



Psychological Flaws in Judicial Decision Making

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Abstract: *The judges' decision-making always plays a very significant role in governance and the judicial system. The fortification of judicial decision-making is generally considered different aspects that operate on different levels: external and internal factors. This study examines the various Psychological flaws, i.e. Implicit Biases, Heuristics (mental shortcuts), and Noise (varied judgments at different times) in judicial decision-making. This research incorporates the shreds of evidence from various documents, articles and books. Then it explores the internal factors of environment, fatigue, mood, multitasking, and others which cause judges to be inclined toward these flaws. Furthermore, this doctrinal research tries to find valuable ways to reduce these effects. Eventually, it is concluded that judges are mostly being accountable for the code of their conduct, not for the decisions they make. Whether they are free from implicit bias, heuristics and noise? The more conscious and effortful decisions, along with the Checklists, Feedback and Accountability system of judges, can improve fairness and justice in the 21st century.*

Key Words: Psychological Flaws, Judicial Decision-making, Implicit Biases, Noise, Heuristics

Introduction

Have we ever thought, do judges' decisions depend on their mood, glucose level, fatigue and other factors? Do these factors cause psychological flaws like Implicit Biases, Heuristics, and Noise in judicial decision-making? Psychological flaws like implicit bias, heuristics and Noise, which make decisions defective, irrational and full of errors, can be seen when the prefrontal cortex is not activated, giving way to fast thinking system. Heuristics, also known as mental shortcuts (outcome of quick thinking system), is a type of cognitive flaw which makes a man jump to a conclusion and make errors while problem-solving tasks. (Kahneman, 2013). Humans, while dealing with a bulk amount of information, take shortcuts in solving problems, making decisions or giving judgements (Nisbett & Ross, 1980). Heuristics are considered as the rule of thumb because it makes people extract judgement while relying on the limited information that helps them to do so without going through all the relevant information (Kahneman et al. 1982).

It is presumed that these flaws are due to the limited cognitive and motivational resources which are required for effective decision-making, and due to the adapted heuristics, we rely on limited information, which makes us prone to different implicit biases affecting the quality of decisions (Peer & Gamliel, 2013). Implicit bias is another type of psychological flaw which dangers fair processes and just results based on stereotyped attitudes, based and they can influence almost everyone (Devine, 1989). Judges are human beings, not exceptional cases from the influence of cognitive illusions, as shown by decades of research (MacCoun, 1989). Judges also use heuristics, causing systematic decision-making errors like all humans (Guthrie et al. 2002). Some researchers believe that a poor legal education system and weak training process may be one of the reasons behind ineffective decision-making (Shah, et al 2018). This research covers various psychological flaws in the judicial field, its causes and some valuable ways to reduce their effects. This paper emphasises the importance of judicial decisions free from these hardly-seen flaws and how through

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addressing, they can make a massive difference in effective judicial decisions. Some of the considerable flaws are as under:

Confirmation Bias

When people have preconceived notions on any particular issue, they usually prefer that information that satisfies their beliefs and ignores evidence disapproving of them. Confirmation bias makes us find, explain, and create information which helps our assumptions and drives us to come up with a decision based on bias (Plous, 1993). This was proved by a study conducted at Stanford University; a few subjects favour capital punishment, while few are against it. These subjects were given studies to read which were in favour and against capital punishment. After going through the studies, those subjects who were already in favour of capital punishment agreed more with those studied that were supporting capital punishment (confirming their preconceived notions). In contrast, those subjects who were against it agreed more with the studies against capital punishment. Hence this study proved the confirmation bias (Lord et al. 1979).

Judges, while evaluating evidence, might be subject to confirmation bias. Confirmation bias might influence judges to give preference to the evidence which confirms their already held beliefs and notions and disregard other evidence which is against those notions (Peer & Gamliel, 2013). The research was conducted in Sweden, in which experts were given a murder case of a female psychiatrist. Her patient's wife was the prime suspect and was accused of murder on the basis of jealousy. Experts were provided twenty pieces of information for rating the degrees at which incriminate the suspect. At the same time, half of the experts were informed about the existence of another suspect, who was the previous male patient of the victim and was harassing her for a long time. Instead of considering the later suspect's information as evidence for a case, all experts declared the prime suspect guilty (Rassin et al. 2010). While in some cases, the killing of black people, many police officials involvement was involved in acts of terrorism were usually liberated by white judges (Channa, et.al 2022). However, the above case showed that judges failed to think the other way around. Shreds of evidence were regarded for proving the main suspect guilty instead of the different suspects. This proves that judges also pronounce judgments influenced by confirmation bias (Peer & Gamliel, 2013).

