Proposals to lower the age of voting, to 15 for example, are regularly met with worries that people that age are not sufficiently ‘competent’. Notice however that we allow people that age to sign binding legal contracts, provided that those contracts are co-signed by their parents. Notice, further, that in a democracy voters are collectively ‘joint authors’ of the laws that they enact. Enfranchising some less competent voters is no worry, the Condorcet Jury Theorem assures us, so long as the electorate’s competence averaging across all voters remains better-than-random.

Thomas Nagel invites us to regard citizens as ‘joint authors’ of the laws.¹ From his brief and allusive remarks, it is unclear what exactly he means by the phrase or how exactly it is supposed to solve his particular problem.² But Nagel’s own intentions are beside our present point. Here we simply borrow the phrase, give it determinate meaning of our own, and show how the concept thus explicated can do real work in solving a hard problem in democratic theory. Specifically, we shall be discussing the problem of extending the franchise to citizens of dubious competence, children in particular.

Of course, many different kinds of competencies are involved in voting. Some people – such as felons and bankrupts – are disenfranchised on the grounds they are morally incompetent (or worse). But young people, like elders under guardianship, are

² His aim was to explain why members of the same political community owe strong duties of egalitarian distributive justice to one another that they do not owe to people outside their political community. But if we owe duties of egalitarian distributive justice only to those whom we allow to be ‘joint authors’ of the laws with us, then it seems altogether too easy to evade such duties to others by refusing them the right to vote. By that standard it is all right to disadvantage people, so long as we make sure to doubly disadvantage them – denying them political power, at the same time as denying them economic benefits. That seems a queer doctrine indeed.
disenfranchised specifically on grounds of cognitive incompetence. We concentrate exclusively on that sort of electoral incompetence in this article.

Children constitute a special case for moral and political theory in all sorts of ways. However sceptical people are about paternalism in general, they invariably regard it as only right and proper that parents exercise power paternally with respect to their children. However committed people are to ideals of a maximally inclusive franchise in general, they invariably regard it as only right and proper that children be denied the right to vote.3

In this paper we use the special case of children to cast light on broader issues surrounding the franchise. Drawing an analogy with the notion of suretyship invoked when co-signing contracts with under-aged minors, we suggest a way of reconceptualising what people in general are doing when they vote together. In contract law, suretyship enables incompetents to be covered by someone more competent. Politically, by analogy, being enfranchised alongside others more competent is, we suggest, how incompetents can analogously get covered in electoral law. Nagel’s phrase ‘joint authors’ applies nicely to both cases. An electoral equivalent of ‘suretyship’ might thus be the best way of fleshing out Nagel’s inchoate notion of what it is for people to be ‘joint authors’ of the laws. We go on to trace the implications of such an analysis for who should be allowed the vote, and what people should be seen to be doing when they are voting together.

I.

To dispel the mysteries surrounding Nagel’s phrase about citizens being ‘joint authors’ of laws that are publicly enacted, let us begin by transposing the case into the familiar realm of contracts privately concluded. There, we all know what it is to be ‘joint signatories’ to a contract.

For a first case, suppose two of us have authored an academic article together. As coauthors, we jointly own the intellectual

3 Children are a ‘special case’ too, in the sense that everyone is or has been a child once, unlike other disenfranchised groups: in that sense they are not a ‘discrete and insular minority’ of the sort that the US Supreme Court accords special protection per the famous footnote 4 of United States v. Carolene Products Company, 304 U.S. 144 (1938).
property rights in the piece. Suppose that a journal agrees to publish the piece, on condition we contractually assign copyright to the journal’s publisher. The signature of each of us (plus the publisher’s representative) will be required to bring the contract into force. Once signed, that contract will be binding on the two of us jointly and severally. Suppose the contract requires us to warrant that the article contains nothing defamatory, and it requires us to indemnify the publisher should a court find otherwise. Under the terms of that contract, each of us would be legally required to indemnify the publisher in full, should the other fail to discharge to his or her contractual obligations in this matter.

Or, consider the case of a legal partnership. Once you have both signed the documents legally forming the partnership, either of you can undertake commitments in the name of the partnership. Further, each of you is jointly and severally liable for all the commitments of the partnership. If your partner reneges on some commitment made in the name of your partnership, you are contractually obliged to bear the full costs of meeting the commitment yourself. Pragmatically speaking, this implies that all partners are individually liable for the partnership debts in full or in part (dependent usually on their ability to pay), so a creditor can ‘go after’ each individual partner until a debt is satisfied or the partner is bankrupt.

