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ABSTRACT

While the psychological phenomena that affect group decision-making have been thoroughly investigated for decades, how these phenomena apply to decision-making by judges on panel courts is under-examined. This article examines the main psychological phenomena of group decision-making, both positive and negative, and considers their implications for panel courts and other groups of professional legal decision-makers such as adjudicators serving on tribunals. This article argues that experimental studies on judges and adjudicators testing the effects of these phenomena would improve understanding of legal decision-making by these groups and could help to devise ways to improve their decision-making processes to reach higher quality decisions. Some ideas and outlines for experimental studies are presented.
1. INTRODUCTION

In 1798, the Lord Chief Justice of the English Court of Common Pleas James Eyre observed that ‘[i]t is impossible that the bodies of men should always be brought to think alike; there is often a degree of coercion and the majority is governed by the minority and vice versa according to the strengths of opinions, tempers, prejudices and even interests.’¹ His remarks spoke to how the dynamics that affect all groups making legal decisions, (such as individual members’ predispositions, and their ability to cajole and persuade each other), have a bearing on how the group ultimately decides.

Group decision-making is ubiquitous in legal systems. Juries decide guilt or innocence. Appellate, apex, and international courts are composed of panels of judges of varying sizes to hear cases. Tribunals often sit in panels of three to resolve disputes in specific areas of law. All share a common feature: groups of people working together to decide legal issues.

Eyre CJ’s remarks foretold some of the psychological phenomena better understood centuries later. While there is now a relatively well-developed body of scholarship on group decision-making psychology, and a rich sub-group of research investigating juries’ decision-making, there remains far less examination of how group decision-making phenomena affect judges on panel courts and other adjudicators serving on panels such as on administrative tribunals.

Court systems are designed with an acceptance that more judges ought to hear important cases with higher stakes.² A reverse pyramid structure is deployed where one judge hears a case at first instance and increasingly larger panels hear the case as it moves to appellate and apex court levels. Major international courts also operate larger judicial panels. There appears to be a tacit, and arguably, uncritical assumption that group decision-making is superior to individual decision-making. Surveys of UK and Netherlands lawyers indicate a belief that groups of judges arrive at better decisions than individuals judging alone.³

While there is nothing to suggest that this assumption is fundamentally incorrect, it is nevertheless important to analyse how to harness the advantages of being part of a group and suppressing group decision-making errors in the context of panels deciding legal disputes. In particular, how judges or adjudicators deliberate with each other ought to be examined in greater depth to help identify whether group psychology phenomena help or hinder their decision-making. How do they exchange information, assess evidence, evaluate the credibility of a witness, or determine probabilities of event having occurring as described as a group? How do they communicate, persuade, and influence each other towards final draft judgments in the deliberation

¹ Grindley v Barker (1798) 1 Bos. & Pul. 229, per Eyre J.
chamber, in court corridors\(^4\) or through emails or the track changes function on word processing software?\(^5\) Crucially, what are the consequences of the way that judges and adjudicators work together for decision outcomes? And, what processes and techniques can groups of judges adopt to harness the benefits of group decision-making and mitigate their drawbacks?

To some extent, answering these questions requires simply asking judges and adjudicators how they go about their business and what they believe to be best practice. However, researchers and judges alike have sought to understand and explain aspects of group dynamics on courts through various analytical lenses and disciplines. Leading judges reflect on their role on panel courts in extra-judicial writing, offering insiders’ views of collegial (or not-so-collegial)\(^6\) decision-making on their court.\(^7\) Researchers survey and interview judges serving on panel courts about how they influence each other’s decision-making.\(^8\) They investigate voting fluidity – how often judges change their minds between the hearing and delivering the final judgment through dialogue and persuasion by colleagues. This scholarship also tries to unpack what factors nudge judges to decide differently; for instance, the seniority or expertise of a colleague on their court and the desire for consensus.\(^9\) As this article will expand upon, some of these themes overlap with phenomena identified by psychologists studying group decision-making.