Hindsight Bias

While evaluating events and results after they happen,

people show hindsight bias when they judge the event as more predictable than earlier. This phenomenon is also known as "we knew it all along". This happens almost in every field, whether in medicine, history, law etc (Fischhoff, 2007). Generally, hindsight bias is the inequality between foresight and hindsight. Events are less predictable earlier than after they happen. People estimate a high probability of an event after its occurrence (Peer & Gamliel, 2013). An experiment was conducted in which subjects were given some possible results and were told to figure out the correct one by assessing the probability of each effect. However, different subjects were told different results than true ones. Each subject thought the higher likelihood of that outcome which was described as accurate regardless of what it was (Fischhoff & Beyth, 1975).

In the case *First Alabama Bank v. Martin* (1982), the Supreme Court of Alabama got the evidence that assets were negligently managed by the trustee, considering that the trustee sold assets in stocks "at the bottom of the market. Hence court did not explain how the market had bottomed out and could have been known to the trustee (Torbert, 1983). The hindsight bias affects the way judges decide the case. Judges influenced by hindsight bias are more likely to believe that they could have predicted the result of an issue, even if the available evidence did not follow the result at the time of the decision. Judges decide the case relying on hindsight bias than on the arguments and evidence. Judges primarily access past events with the help of hindsight bias, but they should be careful. They should avoid presuming the result is predictable merely because it occurred. Like, in a case, a car hits a cyclist, a judge may figure out that the victim was suffering from injuries. Nonetheless, instead of relying on hindsight bias, they should evaluate the evidence and situations of the accident instead of hindsight, similarly in the case of defective construction work. A judge may already figure out that the building is vandalised. Judges must evade cognitive biases and decide the claim based on the evidence of the event (Viscusi, 1999). This process of analysing past occasions based on hindsight is termed as "re-predicting the past" (Guthrie & Rachlinski, 2005).

Anchoring

The initial values also influence the decision when received by an external source, such as using irrelevant information. Anchoring is also a type of heuristic that can affect the judgement if a figure is given, whether high or lower. A study was conducted in which subjects were asked to guess the number of countries in the African continent that are also members of the United

Nations. Before assuming, they were shown a spin rolled by a researcher, and that spin stopped on numbers 10 and 65. Those subjects who were shown number ten; guessed twenty-five countries while those who were shown number sixty-five; guessed forty-five countries. This is how anchoring affects human judgment (Kahneman et al. 1982).

The research was conducted on German judges to determine the anchoring effect on judicial decision-making (Kahneman, Slovic, & Tversky., 1982). The judges were anchored in many ways, such as providing the questions asked by the journalist on the sentence, the acknowledgement of the prosecutor on the sentence and the sentence demand by the prosecutor, which was based on randomly rolled dice by a judge. The result showed that these anchors affected the decision of German judges. The judges sentenced severe punishment when shown higher randomly determined anchors (Englich et al. 2006).

Framing

While making uncertain or risky judgements, people mostly try to categorise the decision by the presently available options of gain and loss, for instance, the party deciding whether to settle the case or go for the trial. This effect of categorising is known as Framing, which influences the decision-making due to given options and by thinking about the risk incurrence. People also prefer certainty while choosing the options provided. They choose gain when shown gain-like options, whereas they choose loss when demonstrating loss-like possibilities. Such as the majority of people tend to prefer a sure profit of \$100 to 50 per cent chance to win \$200. When opportunities like a 50 per cent chance of losing \$200 and an inevitable \$100 loss are given, people prefer 50 per cent of losing \$200 (Kahneman & Tversky, 1984).

Kahneman and Tversky (1984) show how facts can have variables. This means different representations can make facts look different. The way of representation of facts plays a crucial role in decision-making. Similarly, various representations of facts also show several effects on the individual while decision making. Thus, the representation of facts affects the way we make decisions. Impacts rely on how they are presented (Koebler & Harvey, 2004). This can be seen in daily life. For example, an eighty per cent chance of success is more appealing than a 20 per cent chance of failure through showing negative and positive results. Probability can also be framed as an 80 per cent probability of success can be considered more highly probable than the 20 per cent probability

(Teigen & Keren, 2003). This shows how the framing effect influences the decision-making process.

A plaintiff had the disease, which was slowly causing him long-term loss of vision. To reduce the risk of fabrication, surgery was conducted, and it resulted in permanent vision loss. Judge was asked to award compensation. The judge granted him less money than it was usually awarded in cases of vision loss. This shows how the facts were framed and affected the judge's judgement and how his later expected vision loss was considered relevant for awarding less compensation. The other relevant facts were not shown, that how his early vision loss at a young age can cause him to be unemployed and have other adverse effects in future (Chopra, 2020).

