T R A N S C R I P T

ELECTORAL MATTERS COMMITTEE

Inquiry into Electronic Voting

Melbourne — 22 August 2016

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Mr Geoffrey Goode, president, and
Dr Lee Naish, immediate past vice-president, Proportional Representation Society of Australia (Victoria and Tasmania) Inc.

Necessary corrections to be notified to executive officer of committee

The CHAIR — Welcome, everyone, to two days of public hearings of the Electoral Matters Committee in our inquiry from the government into electronic voting. It could not be more topical than at the moment. This is the first day of our hearings. Can I just check with you that you have received the guide to giving evidence at public hearings?

Mr GOODE — Yes.

The CHAIR — And you are well aware of the hearings being covered by parliamentary privilege. Basically that means you can say whatever you like in here, but do not go out there and say it. That is the guide I always give to new members of Parliament on the issue of privilege. It is also equally applicable to you.

Could you please state your full name and your business address, and could you tell us please whether you are attending in a private capacity or whether you are officially representing an organisation? Your evidence will of course be taken down by our capable people here from Hansard. You will get a copy of that in due course to check that the transcript is correct — not to change your mind, but to check that the transcript is correct. Then initially after you give your name and your business address, could just make a very brief submission and then we can ask questions. The hearings unfortunately today are only 20 minutes each, so you might want to bear that in mind when you are giving your submission. Thank you.

Mr GOODE — I am Geoffrey Goode, president of the Proportional Representation Society of Australia, Victoria-Tasmania branch.

Dr NAISH — I am Dr Lee Naish. I am also a member of the same society, so the same address is applicable.

The CHAIR — Thank you. Please commence.

Mr GOODE — Our submission covers our main points. Our main interest in the area of voting is adoption and advocacy of the single transferable vote form of proportional representation, which fortunately the Victorian Parliament has adopted in at least one of its houses. Our main priorities are not just advocating that but dealing with some of the weaknesses in the way it has been adopted, and perhaps suggesting further improvements. We are very fortunate that the federal Parliament recently made a landmark decision in getting rid of group voting tickets, something we opposed 30 years ago, and we hope the Victorian Parliament might start thinking about that soon.

But on the subject of electronic voting, our main focus has been on the counting, because it is obviously advantageous for a very scrupulously fair system, but necessarily intricate system like the single transferable vote, to have every assistance possible, and the counting that is already being done at local government level, for instance, and with the upper house, is invaluable. We support that, and we do it ourselves in very small scale elections for other organisations, and we have had no trouble at all with it.

Other matters — extensions of that — include going beyond that to the actual registration of the vote by the voter. That is another matter. There are a lot of human factors in that — ergonomics, security et cetera. Dr Naish has recently retired as a senior lecturer in computer science at the University of Melbourne, so any questions the committee might have on security aspects and the soundness of various aspects of electronic counting are things that his department has discussed. A colleague of his will be speaking later, Vanessa Teague. We have been in touch with her and had advice from her, and we take the view that there are several human factors aspects that are probably our main focus.

Internet voting is another matter again, of course, and Dr Naish and Dr Teague will be talking about the weaknesses there. But in the human factors aspect, we have drawn attention to the fact that electronic voting could see the voter losing some of the customary rights and customary expectations that they have with paper voting. One of those areas is informal voting, and returning a blank ballot. Although people talk about compulsory voting, all we have is compulsory attendance at a polling booth. Secret voting means you can do what you like, and you should be able to continue to do that. Computer systems, as anyone knows who has tried to use them, at times suddenly come up and demand you agree to a set of conditions or you will not get any further, and they might be a 10-page lot of legalese in fine print. Nobody reads them; they just sort of tick and say, 'Yes, I'll do it'. Well, we do not want that situation. There must be an opportunity for people to vote informally or blank. I think that is one of our — —

The CHAIR — But it will remove the right to send a message to one's member of Parliament.

Mr GOODE — I will come to that.

Ms PATTEN — Yes. Maybe there are some little emoticons you could add.

The CHAIR — I have had a few messages over the years.

