

**Jan Christoph Bublitz: What is wrong with hungry judges? A case study of legal implications of cognitive science.**

Will appear in:

AM Waltermann, D Roef, J Hage & M Jelcic (eds.), *Law, Science, and Rationality* (Eleven International Publishing, Maastricht Law Series) [publication 2019].

\*\*\*\*\* Please only quote published version \*\*\*\*\*

## Introduction

Legal studies are at an interesting *empirical*, and more specifically, *psychological* turn. Cognitive science reveals more of the psychology behind moral and legal decision making, with sometimes unexpected and sometimes commonsensical results. Some speak about a “New Legal Realism”.<sup>1</sup> This chapter explores one of the normative questions posed by these developments: Do findings about psychological processes underlying legal decisions afford to infer anything about its correctness? Should they provide grounds to challenge (review, appeal) decisions? These questions are addressed through a case study on judgments by the proverbial hungry judge. That “justice is what the judge ate for breakfast” was a trope of Legal Realism. And, evidently undercomplex, it was not infrequently turned against it: how ridiculous the Realists’ ideas!<sup>2</sup> However, a recent study by Shai Danziger and colleagues found precisely that: Decisions of an Israeli parole board, staffed by professional judges with a mean expertise of more than twenty years of judging, varied significantly in relation to the time of the last meal break.<sup>3</sup> Chances of a positive outcome for applicants were less than half as high in the three last decisions after a meal break than in the first three decisions. Thus, provided that cases were distributed randomly and no other confounding factors were at work, the time of the meal seems to have causally affected judgments in these cases. This makes one wonder about the normative implications of such a finding: How do such influences relate to the

---

<sup>1</sup> CR Sunstein & T Miles, ‘The new legal realism’, in *University of Chicago Law Review*, vol. 75, 2008, 831-851.

<sup>2</sup> D Priel, ‘Law and Digestion: A Brief History of an Unpalatable Idea’, 2017 (preprint, SSRN <http://dx.doi.org/10.2139/ssrn.2982716> ), traces the historical development of the hungry judge slogan.

<sup>3</sup> S Danziger, J Levav & L Avnaim-Pesso, ‘Extraneous factors in judicial decisions’, in *Proceedings of the National Academy of Sciences*, vol. 108, 2011, 6889–6892.

correctness of decisions – do they falsify it, should they give grounds for review, or could decisions, in the terminology of contemporary debates in philosophy, be “debunked”?<sup>4</sup>

This chapter proceeds as follows: After a brief introduction of the study in the first section, the second section seeks to explain the decisions and analyzes whether they are correct in light of several criteria, from extralegal factors over bias to rules of precedents. This requires elaborating on sources of legal errors, the distinction between context of discovery and context of justification, and visible and invisible parts of a judgment. The third section addresses the main normative problem, inconsistent judging across cases. It runs contrary to legal principles such as equal treatment before the law. As the idea of equal treatment is exposed to come under some criticism, and as its scope and importance are not always clear, the chapter sketches a brief justification of equal treatment as an inherent feature of reciprocal relations in a social contract model. With respect to the concrete decisions of the study, however, the chapter argues – perhaps counterintuitively – that decisions affected by the time of the meal and related factors are regularly *neither* incorrect, *nor* violate rights of affected parties. Rather, they follow from features of the law such as indeterminacy, reasonable disagreement and a diverse judiciary. Under non-ideal circumstances, unequal treatment as exposed by the study might thus be justifiable. Nonetheless, legal systems are called upon to create conditions facilitating more consistent rulings.

## 1. The Hungry Judge Study

The study by Danziger and colleagues (henceforth: “the study” and “the researchers”) surveyed over a thousand parole board decisions (n=1112) which had only two possible outcomes: granting or denying applicants’ requests (which concerned release, conditions of parole, or related matters). The main finding is that favorable and unfavorable decisions wavered during the course of the day, but they did not do so randomly, but in shifting patterns. As time went by, judges tended to decide more dismissively; and this trend was affected and partly reversed by meal breaks. The researchers summarize their findings:

“[T]he likelihood of a favorable ruling is greater at the very beginning of the work day or after a food break than later in the sequence of cases ... [T]he likelihood of a ruling in favor of a prisoner spikes at the beginning of each session—the probability of a favorable ruling steadily declines from  $\approx 0.65$  to nearly zero and jumps back up to  $\approx 0.65$  after a break for a meal. ... From the

---

<sup>4</sup> H Sauer, *Debunking Arguments in Ethics*, 1st ed., Cambridge University Press, 2018; S Nichols, ‘Process Debunking and Ethics’, *Ethics*, vol. 124, 2014, 727–749.

perspective of the prisoner, there is a clear advantage to appearing at the beginning of the session (i.e., either at the beginning of the day or immediately following the break).”<sup>5</sup>

The following graph may help to illustrate their findings:

[Insert Figure 1 here]

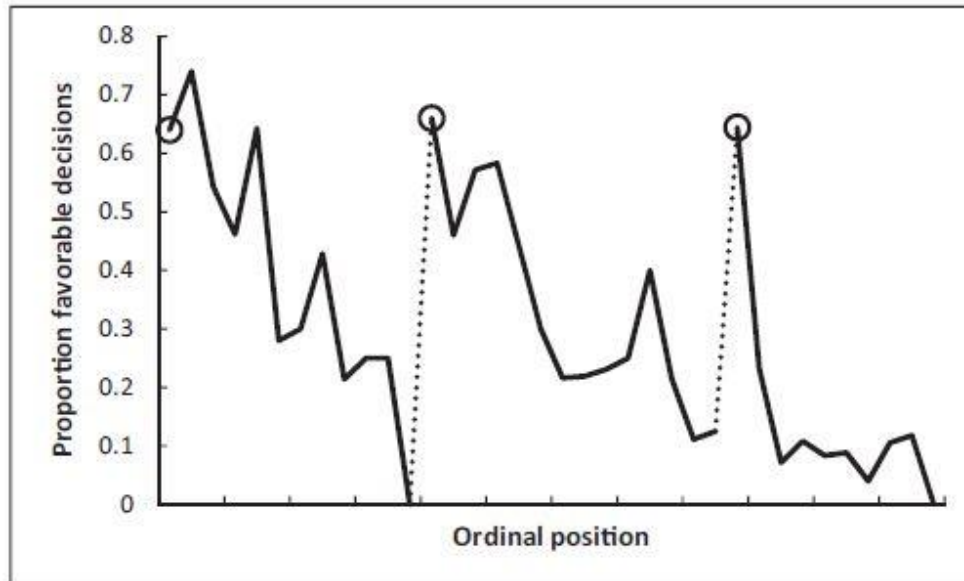


Fig. 1. Proportion of rulings in favor of the prisoners by ordinal position. Circled points indicate the first decision in each of the three decision sessions; tick marks on x axis denote every third case; dotted line denotes food break. Because unequal session lengths resulted in a low number of cases for some of the later ordinal positions, the graph is based on the first 95% of the data from each session.

The researchers offer the following explanation:<sup>6</sup> Previous studies demonstrated that repeated judgments deplete mental resources.<sup>7</sup> Depleted resources seem to influence the content of decisions towards upholding the status quo, which supposedly means here: dismissing the application.<sup>8</sup> Therefore, the

<sup>5</sup> Danziger, Levav and Avnaim-Pesso, 6889–6892, p. 6890.

<sup>6</sup> Figure 1, adapted from Danziger et al. (2011), p. 6890. Reprinted with kind permission from the National Academy of Sciences.

<sup>7</sup> A classic statement of the idea of ego-depletion is RF Baumeister, ‘Ego Depletion and Self-Control Failure: An Energy Model of the Self’s Executive Function’, *Self and Identity*, vol. 1, 2002, 129–136.

<sup>8</sup> I only wish to note that it is not clear why *denying* requests is supposed to be the default outcome in terms of the law. Domestic law usually has default rules for different types of parole decisions, and often they are guided by the idea *in dubio pro libertate*. The default outcome would then be *granting* requests.

researchers note, “as judges advance through the sequence of cases ..., they will be more likely to accept the default, status quo outcome: deny a prisoner’s request”.<sup>9</sup> Meal breaks restore mental resources, and this reverts chances of positive decisions (almost) back to the initial level. Whether this change is mediated by increased glucose levels, increased mood or another factor cannot be discerned from the study. Since it only collected behavioral data, statements about the underlying psychological processes are educated speculations.<sup>10</sup> The researchers also speculate that “judges may simplify their decisions”, without further elaborating what simplification means here more precisely. One may thus wonder: Does granting applications and deviating from the status quo require more mental resources, or does it cause more paperwork, or is the status quo easier to justify?