Egocentric bias

Egocentric is a bias in which people make egocentric and self-serving decisions about themselves and their abilities. They overestimate their contribution to a joint activity too. Like married couple was asked how much they contribute to household chores. Both of them overestimated their shares. Judges can also be prone to this type of bias. The research was taken from judges in the United States. They were asked a question like what percentage of they think that the decisions of judges who are currently in that room were overturned on appeal. The 87.7 per cent of judges believed that half of the judges' decisions were overturned on appeal. But the fact was that rarely in the United States, any Judge's decision is overturned on appeal. It also showed that judges are egocentric as mobile drivers, teaching faculty members and married couples (Guthrie et al. 2002).

In a study conducted in 2009, administrative law judges showed similar tendencies to rate their own abilities highly. When asked to rate their ability to assess the credibility of witnesses and to avoid prejudice based on race or gender, a large percentage of judges believed they were in the top 50% of performers, with no judge rating themselves in the lowest quartile (Guthrie et al., 2009). This study showed how judges like other humans, are influenced by egocentric bias. Judges also make self-serving judgements. They decide cases in a way which favours their own biases.

Availability Bias

Those judgements influenced by probability depend upon ease and are known as judgements based on availability bias. When a person thinks about the previous occasion, they can imagine the happening of

an event. It can give reasonable outcomes only when observed occasions' memory harmonises perfectly with the prevalence of the actual event. Consequently, inaccurate judgements can occur (Kahneman, & Tversky, 1973).

The research was conducted in which mock jurors were asked to rate the credibility of a witness. In the first time, the witness gave testimony truthfully, and in the second, he gave false testimony. The videotapes of both depositions were given to mock jurors. The mock jurors declared the witness deceptive while keeping in mind the second recent false testimony and ignoring the first true testimony. The currently available data was given priority over the remote past ones. Thus the study proved the effect of availability bias in judicial decision-making (deTurck et al. 1989). Availability bias can cause the judge to overestimate the likelihood of any specific event or outcome. For instance, if judges have dealt with several cases related to a specific crime, they are likelier to believe that the crime is common and declare the defendant convicted. Wrong and biased decisions can be made by judges who can ignore the other factors that might have caused the crime (Kahneman, 2011).

Representativeness Heuristics

Representativeness heuristics is a mental shortcut in which decisions are made while comparing two things. If an item looks like a typical example of another thing, it is considered a result (Kahneman & Tversky, 1972). For instance, we think the consequent five heads in a row is unlike the result, while a good student will remain topper in class is likely the result. However, a good result is typically considered a thing (Koehler & Harvey, 2004). It is also applicable to single and repeated events. We use cognitive resources while feeling prey to this heuristic, and it can make us make falsifiable decisions (Olson, 1976)

For example, judges decide based on categories like the likelihood that a criminal defendant is guilty. They base their decision on the defendant's behaviour in court. As if the defendant looks nervous and shifty, they consider it evidence of guilt. But if the defendant is not guilty and is at ease, he is presumed innocent. The nervousness is viewed as evidence of guilt, while the comfort is considered evidence of innocence. So they make categories of the nervous defendants as guilty while the eased defendant as innocent. This categorisation makes the judgment based on the representativeness heuristic (Guthrie et al. 2002).

It is also demonstrated that the representativeness heuristic can also be helpful and

provide better results. But it can be only effective in statistical data but not in judicial decision-making. The representativeness heuristic can be helpful in relevant statistical data called base-rate statistics (Kahneman & Tversky, 1982). In another study, the possibility of the adverse effects of overreliance on it is discussed. Excessive reliance on the representativeness heuristic can make people decide on various errors (Kahneman et al. 1982). It shows that the representativeness heuristic is not suggested in judicial decision-making.

Noise

Noise is the hidden force that influences the judgements made by judges, doctors, forensic practitioners, army men, people in business and other office workers who make daily judgments. It is an unseen flaw in judgement when the same or different judges make various decisions, even of the same case and follow the same procedure. This variation in reviews on the same cases causes great injustice and unfair effects on others. The authors tried to explain how mood, fatigue, hunger, weather, personal experiences, and environmental factors cause variable judgements. The authors call it unwanted variability (Kahneman et al. 2022).

Kahneman and his colleagues (2022) conducted some research in which the same case was provided to some judges and were asked to come up with the decision following the same procedure as it is being used in courts. The results were astonishing. All judges gave different judgments. This is what the authors call unwanted variability or Noise in decisions. Another study was conducted in which a case was provided to a judge to decide, and he came up with a judgement, and then after a few weeks, the same case was again given to him to decide. The results showed that the same judge at different times gave different judgments following the same procedure of the same case.

