

## Open and Fair Trial in the Social Media Era - An Insurmountable Conflict or an Emerging Opportunity?

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### Abstract

The ideal of open trial in the social media era faces a number of obstacles and challenges that are due on the one hand to the instant information propagation afforded by the digital environment, on the other to the much more widely available disseminating technology. At the same time, a number of opportunities for rethinking the concept of open trial arise too. Taking recent consultations in England and Scotland on the use of live social media reporting during trial proceedings as a starting point, we argue that the decision by both systems to allow in principle tools such as Twitter aimed correctly at maximising openness, but in failing to unpack further the concept of open justice, and in avoiding a deeper analysis of possible technological solutions, missed an opportunity to mitigate the inherent tensions between open and fair trial further. In the paper, we firstly discuss such an "unpacking" of the open trial ideal, trying to isolate those aspects that are "intrinsic" to the concept from those that were merely historically contingent responses to technological and social constraints at the time. We then discuss a simple technical response to some of the concerns voiced but not resolved in the consultations. We then move on to a more abstract thought experiment how technology might enable much more radical (and at the same time historical) versions of open trials.

Open trial, Fair trial, Social media, Jurors, Commitment reminder, E-voting.

### 1. Introduction

The topic of this paper are the challenges that live social media reporting brings to the administration of justice, and in particular the new fault lines it opens between the right to a fair trial, and the right to an open trial. These two rights are uneasy bedfellows. Sometimes, an open trial will be an aid to a fair trial. This is how, historically, Jeremy Bentham justified the ideal of open trials: serving as a control against arbitrary decision making by the judiciary through the citizen-observers, and also as a way to illicit further evidence. In its legal form, we find this in the 6<sup>th</sup> Amendment to the US constitution, which grants the defendant a right to a public trial. Sometimes, however, the two will conflict: when we hear talk about "trial by media", what is feared is the danger of pre-empting unbiased and rational decision making by the finder of facts.[\[2\]](#) In its legal form, it finds its expression in freedom of speech laws as a right of the public to be informed about legal proceedings. Laws of procedure are used to mitigate the balance between the two ideals. Sequestering jurors to insulate them from media coverage, and reporting restrictions backed up by the threat of criminal sanctions for contempt of court, are two of the tools historically used to permit as much openness as possible, while restricting it where necessary in the name of fairness. However, we argue that this strategy is intimately connected to a very specific technology - the printing press - and a very specific business model, the journalists as professionals who through their training and expertise add value to the reporting. Neither of these two conditions can be taken for granted any longer. Social Media poses new challenges to an open trial and the administration of justice that force us to rethink the relation between openness and fairness.

In our rational reconstruction of the history of the open trial ideal, we take as a starting point the idea that in the first recorded examples of what can be termed "trial by jury", the trial had only one public: everyone. We see this for instance in the concept of trial in Athens, that were held publicly for everyone, literally, to see. [\[3\]](#) Open trials involving the entire group are typical for small communities with little role differentiation. Changes in communication technology, among other technological and social drivers, split over time this single public into three different publics, or three different constituencies that together ensure publicity of the trial: the jurors as randomly chosen representatives of the public, the citizen-observers in the court room, and finally the media and professional court reporters as mediators of information to the public at large. This split necessitated a complex set of rules to negotiate the respective roles, rights and obligations between these three groups to ensure that the jury, as a public with a special role - representative of the

wider population, and unlike these not just observer, but co-decision maker - can conduct its task. This included laws that allowed judges to impose reporting restrictions (supply side), or rules that sequestered the jurors and kept them away from information (demand side).

We will see how social media disrupts this historically grown balance between the three constituencies, allowing access to communication dissemination tools that blur the boundaries between professional court reporters and citizen-observers on the one hand, and on the other hand make it increasingly impossible to shield the jurors from either. For the legal framework of open justice, this poses a dilemma: one option is to prohibit this new form of communication from court entirely. This would preserve the traditional balance between the publics, protect (aspects of) the integrity of the trial, but prevent the concept of "open justice" to adapt to changing conditions. We instead argue that "open justice" is an essentially contested legal concept<sup>[4]</sup> that must change its meaning in response to social expectations, expectations which in turn are shaped by, among other factors, media and communication technology.

The second option is to permit live social media reporting from court, bringing court reporting in line with other news coverage, where "citizen journalism" is now ubiquitous. But if the rest of the legal system is not also changed, these risk exposing on the one hand citizen journalists to significant legal risks such as contempt of court charges, while at the same time might still fail to protect the integrity of the trial.

We will argue that legal tech can at the very least partly and temporarily assist in mitigating the resulting problems. We exemplify this through a simple smartphone application that delivers a "nudge", <sup>[5]</sup> which intervenes in the way citizens and jurors interact with social media and promotes their alignment with court rules about reporting. A next step, still well within current technological capabilities, would be to provide them with "computational media law" for their mobile devices - if technology enables them to act like journalists, it might also provide them with some of the knowledge trained journalist have when they navigate the legal constraints of trial reporting.

The second part of the paper will deviate more radically from the current model of "open trial", and invite the reader to test the conceptual boundaries of the concept through the thought experiment of a technology-enabled trial of the future. While it might be possible to leverage technology to mitigate the danger of citizen-observers reporting from court, this assumes that the current distribution of roles between the three groups is broadly speaking correct and only needs rebalancing. But if, as we will claim, the current division is in itself the response to contingent technological developments that happened in some cases centuries ago, when current laws of trial procedure and reporting were formulated, rather than the expression of a legal value in itself, we can rethink more radically how a technologically enabled open trial might look like.

The basis that underpins our second scenario is a cryptographic e-voting protocol called Random Sample Voting (RSV). <sup>[6]</sup> We examine how jury trials would look like if this type of technology were used. The main feature of this protocol is that a subset drawn at random from the voter register - much larger than the current jury, but still small considering population size - is authorised to participate in the decision, while their anonymity is protected via a cryptographic mechanism. As a result, the selected jurors/voters cannot be identified due to encryption, but nevertheless, the outcome of their vote can be verified as coming from legitimate decision makers only. We describe the way RSV can be used in jury deliberation and decision making, giving rise to what we call Random Sample Justice. While this might look alien, we will try to show that this type of jury would indeed constitute a return to much older conceptions of open trial and the role of the juror, conceptions which were abandoned not so much because of an overarching jurisprudential argument on how an ideal trial should look like, but simple because changes in population size, transport capacity and media made such a system unfeasible.

## 2. Context and Motivation for our Work

The potentials and dangers that live social media reporting from courts pose to the justice system have increasingly been recognised. In England and Wales, the Lord Chief Justice carried out a "consultation on the use of live, text based forms of communications from court for the purposes of fair and accurate reporting", which resulted in a revised practice note. <sup>[7]</sup> In 2012, the Judicial Office for Scotland on behalf of the Lord President, <sup>[8]</sup> initiated a more ambitious review of the current policy regarding recording, broadcasting and live text based communication (LTBC) in civil and criminal trials. And finally, in 2017 the Advocate General launched a consultation on the impact of social media on the administration of justice, citing the case against the murderers of Angela Wrightson as an example of the dangers that the administration of justice faces. <sup>[9]</sup> What all these consultations have in common is a realisation that new forms of communication, including in particular social media, were changing radically the environment within which trials take place. We will focus on the Scottish consultation, simply because it made the conflict between open trial and fair trial particularly explicit. However, even though it focuses on Scottish courts, the consultation and the response identified concerns that are global and fundamental in nature. Scots law in what follows is thus a mere illustration for problems that the very

institution of open trial is facing, and on occasions we will also refer to institutions from England and the US - not comprehensively or doctrinally in depth, but they are hopefully helpful to illustrate conceptual issues about the jury as an institution.

In particular, the administration of justice faces two challenges:

a) changing means of how to distribute information. Gone are the days when only professional journalists had access to mass media, whose operation required considerable financial investment. Instead we have entered a world where everybody can at any time record, comment on and disseminate news and potentially to a worldwide audience.

b) because of the above, we also see a changing public expectation about what openness of public proceedings means: increasingly we expect to get access to all information, in real time, from a mix of media including social media, and supported by text, images and clips.