There is also one example of a controlled experiment on group legal decision-making by UK tribunal members.\(^10\) The experiment, based on a hypothetical disability allowance tribunal claim, investigated, *inter alia*, the extent to which individual tribunal members’ initial pre-deliberation assessments of the claim changed after deliberating the case with fellow members on their panel (22% of all panel members changed their mind).\(^11\) Experience on the tribunal appeared to be a factor. Individual panel members tended to change their minds on their decision more often where


\(^5\) The author has had conversations with judges and adjudicators from two courts who reported using the track changes function on a word processor for this purpose.


\(^11\) Id. at. 14.
both of their colleagues on the panel were more experienced than them, compared to when only one colleague had more experience.\textsuperscript{12} The study also showed that the professional expertise of each panel member (that is, the professional background of each member) was relied upon substantially by their colleagues.\textsuperscript{13}

More commonly, researchers have investigated correlations between the characteristics of individual judges serving on panels of different compositions and the outcomes that those panels produced in the real world – so-called ‘panel effects’. For instance, studies have tested whether US judges’ political affiliations influence each other’s decision-making on panel courts in politically sensitive cases. For example, Sunstein et al found that in cases on politically sensitive areas of the law, US circuit court judges’ individual ideological preferences were dampened if sitting with two judges of a different political party, but were amplified if sitting with two judges from the same political party.\textsuperscript{15} An analysis correlating the gender composition of panels on the Australian High Court and rulings of that Court between 1994 to 2011 revealed female barristers were more likely to succeed when the court’s panel composition included female judges than when they appeared before all-male judicial panels.\textsuperscript{15}

Others have studied ‘freshman effects’ (newly-appointed judges tending to defer to their more experienced colleagues’ preferred decisions on the panel),\textsuperscript{16} ‘seniority effects’ (more senior judges tending to hold more sway over their more junior colleagues)\textsuperscript{17} and dissent aversion (judges tending to avoid issuing dissenting judgments against their colleagues in certain circumstances).\textsuperscript{18}

Some studies have focused on how judges work together, rather than simply observing outcomes. A study on decision-making on the German Federal Court of Justice found that where groups of judges were more familiar with each other, they tended to

\begin{itemize}
\item \textsuperscript{12} Id. at. 12.
\item \textsuperscript{13} Id. at. 12
\item \textsuperscript{15} R. Smyth and V. Mishra, Barrister Gender and Litigant Success in the High Court of Australia \textit{Australian Journal of Political Science} (2014) 49(1), pp. 1–21.
\end{itemize}
debate a more comprehensive range of perspectives during deliberations than judges unfamiliar to each other.footnote{19}

A persistent, yet unsurprising theme emerges from the research outlined above; deciding cases together as a group, and the processes used for that task, have a bearing on decision-making and outcomes. Many studies hint at how group psychology phenomena may play a role.footnote{20} However, perhaps surprisingly, this angle has yet to be systematically investigated. As two American scholars noted:

‘The psychology of small-group decision making is well understood. Yet ... such theories have not been widely applied to investigations of decision making in courts. This is curious, because these theories fit well with the nature of the task that most appellate courts face.’footnote{21}

Experimental research investigating group decision-making phenomena on judges and adjudicators would help to better understand, and possibly improve how panels of judges and adjudicators work together. Experiments could test the effectiveness of different deliberation processes and techniques to try to improve panel courts’ and tribunal panels’ decision-making. This research would also help to triangulate results from the other research modes described above.

The next part of this article overviews the main psychological phenomena of group decision-making and considers their application to legal decision-making. The final part of this article offers some suggestions for experimental studies testing how different deliberation processes may help to harness positive group decision-making phenomena and mitigate negative phenomena.

Before analysing the existing psychological literature, some context is required. While groups come in all shapes and sizes and engage in a wide spectrum of decision-making tasks, groups of judges or adjudicators possess very particular characteristics, depending on the broader political and institutional contexts in which they operate, the area of law that they decide upon, and the professional backgrounds and training of individual members. They are highly structured groups with high levels of interdependence and familiarity with each other. They differ, for instance, from juries in that they are experts in the law and work together as colleagues over time, rather than for just one trial.