Another research showed that those judges who are in a good mood or have eaten lunch or breakfast or had a good sleep pronounce the most lenient punishments, whereas those judges who are in a bad mood, haven't eaten lunch or are sleep deprived pronounce severe penalties. So the question arises, "Does the justice system depend on a specific judge on specific conditions at a specific time to give specific punishment?" Cognitive biases also play a significant role in bad judgements and noise. To improve the quality of the judgement, judges must be trained to be aware of these hidden factors and how to recognise and overcome these flaws. There should also be an outside reviewer who should go through the judgement thoroughly and analyse the judgements

and all the factors which cause noise. As authors repeatedly state that in every judgement, there is always more noise than we assume (Kahneman et al. 2022).

The Factors Causing Bias, Heuristics and Noise and Their Effects

Defence decision causes grave unfairness and injustice to the individual who comes to court. Before finding solutions to decrease the effect of faulty heuristics and biases, it is necessary to understand the factors causing them. The following are some factors affecting the decision-making of judges:

Fatigue and Low Glucose Level

Usually, sleeplessness causes deprivation, which results in fatigue. Its effects on poor communication, rigidity in the thinking process, inadequate focus on a peripheral concern like distractions, lack of creativity, too much dependence on stereotype methods, unable to try new approaches, missing memory patterns of any event, mood changes like loss of concentration and lack of dealing with surprise and shock (Harrison & Home, 2000). Due to fatigue, judges also go through these effects, which cause them to be more prone to faulty heuristics, bias and noise.

Low glucose level also affects decision-making. The brain consumes 20% of our daily calorie intake because it needs more energy to be more focused and active and makes decisions based on rationality. When the glucose level is low, the heuristics, biases and noises take changes. At the same time, decision-making makes our thinking fast (less attentive consideration and slow reflection (more focused and cautious) become set aside due to a lack of energy for cognitive functions (Masicampo & Baumeister, 2008).

Research was conducted which showed the effects of fatigue, and low glucose levels can affect judges' decisions. The study was conducted on parole board judges. Studies showed that the findings of judges are dependent on what time they hear the case. When they hear the case in the early morning and after lunch breaks, judges are granted more parole than those heard before and at the end of the day. So the researchers concluded that the judges' level of fatigue and the level of glucose affect their decision-making (Danziger et al. 2011).

Gastronomic Jurisprudence

Another state of mind which affects the judges' decisions is known as Gastronomic Jurisprudence (Clark, 1942). This state of mind reflects the judges'

decisions that are based on the condition of their digestion or, in other words, the type of food judges eat can have an impact on their judgement. This thought has been considered an unrealistic old phenomenon due to the probability of legal representation and cases heard non-randomly. Priel (2020) argues that this is an old idea of unknown origin that digestion influences the state of mind, favoured by many legal realists such as nineteenth-century English judge Charles Bowen, Walter B. Kennedy, Jerome Frank and also non-lawyers Alexander Pope, Charles Dickens, Lord Campbell, and Michel de Montaigne. However, he disagrees with them keeping the scientific literature at a distance. The new research done on brain-gut connections proves how the microbes of the gut are directly connected to the brain, thus known as the "second brain". It affects mood, inspiration, and mental functions such as the intuitive making of the decision (Mayer, 2011).

Multitasking

Multitasking is also a cause of distractions and being less focused because it makes judges repeatedly switch from one task to another. Watson and Strayer (2010) conducted research which shows that 97% of the study subjects faced adverse effects on their performance. When judges are asked to switch tasks from one to another, it distracts them and affects their performance when judges are diverted from other matters; parties lose faith or belief in the judicial system and consider that judges are not hearing their voice which affects their brain reward system (Tamir & Mitchell, 2012).

The economists discovered that a particular tribunal in Italy was using an ineffective method for managing their cases. They found that the judges were handling too many issues simultaneously, causing them to not concentrate on any individual case fully. This meant that although many cases had initial hearings, there were few final hearings. Instead, it would have been more efficient for the judges to concentrate on a few instances, complete them, and then move on to the next set of cases. To illustrate this point, consider a judge assigned two cases, A and B, each requiring ten days of undivided attention to complete. If the judge juggles both cases by working on A on odd days and B on even days, the average duration of the two points would be 19.5 days (with both cases completed on the 20th day). However, if the judge focuses on each issue in turn, she would complete A on the 10th day and B on the 20th day, resulting in an average duration of both cases from the time of assignment of just 15 days (Harley & Persico,

2018). Multitasking affects the quality of judges' decisions. It can cause the judge to decide on issues based on biases and heuristics and make them prone to take shortcuts to complete the task. As a result, it makes them give biased outcomes and judgements.

Mood

The way the human brain processes information depends on the psychological mood. A positive attitude makes us think fast without much effort, while a negative mood makes us feel slow with action. A positive mood enhances the default processing approach, while a negative mood fights against it (Huntsinger et al. 2010). A positive mood makes us think fast, which causes default and relies on already-held preconceived notions. While a negative mood makes us feel slow, that signal default by paying attention. Elsbach and Barr (1999) suggested that a negative attitude is best for tasks which require more effort, like the decision-making done by the judges.