The Scottish consultation identified a potential conflict between the demands for open justice, and the demands of a fair and just trial. A typical example is the fear of jury intimidation if details about jurors are disseminated, illegally but unknowingly, by citizen observers who tweet live about the trial. The public learns more about the trial (open trial), but more than healthy for a fair trial, if that information is used to influence jurors. Another example is the contamination of witness memories, who might follow one of the observers on Facebook or Twitter. We will discuss this scenario in more detail below, but it illustrates that rules limiting access of media to jurors will not be sufficient. Finally, there is the danger that jurors read commentaries and speculations about the trial and accept in evidence facts that had not been presented and cross examined in court. However, apart from stating that open and fair trial are brought into conflict, there was little in the consultation or the ensuing report that analysed the nature of these values and their conflict in any detail. Furthermore, despite the focus on live, text based electronic communication on social media platforms such as Twitter, responses to the consultation came predominantly from established media organisations who employ professional journalists, such as the Sky News, which use social media merely as an additional outlet. There were no responses from social media platform providers, nor from representatives of citizen journalists or the outlets that have been created for them. In what follows, we try to unpack the concept of open justice a bit more, to get a clearer idea where exactly social media disrupts established trial procedure.

### 3. Evolution of Open Trial

The history of open trials is intertwined with the struggle of people to balance the power of kings and rulers in the administration of justice. The hallmark of a despot are legal proceedings and sentences that are arbitrary, inconsistent and in conflict with the community norms and perceptions of fairness. Holding trials literally "in the open", in public areas such as in market places, was also a means of scrutiny of the trial and a way to achieve transparency. Early societies would not strictly differentiate between judges and the public, rather, decision making could take communal shape involving either everybody, or at least everybody of a certain group, e.g. older members of the community. [\[10\]](#)

We encounter this approach to open justice in classical Athens. Trials were "open" to the public and randomly selected citizens fulfilled their public role through jury duty, also serving as guardians of democracy in the Athenian polis. Crucially, the Athenians, in order to prevent jurors from being bribed, introduced a method of selection that was based on a public lottery implemented by a device called a "kleroterion." [\[11\]](#) We do not know exactly how many jurors sat in the same panel, but most likely they were two panels of 500 jurors each. [\[12\]](#) The large number of people included in the jury shows that they were indeed seen as an implementation of the open trial ideal to control the authorities, and less as an "aide" to the judge. We note for future reference that we have here the use of randomness as an aid to justice -the fairest way to decide who the decision maker should be is sometimes by using random methods. Neil Duxbury's study on Random Justice documents the use of randomised procedures in the aid of justice, and we will see below how today, cryptographic methods stay particularly faithful to this notion of justice through a (controlled) randomness.

In the English-speaking world juries are traced to earlier Danish or Saxon legal customs together with contributions stemming from the Norman invasion [\[13\]](#) . In Saxon times, persons who committed a crime were judged by the community they belonged to. Each village had its own tribunal and the fact that the trials were 'public' simply meant that the proceedings were held in the open air, removing "through architecture" some barriers to an open trial, while creating others, such as crowd size or weather, which means that they reflected contingent social features such as the size of a typical settlement. The Norman invaders were able to use the existence of these methods of public decision making to legitimise their reforms, nonetheless, their jury was a very different institution. The jury in its beginnings was created by the Normans to help the administrative power. The first jurors were men, who were obligated to give information under oath for the King's fiscal plans, essentially informants about the wealth of community. [\[14\]](#) It was not until a hundred years later that Henry II, first introduced the jury into the criminal trial process.

By the Assize of Clarendon in 1166, and then the Assize of Northampton 1176, a local jury was required to present to the King those suspected of committing crimes in their town. Nevertheless, the jury took no part in the trial itself. Following negotiations with the Barons and King Henry II, a compromise was reached that future conflicts would be resolved taking into account advice from men of similar status. [15] At this point we see a crucial change in the role of the juror: no longer a tool of the state, but instead its counterweight and balance.

Despite this change, jurors were still strictly controlled by judges during the legal proceedings. What we can also see from this time onwards is the use of "architecture" in addition to formal legal rules in organising the trials. From the 12<sup>th</sup> until the 19<sup>th</sup> century, some courts, for instance, did not supply food during deliberations in order to expedite the process and push jurors to comply with the judges' point of view. [16]

Between 1600 and 1900, the adversarial trial in its modern form emerged. An increasing professionalisation of the defence lawyer brought a shift of control of the trial process to the representatives of the parties, including the extensive examination of witnesses. [17] As a result, jurors gradually morphed into a passive body, as a historical compromise with the judiciary: clearly independent, but also with a more clearly defined and more limited role. [18] It is important to highlight the contingent, external factors that supported these developments. The improved infrastructure resulted in larger, more anonymous cities and improved transport widened the net from which to select jurors, which meant that jurors were increasingly unlikely to have personal knowledge of the accused, rendering their earlier role as investigators moot. Additionally, in a stark reversal of attitudes, distance from and ignorance of the accused, became qualifying features. [19] While earlier jurors were selected because of their local knowledge, the modern jury was seen as "fair" precisely because they relied in their decision making only on facts introduced and examined in court, not their own knowledge of the case. At the same time, a revolution in information technology, the invention of the printing press, assisted in the evolution of "text based" professions such as lawyers or journalists. The ability to record court decisions and to distribute the record now also created an expectation that a competent lawyer must know of them, so that access to the (expansive) records created both a natural and legally entrenched knowledge monopoly on justice that earlier systems of communal adjudication did not know. Conversely, the disruption that the printing technology brought with it created in its wake a complex set of rules and regulations on censorship, defamation, contempt of court and of course also copyright. These in turn created business models for court reporting, but also significant legal risks for the reporters, which led to a further differentiation between citizen-observers of the trial and journalists. Only professional journalists had access to means of mass distribution of information about the trial, but also only they had the legal training to prevent the most serious mistakes and avoid sanctions. Knowing the relevant law, something a journalist would acquire through their training, became a de-facto necessity for court reporting to avoid legal repercussions.

In summary, visions of the open trial, as conceived in Athenian democracy not only did not scale to larger communities, it also was inimical to the knowledge and skill monopolies that communication technology are both creating and continuously challenging. Athenian open trial required nothing else but the citizen to attend. Modern open trial is based on the knowledge how to operate communication technologies. As a general trend, we therefore find a differentiation of roles, where smaller and smaller groups of jurors, chosen by lot, act as representatives of society, while wider society remains involved and informed through a professionalised media. In the course of this evolution, the jurors lost their role as active investigators to an ideal of a passive vessel, approaching the trial as a "blank slate" and basing their decision solely on what the lawyers decide for the parties they, the jury, should hear. There are no contemporaneous sources that give a principled justification for this evolution in terms of reliability, justice or fairness. This supports a view that a combination of emerging business models (in the legal profession), changes in social makeup and infrastructure and "information technology," - the politics of information access - , worked together to achieve this result while largely side-lining the legislature. Only much later do legal commentators elevate the passive jury that has no prior knowledge of the case into a necessary and indeed virtuous feature of the adversarial trial, "back-inventing" epistemological justifications that seem to have little resonance in the debates at the time. [20]

Once it was accepted that the ideal juror was a juror without prior knowledge and duty bound to only consider information introduced and potentially cross-examined by the parties, a conflict between the new understanding of the role of the jury and the ideal of open trial emerged. Driven again by new technologies used by the journalistic profession, the danger arose that jurors could prejudice their status as "blank slates" and were exposed to commentaries with further information about the very trials they presided over. In this analysis, three ideal-typical groups emerged that together ensured an open trial - jurors, citizen observers and journalists talking to the wider public. In reality, these groups of course overlapped. In particular, jurors also remained members of the public, with access to journalistic reporting. This then forced legal responses to regulate the way in which the press could report about trials, using procedural ad hoc reporting restrictions backed by contempt of court law doctrine, and in some cases general prohibitions of media types, such as the prohibition to photograph proceedings.

## 4. Tackling the challenges of the Social Media era

The contingent features of traditional communication technology were instrumental for the success of this type of legal regulation. Court reporting as a professional activity created a bottleneck that could be used as a target for sanctions. The originator of a report was easy to identify, typically living within the jurisdiction of the court and hence subject to the deterrent effect of punishment, and also typically trained on the legal issues. Furthermore, the time delay between writing a court report and distributing it in print gave at least some time for pause, consideration and reflection, allowing legal sanctions to prevent rather than merely punish infractions. If in doubt, at least larger media outfits could employ in-house lawyers to check the lawfulness of a trial report before dissemination, with only marginal delays. The rise of Web 2.0 technology in social media platforms transformed this information ecosystem completely. Before the emergence of cyberspace and social media, the active participation in the "public sphere" was only possible for a small part of the population. With live text based communication the landscape changes, as less literate, less confident or affluent people can openly express their views in online platforms. [21] This is relevant if we look back at our theory of "three guarantors of open trials": While jurors are intentionally chosen by lot to ensure a random collection of skills, knowledge and experience, and citizen-observers are a self-selecting sample that may or may not have certain knowledge and expertise, media brings to the mix a specific set of expertise, which in turn makes them amenable to regulation in a different way. However, once the citizen-observer also takes on the role of the media, reaching a commensurably large audience by tweeting live from court, this exposes both them and the fairness of the trial to significant legal risks. Furthermore, Web 2.0 applications have changed the way people interact with each other online. It is one thing to instruct jurors not to read newspapers or listen to TV during a trial, activities that require an active decision on the part of the juror. Even researching media such as Wikipedia still requires an active decision to ignore the instructions they have been given. [22] Conversely, with other social media such as Facebook and Twitter that seamlessly integrate into our lives, this conscious moment of decision making is missing -and it will be increasingly impossible to avoid exposure to some information that some algorithm decided we should see the moment we go online.

