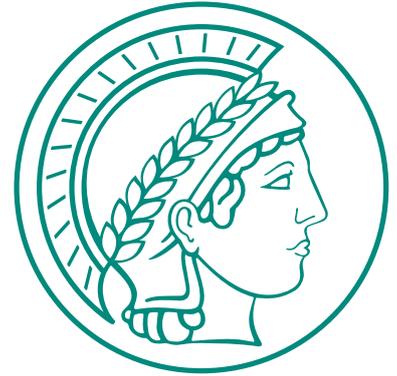


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Judicial Decision-Making
A Survey of the Experimental
Evidence

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Abstract

Judges are human beings. Is their behavior therefore subject to the same effects that psychology and behavioral economics have documented for convenience samples, like university students? Does that fact that they decide on behalf of third parties moderate their behavior? In which ways does the need matter to find a solution when the evidence is inconclusive and contested? How do the multiple institutional safeguards resulting from procedural law, and the ways how the parties use it, affect judicial decision-making? Many of these questions have been put to the experimental test. The paper provides a systematic overview of the rich evidence, points out gaps that still exist, and discusses methodological challenges.

JEL: K10, K13, K14

Keywords: judicial decision-making, bias, heuristic, attitudinal model, ambiguity, parallel constraint satisfaction, public perception

I. Research Questions

Experiments are artificial by design. They remove much, sometimes almost all, of the social context. Strictly speaking, what the experiment studies is only analogue to what the researcher wants to understand. The gap between the experiment and the real world problem that motivates the endeavour is not a bug, it is the definitional feature. Simplifying the situation is a precondition for excluding confounds. If the experiment is properly designed, alternative explanations are ruled out. If there is a difference between the baseline and the treatment, it must result from the manipulation.

But as Albert Einstein has once famously put it: everything should be made as simple as possible – but not simpler. For experimental research on judicial decision-making, the resulting trade-off between internal validity (there are no alternative explanations) and external validity (the experimental result is relevant for the research question) is never easy (Lucas 2003, Schram 2005). Extant research is situated on a continuum. On the internal validity end research starts from the assumption that judicial decision-making is human decision-making. This research hypothesises that knowledge about human decision-making in general is also relevant if these humans happen to be judges. One line of research turns the assumption into a hypothesis, and tests real judges on characteristic features of human decision-making that have been robustly documented with convenience samples. The main contribution of this work is the choice of real judges as a non-standard sample.

A second line of research focuses on differences between the standard tasks that have been used to experimentally isolate the behavioral regularity of interest, and judicial decision-making. The most basic deviation is motivational. Judges do not decide on behalf of themselves. They decide on behalf of the parties. This feature of the task can be isolated without the necessity of recruiting real judges (Cerrone and Engel 2019).

Actually the judicial task is heavily institutionally contained. Judicial decision-making is tightly controlled by a rich set of procedural rules. For the most part, judges are also not free how to decide on substance. They have to expressly justify deviations from the existing doctrine. In the common law jurisdictions, they are additionally bound by precedent. Potentially each of these procedural or substantive constraints has a discernible behavioural effect, as do any of their combinations. If a researcher has reason to believe that an individual constraint has a measurable and sizeable behavioural effect, an experiment can be designed to test the hypothesis. The cumulative effect of multiple constraints is harder to test. In principle, factorial designs are able to test such interactions between impulses. But the approach quickly runs into combinatorial explosion. The researcher needs theory, or at least a good guess, to select the combinations of interest.

An alternative research strategy does not start from behavioural theory, but from the constraint. Such designs compare the otherwise constant setting, once without and once with the constraint. If the researcher wants to maintain as much experimental control as possible, she will use a hypothetical judicial choice. This makes it possible to tailor the remaining features of the task to the specific intervention of interest, either giving the expected effect its best chance, or putting the purported effect to a particularly hard test. If some rule making authority

has a serious interest in the evaluation of the intervention, she may collaborate with a researcher and implement a randomized control trial. Then the intervention is tested under real-life conditions. Yet this biggest advantage of the approach is also a major challenge. The authority may, for instance, prematurely lose interest. Then the study may have to be discontinued, possibly even before enough data has been collected to make the analysis meaningful. Moreover, the room for manoeuvre tends to be limited. The design that may be most appealing from an academic perspective, for instance for isolating behavioral channels, may appear too disturbing to the court administration.