A ‘contract of suretyship’ is yet another way for us to become joint parties to contractual obligations. In its original 1677 definition, a contract of suretyship commits a person ‘to answer for the debt, default or miscarriage of another person’. This legal device is of particular interest for our present purposes, since it is the instrument that is most commonly employed to facilitate a contract where one of the parties is not fully ‘competent’.

Take first the case in which the incompetence in question is of a particularly mundane form: financial incompetence. How does someone who is not himself creditworthy succeed in contracting to buy a used car? Typically, what happens is that he finds someone who is fully creditworthy to co-sign the promissory note as surety, with the surety effectively guaranteeing that the contract will not be reneged upon. Both the purchaser and his surety co-sign the contract with the car dealer, each of them committing to pay the debt in full if the other does not. Again,

4 UK Statute of Frauds, 29 Car. II, c. 3.
they are jointly and severally liable for the contractual obligation – although realistically, it’s the more creditworthy surety whose commitment the car dealer finds most comforting. From that pragmatic point of view, the surety’s signing the contract is what enables the person of dubious financial competence to enter into contractual relations with the car dealer at all.

Consider next more dramatic cases of ‘incompetence’ among adults: mental incompetence. Of course in the limiting case of certifiable mental incompetence, a guardian is appointed and the incompetent individual loses all powers to conclude any legal affairs (contracts or any others) on her own. The guardian simply concludes contracts on her behalf, without the incompetent co-signing.

But step back from that limiting case of adult mental incompetence, and consider the case of contracting with someone of dubious mental competence. She’s not (yet) been declared incompetent by a court. But she’s clearly mentally feeble. You reckon that, if you bargain hard and conclude a tough contract with her, it might well be voided in court as ‘unconscionable’. Yet both she and you nonetheless want to enter into that contractual relationship. What to do? Well, again, you might most naturally suggest that she find a friend who is mentally fully competent to co-sign her contract with you. That serves at least a couple of functions from your point of view. One is that the contract is less likely to be voided as ‘unconscionable’, because the mentally more competent cosignatory would have functioned as a ‘contractual advisor’ to her. Another is that, the contract being jointly and severally binding on both the other cosignatories, you can always claim your contractual due from the competent party if the other is deemed to be too mentally defective for you to pursue at law.

That is a common way of handling issues of contracting with adults of uncertain competence. We typically approach the problem of contracting with children in just the same way. At law, children are incapable by reason of age of signing (non-voidable) contracts. We nonetheless sign contracts with them, pursuant to the relevant contract law. But typically we do so only on condition that someone who is of unquestioned competence to enter into

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5 Children can sign voidable contracts. But while those are binding on the other party, the child may repudiate the contract at any time, at which time the contract becomes void.
binding contracts (such as a parent or guardian) co-signs as surety, thus agreeing to be jointly and severally responsible with the child for the discharge of all the duties arising under the contract.6

II.

There are two salient features of that model to be considered here. We will devote most of our attention to the political extrapolation of the first feature of the model, returning to comment on the political extrapolation of the second feature in Section III.

The first feature is this. The way ‘jointness’ works in the contractual cases we have been discussing is that it takes the signature of both co-signatories to conclude the contract with some third party; and once that contract is concluded, the cosignatories are each jointly and severally responsible for seeing to it that their obligations under the contract are discharged (by doing it all oneself, if necessary).

Let us now take that model of ‘joint authorship’ of obligations from the contractual realm and transpose it into the political sphere. In the political sphere, too, grave concerns over the competence of the mass electorate are regularly raised. The general public is woefully uninformed on all manner of politically important facts, so much so that worries naturally arise about the consequences of letting matters of great importance be decided by a vote among such an ill-informed rabble.7

There are various ways around such worries.8 Here we focus upon one in particular: the reassurance that comes from the thought that voters can be more rational in aggregate than they are individually.9

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6 E. Allan Farnsworth, *Contracts*, 2nd edn (Boston: Little, Brown, 1990), p. 403 comments that ‘one common instance of suretyship occurs when the creditor insists on a surety because the principal is a minor and can avoid [the contractual duty] on this ground.’


8 One of the best is that ill-informed people take their voting cues from others who are better informed. Arthur W. Lupia and Matthew D. McCubbins, *The Democratic Dilemma: Can Citizens Learn What They Need to Know?* (Cambridge: Cambridge University Press, 1998).

9 For another version of this thought, different from the one we develop below, see Benjamin I. Page and Robert Y. Shapiro, *The Rational Public* (Chicago: University of Chicago Press, 1992).
Our thought is just this. Perhaps in voting, just as in contracting, it is not strictly necessary that each and every participant meets high standards of competence, so long as sufficiently many of them do.\textsuperscript{10} After all, no one voter acting alone enacts legislation. A great many other voters have, in effect, to ‘co-sign’ before a proposition becomes law.