The study has been met with skepticism and criticism, not only from members of the (directly affected) Israeli judiciary. One reason is that doubts have been cast on the overarching psychological theory – ego-depletion theory – as key studies failed to replicate.<sup>11</sup> Suspicion is also raised by the large effect size in the study (Cohen's *d* of 1.96). Chances of positive outcomes dropped by over 50%; an effect allegedly much larger than in similar studies.<sup>12</sup> Some critics suspect that the findings result from non-random scheduling of cases, so that effects are not due to time of the meal, but rather to the complexity of cases, duration of hearings, or availability of legal assistance, and therewith, legally relevant factors.<sup>13</sup> Danziger and colleagues have replied to some of these criticisms.<sup>14</sup> I wish to remain uncommitted about the validity of the study, and only wish to note that *prima facie*, its general thrust, namely the suggestion that judicial decision making might be affected by the time of the last meal, and thereby factors as glucose, hunger,

---

<sup>9</sup> Danziger, Levav and Avnaim-Pesso, 6889–6892, p. 6889.

<sup>10</sup> Instead of exhibiting an implicit status quo orientation, it might as well be the cases that judgments become harsher, or more risk-averse, the hungrier or more impatient judges become.

<sup>11</sup> MS Hagger et al., ‘A Multilab Preregistered Replication of the Ego-Depletion Effect’, *Perspectives on Psychological Science*, vol. 11, 2016, 546–573.

<sup>12</sup> Andreas Glöckner, ‘The Irrational Hungry Judge Effect Revisited: Simulations Reveal That the Magnitude of the Effect Is Overestimated’, *Judgment and Decision Making* Vol. 11, 2016, 601-610. Ø Daljord, O. Urminsky & JM Ureta, ‘The Status Quo Theory of Depletion Does not Explain the Israeli Parole Decisions’, Preprint University of Chicago Dec. 2017, [http://home.uchicago.edu/ourminsky/Status\\_Quo\\_Theory\\_Revisited.pdf](http://home.uchicago.edu/ourminsky/Status_Quo_Theory_Revisited.pdf), suggest that the status quo depletion theory is the wrong explanation, but do not call the general finding of the study into question.

<sup>13</sup> K Weinshall-Margel & J Shapard, ‘Overlooked factors in the analysis of parole decisions’, in *Proceedings of the National Academy of Sciences*, vol. 108, 2011, E833–E833.; see also Glöckner 2016.

<sup>14</sup> S Danziger, J Levav & L Avnaim-Pesso, ‘Reply to Weinshall-Margel and Shapard: Extraneous factors in judicial decisions persist’, in *Proceedings of the National Academy of Sciences*, vol. 108, 2011, E834–E834.;

mood, or mental fatigue, seems plausible. It ties in with other studies demonstrating physiological, psychological, or situational influences on moral decision making of lay persons<sup>15</sup> and legal experts.<sup>16</sup>

As my interest lies in the normative consequences of findings of this kind, I shall assume *arguendo* that those of the study are, by and large, correct. I shall further assume that two related variables are among its causes: Blood glucose levels, as the relevant physiological factor most directly affected by a meal and supposedly related to “ego-depletion”, as well as mental fatigue, the lowering of mental resources, as the relevant psychological factor in the eyes of the researchers.<sup>17</sup> The legal argument, however, does not hinge on peculiarities of these factors. They rather exemplify *biological* and *psychological factors* which may influence judicial decisions. In the near future, cognitive science will likely show the influence of more of such factors on moral and legal reasoning. The study may thus serve as a test case for the normative relevance of these factors.

What are the normative consequences of the findings of the study: Are these decisions incorrect, or some of them, and why? Does the study provide grounds for review, and should it? These are at one level simply questions of positive law which different jurisdiction may answer differently. One may, for instance, consider parole board judgments as a matter of administrative law, or as an annex to sentencing and thus criminal law. Parole decisions might be understood as an act of mercy with little judicial oversight, or they

---

<sup>15</sup> DC Molden et al., ‘Motivational Versus Metabolic Effects of Carbohydrates on Self-Control’, *Psychological Science*, vol. 23, 2012, 1137–1144; CM Barnes et al., ‘Lack of sleep and unethical conduct’, *Organizational Behavior and Human Decision Processes*, vol. 115, 2011, 169–180; M Kouchaki & IH Smith, ‘The Morning Morality Effect: The Influence of Time of Day on Unethical Behavior’, *Psychological Science*, vol. 25, 2014, 95–102; KC Yam, X-P Chen & SJ Reynolds, ‘Ego depletion and its paradoxical effects on ethical decision making’, *Organizational Behavior and Human Decision Processes*, vol. 124, 2014, 204–214.; cf. JZ Siegel & MJ Crockett, ‘How serotonin shapes moral judgment and behavior’, *Annals of the New York Academy of Sciences*, vol. 1299, 2013, 42; F Gino et al., ‘Unable to resist temptation: How self-control depletion promotes unethical behavior’, in *Organizational Behavior and Human Decision Processes*, vol. 115, 2011, 191–203.

<sup>16</sup> Sleep deprivation increases severity of punishment, K Cho, CM Barnes & CL Guanara, ‘Sleepy Punishers Are Harsh Punishers: Daylight Saving Time and Legal Sentences’, *Psychological Science*, vol. 28, 2017, 242–247. Losses in football games affects punishment severity in professional judges, probably via the induction of negative emotions, see O Eren & N Mocan, ‘Emotional Judges and Unlucky Juveniles’, *American Economic Journal: Applied Economics*, vol. 10, 2018, 171–205. The authors conclude that “it is noteworthy that the judicial decisions are in fact impacted by emotions that are unrelated to the merits of the case”. In a different study, This Morning’s Breakfast, Last Night’s Game: Detecting Extraneous Influences on Judging’ Institute for Advanced Studies Toulouse (IAST) working paper, n. 16-49, 2016. <http://iast.fr/pub/31020>, shows in a *within-subject* study that asylum applications are more likely successful the day following a win of the local football team, and less likely when the weather is bad. Berdejo and Chen (2013) show that US federal appeal court judges decide more along political lines in the two quarters before elections.

<sup>17</sup> MT Gailliot & RF Baumeister, ‘The Physiology of Willpower: Linking Blood Glucose to Self-Control’, in *Personality and Social Psychology Review*, vol. 11, 2007, 303–327; JL Orquin & R Kurzban, ‘A meta-analysis of blood glucose effects on human decision making’, *Psychological Bulletin*, vol. 142, 2016, 546.

might be fully reviewable. Such matters depend on broader and sometimes historically contingent considerations of particular legal orders about which there is no right or wrong. While it is interesting to ponder how the jurisdictions one is familiar with would handle an appeal grounded in such findings, details of particular jurisdictions are not of present concern. Presumably, such findings by themselves do not provide grounds for review in most jurisdictions. The following explores whether they *should* do so, irrespective of more specific doctrines and considerations specific to each jurisdiction. Moreover, the present interest is not constrained to parole board decisions, but encompasses administrative or judicial acts potentially affected by such factors more broadly.

Danziger and colleagues summarize that their “findings suggest that judicial rulings can be swayed by extraneous variables that should have no bearing on legal decisions.”<sup>18</sup> One intuitively shares their sentiment. Rulings have gone astray, they were influenced by something that ought not be there, something that affects or taints or contaminates decisions and renders them incorrect. Capricious rulings resulting from such extralegal factors appear as a paradigmatic instances of what it means to be “at the whim of a judge”. Or, in the words of the former US Supreme Court Justice William Douglas: there will be no “justice under law if a negligence rule is applied in the morning but not in the afternoon.”<sup>19</sup> In other words, if justice is indeed what judges ate for breakfast, there is no justice.

Or so it seems. The reasons for why the rulings of are wrong and further implications of these findings merit more attention than legal theorists have devoted to it. Exposing errors will prove more complicated and legal implications more nuanced than the foregoing suggests. In fact, I shall argue that framing the problem as one of “extralegal factors” contaminating decisions is misleading. Extralegal factors are *not* the problem in these cases and deflect from the true – and more intricate – problem that lies elsewhere. To appreciate this, let us take a look at correct and incorrect legal decisions

## 2. Legal errors

### 2.1. Correct and incorrect decisions

At the outset, it is important to note the following: each and every decision of the study might be incorrect for the ordinary reasons: Rules were wrongly applied, facts wrongly established, relevant criteria such as the likelihood of reoffending wrongly assessed. Identifying such errors would require engaging with each case, the factual circumstances and the legal reasoning, in short: ordinary legal case analysis. This is

---

<sup>18</sup> Danziger, Levav and Avnaim-Pesso, 6889–6892.

<sup>19</sup> WO Douglas, ‘Stare Decisis’, *Columbia Law Review*, vol. 49, 1949, 735–758 (p. 736).

beyond the scope of this chapter, and also beyond its interest. The challenging question raised by the study is whether such findings add something *new*, a novel perspective on correct legal reasoning and judicial decisions. The following thus focuses on the impact of the supposedly wrong-making factors such as time of the meal, glucose levels or mental fatigue.