The public also recognises such courts and tribunals as distinct entities with a distinct purpose. They possess high levels of entitativity – that is ‘the extent to which a group or collective is considered by others to be a real entity having unity, coherence, and internal organization rather than a set of independent individuals.’footnote{22} A Supreme Court has more entitativity than, say, a jury assembled for a single criminal trial. They also

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20 For instance, Sunstein et al allude to group polarisation and conformity pressures playing a role in decision-making on US federal courts. Sunstein, Schkade and Ellman, supra note 11, pp. 337, 340.
wield considerable power in societies and make decisions with multiple audiences in mind; not just the parties in a particular case but also other courts in the judicial system, the wider public, the media and the state or international group that they operate within. These are all factors that can potentially influence judges’ and adjudicators’ work on panels to varying degrees and should be borne in mind when seeking to explain and better understand their decision-making through the lens of group psychology.

2. GROUP PSYCHOLOGY AND ITS APPLICATION TO JUDGES’ AND OTHER ADJUDICATORS’ DECISION-MAKING

Psychologists identify several phenomena that can affect groups for better or worse when making decisions. Here, the phenomena are broken down into positive and negative categories with particular emphasis on research that investigates groups performing tasks that typify legal decision-making: for example, using and exchanging information, assessing probability and assessing credibility. Categorising the phenomena in these ways provides focus for considering their applicability to groups of judges’ or adjudicators’ decision-making and helps to generate testable hypotheses for experimental research.

2.1 POSITIVE PHENOMENA

Psychologists have broadly demonstrated several general advantages that groups have over individuals in decision-making. When group members interact with each other they can come up with new ideas and solutions that individual members would not have come up with. Group members are more likely to notice and correct mistakes than individuals and, collectively, have stronger memory performance.

Judges and adjudicators who work together must gather knowledge about each case by using, absorbing and exchanging information in many ways. Knowledge is not a

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24 Recognised leaders in this field have previously observed that group psychology is too large a field to conduct a complete review of the literature. R.S. Tindale, T. Kameda and V.B. Hinsz, Group Decision Making in M. Cooper and J. Hogg (eds), The Sage Handbook of Social Psychology, Sage, 2003.


static concept: it constantly evolves and changes through interaction with others.\(^{30}\)

When groups of judges or adjudicators decide a case, they gather knowledge and exchange information through different modes and at different stages of the process. Before hearings, judges and adjudicators pore over written submissions, they read legal texts referred to them by the parties or their representatives, and they may engage – either individually or as a group – in their own research on the legal matters at hand. At hearings, they hear and consider – both as individuals and as a group – oral testimony from parties and various witnesses. After hearings, they may conduct further research on specific issues. All stages involve finding, using and exchanging information. Information may be exchanged in different modes: emails are sent,\(^{31}\) phone calls are made, documents are track-changed and commented upon, informal chats are had in the corridors of court buildings\(^ {32}\) and formal deliberation conferences may be held, either online or in-person.

The exchange of information has been described as the key difference between individual and group decision-making, and the key element of group decision-making.\(^{33}\) Being part of a group can allow for more complete exchange and consideration of information.\(^{34}\) Groups have a more diverse body of knowledge\(^ {35}\) and can process more information than individuals can.\(^ {36}\)

Pooling information from individuals and aggregating it can lead to a better or more accurate judgement, as famously demonstrated by Francis Galton’s ‘wisdom of crowds’ theory where he collected individual entries to a ‘guess the weight of the ox’ competition and showed that the average of these entries was closer to the truth than the single winning entry.\(^ {37}\) Group decisions are not only wiser simply by aggregating individual members’ decisions; rather, studies suggest that small groups’ decisions also improve through collaboration. For example, when two people are asked to perform a visual perceptual task, they perform better after communicating with each other compared to when individuals performed the same task.\(^ {38}\) If small groups engage in open discussion, knowledge is better used.\(^ {39}\)


\(^{32}\) Alan Paterson, The Law Lords (MacMillan 1982) 89.


\(^{34}\) ibid.