Mood affects the way judges interpret the case. In a positive mood, judges interpret the issue in a lenient way and give favour to the defendant (Dhami et al., 2004). A study shows how temperature affects the mood of the judges and, as a result, of that, affects the judges' decisions. They examine the impact of outdoor temperature on high-stakes decisions made by US immigration judges. Despite being indoors with climate control, a 10°F degree increase in case-day temperature reduces decisions favourable to the applicant by 6.55 per cent. This finding aligns with existing research linking temperature to mood and risk appetite and has significant implications for understanding how climate affects cognitive output (Heyes & Saberian, 2019).

Fluency

When we process information efficiently or in a hurry without any effort, we are fluent, making our minds think fast and make decisions without giving much attention to it. People consider fluent processing of the brain as more accurate and true (Alter & Oppenheimer, 2009). But researchers have disproved these stereotypical beliefs. A study was conducted in which some subjects were given easy-to-read fonts, whereas others were given challenging-to-read fonts. Easy-to-read fonts made readers fluent, and they didn't give much attention and focus to it, while hard-to-read fonts made readers diffident, and they were more focused and attentive. The results showed that diffident readers answered more correctly than fluent when asked questions about their readings (Alter et al. 2007).

The effect of fluency was also tested in a courtroom setting. Subjects were given a case to decide by going through the evidence. Some were given evidence in a linear coherent order, while others were presented in twisted order. Both had to develop narrative stories to get and decide on them. The results showed that a cohesive and easy-to-make story affects the credibility of evidence and judgement made from these. More clearly, it showed that the report, which was easier to narrate through linear coherent order, shifted the direction of the decision (Pennington & Hastie, 1992).

Reducing Unconscious Biases, Heuristics, and Noise: Effective Strategies

Judges process information and then come up with the judgement. If judges have to improve the quality of performance, then they must focus on improving the functions of information processing and making judgments. By doing so, they can be benefited in other ways too. There are some pragmatic strategies which can help judges to achieve mindfulness while performing their tasks (Kahneman et al. 2022).

Finding Ways to Reduce Stress

Stress is a significant obstacle to the processing of information and making a judgement. Judges strongly believe that stress is a part of their daily duties which causes severe physical and mental health issues. These physiological repercussions of stress may also impair the Judge's decision-making. Thus, stress management is necessary before information processing and decision-making (Heydenfeldt et al. 2011). Reducing stress may make judges use implicit bias, heuristics, and noise alone. It may help judges make good judgements and stay calm. Continuing education and training for judges improve their well-being. According to the current study, judges should be taught how to seek social support and control their emotions (Maroney & Gross, 2013). Trauma training reduces compassion fatigue, professional burnout, and work satisfaction in mental health practitioners, indicating it might aid judges (Sprang et al., 2007).

Judges might reduce work stress by taking sabbaticals. Judges need time to relax, ponder, and take a break, according to the suggestion. The authors believe sabbaticals would rejuvenate judges and motivate them to work. According to Jaffe et al. (2003), courts should investigate ways to reduce judge stress. The authors believe that judges benefit from a combination of trial hearings, documentation, and continuance requests. The authors found that judges who heard ten or more trials in a year reported better

job performance. This may indicate that trials provide a much-needed break from other, mundane tasks (Resnick et al., 2011).

Attention on Purpose

Some unnecessary responsibilities given to judges, like signing orders, writing reviews, making speeches, and hearing moving cases, are some of the disturbance-causing factors from their primary purpose of being a judge. Many cases at a time can also be the reason for the disturbance. Providing some time for judges to be attentive can be an excellent way to reduce the adverse effects of fast thinking. One of the administrative Judges, Judy Harris Kluger, in The Crime Report in 2014, pointed out the same in a busy New York court in the following words:

"For a long time, my claim to fame was that I arraigned 200 cases in one session. That's ridiculous. When I was arraigning cases, I'd be handed the papers, say the sentence is going to be five days, ten days, whatever, never even looking at the defendant. At a community court, I'm able to look up from the papers and see the person standing in front of me. It takes two or three more minutes, but I think a judge is much more effective that way."

It is also shown by the researchers that these judges who work on a volume of cases on a specific day on less satisfied and meaningful for their work than those who contribute to a fair and just court system while dealing with one issue at a time. This showed that satisfied ones are always renowned for contributing to the judicial field (Rosso et al. 2010). Too much burden on cases can make judges less motivated to work on the case, and this can have negative impacts on the decision-making of judges. The attention of judges can be distracted, so it is highly important to take measures for making their attention on the case while decision making.