A further clarification: I assume there is a correct answer to every legal question, although not necessarily a single one, there could be several, i.e., a set or range of equally reasonable but mutually exclusive answers. Let us call this the *set of ideal outcomes*.<sup>20</sup> Our interest lies in the correctness of particular legal decisions.<sup>21</sup> Generally speaking, a decision is correct if and only if it conforms to the law. This means, *substantively*, that the outcome is a member of the set of ideal correct outcomes, and *procedurally*, that requisite *modi operandi* were followed. For finding the substantively correct outcomes, the law stipulates an ideal method: Applicable norms have to be identified (and sometimes interpreted) by the means legal methodology provides (whatever they precisely are, and potentially all the way down to principles and Constitutions). Norms then have to be applied to the facts, as established by procedural rules of evidence. The result of these operations, if performed perfectly, is the set of ideal outcomes. It forms the substantive standard of correctness for particular judgments.

Courts and administrations seek to reach correct judgments by approximating these steps, though in a non-ideal fashion and under non-ideal epistemic conditions. While often on target, they sometimes fail. Showing that an actual judgment is wrong on the merits requires showing that is not within the set of ideal outcomes. However, identifying this set is frequently impossible under non-ideal circumstances, or requires severe and sustained efforts. Therefore, actual judgments are often challenged on the basis of errors that likely lead to incorrect outcomes. Accordingly, motions to review judgments may highlight errors which probably skewed the outcome (without showing its effects all the way down). Our present question might thus be put in this way: Should influences such as time of meal breaks, glucose, fatigue, qualify as errors of the kind that gives grounds for review?

---

<sup>20</sup> What judges should do when the set has more than one member (i.e., when there are several correct answers) and when they “run out of reasons” to adjudicate between alternatives is an issue we have to sidestep here. It may suffice to note that in most proceedings before courts or administrations, the law stipulates burdens of persuasion or other presumptions which determine outcomes in situations of *non-liquet* (in which no party can make a convincing case for their claim, be it in questions of law or fact). Thus, the Dworkinian “single-right-answer” thesis can largely be bracketed for present purposes, R Dworkin, *Taking Rights Seriously*, with a new appendix, Cambridge Massachusetts, Harvard University Press, 1977.

<sup>21</sup> “Decision” and “judgment” are used interchangeably.

A couple of further differentiations need to be drawn. Some errors such as the false application of a norm are *explicit* in the sense that they can be identified in the reasoning laid down in relevant records, documents such as written legal opinions or judgments. These errors may not be obvious, but they can, in-principle be identified by engaging with the relevant material and records. Other errors, by contrast, are *invisible* or *imperceptible* from this perspective, they remain unspoken and cannot be extracted from records because they are not contained in them. Written judgments, for instance, are not comprehensive statements of all relevant facts and applicable norms, but only of the most salient ones. Many legal and factual premises remain unstated. Some decisions come without an explanation, other with only brief remarks (parole decisions as in the study are typically of this kind). Yet, there might be errors in the unreported parts of a judgment, too (e.g. false application of a norm). Furthermore, not only the reporting but also the decision-making process is regularly *incomplete*. For instance, assessing whether an applicant still poses a threat, how likely his future conviction is, or whether he satisfies other conditions of parole requires protracted fact finding and reasoning that judges do not (and cannot) make all the way through and have to cut at some point. Moreover, reasoning and decision making always remain partly in the dark even to decision makers (judges) themselves. Factors of which they remain unaware are *implicit*. For instance, judges do not explicitly apply all norms, concepts, or background considerations to reach a conclusion, but draw on assumptions and implicit knowledge, use shortcuts and heuristics. Because of this, their reasoning is susceptible to influences such as implicit biases. These biases are regularly not identifiable in written judgments, but there are nonetheless good reasons to assume that they may have shaped outcomes. They are operative in the hidden, deeper layers of the decision-making process, such as the psychology of judges, and may lead them astray. Accordingly, judicial reasoning is partially – and inherently – incomplete and implicit and a range of potentially biased factors contributing to a judgment remain imperceptible. In this way, relevant wrong-making factors may exert influence while remaining imperceptible in the explicit parts of the decision. Implicit biases are a good example. Arguably, their influence should give grounds for review, they might even constitute a wrong in itself, despite their invisibility in judgments (they are, after all, widely implicit even to decision makers).<sup>22</sup>

Decisions suffering from *explicit* failures do not pose particularly interesting novel challenges for legal theory. Every legal system has rules and doctrines to address them. The intriguing aspect of the study is

---

<sup>22</sup> For an introduction to implicit biases, see the introduction of M Brownstein & J Saul, *Implicit Bias and Philosophy, Volume 1*, Oxford, Oxford University Press, 2016. For empirical research on implicit biases of judges, see JAJ Wistrich & JJ Rachlinski, 'Implicit Bias in Judicial Decision Making: How it affects judgment and what judges can do about it' in *Enhancing Justice* (2017); S Redfield (ed), American Bar Association, 2017, pp. 87–130.



that it demonstrates *imperceptible* factors – the time of the last meal, glucose levels, mental fatigue – which seem to sway judgments without appearing in the records. Such factors may, of course, *indicate* explicit errors in judgments and motivate further scrutiny, which may lead to reviews on traditional grounds. But beyond that, even when particular judgments *are not explicitly* flawed, these factors might still be normatively relevant. This is the theoretically interesting aspect explored in the following. I shall thus assume *arguendo* that an expert review of the cases would fail to find explicit flaws in reasoning or fact finding. *Prima facie*, decisions fall within the set of ideal outcomes. And still, something seems wrong.

## 2.2. Context of Discovery and Context of Justification

It is important to keep apart the actual reasoning and decision-making process, i.e., the psychological operations in the mind of a judge or a collegiate of judges, and the normative justification of a decision. The former is sometimes called “context of discovery”, and at least in theory, it can be fully explained by the natural and social sciences. It stands in contrast to the normative level, the “context of justification”, which is not concerned with factual reasoning processes but with the content and structure of reasons, deductions, inferences, conclusions, and better arguments. Ultimately, this is the level of interest for law and ethics, the substantive correctness of a judgment is decided here.

The written judgment and the accompanying reasons are not, and should not be mistaken for, representations of the actual decision-making process, the context of discovery. They may speak about the “reasoning of the court”, but not in a psychological sense. Drafted *ex post*, judgments are rhetorically stylized to let conclusions appear inevitable and unassailable. They concern the context of justification.<sup>23</sup> Cognitive and social science, by contrast, concern psychological, sociological and other facts about the context of discovery. The study, for instance, is not analyzing rightness or wrongness of decisions, but external facts about institutionalized decision making and judicial psychology. Because such facts address discovery, they are usually held to be of minor relevance for matters of justification. How judges came to a conclusion is regularly irrelevant, what matters is whether the conclusion is right (i.e., falls within the set of ideal outcomes). It is not a condition of the substantive correctness of a decision that it has been

---

<sup>23</sup> This does of course not rule out that there might be cases in which writing the judgment motivates a reconsideration, as previously unthought problems or arguments may arise. Also, *post hoc* writing of judgment neither entails, nor excludes *post hoc* reasoning in the Legal Realist sense, namely that other factors determine the outcome which then steers rationalizations.

reached on a particular way. A decision is not wrong because, for instance, judges relied on intuitions, hunches or heuristics.<sup>24</sup> Explanation and justification of a judgment are simply different subject matters.

The key question is then how cognitive and social science might be of relevance for issues of justification at all. I wish to suggest here that descriptive facts about the context of discovery may be relevant for purposes of legal justification in an *epistemic* way. Facts about discovery may *indicate* that an outcome is incorrect, on the merits, because the process is unreliable to produce correct outcomes. Imagine a judge decides cases by throwing dice. This fact about discovery would suffice to distrust the outcome – without engaging with arguments on the merits. Cognitive science may bring to light unreliable decision-making processes (whether they are unreliable needs surely thorough normative argument). Here is an example: If cognitive science can show that actual reasoning of judges is implicitly biased (context of discovery), we have reason to assume that judgments are wrong, even though no explicit errors are found (context of justification). Biases may nonetheless have had distorting influence in the imperceptible parts. As rule of thumb: If a factor that renders a decision-making process prone to error is identified in the context of discovery, and if it is not rectified subsequently, caution is warranted with respect to the correctness of the decision. This is the *epistemic* relevance of the context of discovery. Note that it also implies that if there was a complete and transparent *explicit* justification, a written opinion enumerating every relevant point of law and fact, every background consideration, every weighing of values and probabilities, then facts about discovery may *not* add anything relevant. Every error could then be identified in the judgment, and if none is to be found there, it is immune to further challenges based on facts about its genesis. However, complete and transparent justifications never exists in law.

### 2.3. Extralegal factors?

Against this backdrop, let us explore what may have gone wrong in the cases of the study. Although the decisions are, *ex hypothesi*, not explicitly erroneous, they nonetheless appear incorrect because of the causal influence of irrelevant or “extraneous factors”. But let us take a closer look: In which sense are the last time of the meal, glucose levels, or mental fatigue “extraneous” or “extralegal factors”? No legal norm refers to them. In that sense, they are rather *alegal factors*. However, “extralegal” suggests more: something akin to what natural sciences call a confounding factor, the presence of something that ought

---

<sup>24</sup> For the relation between heuristics and law, see the contributions in *Heuristics and the law*, G Gigerenzer & C Engel (eds), Dahlem Workshop Reports, Cambridge, MA, MIT Press in cooperation with Dahlem University Press, 2006.

not be there, something that distorts and contaminates outcomes. Perhaps the argument can be put this way:

1. Legal decision D is affected by factor F (empirical premise).
2. F is an extralegal factor.
3. Correct decision are not affected by extralegal factors.