Judicial decision-making is a particularly challenging object of study. At court, the parties' well-being is at stake. Just assigning otherwise sufficiently similar cases to manipulated conditions may not be ethically or politically feasible. In the worst of all cases, from the perspective of the empirical researcher, a true control group is out of the question. Then at most differently designed interventions may be compared.

Procedural codes worry about impartiality, and about the perception of impartiality in the population. One safeguard of impartiality is confidentiality. This safeguard becomes particularly relevant if one accepts that judges effectively have leeway, even in the continental jurisdictions. Were to be known which element of procedure has been most important for the disposition of the case, there would be more scope for forum shopping. This concern is imminent if the judicial decision is taken by a panel, a bench of professional judges, or the jury. To contain this risk, the law makes direct observation, let alone manipulation, impossible. Behavioural research must find indirect paths. The classic reaction is studying mock juries, i.e. panels of jury eligible participants on materials that resemble real jury trials (a classic is Hastie, Penrod et al. 1983). This demonstrates a benefit from experimentation that transcends random assignment to treatment. Shifting from real to hypothetical cases, and real to hypothetical juries, makes social interactions observable that otherwise are purposefully concealed.

A further concern rests on a robust empirical observation. Most individuals rarely, if ever, directly interact with the judicial system. How they, or their relatives or close friends, feel treated on these rare occasions is highly predictive for their willingness to obey the law if enforcement is unlikely (Tyler 2006). Hence there is a pronounced spillover to other areas of life. Randomly exposing individuals to experimental conditions that might trigger such a negative spillover could therefore have a negative externality on potential victims, or on society at large. This normatively undesirable effect is a further reason for tweaking the experimental method and shifting from actual to hypothetical cases.

The following survey brackets jury research. There is so much experimental work on the topic that it would require a separate paper (see only the following surveys and meta-studies Gerbasi, Zuckerman et al. 1977, MacCoun 1989, MacCoun 1990, Steblay, Besirevic et al. 1999, Devine, Clayton et al. 2001, Mitchell, Haw et al. 2005, Steblay, Hosch et al. 2006, Desmarais and Don Read 2011, Wiener, Krauss et al. 2011, Bornstein, Golding et al. 2017, Simon 2019, Hoetger, Devine et al. 2022).

II. Experimental Findings

1. Heuristics and Biases

A rich strand of the literature asks to which degree behavioral regularities that have been robustly documented in other populations matter for judicial decision-making (for an overview see Guthrie, Rachlinski et al. 2001, Teichman and Zamir 2014), including specialized panels within their professional area of expertise (Rachlinski, Guthrie et al. 2006).

Judges are subject to anchoring. When faced with a quantitative task, but not having exact numeric information, any number to which they compare the unknown quantity affects their assessment. This effect can be strategically exploited by the parties, by throwing in a number that leads to a reduction or increase of the estimate, as serves their cause (Bystranowski, Janik et al. 2021). Judges are liable to framing. Whether a decision is presented as a gain or as a loss affects how they evaluate it (Guthrie, Rachlinski et al. 2001: 794). The same holds for the way how an expert reports estimates of risk (Scurich and John 2011). Anchoring and framing have been rationalized with salience (Bordalo, Gennaioli et al. 2015).

Asylum judges fall prey to the gambler's fallacy. They underestimate the probability of a sequential streak (Chen, Moskowitz et al. 2016). In experiments, untrained participants are also inconsistent in the way how they translate their qualitative assessment into dollar amounts, for instance about punitive damages; yet the effect does not translate to observational data (Eisenberg, Rachlinski et al. 2001).

Judges exhibit hindsight bias. When learning that a possible event has actually happened, they increase the estimated probability that it would have happened (Anderson, Jennings et al. 1997, Guthrie, Rachlinski et al. 2001: 799, Oeberst and Goeckenjan 2016). Judges neglect the baseline. If the conditional probability of an event is very high, but the unconditional probability (the baseline) is very low, judges tend to come up with an exaggerated assessment (Guthrie, Rachlinski et al. 2001: 808). When decision-makers face a portfolio of decisions, evaluations spill over. If there is one severe case, the remaining cases are evaluated more favorably (Kelman, Rottenstreich et al. 1996).