The reliance on punishment and deterrence is generally a problem for Internet-distributed content and it gets even worse when it comes to trial reporting, where the damage will often be instantaneous and irreversible. Consider the following scenario: despite instructions to the contrary, a member of the public tweets that a key witness in their view "positively identified" the suspect who "clearly is guilty as hell". This is picked up and retweeted by a follower of the observer, who lives in Australia. She in turn is followed by the next witness, who waits in the witness room. On reading the tweet, his previously shaky and uncertain identification now becomes much more confident and assured. [23] Finally, one of the jurors, accidentally by checking his Twitter newsfeed, sees that one of his friends liked the post - so even though he is not connected to either the observer or the retweeter, he is now exposed to the impression that the wider public considers the accused guilty. At this point, punishing the observer, let alone the retweeter/liker is pointless. The harm is done and the trial potentially compromised.

### 4.1 Mitigating strategies: Digital Commitment Reminders

These problems were all mentioned in the respective consultations on live social media trial reporting in Scotland and England. Ultimately, the decision was taken for both jurisdictions to relax current restrictions to ensure openness of the trial. On balance, we consider this the right decision, and also one that might force itself upon the legal system as it becomes increasingly impossible to prevent in practical terms observers from bringing Internet-enabled devices with them. As public expectation increasingly moves towards real-time, multi-media coverage of all events, and through channels other than traditional media, prohibiting activities such as live tweeting from citizen-observers can only undermine public trust in the judicial process. Furthermore, professional court reporting has generally been in rapid decline, so relying on professional journalist only to inform the wider public about trial procedures seems increasingly an untenable position. Citizen journalism could mitigate this problem, and might become the only way in which information about trials reaches a wider public. [24] However, while the reports and recommendations acknowledge the potential problems, they do little to resolve them. This to some extent might be a missed opportunity. As we argued, there are two main changes in the dynamic between the three guarantors of open justice when we allow citizen-observers to partly usurp the role of professional reporters: the increased speed of communication removes the time for reflection and analysis that in the past may have prevented hasty disclosure of information, while the lack of legal training and expertise might make lay observers more likely to violate legal provisions. But if we can capture the relevant legal knowledge and make it available in real time, the danger could arguably be mitigated.

Capturing legal knowledge this way has always been a key task of legal AI, with significant progress over the last decades. It remains true that capturing legal reasoning and interpretation remains a significant challenge. But what is suggested here is not to capture the knowledge a judge needs to determine whether to impose a reporting ban, even less the legal interpretation necessary to determine by judicial review if the ban was lawful. Rather, what is suggested is to take a

computational representation of the ruling that the judge gave, which will be in the form of a simple rule ("do not mention party X by name"), similar to the type of rules journalists learn about in their compliance training.

One particularly straightforward form that this could take is as a digital commitment reminder. It takes the form of an application, to be downloaded by the official court's website and a precondition for the permission to use a device for live reporting.

The power of commitment reminders as a means to conform to an obligation has been demonstrated by a number of experiments. These experiments were based on the underlying psychological theory that the decision of someone to be honest is correlated with an internal reward system, which is influenced by society. In other words, if an individual complies with social norms and values, and follows them in their actions, this will have a positive reflection in their "self-concept," (that is, to how someone thinks about, evaluates and perceives oneself). People who engage in actions that are compatible with their moral standards reinforce positively their self-concept, even if this process requests sacrifice and effort. On the other hand, failing to comply with the inner standards of morality may lead to negative feelings about oneself.

Mazar et al.[\[25\]](#) show that the majority of people cheat up to the point where they gain something, (money for instance), but they do not risk losing their positive self-concept. In their experiments, participants were paid for every correct answer. Where there was third-party verification of their answers, the participants did not cheat at all. On the other hand, in the condition where verification was left to the participants, they cheated but, most of them, not to the point that they would be considered completely dishonest.

In this context, a commitment reminder that pointed each participant to a previous honour code commitment they have made, was experimentally tested and proven to be effective in increasing the honesty of the participants. Indeed, people who sign an honour code, before engaging in an action, are less likely to cheat.[\[26\]](#)

A related conceptualisation of this idea can be found in "Nudge" theory as another way to think about a digital commitment reminder. It is based on research in psychology and behavioural economics and makes a basic point that peoples' thinking can be either a result of the "Automatic System" or of the "Reflective System."[\[27\]](#) The former is based on intuition, thus is more rapid, the latter is a product of reasoning and self-consciousness. Usually people, because of the conflict they experience between these two systems, tend to make mistakes, because of biases, heuristics and fallacies in their logical process. The proposition of Thaler and Sustein[\[28\]](#) is based on a libertarian paternalistic (so called "soft paternalistic") model under which a nudge is an "aspect of choice architecture" that can influence peoples' behaviour in a subtle way, i.e., is of low interference. In this context, people will consciously decide, but with the help of a choice architecture, which will improve the way they take decisions. We encountered a pre-digital example of such a "choice architecture" in our historical survey: separating food sources from the jury room nudged them into faster decision making. In the same vein, observers or jurors could be asked to download an app that acts as "choice architecture", reminding them on the one hand that there is a choice to be made before they access social media, or upload a clip from the trial and at the same time makes it subtly easier to choose the "right" action, e.g., by forcing them to make more clicks through various screens if they want to do something potentially illegal.

Digital commitment reminders can be relatively easily implemented. The application could be downloaded by every member of the public in their device from the courts' website and activated before entering the courtroom. The commitment reminder will pop up every time a member of the public opens their mobile phone or other mobile device and uses an app that allows live reporting. At its most basic, a text that will pop up every time a member of the public uses their device reminding them, for example, that "You are a member of the public. You are allowed to report from the trial, but remember that it must be fair and accurate." As the trial progresses, this message can be updated centrally if new restrictions are imposed, for instance, "The judge in the case you attend has ordered that the name of the victim must not be disclosed, remember this when tweeting."

It is possible to strengthen the effect by imbuing the system with varying degrees of "intelligence", in particular to make them more responsive to both trial and user context. Named entity recognition for instance could be used to detect that the user is typing words and phrases that are likely to trigger legal consequences.[\[29\]](#) For example, an AI system can be trained to recognise that the user is tweeting about a named individual (matched against a list maintained by the court, e.g. the names of the jurors, and dynamically amended if the judge orders further naming restrictions) and identifies them as a juror ("Hey, our Phil's on the juror's bench- bad luck mate!"). When such a phrase is entered, a more specific commitment reminder may appear on the screen.

Even more intelligent solutions have been explored in other contexts. Early applications of machine learning technology tried to alert the writer of an email when they included potentially sensitive information about themselves, generating an alert similar to our commitment reminder.[\[30\]](#) The same method that identifies if a writer discloses sensitive information about themselves can be used to check if they are including sensitive [\[31\]](#) information. A main technical challenge would be to carry out such checks without causing significant time delays - in this sense writing emails at home

differs from real-time tweeting from court. Even closer to what is suggested here is the work of Mao et al., who trained an algorithm to detect if a twitter user was disclosing health information about themselves. [32]

Nevertheless, implementing such a system in practice might be significantly harder than the simpler "blanket" commitment reminder previously presented. The reason is that such a system should have direct access on the text that is typed on an application by the user. This can only be achieved by installing the AI system either within the application or within the device operating system. In either case, this would require the court application to be authorised by the operating system or the social media application supplier (e.g., for an iPhone and twitter, the court AI system would need to be authorised by Apple or Twitter). As part of our research, we build some simple court commitment reminders as proof of concept, but an evaluation of their efficiency will have to be subject to a future study.

From a quick survey of available training material for journalists, it seems that a significant amount of information is in the form of simple compliance rules: "if the judge decides X, then do not any longer mention name of defendant" etc. This is a tried and tested way of legal knowledge representation, going back to the early days of legal AI, rule based legal expert systems in the 1990s. While these had at the time only limited commercial uptake, this was at least in part due to the cumbersome user interface of the systems that restricted developers to trained computer scientists. With these systems, it would have been unfeasible for a court's secretary to simply update the rule base once a new reporting restriction is added. This limitation however has changed significantly in recent years. Providers such as Neota Logic offer user-friendly interfaces to allow even unsophisticated users to develop rule-based apps [33] - allowing in theory even the court to dynamically update the rule base (the list of prohibitions). As reporting descriptions often change as the trial develops, this would allow relatively simple programmes to represent substantial "intelligence."