Conclusion: D is not correct.

This would be a strong understanding of “extralegal factor” as wrong-making factor (3). A weaker version would be the epistemic variant just described:

- 3\*. Causal influence of extralegal factors *indicates* that D may be false (but it could be correct).

In light of the study, it may appear tempting to suggest that glucose is an extralegal factor. However, this would come with a commitment to the proposition that *legal decisions should not be causally influenced by glucose*. This is unpersuasive. Legal decision-making is embodied, with minds and brains of judges running on glucose. Until AI overtakes the judiciary, every full *causal* explanation of a legal judgment involves glucose. Its presence is not the problem.<sup>25</sup> Nor does it provide reasons to think the decision is incorrect.

However, glucose levels and mental fatigue may matter more indirectly in how they affect mental capacities for judging. They might fall below a point at which a judge is no longer fit to judge. “Depletion” of mental resources *sensu strictu* may denote such an incapacity. But there are no indications that mental capacities of judges in the study fell below this threshold. More likely, they simply experienced the familiar everyday swings of mental energy, clarity and fatigue, patience and annoyance, calmness and irritations. They do not qualify as instance of 3 or 3\*.

It might be helpful to disambiguate “extralegal factors”. In the law, it commonly refers to extralegal *reasons*, i.e. invalid inputs into the decision-making process, considerations which courts should not take into account. The phase of the Moon-Cycle, or more worrisome, race of an applicant, are clearly irrelevant and in this sense, legally invalid reasons. If they affect a decision, it is probably incorrect. So there is grounds for epistemic concern (3\*). But none of this applies to the cases of the study, which is silent about

---

<sup>25</sup> Nor, I should add, are specific glucose levels. Attempts to define *right levels of glucose for legal decision making* are probably futile for medical reasons. Glucose levels vary considerably between persons and are regularly modified via medication (e.g., Diabetes).

reasons. “Extralegal factors” there does not refer to reasons, but to glucose or mental fatigue. They lie on different levels. Glucose is one of the causes of the cognitive machinery on which legal reasoning runs and mental fatigue is an indication of its functioning. Both refer to *causes*, not reasons, and they are not evident instance of 3 or 3\*.

To put it differently: The researchers open their paper with the rhetorical question “are judicial rulings based solely on laws and facts?” Their aim is to show that this is not the case. But this way of framing it tends to conflate categories. If they take their study to provide a dismissive answer to their question in a strict sense, then *no* judicial ruling is based “solely on laws and facts”. There are always further causal factors, the physical realizers, the embodiment of the decision-making process – but they are not “extralegal”. Moreover, judges of the study supposedly *did* base their rulings on laws and facts, and not on morality, aesthetics, personal proclivities, the weather, or the time of the lunch. At least nothing suggests that they entertained such considerations (“let us deny this application quickly so we can have lunch”). Therefore, neither extralegal reasons, nor extralegal causes are helpful categories in capturing the problem.

## 2.4. Procedures & Biases

The foregoing drew on a substantive idea of correctness. Let us briefly turn to the procedural side. Procedural rules stipulate *modi operandi* for fact-finding and, to some extent, deliberation. Breaches may provide grounds for review, they may *indicate*, again epistemically, that judgments might be incorrect on the merits. Moreover, some breaches violate principles of procedural justice and therefore constitute wrongs in themselves, and may give rise to remedies for that reason alone. But the problem of the study does not seem to lie in irregular proceedings. Quite conceivably, all procedural rules were observed.

However, one might be inclined to think that judges were *biased*. This would violate a central principle of procedural justice (its relevance is underscored by the fact that the “rule against bias” is considered one of two principles of natural justice in common law).<sup>26</sup> Whether judges were indeed biased depends on what constitutes bias in a legal sense. Not every bias in psychology is one in law. The legal idea of bias is rooted in the demand of judicial and administrative impartiality. It prohibits (dis-)favoring a party for

---

<sup>26</sup> M Groves, ‘Rule against Bias’ *Hong Kong Law Journal*, vol. 39, 2009, 485.  
H Stout, ‘Bias’, in *Judicial Review*, vol. 16, 2011, 458–482.

undue reasons.<sup>27</sup> The classic conflict of interest between the role of the judge as a neutral arbiter and personal interests (“no one be a judge in her own case”) does not apply here. But judges might exhibit treat one party unfairly for other reasons.<sup>28</sup> However, the study does not provide indications that judges *knowingly* disfavored later applicants. They might have done so *implicitly*. But how precisely would implicit bias work in these cases? Usually, it is triggered by properties of the party, e.g. gender or ethnicity. Yet again, there are not indications that this has been the case. The same is true for motivated cognition; nothing indicates that judges desired a particular outcome.<sup>29</sup> Therefore, behavior of judges does not fit traditional conceptions of bias as lacking impartiality.

Perhaps a related idea, “predetermination” in common law, is a better candidate. It denotes the “minimal requirement of impartiality in legal disputes, an attitude of openness to and lack of pre-judgment upon the claims of the disputants”.<sup>30</sup> It is interesting to ponder what this means more precisely. Common law draws a distinction between a judge’s predispositions and predetermination.<sup>31</sup> As Keith Lindblom, former Judge at the English High Court, summarizes:<sup>32</sup>

“The jurisprudence on ... predetermination, in the planning decision-making context, is mature and uncontroversial. It recognizes the clear and crucial distinction between predisposition and predetermination. Predisposition is normal and acceptable. Predetermination, when it occurs, is unacceptable. What distinguishes one from the other is that in the case of the former, at the time when the decision in question is made, the decision-maker’s mind is open; in the case of the latter, that mind is closed.”

However, even though the jurisprudence might be uncontroversial, clear distinctions are probably hard to draw in concrete cases. When is the mind open, when is it closed? This seems to be a gradual affair, related to the sensitivity of judges to relevant reasons.<sup>33</sup> But is there any way to render these notions more concrete? Mind seems closed if every application at a particular time or place in the order were denied, irrespective of the submissions of the party. But the study does not show such strong effects.

---

<sup>27</sup> The demand of impartiality is expressed in Art. 6 of the ECHR; Art 41 and 47 of the EUCFR. On the convergence between legal cultures in this regard see M Allars, ‘Disqualification for Bias and International Tribunals: Room for a Common Test’, in *Missouri Law Review*, vol. 78, 2013, 379–411.

<sup>28</sup> H Stout, ‘Bias’, in *Judicial Review*, vol. 16, 2011, 458–482.

<sup>29</sup> AM Sood, ‘Motivated Cognition in Legal Judgments—An Analytic Review’, *Annual Review of Law and Social Science*, vol. 9, 2013, 307–325.

<sup>30</sup> W Lucy, ‘The Possibility of Impartiality’, *Oxford Journal of Legal Studies*, vol. 25, 2005, 3–31 (p. 15).

<sup>31</sup> J Maurici, ‘The Modern Approach to Bias’, *Judicial Review*, vol. 12, 2007, 251–260.

<sup>32</sup> *R (Harris) v Haringey London Borough Council* [2009] EWHC 2329, at para 62.

<sup>33</sup> P Havers & A Henderson, ‘Recent Developments (and Problems) in the Law on Bias’, *Judicial Review*, vol. 16, 2011, 80–93.

Probability of a favorable ruling dropped significantly before the first and the second break, but it still ranged around 30% and 20% respectively. So judges apparently did listen and granted persuasive applications. Only at one point in the afternoon, chances approximate zero for a short interval. But this might be a statistical artefact as it rises again shortly after.<sup>34</sup> The picture is slightly different with respect to the ordinal number of the case. If judges made more than nine decisions before a food break, chances of positive outcomes for later decisions dropped below 10%. Perhaps, this indicates closed-mindedness. But it affected only a handful of cases. Apart from them, the effect size is not big enough to speak of minds being closed in a pronounced sense. Rather, one may say judges were more open-minded towards applicants' cases at some points in times, and more towards the opposing (prosecutorial) side at others. Such fluctuations do not seem to qualify as predetermination.