\(^{39}\) Bang & Frith, supra note 22, p. 6.
Narrowing the focus to legal decision-making reveals similar trends. Mock jury studies generally suggest that deliberation facilitates higher levels of reasoning and more accurate decision-making compared to individual jurors’ decision-making before they deliberate.\textsuperscript{40} One study found that jurors who deliberated in a mock trial became more nuanced in interpreting the facts and were better at evaluating conflicting evidence they were confronted with through the deliberation process.\textsuperscript{41} A further experimental study suggests a more complex picture; group deliberation can lead to more optimal decisions, but only in difficult legal cases. In another mock criminal trial experiment, participants were asked to determine guilt or innocence in multiple hypothetical cases, some of which were ‘easy’ to decide (it was quite clear whether the protagonist was innocent or guilty), and some of which were ‘hard’ to decide (it was less clear whether the protagonist was innocent or guilty).\textsuperscript{42} The researchers compared the performance of groups of three participants who deliberated with each other against the performance of groups that were constructed simply by randomly aggregating the decisions of three decision-makers working alone. Groups who deliberated made more optimal and accurate decisions than the constructed groups of aggregated individual decisions did, but only in difficult cases.\textsuperscript{43} In fact, the researchers found that group deliberation was counterproductive in more straightforward cases.\textsuperscript{44}

Better use and exchange of information can hinge on how familiar and comfortable group members are with each other. Where members feel trust or ‘psychological safety’ within a group, members are more likely to contribute unshared information and offer opinions that challenge the group’s view.\textsuperscript{45} Where members are familiar with each other they are more likely to consider and build upon shared information.\textsuperscript{46} Judges and adjudicators who work together in groups will be familiar with each other, to varying degrees – an apex court, for instance, is a group of colleagues who get to know each other reasonably well.\textsuperscript{47} Familiarity may allow colleagues to voice dissenting views without fear of harming personal relationships with colleagues.\textsuperscript{48}

From a theoretical perspective, legal decision-making is decision-making under uncertainty.\textsuperscript{49} Uncertainty requires judges and adjudicators to assess probability in different contexts to make decisions. Assessing probability can be either retrospective or prospective. For example, when a plaintiff claims a defendant’s negligence caused them injury, that requires the judge to assess whether the defendant ought to have reasonably foreseen that their actions or inactions would cause the damage that it

\begin{itemize}
\item \textsuperscript{41} McCoy, Nunez and Dammeyer, supra note 35.
\item \textsuperscript{42} Van Dijk, Sonnemans and Bauw, supra note 2.
\item \textsuperscript{43} ibid 233.
\item \textsuperscript{44} ibid 235.
\item \textsuperscript{46} M Travis Maynard and others, Do I Really Know You and Does It Matter? Unpacking the Relationship between Familiarity and Information Elaboration in Global Virtual Teams \textit{Group & Organization Management} (2019) 44(1), pp. 3–37.
\item \textsuperscript{47} Swalve, supra note 16.
\item \textsuperscript{48} ibid 226.
\end{itemize}
did; this requires assessing probability retrospectively. In other situations, assessment of probability is prospective; a judge or adjudicator may have to predict an injured party’s future loss of earnings when determining appropriate compensation in a personal injuries claim, consider how likely a convicted criminal is to re-offend, or, in bankruptcy proceedings, weigh up how likely it is that an organisation will go bankrupt. All are exercises in assessing the probability that something may happen in the future.

Are groups better than individuals at assessing probability? Group psychology literature suggests that they are, and are more likely to make more objectively-accurate decisions based on uncertain information.\(^{50}\) For instance, a controlled experiment where university students had to determine guilt or innocence in a mock criminal trial based on probabilistic evidence found that groups of three decision-makers tended to make better use of that evidence, reaching verdicts that were objectively more accurate than those reached by individuals.\(^ {51}\) Groups are also less susceptible to probability matching than individuals are – a flawed decision-making strategy whereby people incorrectly predict something or someone is a member of a particular group or class based on proportional base rates.\(^ {52}\)

Accurately assessing probability is undoubtedly important for legal decision-making. This research that suggests groups are better than individuals at assessing probability supports the hypothesis that judges and adjudicators working in groups may be better at such tasks than their counterparts working alone.