## 4.2 Beyond technological fixes: Random Sample Justice (RSJ)

The previous section assumed that the distribution of responsibilities between juror, citizen-observer and journalists is broadly appropriate, and adjustments caused by technological disruption can be mitigated through technological tools. Social media made the tools of journalists accessible more widely and as we have seen in the preceding section legal tech can also democratise the access to the legal knowledge to use them safely, by making self-executing, computational models of the relevant rules available to users. However, hidden beneath this technological fix is a more substantive issue, a shift (even though gradual and mitigated by legal constraints) from open trial as a right of the accused to a right of the public, at the possible detriment to the accused. While this may be inevitable, or even desirable, it needs a discussion that is couched in different terms. In this section, we try to revive some of the normative decisions that underpin the open trial, exploring if modern technology would allow us, in principle, to go back to the ideal of the jury that we encountered in Section 3, before changes in communication technology and the "information monopolies" of lawyers respectively, pushed the juror into a more marginalised role. As we discussed, the original Athenian jury involved everybody. The latter jury system balanced the economic constraints with this ideal of public participation in trials and the openness of the trial, by using a randomly chosen but still sizeable sample of citizens. Remember too that the original jury was an active fact finder, before delegated into the "blank slate" role when equal access to information became too difficult. Both aspects can be addressed through technology: "disintermediation" was the great promise of the Internet, subverting knowledge monopolies and making information accessible directly for everyone. [34] Just as for the old, "local" jury, the information that mattered was accessible to them directly, in the new digital environment, everywhere can be "local" and local knowledge made accessible beyond its geographical confines. On the first element, generating unbiased and verifiably random outcomes is a main concern of one of the key enabling technologies of the Internet, cryptography.

As we have discussed, classical Athens was the first paradigm of jurors being selected by lot and currently, this practice is compulsory in both England and Scotland. Selecting a jury at random presents important advantages. [35] First, people who share some requirements, for example are eligible for voting, have all an equal chance to serve on jury. Second, because jurors are randomly selected their choice cannot be manipulated and it is harder to threaten or bribe them. Therefore, their verdict is harder to be influenced by external pressures. [36] Third, defendants are judged by "a jury of their peers" as jurors are selected from a sample of the population, which they represent in court. Thus, the pool of people from which jurors are selected, is a "representative cross-section of the population." [37]

The solution we present is based on the idea of Random-Sample Voting (RSV) which was introduced by David Chaum [38] as an electronic voting system. [39] The starting point of Chaum (2012) is that a small random sample of eligible participants can be more effective for conducting large scale decision-making procedures, such as elections and referenda. While Chaum's proposal focuses on elections and issues related to representative democracy, one can observe that the jury trial can be seen as an instance of representative democracy by lottery.

The main features of Chaum's proposal are that a small subset drawn at random from the voter register is authorised to participate in the election while their anonymity is protected via a cryptographic mechanism. Thus, the selected voters

cannot be identified in the system due to encryption but nevertheless the outcome of their vote can be verified as correct. The key technical ideas of RSV are (i) that each ballot has a unique numerical vote code for each choice (e.g., "Yes" and "No" will be assigned to two numbers different for each voter), (ii) each ballot has two sides, of which one is used for voting and the other for verification, (iii) some of the ballots are decoy ballots which do not count in the final tally, (iv) valid and decoy ballots are otherwise indistinguishable, thus ensuring that the identity of the valid voters is hidden within the set of decoy and valid voters.

The system has the capability of distributing decoy ballots on demand, while valid ballots are guaranteed to be randomly assigned. As a result, everyone who wants to participate in the process, is able to do so, but because decoy ballots are indistinguishable to valid ones, they act as a protective mechanism, a form of "obfuscation", [40] against those who may try to subvert the election. The final tally of an RSV procedure can be verified by the voters and external participants after the completion of voting. This process is proven to ensure the validity of the tally, without jeopardising the privacy or the identity of the voters.

We now describe our solution which applies the RSV concept to the jury trial instead of voting. In our proposal, the authority running this procedure will be the Court, acting as a broadcaster. The trial will take place in the courtroom, but jurors can watch the trial via live video stream. The process is divided in eight steps taking place, before, during and after the trial.

Before the trial, the ballots (valid and decoy) are created in the same way as in an RSV procedure. In the ballots, instead of the "Yes" and "No" choices, the two choices of the vote will be replaced by "Not guilty" and "Guilty." The two choices are represented by two different codes, which the jurors can use at the end of the deliberation. The authority will create valid and decoy ballots as in an RSV procedure. After the preparation of the valid ballots, jurors are randomly selected, for example from the list of registered voters. After the selection of jurors is completed, they will receive the jury summons with email or post. This communication will include also a username and password to be used in the deliberation process, which is explained below. Moreover, the system will distribute decoy ballots, to decoy jurors, who want to participate in the trial.

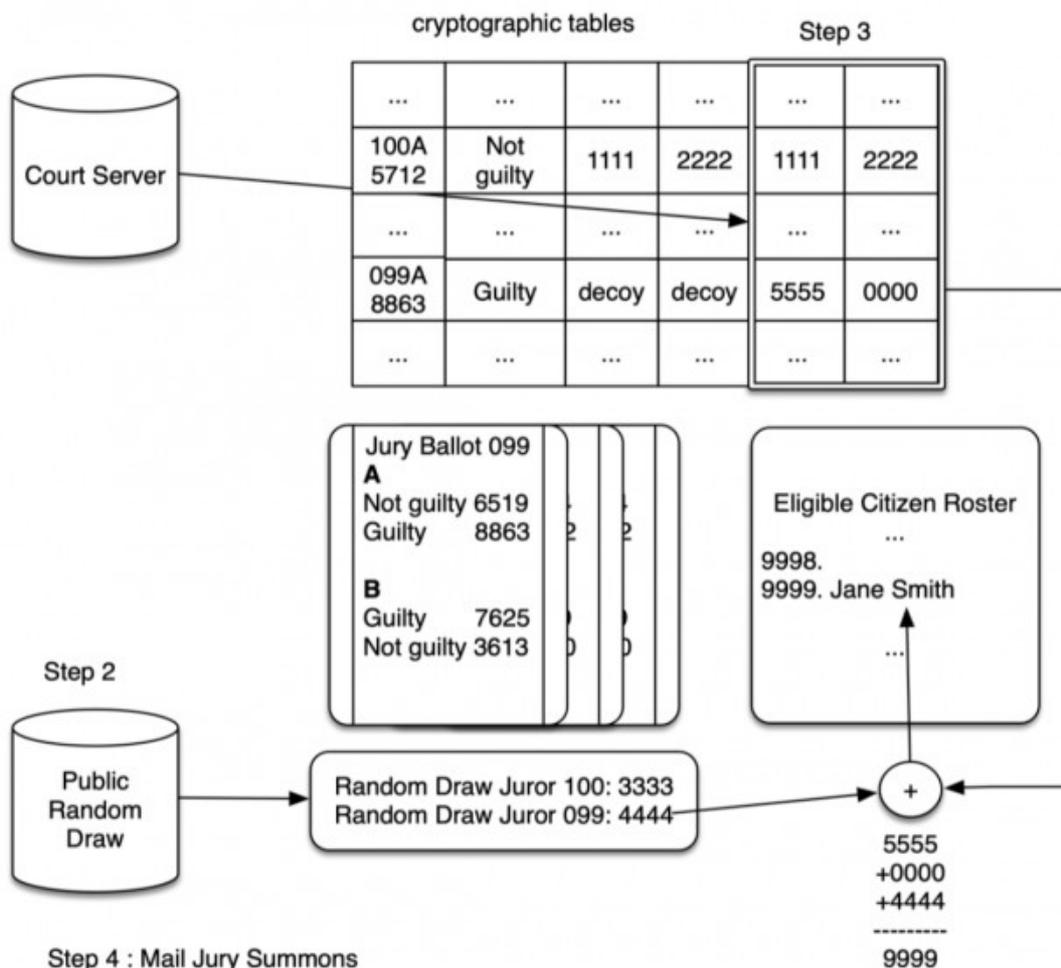


Figure 1. RSJ: The first two steps of the process from the perspective of a valid juror.