### *Objective or apparent bias*

Furthermore, there is an objective or apparent side to bias. Because of the importance of impartiality, a real possibility or the appearance of bias suffices to disqualify a judge or member of the jury. In Lord Hewart's proverbial saying, justice should not only be done, but also be seen to be done. And as often reiterated by the ECtHR, it is of great importance that "courts inspire confidence in the public and the parties".<sup>35</sup> Suppose a new applicant comes before the parole board, constituted in the way as it was during the study. His case is the last before lunch break. Made aware of the study by his attorney, it may *appear* to him that his case is not judged impartially, that the cards are stacked against him. This impression is understandable. But does it suffice to disqualify judges, or provide grounds for subsequent review? Under the European Convention, it is not the perspective of the applicant but of a "fair-minded" observer which is decisive.<sup>36</sup> How would proceedings appear to such an observer? Mainly, I think, this depends on the still outstanding explanation of the judgments. Without it, the appearance of bias seems hard to deny. Worth noting is the fact that the problematic aspects have likely not occurred to anyone involved in the proceedings. Neither parole board judges, nor applicants or their attorneys supposedly entertained the idea that ordering of cases had an impact on outcomes. Thus, the appearance of bias, probably due to imperceptible factors, is revealed through the study. This is an interesting indirect effect cognitive science (and social science) may have on the law. Once the study is out, the law cannot deny its findings.

---

<sup>34</sup> See Figure S.2. in the supporting information of Danziger (2011).

<sup>35</sup> ECtHR, *Kyprianou v. Cyprus*, Grand Chamber, 12/15/2005, App. no 73797/01.

<sup>36</sup> See W Schabas, *The European Convention on Human Rights: A commentary*, Oxford University Press, 2016.

## 2.5 What then is the problem?

Let us take stock: hitherto, we could neither find faults in procedure, nor *ex hypothesi* in explicit reasoning of decisions. Nonetheless, something seems wrong. The main piece of evidence is the pattern of outcomes. If cases are randomly distributed and their number is large enough, a more equal distribution pattern is expected. At least under one condition: *that cases are measured by the same standard*. This is where the problem seems to lie. More precisely, it arises from the conjunction of two phenomena: Meal-related influences affect imperceptible parts of judgments, and their operations are brought to light through a comparative juxtaposition of many decisions. The view on the particular case, the usual focus of the law and of judicial review, does not reveal them.

How may this happen? Imperceptibility is related to legal indeterminacy. Judging requires applying loosely defined concepts or broad standards to a concrete case, tailored to its circumstances through interpretation. Interpretation is intertwined with assessments of facts of the case. Going back-and-forth between facts and norms is common in rendering the latter more precise to fit the former. For instance, take a central consideration in the type of decisions of the study. Granting parole requires that the applicant no longer poses a threat. To assess this, normative thresholds for threats have to be defined, and be related to the factual likelihood of reoffending (in any case only educated guess). This may have to be done with respect to different types of misconduct and severities of potential harms. They will be weighed in light of general considerations about the values of public security and individual freedoms, not always free from influence by the prevailing political climate. Accordingly, determining whether an offender still poses a threat easily turns into a complex calculation involving forecasts, probabilities, and values. A single right outcome is often hard to find, several reasonable outcomes remains. Within this spectrum, judges have leeway. It is here that legal reasoning becomes susceptible to biases and influences, including psychological and physiological ones. Mental fatigue may make judges more risk-averse and low glucose levels less trustworthy. But notably, they do not render decisions incorrect. Both old and new assessments of thresholds and standards may fall within the range of the reasonable. Divergences nonetheless suffice to shift judgments from one category to the other, from approval to rejection. Thus, judges may subtly – and implicitly – change concepts and standards by which they evaluate the facts of the case, but do so within the bounds of the law, without trespassing conceptual or normative boundaries. This may explain the patterns of decisions without presupposing bad faith, bias, or (non-comparatively) wrong outcomes.

### 3. Normative implications

#### 3.1 Treating like cases alike

If this explanation is, by and large, correct, what follows for particular decisions? Applying different standards, overtly or subtly, runs contrary to the maxim to treat like cases alike or the idea of equal treatment before the law. If outcomes depend on the time of the day or ordering of hearings, two relevantly similar cases might be decided differently. As a formal principle, treating like cases alike is a central idea of justice, deeply rooted in the western tradition and tied to idea of the rule of law. Its corollary on the personal level is the right to equal treatment before the law. Legal orders may construe its material scope, interferences, and remedies differently. Whereas some, as Art. 14 of the European Convention, conceive it as an accessory to substantive rights, it is a stand-alone right in others (e.g. Art. 26 Covenant Civil and Political Rights).<sup>37</sup> In substance, it may prohibit unequal treatment *tout court*, or only if based on specific enumerated grounds (such as race, gender, sexual orientation). Interferences may also be justified differently. Again, rather than reviewing particular theories, let us consider analytically how the law should deal with such situations.

#### 3.2. Precedent and *stare decisis*

*First and foremost*, a judgement in contravention of equal treatment is *relatively* or *comparatively* incorrect, not in itself (non-comparatively). Accordingly, in the absence of a diverging ruling in another case, applicants have no grounds to complain. There are no *independent* reasons for the incorrectness of the decision (provided, as assumed here all along, that decisions fall within the range of correct outcomes). *Secondly*, legal orders in which binding precedent plays a central role (a feature of common law) may hold that subsequent decisions have to be decided pursuant to the first because the (temporally) former sets the standard: *stare decisis*. The first decision (more precisely, its *ratio decidendi*) binds later courts. Then, strictly speaking, a diverging second decision on the same point does *not* fall within the range of permissible outcomes, as this range has been narrowed down by the previous decision. One may surely ask why the first decision should be binding. This touches upon foundational questions of precedent and *stare decisis*. Apart from familiar problems of establishing *rationes* and likeness, critical voices cast doubts on the plausibility of temporal priority as a normative criterion. If the law is truly indeterminate in

---

<sup>37</sup> For the ECHR see Schabas. For the CCPR Human Rights Committee, 'General Comment No. 18 - Non-discrimination', , 1989. A comprehensive comparative work is JH Gerards, *Judicial review in equal treatment cases*. Leiden, M. Nijhoff Publishers, 2005.



the first decision, why should the concretization by the first bind following courts? If there are no prevailing reasons for a particular decision in the first case, there are none in the second<sup>38</sup> Binding precedent means that an arbitrary decision is perpetuated, without better reasons in its favor. In the eyes of critics, this is a “foolish consistency” conferring undue powers to the past.<sup>39</sup> Subsequent decisions, handed down in view of previous ones, may seem epistemically advantageous and further develop the law. This view prompts thorny questions about the lawmaking powers of the judiciary, the value of legal consistency and stability. As they may lead us astray here, we may perhaps sidestep them with the following: Courts should not be barred in-principle from deviating from former decisions – and thereby, treating like cases *unlike* – if persuasive reasons suggest so (this position seems to correspond to the actual realities in many precedent-based jurisdictions). However, with respect to the present inquiry, it would not be persuasive to conceive diverging second decisions as advancements of the law, given the repeated and *unreasoned* tossing and turning throughout the day. Not following precedent in these cases does not seem to further any valuable goal. Therefore, these cases interfere with (a modest understanding of) the rule of precedent, or the idea of equal treatment. This needs justification.

### 3.3. Criticism of Equal Treatment

This leads us, *thirdly*, to a line of critic against the value of equal treatment which has resonated in civil law thinking. As an example, here is a remark by Hans Kelsen:

“what of the special principle of so-called equality before the law? All it means is that the machinery of the law should make no distinctions which are not already made by the law to be applied. If the law grants political rights to men only, not women, ... then the principle of equality before the law is fully upheld if in concrete cases the judicial authorities decide that a woman ... has no political rights. This principle has scarcely anything to do with equality any longer. It merely states that the law should be applied as it is meant to be applied. It is the principle of legality ...which is by nature inherent in every legal order regardless of whether this order is just or unjust”<sup>40</sup>

Distinguishing equality *before* the law from equality *in* the law, Kelsen notes that the former only consists in the principles of legality, the correct application of existing law. It does not confer an additional right over and above the non-comparative rights which the person possesses. This *equality skepticism* is echoed

---

<sup>38</sup> A Marmor, ‘Should like cases be treated alike?’, *Legal Theory*, vol. 11, 2005, 27-38.

<sup>39</sup> CJ Peters, ‘Foolish Consistency: On Equality, Integrity, and Justice in Stare Decisis’, *Yale Law Journal*, vol 105, 1996, 2031-2115.

<sup>40</sup> H Kelsen, ‘What is justice?’ in: *Essays in Legal and Moral Philosophy*, Dordrecht, Springer, 1973, p. 15.

in influential more recent contributions arguing that equal treatment or comparative justice is “empty” or “tautological”.<sup>41</sup> If two decisions about the same facts diverge, so the argument goes, the law has been misapplied in at least one. However, this modern equality skepticism overlooks what has been emphasized in the foregoing, the realms of indeterminacy and imperceptibility. Wherever several outcomes are *prima facie* right, unlike treatment (within this range) does not run afoul of *other* requirements of the law. Whether like cases should nonetheless be treated alike is then a non-redundant and distinct question, which skeptical arguments regularly fail to adequately address.<sup>42</sup> Furthermore, skeptics often note their troubles with locating deeper sources of the value of equal treatment, over and above the correct application of other substantive criteria. But they may not need to look in too faraway places, the idea of equality might be enshrined in the very foundations of state authority.