Formalizing Decision Heuristics

However, it is assumed that judges process information and systematic decisions, reviews and decision, but practically this is not true. The research was conducted on the bails in England and Wales. Judges' decisions were based on matching heuristics depending on the following three factors.

- 1) Bail opposed by the prosecution
- 2) Terms and conditions and remand imposed by previous courts
- 3) Terms and conditions and remand imposed by police while in custody

When the magistrate gets answers to these questions, as yes, he refuses to grant bail (Dhami, 2003). Another study was also conducted to show that judges mostly rely on simple heuristics (Dhami & Ayton, 2001).

In the medical field, the medical community formalised heuristics to detect heuristics in their decisions through critical review. Then, they made it more straightforward and improved it (McDonald, 1996). This also can be applied in the judicial field. They should also formalise decision heuristics in every case, whether civil or criminal. Then they can also detect heuristics, bias and noise to improve their decisions so that justice can be done (Gigerenzer & Engel, 2006).

Formalising decision heuristics makes judges decide with different options and outcomes to assess systematically. It helps them to break complex decisions into smaller, simpler and more manageable chunks. They make judges recognise errors and make them correct and reduce the effects of bias and heuristics. The use of an algorithm is a digital tool for formulating decision heuristics for an accurate analysis of a large amount of information (Danks & London, 2017).

Identifying Distractions and Becoming More Mindful

Specific factors affecting judges' work cause distractions due to multitasking, fatigue, hunger, mood etc. Harvard University students researched that a person needs 20 to 30 minutes to concentrate and focus on the tasks again after a simple distraction. A proper mechanism for identifying all the distractions and reducing their effect should be enforced in courtrooms. The court environment, like temperature, noise and others, should be periodically identified and balanced (Enayati, 2011). Lawyers and judges must be taught mindful practices like mediation for better concentration (Hölzel et al. 2011). It does not be considered a religious ritual but an efficient way to reduce stress and to be more mindful (Codiga, 2002).

Judges can reduce their biases and heuristics by identifying distractions, including emotions, internal thoughts and external noise. Research demonstrates that external noise adversely impacts decision-making and can lead to bias and decreased cognitive functions (Klatte et al., 2013). Lueke and Gibson (2015) conducted a study in which they found that practising mindfulness can reduce psychological biases and make people decide based on rationality. Mindfulness makes judges aware of their bases and heuristics, which can cause them to take measures to minimise biases and heuristics during decision-making.

Making Checklists

Making checklists is a great way to improve many fields that need extra care and attention. Physicians adopted this strategy in the medical field. For that purpose, simple checklists were made, like washing hands with soap etc. Thus this saved not only many lives but also millions of dollars (Gawande, 2010). Guthrie and others (2007) highlight that in substantive matters, judges occasionally use checklists like Do all ingredients of an offence fall in this case or not? But rarely this same strategy is applied in procedural issues. Judges hardly get essential information about the case unless parties in court plead it. A checklist in procedural matters can bring a huge difference and bring parties to fairness and justice.

The JFG recommended the utilisation of checklists or bench cards that contain a set of "best practice" questions or exercises (e.g., perspective-taking, cloaking) to encourage decision-makers to systematically examine and question the reasoning behind their decisions for any indications of possible bias. However, this approach should only be employed after decision-makers have received training on implicit bias and diversity, and it should be offered voluntarily. If untrained judges use these tools, their attempts to correct discrimination may be inconsistent and limited to specific cases. If resistant judges are required to use these tools, using checklists as a mandatory procedure could have the opposite effect and increase biases among such individuals (Casey et al., 2012).

Accountability and Feedback

For getting expertise and learning, feedback is one of the most effective ways. This can help judges to improve their ability of judicial decisions. Review is also a type of feedback, but till it is reviewed on any higher forum, there remains a significant gap which reduces the essence of feedback as it must be done

immediately after the decision. A judgement which is not working systematically well cannot be improved by the judge later on. Do judges try to observe the given conclusion again, or is the judgement free from implicit bias, heuristics and noise? Do courts conduct surveys after pronouncing judgements to know the satisfactory level of judgements? (Courttools, 2020).

A neutral observer must be appointed who can observe the reasoning of the judicial mind of the judges on every point of the case (Brest & Krieger, 2010). Lastly, a more effortful and effective judicial sense can be achieved through accountability. It causes accuracy and a more rational explanation of the judge's decision (Braman, 2010). Judges must ask themselves: "How can the judgement be improved, and why the extracted judgement is appropriate?" This can be done with efficient feedback and an accountability system.