In Figure 1, the first two steps of the process are presented. The court server creates the cryptographic tables, and how a valid juror is selected based on a public random draw. In this example, a jury ballot with serial number 100 and two sides A and B is shown. Each side contains different random codes, one for "Guilty" and one for "Not guilty." [41] The authority using the court server publishes a cryptographic table that contains hidden information in the form of rows. There is a single row for each code in each ballot which is divided in four columns (the number of columns will be augmented in the course of the process). The first column contains the code and the serial number as well as the side indication (A or B). The second column contains the choice, "Not guilty" or "Guilty." The third and fourth column contain two numbers that sum to a single random number that represents the first summand for random jury selection. The same summand is used for all the rows of the same ballot. In step 2, a random draw is executed to produce the second summand. The summand (in this case 3333) is added to the numbers in third and fourth column (in this case 1111 and 2222) and this results to a number that selects a juror (in this case Joe Public at location 6666) from the public citizen roster.

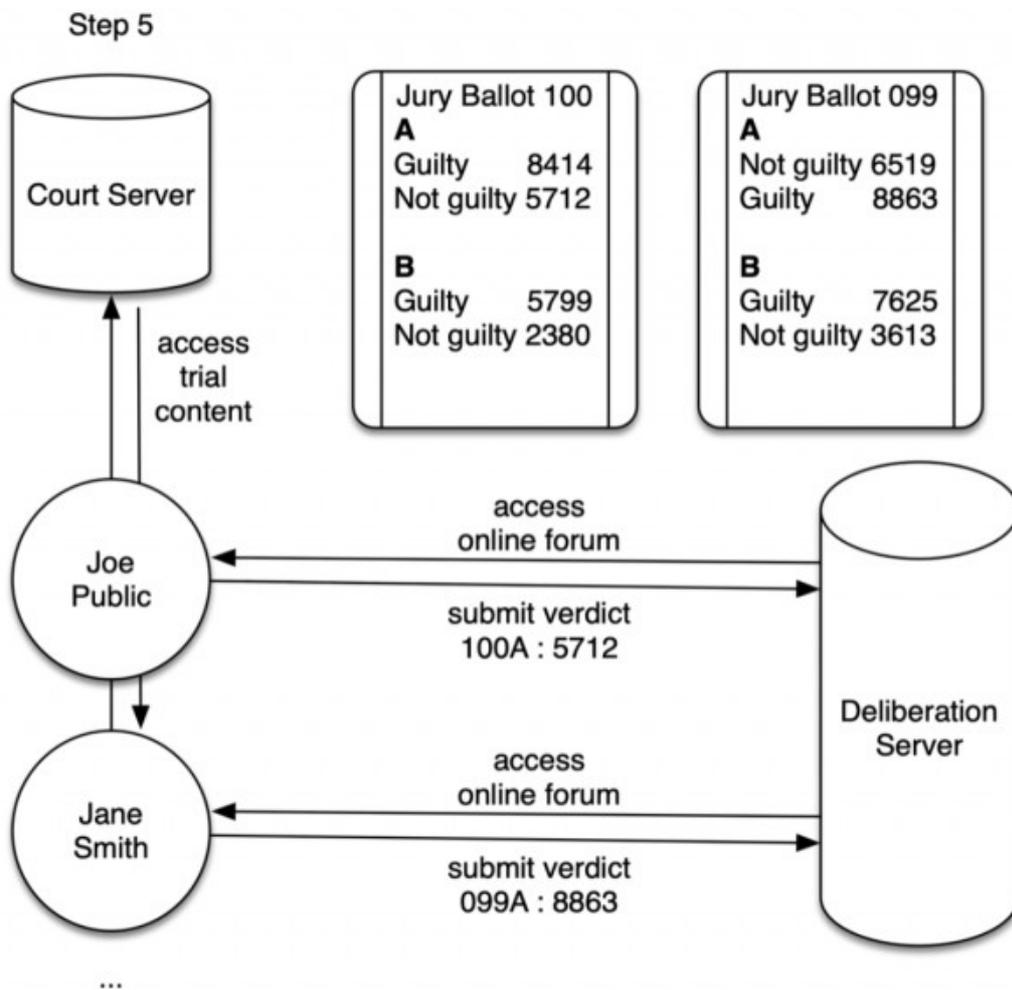


Figure 2 RSJ: The first two steps of the process from the perspective of a decoy juror.

In Figure 2, the same first two steps are shown, but for the case of assigning a decoy juror. After step 2, (the random draw), the rows of the tables are augmented by two additional columns determined in the following way. For the case of regular ballots, the additional columns, five and six, contain identical data to columns three and four. For decoy ballots, which are marked with the word "decoy" in the third and fourth column, they are assigned two numbers suitably selected by the authority so that the ballot will be assigned to a decoy juror. In the example, decoy juror Jane Smith is selected, because the two numbers (0000 and 5555) sum up to 5555 and are added to random draw for ballot 099 which is 4444. This sums to 9999 which is the number corresponding to Jane Smith in the roster. In this way, the authority can appoint as a decoy juror anybody that wishes to become one. Nevertheless, in the verification step, the way a decoy juror is selected will be indistinguishable from a valid juror.

This has two consequences: nobody can prove to a third party that they are an actual juror - making it impossible to identify the actual jurors to promise a decision for a bribe. Second, nobody, not even the jurors themselves, can find out who an actual juror is, making it impossible to retaliate against them after the trial.

The second stage of the process that takes place after the distribution of valid and decoy ballots is now described. The jury trial begins, and the proceedings are disseminated via a live video stream that jurors can watch from their homes via the court's website. The trial is open to everyone. However, in order to gain access, members of the public have to register as jurors (most of them will be the decoy type unless they are selected as actual jurors), using the provided username and password. This for all practical purposes looks more like the Athenian ideal of the open trial than its modern incarnations. If the Athenian model was abandoned at least in part only because it became for practical reasons too difficult to administer as societies grew, transport improved, and the media was able to take over some of its roles - that of informing the public of the law and its administration - technology could now allow us to return to the older ideal. It should be emphasised here, again, that unlike the tools proposed in the previous section, we do not make the case that this is indeed a better approach, let alone that we are currently in a position to implement such a system. Rather, the objective is to invite us to think about what we normatively try to achieve with open trials and jury trials, and distinguish what we consider essential from what are merely historical, contingent accidents and responses to pragmatic societal, economic and technological constraints. Traditional comparative legal analysis of legal institutions also tries to expose the extent to which they are shaped by contingent or extraneous factors, and to what extent they are based on principles of justice. Technology becomes a lens through which we can ask these questions, and selectively remove some of the factual constraints that currently shape jury trials, without having to resort to a purely utopian speculation about what trials in an ideal society would look like. Presumably, truly ideal societies would not need trials in the first place.

We can for instance immediately see an important difference to the current understanding of a fair jury trial. In the current system, some otherwise eligible citizens are excluded from serving as jurors in a specific trial, for instance because they have a vested interest in its outcome, know the parties or are related to them, or because they hold views that make it questionable if they will be able to decide objectively and without bias. Two important legal mechanisms to achieve this, in many but not all common law jurisdiction, are the *voir dire*, a trial before the trial that allows the parties to examine and, in some cases, to challenge the juror selection for cause, and peremptory challenges that allow rejection of jurors without stating a cause. *Voir dire* jury selection plays an important part of trial procedure in the US, where also peremptory challenges are used aggressively. The primary aim of the *voir dire* is to ensure that the jury is not biased - and unbiased jury means here that individual jurors are not biased, as the *voir dire* aims to identify and eliminate them from the pool. There is however a different way in which we can think about an "unbiased jury", not as a mere aggregate of unbiased individuals, but as a property of the collective. [42] In this view, a jury is likely unbiased if as a group, it represents a diversity of viewpoints and attitudes. Peremptory challenges, albeit controversially, can and have been used to ensure more varied juries, though this has seen in recent years a number of limitations being imposed on counsel, prohibiting e.g. the exclusion of a juror "on grounds of ethnicity only". There is no comparable process to the *voir dire* for jury selection in England or Scotland, and both jurisdictions have over time first limited the number of peremptory challenges from 5 to 3, and finally abolished them altogether. [43] Ireland by contrast still allows up to 7 peremptory challenges for each party.

In Scotland, jurors who are related to the accused, have a direct connection to the case or private information about it are prohibited from serving. However, this relies largely on the jurors self-identifying as part of the swearing-in process. This type of filtering would obviously remain possible in our system of RSJ, allowing potential jurors to bring up any reason why they should not be involved in the trial, and threaten legal sanctions if no disclosure is made. [44] In theory, even a degree of investigation would be possible, by cross-referencing e.g. the name and address of jurors automatically against public registries of birth, or even carry out an "adverse media search" to discover through their social media accounts if they are connected to the accused, victim or any of the witnesses. However, questioning individual jurors to discover their attitudes, as in the US *voir dire*, or "manual" peremptory challenges against jurors by counsel, would become impossible.