### 3.4. Social Contract & Equal Treatment

Here, *fourthly*, is the sketch of an argument for the inherent value of equal treatment. It lies in the basic arrangement that confers legitimacy to state authority in the first place: the social contract. Equality is part of the pre-contractual condition, in the sense that no one has any claims or prevailing rights over others. It is then incorporated into the contract and adopted as a general principle, provided the contract is indeed one between free and equal partners. Any plausible construal of an arrangement of equals will include equality before the law. And as a principle of contract law, one party is bound to perform its contractual duties if and only if the others do so likewise (*do ut des* in the civil law tradition). This leads to reciprocal relations between all parties. This implies that every citizen is bound to give up her freedoms only to the extent that others do likewise. Otherwise, the reciprocal relationship is violated. Accordingly, if A has to give up her liberty, say in the interest of public safety – and provided that decision is not erroneous for other reasons –, B is expected to do the same under equal circumstances. The first case thus sets a standard against which others are to be measured. If a lesser burden is imposed on B, *ceteris paribus*, A can complain that her contribution to the common good was heavier. This deviation needs justification, which may often be impossible under *ceteris paribus* conditions. As a consequence, A was overcharged, triggering some kind of remedy.

---

<sup>41</sup> P Westen, ‘The Empty Idea of Equality’, *Harvard Law Review*, vol. 95, 1982, 537-596; Peters 1996.

<sup>42</sup> One reason for this neglect is that the possibility of several correct outcomes seems a peculiar feature of (applied) law and might have escaped the attention of some philosophers. For other arguments to the same result: AR Miguel, ‘Equality before the Law and Precedent’, *Ratio Juris*, vol. 10, 1997, 372–391.; FK Thomsen, ‘Concept, Principle, and norm—equality before the law reconsidered’, *Legal Theory*, vol. 24, 2018, 103–134.

With this, we have justified a basic system of equal treatment and precedent: State authority grounded in an arrangement of equals standing in reciprocal relations cannot treat some parties favorably or unfavorably. It is bound to adhere to general contractual principles and to commit itself – as all actual states do to some degree – to the idea of equal treatment. Equality before the law is thus an *architectonical feature* of plausible social contract models. Accordingly, by default, everyone has to be treated equally, and later decisions should follow former ones. Nonetheless, precedent can be overturned but this requires sound justification, additional reasons.

Moreover, *fifthly*, most authors agree on the *instrumental* value of equal treatment: clarity and predictability of the law. Although some may see this as a “status quo bias”, normative stability is an important background condition for social coordination and cooperation.<sup>43</sup> Therefore, good reasons speak in favor of conceiving equal treatment as an independent right. This supports the default rule that legal systems should treat like cases alike.

### 3.5. Limits to equal treatment: Disagreement and Diversity

Nonetheless, *sixthly*, equal treatment is not an absolute or infeasible right. It comes with costs, and it might be overridden by countervailing reasons. One set of such reasons might summarily be referred to as diversity, pluralism, decentralization, and feminist standpoint epistemology. Although I wish to remain uncommitted to the merits of the latter, it underscores the undeniable truth that perspectives and life experiences differ. Insofar as legal indeterminacy is generated by incommensurable values and diverging assessments of facts, equal treatment would, somewhat ironically, buttress majoritarian views. To put it bluntly: If the perspectives of privileged white men who made up the overwhelming part of the judiciaries for the last centuries are complemented by more diverse and diverging perspectives, more variance in judgments, even on similar facts, are to be expected. There is room for reasonable disagreement. This point relates back to the discussion of bias. Judges differ in their life experiences and outlooks, and *dédoublement*, the separation between role and person, only goes so far.<sup>44</sup> In the words of Stephen Schwebel, former President of the International Court of Justice: “We are all prisoners of our own experience. Such measure of objectivity as may be humanly possible may come more easily to some than others, depending in part on that experience, in which the legal and political culture that conditioned it is

---

<sup>43</sup> N Bostrom & T Ord, ‘The Reversal Test: Eliminating Status Quo Bias in Applied Ethics’, *Ethics*, vol. 116, 2006, 656–679.

<sup>44</sup> GI Hernández, ‘Impartiality and Bias at the International Court of Justice’, *Cambridge Journal of International and Comparative Law*, vol. 1, 2012, 183–207.

important.”<sup>45</sup> Disparities in adjudication between judges are well known and wide spread.<sup>46</sup> As long as outcomes of particular decisions stay within the bounds of the permissible, they follow from a *prima facie* welcome development. Diversity comes with costs to decisional consistency. With this, we can assess the still hovering charge of subjective bias. If diverse personal experiences and backgrounds of judges explain differences in judgments, the impression of bias and unfair treatment *disappears*.

Nonetheless, *seventhly*, wide variations between outcomes are still somewhat unsatisfactory. Lawmakers are of course free to narrow down indeterminacy and streamline decision making. They may introduce more finely knit rules, vest judges with less discretion, or step-in whenever the judiciary treats too many like cases unlike. But these interventions face technical and practical limits. The law is to some extent necessarily general and abstract to fit the multifaceted and hard to anticipate situations which it seeks to regulate. Inflexibility, over-rigidity, and failure to afford “right” decision in individual cases are typical downsides of tighter regulatory regimes.<sup>47</sup> Some tensions between equality, indeterminacy, discretion, and diversity thus remain. But this does not seem to pose pressing problems of legitimacy, neither for the entire legal order, nor for individual cases, provided their outcomes stay within the correct range. To assuage remaining worries, H.L.A. Hart once suggested to “identify ... the optimum conditions for the exercise of discretion, because where we cannot be sure of being right, we can at least do what we can to obtain the best conditions for decisions.”<sup>48</sup> However, Hart explicitly understood this to not encompass “psychological conditions of the sound exercise” of discretion, but only conditions of the normative-legal sphere.<sup>49</sup> In this point, studies as the one by Danziger and colleagues suggest that Hart might have been wrong. Every decision has bio-psychological conditions which may influence outcomes, especially where

---

<sup>45</sup> SM Schwebel, ‘National Judges and Judges Ad Hoc of the International Court of Justice’, *International and Comparative Law Quarterly*, vol. 48, 1999, 889–900, p. 895.

<sup>46</sup> An interesting model to measure disparities and extrapolate error-rates provides JB Fischman, ‘Measuring Inconsistency, Indeterminacy, and Error in Adjudication’, *American Law and Economics Review*, vol. 16, 2014, 40–85.

<sup>47</sup> See DA Strauss, ‘Must Like Cases Be Treated Alike?’, 2002, University of Chicago Public Law Research Paper No. 24. Available at SSRN: <https://ssrn.com/abstract=312180>. Noteworthy, many actual legal systems do not invest much in ensuring consistency between individual cases, only in coherence in law on a higher level of generality, mainly through high courts. Given that administrations and courts in mass society routinely deal with many potentially alike case, databases affording comparisons could easily be established. The lack of will to do so may indicate that consistency is not perceived as a pressing goal, at least on this level of implementation. This may change once Big Data enters judicial practice.

<sup>48</sup> HLA Hart, ‘Discretion’, *Harvard Law Review*, vol. 127, 2013, 652-665.

<sup>49</sup> *ibid*, 653.

the indeterminacy of the law affords leeway Excluding them from the interest of legal theory is a shortcoming.

Hitherto, a permissive view with respect to variations and divergences has been formulated. It needs two specifications. *Eighthly*, more restrictive limits have to be drawn to unequal treatment with respect to discrimination on grounds of unchosen personal characteristics (e.g., race, gender, ethnicity) or of expressions of fundamental rights (e.g., religion, opinion). Such criteria should never, or only in the rarest of circumstances, be allowed to make a difference. Accordingly, unequal treatment on these grounds is regularly discriminatory and requires “very weighty” justificatory reasons (ECtHR).<sup>50</sup> For our purposes, we can leave open the vexing question whether discrimination has to be intentional (or whether implicit bias suffices).<sup>51</sup> It bears noting that the additional strength of these prohibitions derives not from equal treatment alone, but from general considerations about societal problems (racism, sexism, xenophobia) in combination with the importance of the protected basic liberties, as well as the equal moral status of everyone.<sup>52</sup> In light of these considerations, discrimination of this sort arguably constitutes an independent wrong in itself. Therefore, even though a decision falls within the range of ideal outcomes, it is wrong if it discriminates on these specific grounds.

The foregoing suggests drawing a distinction between unequal treatment based on characteristics of affected persons and of judges. The latter is regularly justifiable whereas the former is not. However, this needs, *ninthly*, restrictions with respect to personal preferences of judges. Consider one of the classic claims of Legal Realism, namely that judicial decisions are strongly influenced by the political views of judges (“attitudinal model”).<sup>53</sup> Assuming that this is – to some extent – descriptively true, does the view laid out here not confer on judges an evaluative *carte de blanche* to implement their attitude, hidden behind a veil of vagueness and indeterminacy? Such a consequence is clearly wrong, it contravenes a role-expectation of judges: political neutrality. However, where judges are tasked with exercising discretion, they are supposed to make, among others, policy considerations and value decisions. The crucial difference is that these decisions should not be based on personal preferences or prejudices, but on the

---

<sup>50</sup> J Gerards, ‘The Discrimination Grounds of Article 14 of the European Convention on Human Rights’, *Human Rights Law Review*, vol. 13, 2013, 99–124.