Finally, in many contexts, judges and adjudicators must assess the truth of a party’s or a witness’ claims. Generally, across several experiments, groups are more accurate than individuals are in distinguishing truths from lies.\(^ {53}\) A key finding is that this group advantage arises through the process of group discussion.\(^ {54}\) Applied to legal decision-making, one hypothesis is that groups of judges and adjudicators who deliberate with each other may be better at more accurately detecting the truthfulness or otherwise of a party’s or a witness’ evidence than individual legal decision-makers. A crucial question is what modes of deliberation best harness this advantage.

### 2.2 NEGATIVE PHENOMENA

Despite the advantages that groups have over individuals in decision-making, groups also make errors when making decisions. Such errors are often colloquially referred to as ‘groupthink’, although that concept, coined by psychologist Irvine Janis, initially had a narrower scope. It was originally defined as a ‘mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members’ striving for unanimity overrides their motivation to realistically appraise alternative courses of action’.\(^ {55}\)

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\(^ {51}\) Van Dijk, Sonnemans and Bauw (n 2).


\(^ {54}\) ibid.
That concept identifies a group's cohesiveness as the very thing that triggers poorer quality decision-making processes and outcomes. To 'get beyond groupthink,' Sunstein and Hastie broadly categorise errors that groups make as follows:

- **Group amplification of error**: where groups amplify, rather than correct, individual errors in judgement,

- Groups fall victim to **conformity effects**: where group members uncritically follow what other members say or do,

- **Group polarisation**: where groups adopt more extreme positions than the ones they began with, and

- **Information errors**: where groups emphasise what everybody knows instead of focusing on critical information that only some members have.

This is a useful structure to help unpack group decision-making errors and how they may affect legal decision-making.

**Group Amplification of Error**

Where individuals have biases or make errors of judgement, these can be amplified through the group decision-making process. Experimental research on jury decision-making suggests that individual jurors' biases are amplified by group deliberation. For example, Kramer and his colleagues hosted a controlled experiment where jurors in a mock trial were exposed to negative pre-trial publicity about a defendant, potentially improperly biasing their view on the case. After juries deliberated with each other, this appeared to amplify the prejudicial biasing effects of that pre-trial publicity. In another study, mock juries favoured attractive defendants more after deliberation than beforehand. On the other hand, another study found that the deliberation process dampened individual jurors' reliance on inadmissible evidence about a defendant, counteracting its biasing effect.

Overall, research findings on this phenomenon are inconsistent. It remains an open question whether group amplification of error could affect groups of judges and adjudicators in similar ways, particularly given that they tend to have more entitativity and expertise than jurors do. Given there is an abundance of experimental research suggesting individual judges’ susceptibility to the influence of extraneous factors

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when deciding cases alone, the hypothesis holds that such errors may be amplified by group interaction in certain circumstances.  

**Conformity effects**

Poor decision-making can occur when group members uncritically follow other members’ decisions. Conformity effects can occur for a variety of reasons: social loafing (the tendency to exert less effort when working in a group than when working alone), social or political pressure, or a desire to fit in with a group. Whatever the rationale, conformity effects – or, more colloquially, ‘herd mentality’ – can affect the objectivity and accuracy of groups’ decisions.

In legal decision-making, pressure to conform with the group, in the sense of arriving at a consensus, may be partially driven by institutional factors. For example, rules governing returning jury verdicts in many jurisdictions implicitly acknowledge and prioritise the need for group consensus among jurors by facilitating majority verdicts if a unanimous verdict is not returned. On panel courts, dissent aversion – judges on panel courts preferring to avoid having to make a dissenting judgment – is a recognised phenomenon. This translates in experimental studies as well: Van Dijk et al found that there was a strong tendency towards unanimity. They concluded that ‘deliberation caused many participants to change their mind, whether by conviction, trust in other group members or due to group pressure.’

However, some motivations for apparent conformity among judges and adjudicators may be purely psychological, rather than a by-product of institutional pressures. Solomon Asch famously demonstrated that individuals often made a wrong decision, apparently just to conform with other group members who made the same wrong decision.