Mr GOODE — I was a classic witness to it. I was a scrutineer at the Flinders by-election in the 1980s, and the deputy federal leader of the Liberal Party, Neil Brown, was on the same table. He was the Liberals scrutineer. It was fascinating to watch his face, as 40 per cent of the ballot papers had 'No Dams' written on them.

The CHAIR — I remember that at that election.

Mr GOODE — Yes. I did not expect it either, and we were delighted, but you do not want an opportunity for people to put their names on the electronic forms, because that would invalidate the vote. You are aware of all these things, of course, but if there are more technical questions that anyone has, I hope Dr Naish could help.

The CHAIR — Could I start, please? I was actually surprised when I read through the submissions, because the overwhelming message to me is, 'Don't do it on a large scale'. Why are people with technical expertise telling me that?

Dr NAISH — There are significant technical challenges in doing electronic voting in a way which is verifiable and preserves privacy and things like that — all the traditional things that we want in a voting system; secret ballots — while being able to trust the system and trust that votes are cast as they are intended and eventually get counted properly. Trying to verify that all that works when you are in the dark, invisible recesses of a computer is an extremely challenging problem.

People often draw the analogy with electronic banking. One of the big differences with electronic banking is that you want to have receipts. At the end of the day if I transfer $1000 from my bank account to Geoff's bank account, I should be able to get a receipt so I can prove that I have transferred the money. The banks will have all that information available. With voting, you do not want to have receipts. You do not want to be able to prove how you voted, for example — for privacy reasons, for reasons of avoiding coercion and so on. That makes the whole problem from a technical point of view much, much harder.

There are very elaborate schemes. The electronic voting vVote system that was used in Victoria in the last election has got some very fancy mathematics behind it and very fancy protocols. It can be done. One of the problems is that it does get very complicated, so in order for everyone to be satisfied that everything is running smoothly, there are a bunch of fairly complicated steps that need to be explained to the voters and explained to everyone else — you need confidence in the computer systems and so on. One of the submissions was by Roland Wen, and I cannot remember the name of the other person, who was fairly critical of that system because it was not implemented in full. There was not as much risk management as could have been done possibly.

Essentially, even if you do it right from a theoretical, mathematical, computer sciency point of view, which is fascinating for people like me and Vanessa Teague and other people, there are still some practical sorts of human aspects of it which make it more complicated. There are other submissions — people like Craig Burton, for example, who is on the last session of the day and has had a lot of experience with this. Having been a main, principal person behind a lot of these systems, he is now saying, 'We've done a bit of dabbling in this area. It's probably just best to avoid it'.

I think maybe it can be done. It needs a lot more education of the voters so that they understand the extra steps that need to be done in order to make sure that we do have confidence in the system. The other option is just to stick with paper and pencil, which I have always said works really well. It might seem a little bit last millennium, but if it ain't broke — —

Certainly for elections where you need a large degree of confidence in the outcome, paper and pencil does work really well. In order to get a similar degree of trust and reliability in an electronic system, it is a very difficult challenge. Maybe it can be done, but it is still an open question, I would say.

Ms SPENCE — Could I just get you to elaborate on that a bit? You said that it maybe can be done but that would involve some further education of voters. Could I just get you to elaborate upon what you mean by that?

Dr NAISH — One of the main challenges is for a voter to be able to be confident that their vote — the vote that they made as they intended; number 1 preference for you, for example, et cetera — eventually gets into the system and gets counted. But it is also important that they cannot prove to their friend or anyone else, who might be offering them some incentive or some disincentive for voting the other way, how they voted. It is sort of like the opposite of having a receipt. If I transfer some money to Geoff's account, I get a receipt, and I can prove it: 'Look, I transferred some money'. This is the opposite. You want to be able to be confident in yourself that, 'Aha, I can see that my vote has been counted, but I cannot prove it to anyone else'. That is a technical challenge.

The way you can solve that is by allowing voters to have the opportunity to do some extra steps of verification when they are in the polling booth. It is sort of a fairly complicated mathematical argument, but you can allow people to be very confident that their vote in the system is trustworthy. But in order to do that there are some extra steps that they can do in the polling booth. For example, they might be able to put in a vote and then say, 'No, actually, I don't want that vote to go in. I want a different vote to go in' — little complicated things like that which allow some sort of sneaky mathematics to get past

that seemingly impossible contradiction of being able to prove to yourself that your vote is counted but not being able to prove it to anyone else.