At this point our technological lens allows us to further unpack some difficult questions about the law. What role, if any, do we assign to random decision making in the trial process? Is it a mere pragmatic tool only, or can there be at least sometimes an inherent normative value in using randomness, as Duxbury argued? [45] Are these methods merely remedial, addressing a specific problem, or do they have a value in themselves? If so, what values does it enhance, and with what other values and normative intuitions does it conflict? Even legal systems that on the surface have adopted similar solutions may find that their attitude to RSJ differs, hinting at different answers to these questions. Duff e.g. notes that while both England and Scotland abolished the peremptory challenge at roughly the same time, the discussion and public reaction differed significantly - what was perceived in England as an attack on the fairness of the trial, driven by expediency and cost-cutting and created significant opposition, was in Scotland an unproblematic and generally supported move, seen perfectly aligned with the overall rationale of the trial. [46]

The case of *McCadden v. H. M. Advocate* [47] is interesting for our purposes, where Lord Justice Clerk argued for the court:

"There may never be a process which eliminates the possibility of personal prejudices existing among jurors, the nearest practical one (and it is not fool proof) being possibly the "vetting" of jurors, a system against which the law of Scotland has steadfastly closed the doors. Evidence of how it is used and abused in countries in which it is operated only tends to confirm the wisdom of that decision"

And

"The existing system of empanelling a jury from a list of assize is so broadly based that it provides a wide opportunity of a mix which is liable to level itself out."

We can contrast with a view that focusses not on the aggregate outcome of the decision, but considers at least very strong bias, vested interests or prejudices of every individual juror as tarnishing the ideal of justice. *Nemo iudex in causa sua*, nobody must be a judge in his own case as a principle of natural law is a deontological maxim that applies even if the actual impact of this self-interested judge in a given case was minimal, it not only impacts the accuracy of the verdict, but its fairness. [48] We can also contrast this view with a conception that requires that juries, as an aggregate, should be intentionally designed to be balanced, managing diversity through a direct goal driven process. The US, in varying degrees, could be understood as operating jury selection with this aim in mind. The objections to this approach that the above quote alludes to can again be distinguished according to their underlying rationale. The process might lead to abuse and manipulation, a (merely) pragmatic objection. But we also find a normative problem. Excluding a juror not because of any personal link to the specific case, but because of their membership in a group or for holding certain opinions and attitudes is disrespectful to the juror as an individual and as a citizen. In this argument, jury duty takes on aspects of a right, something of which one is not to be deprived lightly, an approach that also makes sense if juries are indeed to be understood as "little parliaments". [49] The Scottish approach thus comes with a dual justification of the use of random selection: it is deontologically right because it respects the dignity of the juror, and also epistemologically sound because "biases and prejudices" will balance each other out. Here we encounter however an obvious problem with the Scottish approach. As long as juries remain small, there is no guarantee that such a "balanced mix" will emerge from using random decision making. Even if the list from which jurors are chosen is complete as a mirror of a diverse society as possible, the outcome in each individual case could still be highly homogenous. It is a common mistake by laypeople when reasoning about randomness and probabilities to assume that randomness can't create patterns. In reality of course, choosing 15 people from the entire population can well result in a group of middle-aged brown-haired men with the first name "Jack" and an allegiance to Celtic FC. The overall justice system might be as diverse and, in that sense, unbiased as intended, but individual trials can and will still have highly homogenous selections. Conversely, if jury duty is indeed a right, the small number used to "ration" it also requires normative justification. This first point links the Scottish position to current discussions about big data: big data analytics, in essence a form of advanced statistical analysis, can cope with heterogeneous data of low quality, so the argument, because the sheer size of it will mean distracting "noise" will be cancelled out. For us, this means that our RSJ system not only gives random processes the same normative prominence that Scotland does, it provides the type of environment that would have to be in place to consistently achieve its epistemological and normative goals. Only very large juries can guarantee the "balancing out" that the Lord Justice Clerk appealed to in *McCadden*, and at the same time it is much less restrictive if we perceive jury service not just as a duty, but a right. By the same token though, this also means that RSJ is potentially less well aligned to the underlying normative and epistemological models we find in other jury systems, even if they superficially have developed similar tools and mechanisms.

Finally, we can see now also another connection between RSJ and the issue of live text based social media reporting of trials and the first part of the paper. To recap, the consultations identified two potential concerns in allowing citizen-observers to tweet or blog live from court: they could disclose certain protected information, in particular the identity of the jurors, and this make these susceptible to external manipulation and influence. This is precluded in RSJ as the cryptographic protocols make it impossible to know, even for the jurors, whose votes will eventually count, and the pool too large to approach all of them. The second concern was that jurors in turn might pick up through social media information that influences them in their decision making. But if the Scottish argument is right, then this is less of a concern if there is a sufficient probability that these influences and biases cancel each other out - which however requires, as we saw, considerably larger juries. Unlike the solution developed in the first section, filtering out problematic trial reports before they are even submitted, this approach would side-step the issue, take the ideal of open trial to its logical extreme and tolerate, rather than prevent, even potentially problematic information being released.

This was only a first attempt to show how RSJ as a thought experiment can help us to further analyse what role, if any, randomness can play in modern trials, and how it supports or is in conflict with conflicting intuitions about "fair" decision making and unbiased court procedure.

After the trial is finished, a public forum should be provided by the court. Access to the forum will be ensured with the same username and password that is used to access the digital content of the trial. Everyone authorised could post a question or comment on the proceedings.

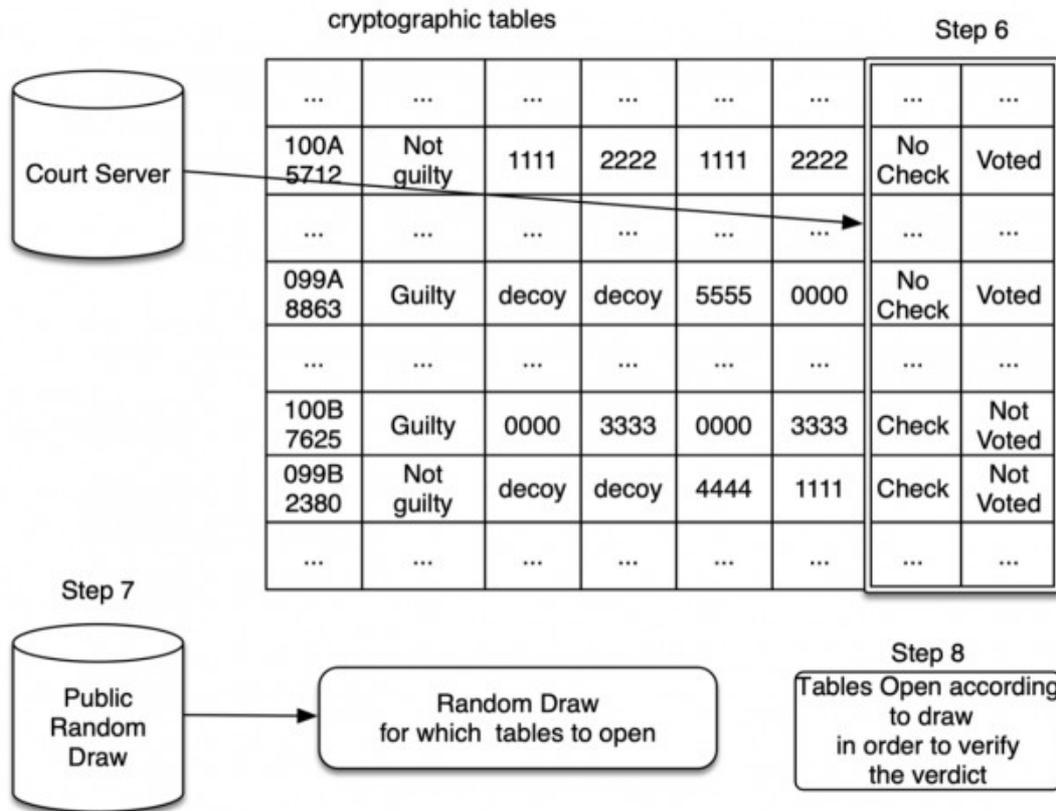


Figure 3. RSJ: The deliberation stage.

In Figure 3 the deliberation stage is described as step 5. Valid and decoy jurors cast their ballot on the court's server using the ballots they have received. In this example, Joe Public votes for Not Guilty and Jane Smith votes for Guilty.

After the completion of deliberation, all participating jurors can place their vote on the electronic bulletin board of the court's website, following the RSV procedure. The vote via the code that each juror has selected, either for "Not guilty" or for "Guilty" is sent via email, or via telephone on a hotline that will be provided to all participants. The system will be open in order to collect the votes of all participating jurors. The decoy votes will not be counted in the tally by the server of the court and thus, they do not affect the outcome of the procedure.