A narrower phenomenon – the cascade effect – where group members follow the statements and actions of those who spoke or acted first when deciding an issue may also have a bearing on legal decision-making. The order in which positions are expressed may affect outcomes. For instance, Davis demonstrated that the order in which individual mock jurors give their verdict affected mock juries’ overall verdicts as a group. The study showed that the crucial fourth juror in six-person mock juries was significantly influenced by the preceding sequence of votes (e.g. whether the previous jurors had voted guilty or not guilty). Of course, decision-making in a real-world environment may not bear the same trends. Nevertheless, order effects of a similar nature may be worth investigating – for instance, the order in which judges on

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61 For an overview, see Barry (n 23) ch 2.
62 ibid 85, 88–89.
64 Van Dijk, Sonnemans and Bauw, supra note 2, p. 233.
66 Sunstein and Hastie, supra note 48, 23.
a panel court express their opinion on a case to their colleagues during a deliberation conference. Practices in this regard vary from court to court.68

Group Polarisation

Group polarisation is the intensification of a position held by a majority of group members as a result of discussion.69 Through discussion a group's position on an issue becomes more extreme than the positions held beforehand by individuals. Hundreds of studies demonstrate this phenomenon70 offering different explanations for it. One is that the way information is exchanged by groups can pull a group towards a position they were initially inclined to.71 Another explanation is social validity: people may adjust their position to that most favoured by the group either because they want their peers to respect them more or because it avoids conflict.72 A further explanation is that agreement from others tends to increase individuals' confidence, which in turn fuels more polarised positions on an issue through corroboration of that position by peers within the group.73

As outlined above, political scientists have demonstrated in real-world cases that where judicial panels are comprised of more judges of the same political persuasion, the overall panel's positions in politically sensitive cases become more polarised in the direction of their shared political preferences.74 Group polarisation has been suggested as one possible explanation of this phenomenon, although authors acknowledge that it is difficult to test for this in the real world.75

Mock jury experimental studies demonstrate group polarisation in mock civil trials.76 In one study, where participants deliberated with like-minded peers, awards of punitive damages were significantly higher than the median of individual jurors’ pre-

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68 On the Irish Supreme Court judges speak in inverse order of seniority. On the Norwegian Supreme Court and the US Supreme Court, the Chief Justice speaks first with the remaining judges offering views in order of descending seniority. See further, Barry (n 23) 218–220.


72 ibid.

73 ibid.


75 They accept that testing for phenomena such as group polarisation ‘in the real world ... is extremely hard to test in light of the range of confounding variables.’ Sunstein and others, supra note 63, p. 309.

deliberation awards – a ‘severity shift’ occurred. Similar research suggests that this translates to determinations of innocence or guilt in criminal trials as well.

Again, the question arises whether this transfers to groups of judges and adjudicators, who are more expert and who possess higher levels of entitativity and collegiality than juries.

**Information Error**

The benefits of groups exchanging information through group discussion are set out above. However, such benefits only accrue if the group discusses and uses information that is most useful to the decision at hand. Sometimes, group dynamics affect what information gets prioritised or discarded by the group, sometimes leading to poorer decision-making. Faulmüller et al summarising other scholars’ work, categorise these phenomena as follows:

a) information that is known to all of a group’s members, distinct from information that only one member knows, tends to dominate group discussion

b) group members tend to repeat previously mentioned shared information because it brings them social validation within the group, and

c) this social validation increases the perceived accuracy and relevance of that information which, in turn, increases the impact or sway that that information holds over the group.

These phenomena suggest that sometimes useful information is either dismissed by the group or not oxygenated at all while less useful information carries more weight. To reiterate, this body of work may suggest that some of these group errors could affect judges and adjudicators working together.

**2.3 REFLECTIONS ON THE GROUP PSYCHOLOGY LITERATURE**

Whether the effects discussed here affect groups of judges and adjudicators in different contexts remains an open question. However, the literature provides an evidentiary basis for drawing hypotheses for controlled experiments on judges and adjudicators who serve on panels. The final part of this article presents some suggestions for such experiments. A key objective would be to investigate and inform

77 ibid.


courts and tribunals of ways to modify how judges and adjudicators deliberate with each other to optimise their decision-making.