Judges have a hard time handling probabilities. This leads to miscarriage of justice. Judges do not acquire distributional information when it is available (Sonnemans and Van Dijk 2012).

Judges do not only infer from the emotions of victims how deserving they are (Rose, Nadler et al. 2006). Emotions do also affect how they evaluate the case (Feigenson and Park 2006, Wistrich, Rachlinski et al. 2014).

2. Personal Attitudes

The foregoing are cognitive limitations. Unless they decide about phenomena that affect society at large, like environmental damage, the case disposition has not direct effect on the judge's personal well-being. Outright selfishness can therefore at most be a minor motive

(Posner 1993), e.g. when preparing for reelection or promotion (Shepherd 2009). The prominent attitudinal model does, however, expect judges to be swayed by ideology (Segal and Spaeth 1993) or, more sophisticatedly, to strategically take into account which decision serves their ideological cause best (Epstein, Knight et al. 2001). Experimental evidence qualifies this expectation. Judges decide on behalf of others. In the lab, participants even serve their experimental constituency if they have no personal stake in it, and if they have to invest a fraction of their experimental endowment. They are motivated to do a good job, even if it has been randomly assigned to them (Engel and Zhurakhovska 2017). In one vignette study, laypersons instructed to decide as judges exhibit ideological bias (Kantorowicz-Reznichenko, Kantorowicz et al. 2022). In another vignette study, a correlation of some, but not all, political opinions with the proposed decision of the case is observed (Braman 2006). In a further study, professional judges, unlike laypersons, are unaffected by their personal attitude towards salient policy issues (Kahan, Hoffman et al. 2015).

Even if decision makers are motivated to be impartial, bias may sneak in inadvertently. This has been demonstrated for race (Rachlinski, Johnson et al. 2008) and ethnicity (Gazal-Ayal and Sulitzeanu-Kenan 2010, Choi, Harris et al. 2022), gender (Kulik, Perry et al. 2003, Miller 2019), ideology (Furgeson, Babcock et al. 2008) or induced punishment philosophy (McFatter 1978), and for the stereotype that tattoos are typical for criminals, and hence predict guilt (Funk and Todorov 2013). Legal education mitigates the effect of stereotypes, but only if the learned rules are simple, rather than judgmental - rules, rather than standards, in the terminology often used in law and economics (Girvan 2016).

In international courts, a further potential for bias results from nationality. If a judge on the bench has the nationality of one of the parties, this may bias the decision in this nation's favor. Random assignment to panels in the appellate body of the World Trade Organization creates quasi-experimental evidence. Overall, there is indeed a bias, but it is driven by the dominance of judges having US nationality (Arias 2019).

3. Ambiguity

In the effects listed in the previous section, the bias had a chance due to the characteristic complexity of legal cases, which gives room for motivated reasoning (Norton, Sommers et al. 2006). The literature on judgement and decision making has characterized the typical task in the courtroom as ambiguous (Simon 2004). Actually, the ambiguity tends to be severe. Judges do not only lack credible information about the baserate of the crime with which the defendant has been charged, and the conditional probability of him being guilty, given the available evidence. In most cases, even the state space is not well defined: multiple chains of events might have happened (more on these distinctions from Engel and Goerg 2018). The judge cannot avoid engaging in sense making (Kunda 1999).

It has been shown (with laypersons) that individuals tend to do so by way of storytelling. They try to combine the pieces of evidence to a consistent story (Hastie, Penrod et al. 1983, Pennington and Hastie 1986, Pennington and Hastie 1991). The underlying mental process has been modelled as parallel constraint satisfaction (Simon 1998). In an iterative process

(Simon, Pham et al. 2001), decision makers reason bidirectionally: from the evidence to the interpretation, but also back from the provisional interpretation to the evidence (Holyoak and Simon 1999), until a coherent interpretation has been forged that meets the probative standard, like preponderance of the evidence or, more strictly, beyond a reasonable doubt (Glöckner and Engel 2013).