In a democracy, all voters are in that sense ‘joint authors’ of the law. There are various far fancier understandings of ‘jointness’ (couched in terms of ‘we-intentions’ or some such\textsuperscript{11}) and there are far more dramatic ways of describing emergent properties of groups. We have nothing so fancy in mind here. The only collective intention here in view is people’s intention to make laws by aggregating their votes, and the only emergent property is the winner of the popular vote. ‘Joint authorship of the law’s means, for us, nothing more – and nothing less – than that laws are made by aggregating the votes of citizens, who thereby serve as the laws’ ‘joint authors’\textsuperscript{12}.

Our claim is that making people ‘joint authors of the laws’ in this way makes it harmless to include some ‘incompetent’ voters among the set of joint law-makers. Why should that be so? And how many incompetents can we afford to include on that basis?

Our answer to both questions turns on the Condorcet Jury Theorem. In its standard formulation, that theorem says that if each individual voter $i$ has probability $p_i > 0.5$ of being correct in a 2-option choice then:

\begin{itemize}
  \item[(a)] the probability $p_N$ that a majority of $N$ voters acting independently will choose the correct option is greater than the probability that any given voter will do so (i.e., $p_N > p_i$); and
  \item[(b)] that probability approaches certainty as the number of voters approaches infinity (i.e., $p_N \to 1$ as $N \to \infty$).
\end{itemize}

Furthermore, sample calculations show that for groups the size of a small town (much less the size of a large country) $p_N$ is very close to 1 even if $p_i$ is only slightly over one-half. For example, the probability of a majority among 40,000 independent voters being correct is $p_N = 0.99999$ just so long as individually they are $p_i = 0.5108$ likely to be correct, on average.

\textsuperscript{10} How many are ‘sufficient’ is something we specify below.


\textsuperscript{12} Through their elected representatives, to be sure, in most modern democracies.
In that classic formulation, it is assumed for convenience that all voters are identically competent. But the theorem has been reproven for voters who vary in competence: the same result holds just so long as mean voter competence is better than random (better than 0.5 in the two-option case). And whereas in that classic formulation it is assumed for convenience that voters are choosing between just two options, an analogous result extends to cases involving any number of options.

That Condorcet Jury Theorem has two primary implications for the issue at hand. One is that in order for the majority vote to be correct, we do not need for voters to be particularly competent. As long as voters are on average better than random at choosing the right option, the majority of any large group of them will be almost certain to be right. Furthermore, the group’s performance can be improved by adding additional voters to the group, even if the new voters’ competence is lower than that of existing voters – indeed, even if it is somewhat worse than random. And pause to think just how hard it is to be worse than random: you would almost have to know the right answer and perversely vote intentionally in the other direction for your performance to be worse than random!

There may well be ‘value’ questions to which there is no right answer, and those might well figure largely in politics. But remember the argument to which this article is addressed. The issue is not whether children should be disenfranchised because they have bad values or characters (as with felons or bankrupts). What is at issue here is instead whether children are cognitively competent, i.e., whether they are capable of right reasoning on topics on which there genuinely is some right answer.

13 The analogue to (a) and (b) are both true if the distribution of competences is symmetrical around the mean; (b) is true no matter how skewed the distribution may be; and (a) is also true unless the distribution is highly skewed. See Bernard Grofman, Guillermo Owen and Scott L. Feld, ‘Thirteen theorems in search of the truth’, *Theory & Decision*, 15 (1983), 261–78, pp. 268–6, 271–2; and Guillermo Owen, Bernard Grofman and Scott L. Feld, ‘Proving a distribution-free generalization of the Condorcet Jury Theorem’, *Mathematical Social Sciences*, 17 (1989), 1–16.

14 Christian List and Robert E. Goodin, ‘Epistemic democracy: generalizing the Condorcet Jury Theorem’, *Journal of Political Philosophy*, 9 (2001), 276–306. The standard Condorcet Jury Theorem proof also presupposes that voters act statistically independently of one another: in polities characterized by common information sources and organized by a handful of political parties, that is perhaps always a partially dubious assumption; still, as long as people’s votes are not completely determined by those common factors the Condorcet Jury Theorem still works (merely more slowly).

15 Grofman et al., ‘Thirteen theorems’.
The second implication of the Condorcet Jury Theorem for the issue of enfranchising cognitive incompetents is this. We can actually afford to include among the electorate some ‘incompetent’ voters – defined in that extreme way as ones whose judgment is less reliable than random – just so long as including them does not drop the mean competence of the electorate as a whole below random. So long as the mean competence of the expanded electorate remains better than random, the probability that the majority vote among that group will select the correct answer is still near certainty among large groups.