In Figure 4, it is shown how the votes of valid jurors are counted and the tables are prepared for verification. The authority augments the rows with columns seven and eight. Column seven contains an indication that explains whether a row corresponds to a ballot side that is checked or not checked. Checked rows correspond to those ballot sides (A or B) that were not used in the voting process and thus are used for verification. In our example, for ballot with serial number 100, that is assigned to juror Joe Public, side A is used for voting, while side B is used for checking; this means that the rows corresponding to vote codes 5799 and 2380 will be marked as checked in column seven. Column eight is marked as "Voted" if the code of the row has been submitted by the juror and "Not Voted" otherwise. The authority at this stage announces the final result as revealed by the codes submitted by the valid jurors.

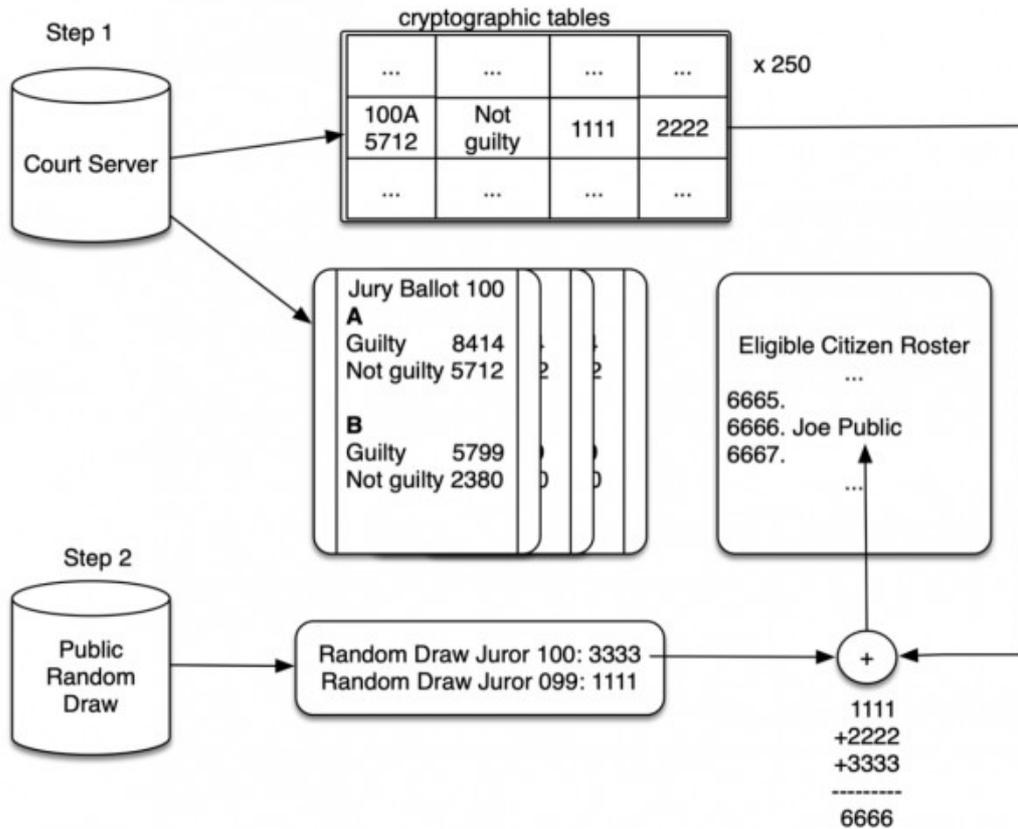


Figure 4. RSJ: The verdict stage.

After the end of step 6, the system makes its final draw (step 7), determining a partial opening of the cryptographic table following the RSV verification procedure. When this is completed, everyone may deduce that the outcome of the deliberation is indeed, the one announced by the court. This happens because each juror can verify that the verdict has taken into account his or her input, by the code of their retained copy of their vote. Further details regarding how verification is performed are omitted, as these are identical to that of Chaum [50] and outside the scope of our present exposition.

## 5. Conclusion

When the European Parliament in its resolution on civil liability for robots evoked in the recital literary figures from Mary Shelley's *Frankenstein's Monster* to the classical myth of *Pygmalion*, it did so hoping that this would help to communicate the key concepts to the wider public. The vision of an open, technology enabled trial that we outlined in the last section also has literary precursors, though none as canonical as those used by the EU. In the Episode "Majority Rule" of the TV show *Orville*, the landing party on a new planet unintentionally violates a local taboo. The society has no actual authorities, just a system of voting by the general public on everyone's behaviour. The crew becomes subject to tele-voting which may result in "social correction." Meant as a dystopian vision of legal dispute settlement, it may serve as a reminder that we did not necessarily intend RSJ as described to be a feasible social mechanism - though we consider that it may have a positive place in some forms of communal decision making. Rather, we wanted to show how our legal concepts of open and fair trial are crucially shaped by available technological tools, which in turn shape what the public demands of the justice system. In its consultations on the use of live social media reporting from trials, the consultations in England, Wales and in Scotland favoured one understanding of open trial, openness as a right of the public, over another, equally valid and historically grounded one, openness as a right of the accused. We showed how legal tech could at the very least mitigate the problematic consequences of this choice first. What the second section aimed to outline is a future where we follow the other path, and emphasise openness as a right of the accused, and the random choice of jurors as an intrinsically valuable rather than merely instrumental aspect of justice. This revived a vision of the open trial that had become in its original format unfeasible but was still casting a long shadow.

RSJ incorporates protective mechanisms, which uphold and have the potential to increase a fair administration of justice. The anonymity of jurors reduces the incentives for bribery and corruption. This pre-empts one of the main concerns raised in the Scottish consultation on LTBC discussed in Section 2, the danger to expose the jury to external pressure

when untrained observers communicate their identity to the wider world. It also enables us to be more permissive about LTBC from court as a degree of compliance is now ensured, protecting both the integrity of the trial, and the citizen journalist from legal repercussions, something that, as the consultation noted, can hardly be avoided anyway. Even more radically, it was suggested to have the entire trial online.

In a world where RSJ is used, it would probably be desirable to follow the lead of Scotland and have jury verdict based on a (potentially qualified) majority opinion and not a unanimous opinion. This is because the jury pool with the Random Sample Justice solution we propose can be increased much more than the currently predominant small sizes from 9 (France) to 15 (Scotland). The ideal number for a suitable jury size is an interesting open question for future research. [51] The ability to use a larger number, say in the order of hundreds, may allow for a more representative sample of the population to contribute to the decision, thus, in a way, restoring the ideal of the Athenian legal system. To move beyond a mere thought experiment, we would need to identify collective decision problems that share the constraints of the trial, but are maybe less drastic in their consequences for individuals. A situation where we want communal engagement and at the same time are worried about undue influence on the decision maker. We could envisage e.g. community-driven reprimands on large corporations polluting the environment, as a form of collective justice that matches communal property conceptions of public land. This however will have to be subject to further study.

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[1] University of Edinburgh, UK; [lamprini.georgiou@ed.ac.uk](mailto:lamprini.georgiou@ed.ac.uk), [b.schafer@ed.ac.uk](mailto:b.schafer@ed.ac.uk)

[2] Examples for the use of this term with this meaning include Battaglia, Nicholas A. "The Casey Anthony Trial and Wrongful Exonerations: How Trial by Media Cases Diminish Public Confidence in the Criminal Justice System." *Alb. L. Rev.* 75 (2011): 1579 or Phillipson, G. (2008). *Trial by media: The betrayal of the First Amendment's purpose.* *Law and Contemporary Problems*, 71(4), 15-29. This is not to say that this problem is ubiquitous or inevitable, but that there is reasonable and widely held concern. The Advocate General for England and Wales also highlighted the danger of "trial by media" in his consultation on social media and the court, discussed below.

[3] Lanni, A. (2012), *Publicity and the Courts of Classical Athens*, *Yale Journal of Law and the Humanities*, Vol.24, No. 1, pp. 119-135.

[4] In the sense of Gallie, Walter Bryce. "Essentially contested concepts." In *Proceedings of the Aristotelian society*, vol. 56, pp. 167-198. Aristotelian Society, Wiley, 1955.

[5] Thaler, R.H. and Sustein, C.R. (2008), *Nudge, Improving Decisions About Health, Wealth and Happiness*, Yale University Press.