This mental mechanism is highly adaptive. It enables decision makers to make reasonable choices although they full well know that their knowledge and understanding are incomplete. But this human capacity comes at a price. Decision makers can become partisan, while subjectively believing that they are impartial (Guthrie, Rachlinski et al. 2007). This has for instance been shown for experimental participants who have been randomly assigned to represent either plaintiff or defendant (Engel and Glöckner 2013). The effect has been defined as motivated reasoning (Kunda 1990), and for instance been demonstrated for policy preferences regarding discrimination (Braman and Nelson 2007). There is also a cognitive downside. As the mental mechanism is constructive, objective information, like numbers, are liable to inadvertent distortion (Hastie 2011, Rachlinski, Wistrich et al. 2015).

4. Testing Complete Cases

All the former is experimental evidence on individual behavioral effects that one has reason to believe to matter for judicial decision-making. An alternative experimental paradigm exposes real judges to complete materials for a (fictitious) case. That way one for instance finds that judges only pay lip service to precedent when stare decisis holds (Spamann, Klöhn et al. 2021) and take precedent into account when procedural rules forbid (Liu, Klöhn et al. 2021), while being strongly influenced by clearly irrelevant personal characteristics of the defendant (Spamann and Klöhn 2016).

5. Panels

There is a huge literature in political science about decision making within panels of multiple judges (see for instance Songer 1982, Haire, Moyer et al. 2013), some of which is behavioral. It for instance aims at explaining why the presence of a “counterjudge” who has been appointed by the President of a different party (Miles and Sunstein 2006), has different gender (Peresie 2004) or different race (Sommers 2006) tends to lead to more moderate decisions. One explanation is cognitive. The counterjudge alerts the majority of the panel to a concern that they feel unable to overlook (Spitzer and Talley 2013). But relatively little of this evidence is experimental, although group decision making is a classic topic in experimental economics and social psychology (for a structured overview of this literature see Engel 2010).

An exception is Van Dijk, Sonnemans et al. (2014). They show that panels commit less errors than individual judges; that merely aggregating votes suffices; that deliberation does not induce new bias, and improves decision-making if members of the panel decide later cases individually.

6. Fact Finding

The courts do not have the luxury of complete information. Usually facts of the case are unknown, and often additionally contested. Fact finding is an important part of decision-making in the trial courts. Experiments have tested how likely the courts are to get the facts right. A confession may be the result of coercion, rather than the truth. Experimental participants largely ignore the degree of coercion, and instead focus on stereotypes. If the defendant comes from the Middle East and is accused of terrorism, even a dubious confession makes him more likely to be held guilty, same as an African American accused of gang violence, while even a seemingly voluntary confession has little effect if nationality and the charge are matched in the opposite direction (Smalarz, Madon et al. 2018). While judges notice that a confession has been coerced, it still biases the disposition of the case (Wallace and Kassin 2012). If defendants retract a confession, this has practically no effect on its probative value (Malloy and Lamb 2010).

A rich experimental literature has tested the interaction between the court and eyewitnesses. If they express greater confidence, guilty verdicts are substantially more likely (see the meta-study of Slane and Dodson 2022). Students assuming the role of a judge are overly swayed by hearing (mock) eyewitness identification (Boyce, Lindsay et al. 2008). Safeguards routinely implemented by the courts, like cross-examination, prove largely ineffective (see the review of the experimental literature by Devenport, Penrod et al. 1997). Novices and even experts are poor at detecting that a witness lies (Nysse-Carris, Bottoms et al. 2011).

A particularly active area of experimental work concerns lineups. A meta-analysis shows that more innocent fillers do better protect the defendant against false identification (but also increase the number of false negatives) (Juncu and Fitzgerald 2021). If the suspect stands out from the fillers, she is much more likely to be identified, whether innocent or guilty (Fitzgerald, Price et al. 2013). Clear experimental evidence notwithstanding, the courts in the US continue to assign probative value to eyewitness identifications that result from the police suggesting recognition of the suspect (Wells and Quinlivan 2009).