We have already remarked upon how hard it is to imagine how anyone could be ‘cognitively incompetent’ in the technical sense being employed here (‘worse than random’). But suppose for the sake of argument that younger children are incompetent in just that sense, and that they are more incompetent the younger they are. Still, there may be no harm in including a great many younger voters, even on such (as we say, implausibly extreme) assumptions about their cognitive competence.

Suppose, for example, there are 100,000,000 adult members of the electorate who individually are \( p_i = 0.52 \) likely to reach the right conclusion, on average, in two-option choices. Suppose we are contemplating adding 20,000,000 adolescents aged 13 to 17 years old to the electorate.\(^{16} \) The average competence of those adolescents would have to be lower than \( p_i = 0.40 \) (if everyone turns out to vote) in order to drop the average competence of the expanded electorate below the Condorcet Jury Theorem’s magic threshold of \( p_i = 0.50 \). It hardly seems likely that adolescents would be \textit{that} much less competent than adults.\(^{17} \)

At worst, perhaps average competence of adolescents might be \( p_i = 0.48 \) if that of adults is \( p_i = 0.52 \). In that case, we could most definitely afford to enfranchise them without their inclusion leading the overall majority among the expanded electorate to err. And if we can afford to, we should – on the grounds that

\(^{16} \) Those are the proportions of people in those age groups in most developed countries, such as the US for example.

\(^{17} \) And remember, if average adult competence is itself under \( p = 0.50 \) then on Condorcet Jury Theorem grounds we should not be making decisions on the basis of a majority vote among them, either.
every citizen affected by a decision should have a say in the decision unless there is some good reason to exclude them.18

For pragmatic reasons it seems more plausible that we would co-sign a contract with a child aged between 13 and 17 years than with children younger than that. For the same sorts of reasons, we probably ought realistically to focus our discussion on children in this 13–17 age group as people to enfranchise as co-signers to the law.

Note, however, that strictly logically we could keep going with our argument: Suppose that, having enfranchised all those 13 to 17-year-olds, we are next contemplating enfranchising the 20,000,000 members of the cohort aged between 8 and 12 years. Just how incompetent could we afford for them to be? Well, by the same reasoning we can afford to enfranchise children aged 8 to 12 years old without fearing that their lower competence will lead to wrong majority verdicts, just so long as the average competence among that group is over \( p_1 = 0.42 \). If average competence among adolescents is \( p_1 = 0.48 \), it does not seem likely that the average competence of those within five years of them is that much lower.19

Notice the crucial mechanism by which these results are produced within the Condorcet Jury Theorem. What is crucial in compensating for the incompetence of some voters – just as in the case of compensating for the incompetence of some parties to the sorts of contracts we were discussing at the outset – is the fact that they are ‘joint authors’ (of the laws in the one instance, the contract in the other) with other people who are more competent. We would hesitate to allow people of doubtful competence to enact laws all on their own, just as we would hesitate to allow people of dubious competence to enter into contracts all on their

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18 This is a presumption we do not argue for here, but it is one shared by the critics we are addressing who suppose the only reason to disenfranchise children is their relative cognitive incompetence. For an argument for an extensive franchise, see Robert E. Goodin, ‘Enfranchising all affected interests, and its alternatives’, Philosophy & Public Affairs, 35 (2007), 40–68.

19 Indeed, as we say, it does not seem credible to us that average competence of any group is less than random: and if not, then we could afford to enfranchise everyone including babes in arms, since random votes merely cancel out, making no difference to the overall election result. A similar argument can be given for allowing everyone a vote everywhere: if people vote only on the basis of their interests, the votes of people with no stake in the matter will be random and cancel out. See Goodin, ‘Enfranchising all affected interests’, pp. 58–9.
own. But if they do so jointly with others of requisite competence, our hesitations ought to disappear.

III.

In the case of contracts, there was a second feature of the model of ‘jointness of agency’ upon which we should comment before closing. That feature is just this: the action of one co-signatory was necessary, in order to empower the other to sign the contract.

In many of the contractual cases we discussed, that was more of a pragmatic matter than a legal one. No one would be willing to sign a contract to sell a car to someone with a bad credit rating, unless someone with a better credit rating co-signed the loan as well. No one would count on the enforceability of a contract with someone of dubious mental competence, unless someone of clear mental competence co-signed as well.