3. SUGGESTIONS FOR EXPERIMENTAL RESEARCH

Group decision-making is, and will undoubtedly continue to be, a mainstay of legal systems. How judges work with each other on collegiate courts and how they deliberate may well have consequences for judicial outcomes, for better or worse. This makes it worthwhile empirically investigating how groups of judges and adjudicators work together to reach optimal decisions, particularly through the lens of group psychology. Deliberation processes have tended to evolve ad hoc, dictated by norms, personalities and institutional culture rather than through careful design. To give two examples from leading courts; Lady Hale, described how, on the UK Supreme Court and its predecessor, the House of Lords, ‘traditions of collaboration’ can ‘wax and wane.’

Entirely extraneous factors determined how judges on the Australian High Court under Chief Justice Garfield Barwick interacted with each other in the 1970s and 1980s: ‘[c]onsultation between the judges at this [deliberation] stage of the proceedings depended on friendship, speciality and geography.’

These examples suggest that how judges and adjudicators deliberate with each other is often not considered particularly deeply by courts, nor is it often covered by rules. Yet this may well have consequences for parties who appear before them. The upshot is that reforming how judges and adjudicators deliberate with each other may be relatively straightforward if they are presented with convincing evidence on how to improve their process.

Experimental research could identify whether (and if so, to what extent) group psychology phenomena affect judges’ and adjudicators’ decision-making and, ultimately, case outcomes. Moreover, findings could establish an evidentiary basis for proposing reforms on how judges work with each other towards their decisions.

Such an approach would follow a rich vein of existing experimental research on judges. At a general level, behavioural scientist Dan Ariely lucidly describes the particular benefits of experiments – how they help to ‘slow human behaviour to a frame-by-frame narration of events, isolate individual forces, and examine those forces carefully and in more detail. They let us test directly and unambiguously what makes us tick.’ In the study of judicial behaviour, researchers have conducted a range of impressive experiments identifying and explaining how various cognitive biases and other psychological phenomena affect their decision-making, including the impact

84 Hale, supra note 6.
of anchoring effects,\textsuperscript{88} confirmation bias,\textsuperscript{89} hindsight bias,\textsuperscript{90} emotion and empathy\textsuperscript{81} and motivated reasoning.\textsuperscript{92} Experiments can complement other modes of analysing judicial (and other adjudicators') behaviour such as quantitative studies that compile data from bodies of decided case law in real-world courts and statistically analyse trends in outcomes to account for a particular variable.\textsuperscript{93} Of course, the main limitation of such studies is that while they may establish correlations between variables and trends in judicial outcomes, they do not definitely prove causal effects between them.

Experimental studies can also complement role analysis studies – interview and survey studies of judges about their role. The key characteristic of these studies is that judges themselves reflect on their role and generate insights and analysis. Research of this nature is open to criticism that it can be anecdotal and impressionistic, and not as robust as testing hypotheses through statistical analysis of data gleaned from archives of court records or experiments.

Each mode of studying judicial behaviour has a role to play in better understanding how judges judge and what can be done to improve how they perform. In this vein, it seems sensible to build on this and to conduct experiments on group psychology phenomena and their effects on judges' and adjudicators' decision-making and outcomes when they work together. More precisely, experiments could compare different deliberation processes against each other to harness the positive phenomena and mitigate the negative phenomena of group decision-making.

To offer some very brief ‘rough-sketch’ examples: group amplification of error could be tested by measuring individuals’ susceptibility to the influence of inadmissible evidence – for example, oral testimony regarding a sexual assault victim's prior sexual history. While that ought to be disregarded by decision-makers' assessment of the defendant’s guilt or innocence, nevertheless it may have a bearing as other research has demonstrated.\textsuperscript{86} An experiment could test whether a group's final, post-deliberation position is more affected by the inadmissible evidence relative to individual members' pre-deliberation positions. Various deliberation modes could be tested against each other to see which appears to dampen groups' amplification of error, if any.


\textsuperscript{90} W Kip Viscusi, ‘How Do Judges Think about Risk?’ (1999) 1 American Law and Economics Review 26; Guthrie, Rachlinski and Wistrich (n 88) 1313–1318.