Conclusion

Certain factors like mood, fatigue, glucose level and others are causing serious flaws - unwanted noise, biases and heuristics, in judicial decision making affecting the quality of judicial decisions. Evidence has shown how their effects can be reduced through proper feedback, accountability, mediation, making checklists etc. It is concluded that in almost every country, judges are being accountable for their conduct but not for the decisions they make. So it is recommended to take steps by every judicial system in the world make responsible the judges their choices and make sure these judgements are free from above mentioned psychological flaws. It emphasises that further empirical research should be done by the judicial system of every country, including Pakistan, to determine all these unseen flaws and others and their effects in the courtrooms and how along with these other strategies, can improve the quality of judgements. Consequently, the people can have a firm belief in the judiciary.

References

- Alter, A. L., & Oppenheimer, D. M. (2009). Uniting the tribes of fluency to form a metacognitive nation. *Personality and Social Psychology Review, 13*(3), 219–235. <https://doi.org/10.1177/1088868309341564>
- Alter, A. L., Oppenheimer, D. M., Epley, N., & Eyre, R. N. (2007). Overcoming intuition: Metacognitive difficulty activates analytic reasoning. *Journal of Experimental Psychology: General, 136*(4), 569–576. <https://doi.org/10.1037/0096-3445.136.4.569>
- Braman, E. (2010). Is Searching for constraint in legal decision making. *The Psychology of Judicial Decision Making, 203–218*. <https://doi.org/10.1093/acprof:oso/9780195367584.003.0013>
- Brest, P. Krieger, L. H. (2010). *Problem solving, decision making, and professional judgment: A guide for lawyers and policymakers*. Oxford University Press
- Casey, Warren, Cheesman, and Elek , (2012). *Strategies to reduce the influence of implicit bias*. Yale University. https://horsley.yale.edu/sites/default/files/files/IB_Strategies_033012.pdf
- Channa, A. (2022). Human Rights And World On The Edge Of World War III. *Pakistan Journal of International Affairs, 52*(2), 633–651. <https://piia.com.pk/index.php/piia/article/view/469/337>
- Chopra, S. (2020). The psychology of framing and jury decision-making. *Journal of Consumer Attorneys Associations for Southern California*.
- Clark, C. E. (1942). The function of Law in a Democratic society. *The University of Chicago Law Review, 9*(3), 393. <https://doi.org/10.2307/1597400>
- Codiga, D.A. (2002). Reflections on the Potential Growth of Mindfulness Meditation in the Law. *7 Harv. Negot. L. Rev*, 109
- Courttools. (2020, April 5). *Trial Court performance measures*. Courttools. <https://www.courttools.org/trial-court-performance-measures>
- Danks, D., & London, A. J. (2017). Algorithmic bias in autonomous systems. *International Joint Conference on Artificial Intelligence, (January), Melbourne, Australia*:4691–4697.
- Danziger, S., Levav, J., & Avnaim-Pesso, L. (2011). Extraneous factors in judicial decisions. *Proceedings of the National Academy of Sciences, 108*(17), 6889–6892. <https://doi.org/10.1073/pnas.1018033108>
- deTurck, M., Texter, L., & Harszrak, J. (1989). Effects of information processing objectives on judgments of deception following perjury. *Communication Research, 16*(3), 434–452. <https://doi.org/10.1177/0093650890160033006>
- Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology, 56*(1), 5–18. <https://doi.org/10.1037/0022-3514.56.1.5>
- Dhami, M. K. (2003). Psychological models of Professional Decision making. *Psychological Science, 14*(2), 175–180. <https://doi.org/10.1111/1467-9280.01438>
- Dhami, M. K., & Ayton, P. (2001). Bailing and jailing the fast and frugal way. *Journal of Behavioral Decision Making, 14*(2), 141–168. <https://doi.org/10.1002/bdm.371>
- Dhami, M. K., Hertwig, R., & Hoffrage, U. (2004). The role of representative design in an ecological approach to cognition. *Psychological bulletin, 130*(6), 959–988. <https://doi.org/10.1037/0033-2909.130.6.959>
- Elsbach, K. D., & Barr, P. S. (1999). The effects of mood on individuals' use of structured decision protocols. *Organization Science, 10*(2), 181–198. <https://doi.org/10.1287/orsc.10.2.181>
- Enayati, A. (2011, May 11). *Seeking Serenity: When lawyers go zen*. CNN. <https://thechart.blogs.cnn.com/2011/05/11/seeking-serenity-when-lawyers-go-zen/>
- Englich, B., Mussweiler, T., & Strack, F. (2006). Playing dice with criminal sentences: The influence of irrelevant anchors on experts' judicial decision making. *Personality and Social Psychology Bulletin, 32*(2), 188–200. <https://doi.org/10.1177/0146167205282152>
- Fischhoff, B. (2007). An early history of hindsight research. *Social Cognition, 25*(1), 10–13. <https://doi.org/10.1521/soco.2007.25.1.10>
- Fischhoff, B., & Beyth, R. (1975). I knew it would happen. *Organizational Behavior and Human Performance, 13*(1), 1–16. [https://doi.org/10.1016/0030-5073\(75\)90002-1](https://doi.org/10.1016/0030-5073(75)90002-1)
- Gawande, A. (2010). *The Checklist Manifesto: How To Get Things Right*. Metropolitan Books
- Gigerenzer, M. Engel, C. (2006). *Heuristics and the law*. <https://doi.org/10.7551/mitpress/3488.001.0001>
- Guthrie, C. Rachlinski, J. Wistrich, A. (2002). Judging by Heuristic: Cognitive illusions in judicial decision making. *Judicature, 86*(1)
- Guthrie, C., & Rachlinski, J. J. (2005). Can judges ignore inadmissible information? the difficulty of deliberately disregarding. *University of*