How an expert presents her findings affects how much the judge relies on it. Qualitative statements carry more weight than quantitative statements, as does a statement summarizing the expert's conclusion. Making limitations explicit has no measurable effect (McQuiston-Surrett and Saks 2009). The way in which a mental health expert informs the court about the risk that a defendant found not guilty for insanity is dangerous affects the decision about her release from hospital (Dolores and Redding 2009). The way how DNA evidence is presented dramatically changes how the courts assess its probative value (Koehler 2001). If the expert testifies that she has found supporting evidence, but that it is weak, judicial triers of fact misinterpret this as evidence against the claim (Martire, Kemp et al. 2013). In another experiment, judges were not sensitive to manipulations of the validity and reliability of expert testimony (Chorn and Kovera 2019).

Participants assuming the role of judges who have been biased against a party as part of the experimental design are less biased when exposed to an adversarial, rather than inquisitorial, procedure (Thibaut, Walker et al. 1972). A meta-analysis of experimental studies establishes

a small, but significant reduction in the likelihood of pretrial detention if the trier had access to a formal tool to assess the risk of recidivism (Viljoen, Jonnson et al. 2019). But another experiment found an interaction with race: availability of a risk assessment score helped white, but hurt black defendants (Skeem, Scurich et al. 2020). Experiments demonstrate that judges have a hard time ignoring inadmissible evidence (Lieberman and Arndt 2000, Wistrich, Guthrie et al. 2004). Judges are not much better than jury members at disregarding potentially biasing information that one of the parties has strategically introduced (Landsman and Rakos 1994).

7. Institutional Intervention

Judicial decision-making is institutionally contained. If the legislator expects this to address a normative concern about the carriage of justice, it may redesign elements of the institutional setting. Experiments have tested the impact of multiple of these elements on judicial decision-making, and on case outcomes in particular.

Procedural rules may limit access to information. For instance, lay participants usually do not learn about pretrial information, whereas the professional judges with whom they interact do. This information gap has been shown to put them at a disadvantage in deliberations within the court (Fujita and Hotta 2010).

Procedural law defines which party is heard at which moment of the trial. In criminal procedure, the defendant traditionally has the last word. This gives prosecution the opportunity to set an anchor when justifying the charge (Englich, Mussweiler et al. 2005). However when aggregating the ambiguous information of the case to obtain the final judgement, experiments demonstrate a recency effect: the assessment last heard has the strongest effect on the judgement (Engel, Timme et al. 2020). A recency effect was also found for the order in which multiple pieces of evidence are presented, but only if the decision-maker revalued the evidence after every new piece (Kerstholt and Jackson 1998). A recency effect was also observed if an eye-witness contradicted the prosecution's suspect (Dahl, Brimacombe et al. 2009). Defense attorneys may exploit the recency effect in an attempt at "stealing thunder": they start their pleading with noting the main incriminating evidence, to later dispel it, and leave the court with a more favorable view (Dolnik, Case et al. 2003).

In multiple respects, courts have discretion. The most salient situation is sentencing. One paper interprets the decision of the US Supreme Court in *Booker* as a natural experiment. In that ruling, the Supreme Court had given the trial courts more leeway to depart from the sentence defined by the guidelines (543 U.S. 220 (2005)). The trial courts immediately seized the opportunity, and were more likely to reduce, rather than increase, sentences. Still average sentence length approximately stayed constant, as there were a number of very pronounced upward corrections (Hofer 2007). Bushway, Owens et al. (2012) exploit the fact that, in Maryland, data is available about the true criteria for the state's sentencing guidelines, and the criteria the trial judge has been presented with. In about 10% of the cases, these criteria did not match, i.e. the judge decided on the basis of factually wrong information. Arguing that these errors are random, they find that judges are eager to go along with downward errors, in particular for violent crime. By contrast, judges tend to use discretion to correct upward errors, albeit not fully.