<sup>51</sup> Whereas even apparent bias suffices to *disqualify* a judge, the question is here whether it also violates equal treatment, which usually has stronger ramifications.

<sup>52</sup> For an argument against equality skepticism along these lines see PS Shin, ‘The substantive principle of equal treatment’, *Legal Theory*, vol. 15, 2009, 149..

<sup>53</sup> JA Segal & HJ Spaeth, *The Supreme Court and the attitudinal model revisited*, Cambridge, UK, Cambridge University Press, 2002; E Braman, *Law, politics, & perception: how policy preferences influence legal reasoning*, Charlottesville, University of Virginia Press, 2009.

values and principles inscribed in the legal order. And of course, the value of diversity cannot override the rule of law. Even though *de facto*, personal preferences and policy considerations may intermingle to a degree at which they become inseparable, they differ in theory, and judges are called upon to keep them apart. Thus, if judges pursue their own policy preferences – even within the bounds of the permissible –, they fail to discharge their duty. But whether this violates applicants’ rights is a different matter. If one assumes, as argued here, at least a weak priority of precedent, deviating exercises of discretion because of judges’ personal preferences violate comparative justice.

#### 4. Assessing the study

Against the backdrop of these considerations, we can finally assess unequal treatment in the study. It is, we have assumed, neither intentional, nor based on personal characteristics of applicants, or on judges pushing personal preferences. Rather, the causes of unequal treatment are best described as order effects which stem from shortcomings of the legal order to provide a decision-making process that rules consistently and uniformly. They are due to what one may call “technical limitations”, biological constraints and psychological weaknesses of humans, glucose levels and mental fatigue, which shift assessments and standards within the indeterminate legal realm. As long as rulings fall within this range, they are (non-comparatively) correct. But as they contravene equal treatment and precedent (however strong their bind may be), they are in need of justification.

As argued, diversity on the bench and plural perspectives among judges may justify unequal treatment because a diverse judiciary will deliver diverging judgments. Regularly, parties do not have a right to a judge with particular characteristics (e.g. same gender, race, or religion).<sup>54</sup> They are thus exposed to the shifting standards of a diverse judiciary, but this does not give grounds for grave concerns. Rather, this is an inevitable feature of the law and relates to what Jeremy Waldron describes as “luck in one’s judge”. This idea is particularly familiar to common law countries where jury selection and juror exclusion generate an entire field of controversies. More broadly, luck in one’s judge or jury is a variation of the phenomenon of legal luck. As Waldron points out, “legal systems face this element of luck with some disdain: luck may be present; we may wish it were not; we are certainly not going to take any positive action to promote it.”<sup>55</sup> Nonetheless, luck seems inevitable, as the alternative, a strict positivistic rule-bound system, fails – in terms of justice – because of its inflexibility. Therefore, variances between

---

<sup>54</sup> It should be noted that the idea of having a right to a particular jury is not as far-fetched as it may seem, especially with a view on minorities regularly judged by a jury of peers with a different background.

<sup>55</sup> J Waldron, ‘Lucky in Your Judge’, in *Theoretical Inquiries in Law*, vol. 9, 2007, 186-216, p. 187.

outcomes resulting from inter-judge disparities are justifiable insofar as they inevitably follow from a diverse judiciary.

Then, transferred to the question before us, fluctuating decisions *within* a judge might be tolerable as well. If, as we assume, the fact that the judge in one case applies standards different to those she applied previously does not, by itself, violate non-comparative rights. The remaining question is whether unequal treatments are justified. From the perspective of rights of applicants, it seems irrelevant whether shifting standards are due to inter- or intrajudge disparities as long as they are roughly similar in size. Intra-judge differences seem inevitable to the extent that they stem from ordinary biological and psychological functioning of humans. There is a minor difference though. Discrepancies between judges derive from diversity, a value of its own. Intra-judge differences, derive from fluctuations not valuable by themselves. They are thus not worth preserving and should be prevented by the law. Nonetheless, insofar as they are factually inevitable features of human judgments, they are justifiable. Then, the cases in the Danziger study fell short of violating applicants' rights.

This conclusion may come as a surprise. It may provoke the objection that the judiciary is not even called upon to adjudicate consistently. But I wish to suggest the contrary: If intra-judge disparities were *not* inevitable, the weak bounds of precedent should prevail. Non-ideal justifications demand reasonable attempts to approximate the ideal. So to the extent that inconsistencies can be overcome, they should. This remains true even though disparities fall short of violating applicants' *subjective* rights. Consistency and equal treatment are nonetheless objective values which legal orders embrace and should aspire to attain. In addition, as judges are surely better judges the more aware of influences they are, they should be educated about them, enabling them to factor them into their reasoning. If possible, "debiasing" (in a psychological sense) strategies should be developed. Perhaps, inconsistencies might be alleviated through several short breaks, glucose replenishments or other intervention such as coffee. Judges can also learn to be more sensitive about indications of mental fatigue or "ego depletion". And there might be structural solutions: Judges might be asked to be more explicit about thresholds and standards. Thus, even though decisions may not have violated applicants' rights, the study does put pressure on legal orders and should motivate further research into the psychological conditions of legal reasoning.

## 5. Conclusion

The foregoing discussion proceeded under some counterfactual assumptions. In reality, a set of a thousand decisions surely contains some that are explicitly erroneous in substance or procedure. In others, judges might have been partial and biased. Nonetheless, the study raises interesting theoretical questions, over and above such ordinary problems of any judiciary. Even when judges act in good faith and judgments are not explicitly incorrect, they can be influenced by biological and psychological factors that enter the law through loopholes of indeterminacy and imperceptibility. Contrary to first appearance, the normative problem with such influences does not lie in them being extralegal factors, but rather in the absence of consistency in judgment across time and cases. This runs counter to the ideas of equal treatment and precedent. However, it might be justified.

In non-ideal conditions, the judiciary can only attempt to provide consistently judging courts. Shortcomings of the human psychology should be addressed, but normative demands must be shaped by what is descriptively possible: *ought implies can*. Other studies have revealed, and future ones will continue to do so, physiological, psychological and situational factors which may affect judgments, from hormone levels to medications, from mental disorders to personal problems, from sleep deprivation to current political and social events.<sup>56</sup> Judges are, as Jerome Frank and the Legal Realists reminded us some decades ago, humans – and their reasoning susceptible to such factors.<sup>57</sup> This is not an invitation for complacency, but a realistic assessment of what is possible. Therefore, insofar as judiciaries attempt to create condition of consistent judging, the setbacks to equal treatment fall short of violating rights (again, provided that outcomes are within the bounds of the permissible).

The Danziger study is intriguing because it shows skewed *patterns* in judgments that remain unobservable from the traditional legal perspective on the individual case and written documents and records. These perspectives fail to reveal these influencing factors, even though they merit attention and call for explanations. Only a comparative look at a greater number of cases renders them visible. This is the power of statistics, and the study shows that the law is well advised to muster it more often, at least for purposes of quality control. A social institution in the pursuit of justice must be interested in gaining vantage points from which it can detect patterns unobservable from the “internal point of view.”

---

<sup>56</sup> See *infra*.

<sup>57</sup> J Frank, ‘Are Judges Human? Part One: The Effect on Legal Thinking of the Assumption That Judges Behave like Human Beings’, *University of Pennsylvania Law Review and American Law Register*, vol. 80, 1931, 17.



If further studies replicate the findings or reveal more of such factors, legal systems might need to devote more attention to the psychology of legal reasoning. This may also put pressure on the secrecy of court's deliberation. Usually, it is shielded from access by parties or the public to ensure judicial independence. But the contexts of discovery and justification touch each other here. Imperceptible failures remain *de facto* unreviewable without access to discovery. In individual judges, the psychological processes of judging are by their nature hardly accessible. Group deliberations, however, may provide clues for detecting biases and influences. Secrecy is thus a double-edged sword: obtaining evidence for errors would run counter to independence.<sup>58</sup>

Comparative studies such as the present one are then one of the few ways to acquire knowledge about distorting factors. Since they provide only aggregate information about sets of cases, they may not afford inferences about particular cases. Nonetheless, they shed light on the darker sides of the workings of the law, a perspective that should be openly embraced rather than dismissed by legal orders.

---

<sup>58</sup> For instance, in the UK, it is an offence to seek to obtain any information about the jury deliberations, pursuant to section 8 (1) of the Contempt of Court Act 1981.