[6] Chaum, D. (2012), *Random Sample Voting*, available from <http://rsvoting.org>

[7] <https://www.judiciary.uk/wp-content/uploads/2011/12/ltbc-guidance-dec-2011.pdf>

[8] *Cameras and live text-based communication in the Scottish courts: a consultation.* Judicial Office for Scotland on behalf of the Lord President, Brian Gill, Lord Gill and the Review Group. Available from <http://www.scotlandjudiciary.org.uk/Upload/Documents/ConsultationDocument.pdf>. Last accessed March 23rd, 2018.

[9] <https://www.gov.uk/government/publications/the-impact-of-social-media-on-the-administration-of-justice> Last accessed December 5th, 2018

[10] Lanni, A. (2012), *Publicity and the Courts of Classical Athens*, *Yale Journal of Law and the Humanities*, Vol.24, No. 1, pp. 119-135.

[11] Rhodes, P. (2004). *Athenian Democracy*. Oxford University Press.▣

[12] MacDowell, D.M. (p. 37, 1978). *The Law in Classical Athens*. Cornell University Press.

[13] Turner, R.V. (1968). *The origins of the medieval English jury: Frankish, English,*

*or Scandinavian?* *Journal of British Studies*, 7, pp. 1-10. For the Scottish development, that followed in criminal procedures the English trajectory but introduced civil juries only late in the 19th century, see Ian Douglas Willock, *The Origins And Development Of The Jury In Scotland*, The stair Society, Edinburgh 1966

[14] Stephens, J.E. (1896 p.157). *The growth of trial by jury in England.* *Harvard Law Review*, 10, 150-160.

- [15] Magna Carta in its thirty-nine section declares: "No free men shall be taken or imprisoned, or diseased, or outlawed, or exiled or anyways destroyed; nor will we go upon him, nor will we send upon him, unless by the lawful judgment of his peers, or by the law of the land." see Stephens, J.E. (p. 155, 1896). The growth of trial by jury in England. Harvard Law Review, 10.
- [16] For a discussion with further references, see Doyle, Charles Clay, and Clement Charles Doyle. "Wretches Hang That Jury-men May Dine." Justice System Journal 28.2 (2007): 219-239.
- [17] This is described in detail in Langbein, John H. "The criminal trial before the lawyers." The University of Chicago Law Review 45, no. 2 (1978): 263-316 who considers the process only completed by the mind-18<sup>th</sup> century.
- [18] See for a more comprehensive discussion of the emergence of the passive juror and the underlying epistemological assumptions, Schafer, Burkhard, and Olav K. Wiegand. "Incompetent, prejudiced and lawless? A Gestalt-psychological perspective on fact finding in law as learning." Law, Probability and Risk 3, no. 2 (2004): 93-108. See also Hassett, J.M.: A Jury's Pre-Trial Knowledge In Historical Perspective, 43 Law And Contemporary Problems (43) 1980, P.158-160; Dann, B.M.: Learning Lessons And Speaking Rights: Creating Educated And Democratic Juries" Indiana Law Journal (68) 1993
- [19] With further references see Schafer, B., & Wiegand, O. K. (2004). Incompetent, prejudiced and lawless? A Gestalt-psychological perspective on fact finding in law as learning. Law, Probability and Risk, 3(2), 93-108.
- [20] See Hassett, J.M. (1980, 157-160). A jury's pre-trial knowledge in historical perspective: The distinction between pre-trial information and "prejudicial" publicity. Law and Contemporary Problems, 43, pp. 155-168.
- [21] Schulz, P.D. and Cannon, A.J. (2013 p.2). Trial by tweet? Findings on Facebook? Social media innovation or degradation? The future and challenge of change for courts. International Journal For Court Administration, pp. 1-9.
- [22] For an example of a juror using social media for research about the defendant and getting prosecuted see <https://www.theguardian.com/law/2012/jan/23/juror-contempt-court-online-research> . For a discussion on Wikipedia information about active trials as contempt of court see Press Standards, Privacy and Libel: Oral and Written Evidence v. 2: Second Report of Session 2009-1 (House of Commons Papers) p. 406.
- [23] On this phenomenon see e.g. Gabbert, F., Memon, A. and Allan, K. (2003). Memory conformity: Can eyewitnesses influence each other's memories for an event? Applied Cognitive Psychology, 17, 533,543;
- [24] Thornton, B (2017), The case of the disappearing court reporter. Proof Vol 2 2017; Moran, Leslie J. "Mass-mediated 'open justice': court and judicial reports in the Press in England and Wales." Legal studies 34.1 (2014): 143-166
- [25] Mazar, N., Amir, O. and Ariely, D. (2008). The dishonesty of honest people : A theory of self-concept maintenance. Journal of Marketing Research, 45, pp. 633-644.
- [26] Maccabe et al. (2001) researched for one decade the factors that are associated with academic cheating. They suggested that in colleges, who have incorporated honour codes in their policy, students were found less likely to cheat, as opposed to non-code campuses.
- [27] Thaler, R.H. and Sustein, C.R. (2008 p.22). Nudge, Improving Decisions About Health, Wealth and Happiness. Yale University Press.
- [28] See note 23 above.
- [29] See e.g. Nadeau, D., & Sekine, S. (2007). A survey of named entity recognition and classification. Lingvisticae Investigationes, 30(1), 3-26
- [30] L. Geng, L. Korba, X. Wang, Y. Wang, H. Liu, and Y. You. Using data mining methods to predict personally identifiable information in emails. Advanced Data Mining and Applications, pages 272-281, 2008.
- [31] "sensitive" for the purpose of the trial. It should not flag "Juror X looks stunning", but "Juror X is my boss at XYZ company".
- [32] H. Mao, X. Shuai, and A. Kapadia. Loose tweets: an analysis of privacy leaks on twitter. In Proceedings of the 10th annual ACM workshop on Privacy in the electronic society, pages 1-12. ACM, 2011.

- [33] <https://www.neotalogic.com> For a discussion see Lauritsen, M. (2012). Liberty, Justice, and Legal Automata. *Chi-Kent L. Rev.*, 88, 945.
- [34] Gellman, R. (1996). Disintermediation and the internet. *Government information quarterly*, 13, pp. 1-8.
- [35] Duxbury, N. (1999 p.75). *Random Justice On Lotteries And Legal Decision-Making*. Oxford University Press.
- [36] Stone, P. (2009). The logic of random selection. *Political Theory*, 37, 375-397.
- [37] See (Duxbury, 1999, p.75), see note 28 above.
- [38] David Chaum was one of the co-founders of the International Association for Cryptologic Research in 1982. <https://www.iacr.org>
- [39] Davis, J. (2012). How selecting voters randomly can lead to better elections. [https://www.wired.com/2012/05/st\\_essay\\_voting/](https://www.wired.com/2012/05/st_essay_voting/). Last accessed March 23<sup>rd</sup>, 2018.
- [40] On the role of obfuscation in protecting public engagement against repercussions, see e.g. Brunton, F. and Nissenbaum, H., 2015. *Obfuscation: A user's guide for privacy and protest*. Mit Press.
- [41] Or, in Scotland, with the third option of "not proven". The formal implementation is not affected by this, though it might affect the "ideal" jury size
- [42] See Schafer and Wiegand, op cit, p.
- [43] For a comparative discussion see Duff, Peter. "The Scottish criminal jury: A very peculiar institution." *Law and Contemporary Problems* 62, no. 2 (1999): 173-201.
- [44] This would however introduce an asymmetry into the obfuscation process: now at least some people could prove that they are not jurors. As long as the numbers remain small, this would not allow to then infer who an actual juror is, but could be an issue for very small communities.
- [45] Duxbury, Neil. *Random justice: On lotteries and legal decision-making*. Oxford University Press on Demand, 2002.
- [46] See Duff op. cit. p. 180.
- [47] 1985 J.C. 98
- [48] For a discussion of the ethical intuition see already Thomas Hobbes, *Leviathan* 102 (Michael Oakeshott ed., Macmillan 1946), p 102. For a modern (critical) discussion see Vermeule, Adrian. "Contra Nemo Iudex in Sua Causa: the limits of impartiality." *Yale LJ* 122 (2012): 384.
- [49] For a discussion of this term and what it implies, albeit with an English focus, see Lloyd-Bostock, Sally, and Cheryl Thomas. "Decline of the "Little Parliament": Juries and Jury Reform in England and Wales." *Law and Contemporary Problems* 62, no. 2 (1999): 7-40.
- [50] See note 32 above.
- [51] There is of course a long tradition of research into the ideal size of juries - but all these operate within the constraints of the current system, and typically ask what the smallest number is that avoids known problems, to reduce costs. Here the problem is the opposite: if not any longer constraint in the size through factors such as room size etc, how big could/should one get. For a good discussion of existing research, see Saks, Michael J., and Mollie Weighner Marti. "A meta-analysis of the effects of jury size." *Law and Human Behaviour* 21, no. 5 (1997): 451-467.