Machine learning and the availability of relatively large datasets make it possible to provide trial judges with machine generated predictions, e.g. about the risk that the defendant will re-convict. Experimental participants are not easily induced to take this machine generated advice into account. In the experiment, they only do if they receive a financial incentive for following the advice. Even a financial incentive for accuracy does not make them rely on the advice (Grgić-Hlača, Engel et al. 2019). In Wisconsin, these computer-generated predictions may also be used for sentencing. The Supreme Court of Wisconsin has cleared this practice (881 [N.W.2d](#) 749 (Wis. 2016)), but has obliged the court administration to add a list of warnings. Experimental subjects largely ignore these warnings. If the warnings are made much more salient and graphic, and if participants are incentivized, warnings have an effect, but it is counterproductive. They follow the machine advice if it has been wrong, while their own prior assessment had been correct (Engel and Grgić-Hlača 2021).

There have been concerns that the presence of still and video cameras in court might have a chilling effect (Osterreicher 2011). In an experiment, these concerns were not supported. In a criminal case, experimental participants were not more likely to find against defendant (Padon 1985).

During the pandemic, witnesses frequently had to be heard over video, rather than in person. An experiment shows that audio quality matters. With poor audio, witnesses are rated as less credible, triers had less precise recollections of their statements, and their testimony had less influence on the case disposition (Bild, Redman et al. 2021).

A natural experiment in Israel made it possible to identify the effect of a reduction in workload on the way how judges handle cases. It turns out that judges not only use the extra leeway to work harder and more diligently on individual cases; in civil cases the extra work is also to the benefit of plaintiffs, who are more likely to win (Engel and Weinshall Margel 2020). In a lab experiment with law students, time pressure increases the probability that participants straightforwardly follow the law. But they are also significantly less confident in the disposition of the case (Sheppard 2011).

For most decisions, judges have to give explicit, often even written reasons. This procedural requirement can potentially have a host of behavioral effects (summarized in Engel 2007). One experiment shows that the requirement may be blunted. Judges may ex post rationalize a decision tainted by bias (Liu and Li 2019). Yet if judges are required to spell out their reasons before deciding, a debiasing effect obtains (Liu 2018).

For the most part, trial judges decide under the shadow of appeal. One behavioral channel is self-esteem (the judge does not want to make a mistake) and social esteem (the judge does not want to lose reputation, by seeing her decision reversed). In an experiment, these effects obtain, and lead to higher accuracy (Feess and Sarel 2018).

8. Formal and Informal Parties

To a considerable degree, judges are in the hands of the parties and their representatives. To understand error and bias in judicial decision-making, one must therefore understand error and bias in what the court hears from the parties. Experiments show that lawyers tend to be overly convinced by the side they represent (Eigen and Listokin 2012). They also make systematic mistakes in the assessment of the evidence, and assign higher subjective probability to events that are described in greater detail (Fox and Birke 2002).

If the police make mistakes, these mistakes are likely to affect the court, directly through hearing the police as witness, or indirectly through prosecution. This is why the experimental research about bias in police investigations is relevant. It has for instance found that police officers tend to be biased against suspects they have themselves arrested (Lidén, Gräns et al. 2018). Racial bias, to the detriment of black defendants, has also been documented (Swencionis and Goff 2017).

Experts tasked with informing the court about the severity of mental health limitations are aware of the risk of bias, but hold the erroneous belief that it can be overcome with willpower alone (Zapf, Kukucka et al. 2018).

9. Public Perception

The judiciary does not have its own enforcement apparatus. This makes the judiciary particularly dependent on public support. Support starts with selection. It is particularly salient for the US Supreme Court. One experiment finds an effect of motivated reasoning (Kunda 1990) on procedural preferences. Those in favor of the candidate wish the Senate hearing to be formal and legalistic. Those opposed to the candidate argue for a more politicized procedure (Badas 2022). A conjoint experiment finds a spillover from the US State to the federal level. Participants from states in which judges are appointed prefer a more legalistic procedure for the selection of Supreme Court justices (Krewson and Owens 2021b). Another conjoint experiment demonstrates that the general public essentially sees US Supreme Court justices as ordinary political actors. Information about their political leanings dominates information about judicial competence (Sen 2017). However, yet another experiment finds that information about judicial philosophies also changes public evaluation of a candidate (Krewson and Owens 2021a).