## References:

- Allars, M, 'Disqualification for Bias and International Tribunals: Room for a Common Test' *Missouri Law Review*, Vol. 78, 2013, 379–411.
- Barnes, CM, J Schaubroeck, M Huth, & S Ghumman, 'Lack of sleep and unethical conduct' *Organizational Behavior and Human Decision Processes*, Vol. 115, 2011, 169–180.
- Baumeister, RF, 'Ego Depletion and Self-Control Failure: An Energy Model of the Self's Executive Function', *Self and Identity*, Vol. 1, 2002, 129–136.
- Bostrom, N, & T Ord, 'The Reversal Test: Eliminating Status Quo Bias in Applied Ethics', *Ethics*, Vol. 116, 2006, 656–679.
- Braman, E, *Law, politics, & perception: how policy preferences influence legal reasoning*. Charlottesville, University of Virginia Press, 2009.
- Brownstein, M, & J Saul, *Implicit Bias and Philosophy, Volume 1*. Oxford: Oxford University Press, 2016.
- Chen, DL, 'This Morning's Breakfast, Last Night's Game: Detecting Extraneous Influences on Judging' Institute for Advanced Studies Toulouse (IAST) working paper, n. 16-49, 2016.  
<http://iast.fr/pub/31020>
- Cho, K, CM Barnes, & CL Guanara, 'Sleepy Punishers Are Harsh Punishers: Daylight Saving Time and Legal Sentences', *Psychological Science*, 28, 2017, 242–247.
- Daljord, Ø, O Urminsky, & J-M Ureta, 'The Status Quo Theory of Depletion Does not Explain the Israeli Parole Decisions' *Preprint of University of Chicago*, 2017,  
[http://home.uchicago.edu/ourminsky/Status\\_Quo\\_Theory\\_Revisited.pdf](http://home.uchicago.edu/ourminsky/Status_Quo_Theory_Revisited.pdf),
- Danziger, S, J Levav, & L Avnaim-Pesso, 'Extraneous factors in judicial decisions', *Proceedings of the National Academy of Sciences*, Vol. 108, 2011, 6889–6892.
- , 'Reply to Weinshall-Margel and Shapard: Extraneous factors in judicial decisions persist'.in *Proceedings of the National Academy of Sciences*, Vol. 108, 2011, E834–E834.
- Douglas, WO, 'Stare Decisis'.in *Columbia Law Review*, Vol. 49, 1949, 735–758.
- Dworkin, R, *Taking Rights Seriously*.with a new appendix, Cambridge Massachusetts, Harvard University Press, 1977.
- Eren, O, & N Mocan, 'Emotional Judges and Unlucky Juveniles', *American Economic Journal: Applied Economics*, Vol. 10, 2018, 171–205.
- Fischman, JB, 'Measuring Inconsistency, Indeterminacy, and Error in Adjudication', *American Law and Economics Review*, Vol. 16, 2014, 40–85.
- Frank, J, 'Are Judges Human? Part One: The Effect on Legal Thinking of the Assumption That Judges Behave like Human Beings', *University of Pennsylvania Law Review and American Law Register*, Vol. 80, 1931, 17.

- Gailliot, MT, & RF Baumeister, 'The Physiology of Willpower: Linking Blood Glucose to Self-Control', *Personality and Social Psychology Review*, 11, 2007, 303–327.
- Gerards, J, 'The Discrimination Grounds of Article 14 of the European Convention on Human Rights', *Human Rights Law Review*, 13, 2013, 99–124.
- Gerards, JH, *Judicial review in equal treatment cases*. Leiden, M. Nijhoff Publishers, 2005.
- Gigerenzer, G, & C Engel, eds., *Heuristics and the law*. Dahlem Workshop Reports, Cambridge, MA, MIT Press in cooperation with Dahlem University Press, 2006.
- Gino, F, ME Schweitzer, NL Mead, & D Ariely, 'Unable to resist temptation: How self-control depletion promotes unethical behavior', *Organizational Behavior and Human Decision Processes*, Vol. 115, 2011, 191–203.
- Glöckner, A, 'The irrational hungry judge effect revisited: Simulations reveal that the magnitude of the effect is overestimated', *Judgment and Decision Making*, Vol. 11, 2016, 601-610
- Groves, M, 'Rule against Bias' *Hong Kong Law Journal*, Vol. 39, 2009, 485.
- Hagger, MS, NLD Chatzisarantis, H Alberts, CO Anggono, C Batailler, AR Birt, et al., 'A Multilab Preregistered Replication of the Ego-Depletion Effect', *Perspectives on Psychological Science*, 11, 2016, 546–573.
- Hart, HLA, 'Discretion', *Harvard Law Review*, Vol. 127, 2013, 652-665.
- Havers, P, & A Henderson, 'Recent Developments (and Problems) in the Law on Bias', *Judicial Review*, Vol. 16, 2011, 80–93.
- Hernández, GI, 'Impartiality and Bias at the International Court of Justice', *Cambridge Journal of International and Comparative Law*, Vol. 1, 2012, 183–207.
- Human Rights Committee, 'General Comment No. 18 - Non-discrimination'. 1989.
- Kelsen, H, 'What is justice?' in: *Essays in Legal and Moral Philosophy*. 1973, Dordrecht, Springer.
- Kouchaki, M, & IH Smith, 'The Morning Morality Effect: The Influence of Time of Day on Unethical Behavior', *Psychological Science*, 25, 2014, 95–102.
- Lucy, W, 'The Possibility of Impartiality', *Oxford Journal of Legal Studies*, 25, 2005, 3–31.
- Marmor, A, 'Should like cases be treated alike?', *Legal Theory*, Vol. 11, 2005, 27-38.
- Maurici, J, 'The Modern Approach to Bias', *Judicial Review*, Vol. 12, 2007, 251–260.
- Miguel, AR, 'Equality before the Law and Precedent', *Ratio Juris*, Vol. 10, 1997, 372–391.
- Molden, DC, CM Hui, AA Scholer, BP Meier, EE Noreen, PR D'Agostino, et al., 'Motivational Versus Metabolic Effects of Carbohydrates on Self-Control', *Psychological Science*, Vol. 23, 2012, 1137–1144.

- Nichols, S, 'Process Debunking and Ethics', *Ethics*, Vol. 124, 2014, 727–749.
- Orquin, JL, & R Kurzban, 'A meta-analysis of blood glucose effects on human decision making.' *Psychological Bulletin*, Vol. 142, 2016, 546.
- Peters, CJ, 'Foolish Consistency: On Equality, Integrity, and Justice in Stare Decisis', *The Yale Law Journal*, Vol. 105, 1996, 2031-2115.
- Priel, D, 'Law and Digestion: A Brief History of an Unpalatable Idea' Preprint, available, <<https://www.ssrn.com/abstract=2982716>> [accessed 25 March 2018].
- Sauer, H, *Debunking Arguments in Ethics*. 1st ed., Cambridge, UK, Cambridge University Press, 2018.
- Schabas, W, *The European Convention on Human Rights: A commentary*. Oxford, Oxford University Press, 2016.
- Schwebel, SM, 'National Judges and Judges Ad Hoc of the International Court of Justice', *International and Comparative Law Quarterly* Vol. 48, 1999, 889–900.
- Segal, JA, & HJ Spaeth, *The Supreme Court and the attitudinal model revisited*. Cambridge, UK Cambridge University Press, 2002.
- Shin, PS, 'The substantive principle of equal treatment', *Legal Theory*, Vol. 15, 2009, 149.
- Siegel, JZ, & MJ Crockett, 'How serotonin shapes moral judgment and behavior', *Annals of the New York Academy of Sciences*, 1299, 2013, 42.
- Sood, AM, 'Motivated Cognition in Legal Judgments—An Analytic Review', *Annual Review of Law and Social Science*, Vol. 9, 2013, 307–325.
- Stout, H, 'Bias' in *Judicial Review*, Vol. 16, 2011, 458–482.
- Strauss, DA, 'Must Like Cases Be Treated Alike?' 2002, University of Chicago Public Law Research Paper No. 24. Available at SSRN: <https://ssrn.com/abstract=312180>.
- Sunstein, CR, & T Miles, 'The new legal realism', *University of Chicago Law Review*, Vol. 75, 2008, 831-851.
- Thomsen, FK, 'Concept, Principle, and norm—equality before the law reconsidered', *Legal Theory* Vol. 24, 2018, 103–134.
- Waldron, J, 'Lucky in Your Judge', *Theoretical Inquiries in Law*, Vol. 9, 2007, 186-216.
- Weinshall-Margel, K, & J Shapard, 'Overlooked factors in the analysis of parole decisions', *Proceedings of the National Academy of Sciences*, Vol. 108, 2011, E833–E833.
- Westen, P, 'The Empty Idea of Equality', *Harvard Law Review*, Vol. 95, 1982, 537-596.

Wistrich, JAJ, & JJ Rachlinski, 'Implicit Bias in Judicial Decision Making: How it affects judgment and what judges can do about it' in: *Enhancing Justice (2017)*; S Redfield (ed), American Bar Association, 2017, pp. 87–130.

Yam, KC, X-P Chen, & SJ Reynolds, 'Ego depletion and its paradoxical effects on ethical decision making', *Organizational Behavior and Human Decision Processes*, Vol. 124, 2014, 204–214.