Abkhazia to the Democratic Republic of Congo. They tend to intensify over time, moving from the ground of logic to the wrestling-mat of psychology and in the process fanaticising the contenders.

The lesson is apt: if anyone can bring the combatants of these conflicts to their senses, it will be an impartial, computer-aided arbitration they can trust. Then we will be close to escaping from the classical dogma enunciated by Winston Churchill. Democracy by supercomputer is the global future.

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Solomon Passy
The Atlantic Club of Bulgaria
111, Bulgaria Blvd, office 14
1404 Sofia, Bulgaria
e-mail: solomonpassy@gmail.com