Learning that judges have received politically motivated support for their campaigns reduces the perceived legitimacy of the court (Gibson, Gottfried et al. 2011). Actually legitimacy is even reduced if the candidate rejects the campaign contribution (Gibson and Caldeira 2012).

Does the general public only care about outcomes, or is trust in courts and their perceived legitimacy also influenced by judicial procedure? Experimental evidence is mixed. One study shows a moderating effect of how the procedure is perceived. If judges are seen as using a principled decision-making process, institutional loyalty determines acceptance. If, by contrast, judges are perceived as policy makers, members of the public only accept the decisions

with which they agree on substance (Woodson 2015). In Norway, where the judiciary is less perceived as politicized, public support increases when the decision comes with a dissenting opinion that makes the normative conflict transparent (Bentsen 2019).

A quasi-experiment from Spain shows that the perception of judicial activism can even reduce support for the entire polity: decisions of the European Court of Justice are perceived as a threat to national sovereignty which, in turn, triggers resistance to European integration (Turnbull-Dugarte and Devine 2022). On the other hand, public support for Veterans Treatment Courts in the US spills over into general support for the legal system. This finding is explained with an effect of procedural justice (Gallagher and Ashford 2021). Support for the judiciary is also increased in participants who are induced to watch a Dutch TV series that makes judicial procedure more transparent (Grimmelikhuijsen and Klijn 2015).

Overall, the effect of the reasons the court gives for a contentious decision had little effect on experimental participants. Priming them with either equality or liberty did not have much effect on them accepting the decision of the US Supreme Court on same-sex marriage. Actually the equality prime even reduced declared acceptance (Cahill and Rapp 2014).

On the opposite end of the spectrum, a court that enjoys high public acceptance, like the German Constitutional Court, even has power to convey legitimacy to political decisions taken by Parliament or Government, or to deprive their decisions of legitimacy (Sternberg, Brouard et al. 2021).

The most important factor for explaining support of experimental participants for a court ruling is the outcome. The judge's mode of reasoning had no measurable effect on support if they agreed with the outcome. If they disagreed with the outcome, acceptance increased if the ruling expressly acknowledged that the opponent also had a point (Simon and Scurich 2011). This result also holds if experimental participants receive information about the case by a legal expert (Simon and Scurich 2013).

III. Pushing the Frontier

Judicial decision-making is definitely not a virgin territory. This survey is rich, and it has only covered experimental research. Should researchers therefore be advised to watch out for alternative topics? Is the expected marginal benefit from new experiments minor? Has the field reached a steady state of normal science? In some dimensions, the answer is probably yes, and this survey may help the next generation of court researchers spotting research questions that they may prefer to avoid. In conclusion I want to sketch areas in which major advances are more likely.

Disciplines have their cultures. Experimental research on judicial decision-making has most intensely engaged with social psychology, and with psychological work on judgement and decision-making. The equally rich literature in behavioral economics has been almost completely neglected, as has the (less rich, but still sizeable) literature on experimental political science.

The extant experimental research on judicial decision-making is surprisingly little legal. Judges decide in a tightly controlled institutional context. There is variance in this context over time, and across jurisdictions. This variance could be productively translated into stylized facts that can make for experimental manipulations.

Most of the experiments reported in this survey aim at identifying a central tendency. They investigate how their sample on average reacts to the manipulation, and infer the treatment effect in the population. This simplification may prove inappropriate. Different groups of judges may react in characteristically different ways: appointed vs. elected; male vs. female; Caucasian vs. of color; with or without attorney experience; with or without expertise in the specific field (like medical malpractice, DNA evidence, or antitrust). It may therefore be a promising next step to design experiments that are able to document patterned heterogeneity, and the resulting heterogeneous treatment effects.

Finally no case is like the next, and as a practical matter, court cases are only incompletely defined. Traditional experimental methods deliberately eschew this challenge, and purposefully simplify the setting. As machine learning methods are powerful ways of organizing such rich datasets, next generation experimental research might introduce controlled manipulations into such more naturalistic settings, and might rely on artificial intelligence to organize the resulting data. Such experiments would have only partly ex ante defined dependent variables, and would blend theory driven interventions with pattern finding.

Experimental research on judicial decision-making is likely to thrive!

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