Mr DIXON — Is there a major difference in technicality having electronic voting at the polling booth compared to somebody voting at home? Are they as hard as each other, or is one easier?

Dr NAISH — With internet voting there are a lot more security issues and problems. Even if all the technical issues are solved, there are still the issues of coercion. People get together and they all have a big party thrown by some candidate, political party or someone who has strong views about something, and that is their incentive to vote in a particular way. There are some possible ways around that, so systems which allow you to vote in a particular way, receive your free beer or whatever and then go back and vote a different way. There are some technical ways that people have proposed around that, but there are issues of coercion. There are also a lot more issues of security and integrity with the internet. There are all sorts of attacks that can be mounted. The internet is in some ways inherently insecure, and launching denial of service attacks and things like that, as we all know, is not that hard to do. It is easier to mount an attack like that than to defend against it. Something like the census is not so time critical; everyone wanted to do it early, but there is quite a large window of opportunity. Whereas with an election typically there is one day where you want everything to happen, and if there is some nasty attack from someone or if there is a technical glitch and things go down, then it is a whole lot more disastrous.

Ms PATTEN — It certainly seems that the iVote scheme in New South Wales is popular amongst the community, not obviously amongst the experts, it would appear. Given that the community seems to be quite supportive of it, is it just an ignorance, or do we in the community set a lower bar than you as experts?

Dr NAISH — I suspect the community does have a lower bar, but probably experts have a higher bar, and probably people more involved in politics have a higher bar. There is probably a degree of ignorance as well. There is a degree of trust in electronic systems. Certainly with electronic banking and stuff like that people are happy to swipe their smart phones at things and get instant gratification and whatever. They are happy with that. Whether they get instant gratification when they vote, I am not sure. Some of them do; some of them do not. Some walk away disappointed, and the same with the candidates. I think there probably is a gap in expectations of security and so on and also a gap in knowledge.

Ms BLANDTHORN — In your remarks you referred to counting as being perhaps the strongest reason to move to some kind of electronic aspect of the election. There are obviously a number of ways there can be some electronic use in that, whether it is scanning ballots at the point they are entered or whether they are then entered from a paper ballot into the system. Do you have a view about which of those is least susceptible to human and technical errors?

Dr NAISH — Not particularly. There are a couple of things I might say. One is that I think it is very good to have the counting software open source so that anyone can view the source code and identify any errors in it. There have been some issues with the AEC and their software. They have kept it secret for proprietary reasons. I do not think that is such a good thing and such a good reason. One aspect is making the source code open so that there is more opportunity to find bugs in it. For example, recently there was a bug discovered in some of the New South Wales counting software. They use random sampling, and this bug affected how the random sampling was done, and it affected the probability of different candidates being elected. There was someone who would have had a 90 per cent chance of being elected and they were not. They were not guaranteed to be elected, but the bug reduced their chance of being elected to something like 10 per cent, and they were not elected.

Ms PATTEN — How does that happen? I do not quite understand that.

Dr NAISH — Because there is random sampling. When you have a surplus number of votes under New South Wales rules — this was actually local government, this particular example, but the upper house is similar — if there is a surplus of votes, they are sampled randomly to figure out which ones go on and get counted.

Mr GOODE — It is the only jurisdiction in Australia that does that.

Ms PATTEN — Right. So they do not count all the votes; they just take a random sample.

Mr GOODE — The Senate used to do it until 1983. Tasmania has never done it in 120 years.

The CHAIR — That is the time allocated unfortunately for this discussion. A copy of the Hansard transcript will be sent to you in about a fortnight. You know the routine. You can correct errors of fact or spelling or whatever, but you cannot change your evidence. But again, thank you so much for coming along and not only doing a submission but actually expanding on that. Thank you for your expertise. I think these hearings are just going to get more and more interesting. Thank you very much for your attendance.

Mr GOODE — Thank you. Witnesses withdrew.