Sometimes, however, the requirement was one of principle rather than pragmatism. Recall the very first case we discussed, that of two coauthors contracting to transfer their copyright in the article to the publisher. As coauthors, they are joint owners of the intellectual property. That being so, neither author acting alone is able to transfer copyright to the publisher. The signature of both owners is required, as a matter of law.

Whether by reason of principle or pragmatism, however, in the contractual cases we were discussing the co-signing by one party was a necessary condition of the signature of the other party having any effect.20 Might there be something similar in the case of voting to that interesting feature of the case of contracting?

Often in the case of contracting, the power of the co-signatories tended to be asymmetrical. It was the signature of the creditworthy adult that effectively enabled the signature of the minor to have effect when buying the used car, for example. Occasionally, however, the power of the co-signatories was perfectly symmetrical. In the case of the coauthors, the signature of the one was what enabled the signature of the other to have effect, in perfectly symmetrical fashion.

The symmetrical case would seem to be the more common one in politics. For an easy illustration, consider the case of bicameral

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20 In the case of a legal partnership, what is required is the signature of both on the document forming the partnership.
legislatures. A bill must be passed by both chambers in order to become law. If either chamber refuses, enactment is blocked. The two chambers are in that sense ‘joint authors’ of the law. The consent of one is what necessarily enables the consent of the other to make something a law.

Might there be some similar ‘enabling’ feature of ‘joint authorship of the law’ at a more individual level? Perhaps not at the level of the mass electorate. But consider the case of individual members of a legislative chamber that has a rule requiring a quorum to conduct business.

Under such a rule, no decision of the group will be legally binding unless a certain proportion of members are present (or, depending on how the rule is phrased, ‘present and voting’). The presence of each in the chamber is what enables each other member’s vote to count in making law – even laws some of them oppose. Each is a ‘joint author’ of the law, not necessarily in the sense of agreeing with every law that is passed, but at least in the sense that the law could not have been made without them (or enough of them anyway).

Formal quorum rules like that are only occasionally found outside legislative assemblies. But informally, something similar to that operates in conferring legitimacy on democratic outcomes. Where turnout is low, the will of the majority will still be the law – but its democratic warrant will inevitably be called into question. So informally in mass electorates, just as formally in legislative assemblies, the participation of each voter contributes to enabling each other to make democratically binding law.

IV.

What we have shown in this paper is that there are analogies between contract law and the joint authorship of laws. In the case of contracts, the co-signatories are both required to sign the contract in order to conclude it with some third party, even if one of the co-signatories is a child or of questionable mental

21 Sometimes, however, election law does specify that a vote will not be binding unless a certain percentage of those qualified to vote actually vote in favour of a proposition, or unless a certain percentage of those qualified to vote actually cast a vote. In 2005 just such a requirement was imposed for approval of the new Iraqi constitution; Adrian Vermeule, ‘Absolute majority rule’, British Journal of Political Science, 37 (2007), p. 643.
competence. Similarly, in the case of voting, all the voters are ‘co-signatories’ with regard to an electoral outcome. As long as the mean competence of voters remains better than random, we can afford to add children or those of limited cognitive competence into the pool of voters. Condorcet’s Jury Theorem shows us that, by adding more members to the voting pool, even if the competence of the voters is lower than that of the existing voters, the group will actually improve its overall performance, and the probability that the group will select the correct answer will approach certainty.

Ironically, Condorcet himself famously advocated precisely the opposite. ‘Where an assembly can be formed in such a way that there is a very great probability of its decisions being true’, he wrote in the *Essai*, ‘then there is just ground for men less enlightened than its members to submit their will to the decisions of this assembly’ rather than being included in it. Condorcet based that conclusion on the argument that:

A very numerous assembly cannot be composed of very enlightened men. It is even probable that those comprising such an assembly will on many matters combine great ignorance and many prejudices. Thus there will be a great number of questions upon which the probability of the truth of the vote of each voter will be below 1/2. It follows that the more numerous the assembly, the more it will be exposed to the risk of making false decisions.

If that were literally true – that ‘the probability of truth of the vote of each voter will be below 1/2’ in a two-option case – then the decisions of the assembly would indeed be almost certain to be wrong. But what is actually being contemplated, even in Condorcet’s own set-up, is adding some ‘less enlightened voters’ to a group of ‘more enlightened voters’ (in Condorcet’s quaint terms). So it will not be literally true that ‘the probability of the truth of the vote of each voter will be below 1/2’. Some will be above, some below. And as we have shown, using Condorcet’s own model, adding some voters with even less-than-random

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23 Ibid., p. 49.
competence can be perfectly consistent with the majority vote still being almost certain to be correct. The magic by which this accomplished is that the incompetent are ‘joint authors of the law’ together with others more competent than themselves.

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