\textsuperscript{91} Andrew J Wistrich, Jeffrey J Rachlinski and Chris Guthrie, ‘Heart versus Head: Do Judges Follow the Law of Follow Their Feelings’ (2014) 93 Texas Law Review 855.

\textsuperscript{92} Eileen Carol Braman, ‘Motivated Reasoning in Legal Decision-Making’ (Dissertation for the Degree Doctor of Philosophy, Ohio State University 2004).

\textsuperscript{93} See, for example, Sunstein, Schkade and Ellman (n 14).

\textsuperscript{94} This takes inspiration from a study by Andrew J Wistrich, Chris Guthrie and Jeffrey J Rachlinski. See Wistrich, Guthrie and Rachlinski, supra note 52.
A further experiment could identify whether different modes of deliberation exacerbate or ameliorate group polarisation. Participant decision-makers could individually decide what they believe to be an appropriate sentence for a specific crime (or an award of compensation for negligence) within a specific range prescribed by law. Afterwards, the decision-makers would then deliberate in groups together and decide on a final sentence (or amount of compensation). The independent variable would be different deliberation formats, and the dependent variable could be the extent to which the ultimate sentence meted out (or the compensation awarded by the group) strays from the mean amount of individual members’ pre-deliberation positions within that group. Results from different groups using different formats of deliberation (such as changing the mode of communication, or the order in which people speak during discussions) could be compared against each other to test which process mitigates group polarisation.

To investigate conformity effects, an experiment could ask decision-makers what their pre-deliberation position on an issue is first. Individuals could then be put into groups to deliberate with two others who share a different position on the issue. This could test whether individuals move from their pre-deliberation positions towards those of their peers to conform with them. To reiterate, different modes of deliberation could be investigated to test which mode mitigates such an effect; for example, deliberation modes that require individual members’ positions to be revealed simultaneously as against individual members’ positions being revealed in order of panellists’ seniority.

For controlled experiments testing for social loafing, group deliberations could be recorded and transcribed; the amount of discussion by different members could (if controlled for appropriately) be used as a proxy for social loafing. A similar method could be used to highlight how different modes of deliberation result in high or low quality exchange of important information crucial for resolving the case.

Experiments of this nature would, of course, have inherent limitations; as 'the road from the lab to the courtroom is a long one.' There are multiple variables at play in group dynamics in the real world; hierarchies (whether actual or perceived) within groups of judges and adjudicators, institutional prerogatives, modes of communication, gender, race and ethnicity stereotypes and personality clashes among colleagues, to name a few. All can undoubtedly have a bearing on group dynamics and decision-making. Such vicissitudes are inevitable in any group’s work. Multiple experiments across multiple domains of law and jurisdictions will be required to come to any settled conclusion on the actual effects of group decision-making phenomena. One reason why this research has not yet been conducted may simply be the difficulty researchers have in attracting sufficiently large pools of judge participants with similar expertise and functions to glean statistically valid results. Successful experimental research to date has generally involved close collaboration between judges and researchers with experiments conducted at judicial training workshops. A similar format could work to conduct experiments on group decision-making phenomena.

Experimental research ought to be viewed as complementary to other research modes investigating group dynamics on courts such as survey or interview studies and archival research investigating trends in decided cases. Putting judges to the test in hypothetical contexts would help them hold a mirror up to their own practices and help policy-makers in judicial systems consider ways to make decision-making

by panels of courts or adjudicators fairer and more objective by tweaking judicial processes and procedure.

Meaningful engagement with the group psychology literature and applying it to consider the processes that groups of judges and adjudicators employ could prove fruitful. At the very least, it is hoped that this article convinces some readers of the merits of a more probative analysis of how groups of judges and adjudicators work with each other.

US Supreme Court Associate Justice and legal realist Benjamin Cardozo wrote that judges working as a group ‘balance one another’ affording ‘a constancy and uniformity and average value greater than its component elements.’ The processes that judges and adjudicators use to deliberate and collaborate ought to achieve that balance, rather than hinder it. Better understanding the psychology of group decision-making, and its impact on judges’ work, can help to identify the best path forward.

**COMPETING INTERESTS**

The author has no competing interests to declare.

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