- Pennsylvania Law Review*, 153(4), 1251.
<https://doi.org/10.2307/4150614>
- Guthrie, C., Rachlinski, J. J. Wistrich, A. J. (2007). Blinking on the bench: How judges decide cases. *Cornell Law Faculty Publications*, 917
- Guthrie, C., Rachlinski, J. J., & Wistrich, A. J. (2009). The hidden 'judiciary': An empirical examination of executive branch justice. *Duke Law Journal*, 58(7)
- Harley, G. Persico, N. (2018). *Multi-tasking - why it's bad for court efficiency*. World Bank Blogs. <https://blogs.worldbank.org/europeandcentralasia/multi-tasking-why-it-s-bad-court-efficiency>
- Harrison, Y., & Horne, J. A. (2000). The impact of sleep deprivation on decision making: A review. *Journal of Experimental Psychology: Applied*, 6(3), 236-249. <https://doi.org/10.1037/1076-898x.6.3.236>
- Heydenfeldt, J. A., Herkenhoff, L., & Coe, M. (2011). Cultivating mind fitness through mindfulness training: *Applied neuroscience. Performance Improvement*, 50(10), 21-27. <https://doi.org/10.1002/pfi.20259>
- Heyes, A., & Saberian, S. (2019). Temperature and Decisions: Evidence from 207,000 Court Cases. *American Economic Journal: Applied Economics*, 11(2), 238-265. <https://doi.org/10.1257/app.20170223>
- Hölzel, B. K., Lazar, S. W., Gard, T., Schuman-Olivier, Z., Vago, D. R., & Ott, U. (2011). How does mindfulness meditation work? proposing mechanisms of action from a conceptual and Neural Perspective. *Perspectives on Psychological Science*, 6(6), 537-559. <https://doi.org/10.1177/1745691611419671>
- Huntsinger, J. R., Clore, G. L., & Bar-Anan, Y. (2010). Mood and global-local focus: Priming a local focus reverses the link between mood and global-local processing. *Emotion*, 10(5), 722-726. <https://doi.org/10.1037/a0019356>
- Jaffe P. G., Crooks C. V., Dunford-Jackson B. L., & Town J. M. (2003). Vicarious trauma in judges: The personal challenge of dispensing justice. *Juvenile and Family Court Journal*, 54(4), 1-9.
- Kahneman, D, Tversky, A. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology*, 5(2), 207-232. [https://doi:10.1016/0010-0285\(73\)90033-9](https://doi:10.1016/0010-0285(73)90033-9)
- Kahneman, D. (2011). *Thinking, Fast and Slow* (1st Ed.). Farrar, Straus and Giroux
- Kahneman, D., & Tversky, A. (1972). Subjective probability: A judgment of representativeness. *Cognitive Psychology*, 3(3), 430-454. [https://doi.org/10.1016/0010-0285\(72\)90016-3](https://doi.org/10.1016/0010-0285(72)90016-3)
- Kahneman, D., & Tversky, A. (1982). On the psychology of prediction. *Judgment under Uncertainty*, 48-68. <https://doi.org/10.1017/cbo9780511809477.005>
- Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. *American Psychologist*, 39(4), 341-350. <https://doi.org/10.1037/0003-066x.39.4.341>
- Kahneman, D., Sibony, O., & Sunstein, C. R. (2022). *Noise: A flaw in human judgment*. Little, Brown Spark.
- Kahneman, D., Slovic, P., & Tversky, A. (1982). *Judgment Under Uncertainty: Heuristics and biases* (1st ed.). Cambridge University Press.
- Kip Viscusi, W. (1999). How do judges think about risk? *American Law and Economics Review*, 11(1), 26-62. <https://doi.org/10.1093/aler/11.26>
- Klatte, M., Bergström, K., & Lachmann, T. (2013). Does noise affect learning? A short review on noise effects on cognitive performance in children. *Frontiers in Psychology*, 4, 578. <https://doi.org/10.3389/fpsyg.2013.00578>
- Koehler, D, Harvey, N. (2004). *Blackwell Handbook of Judgment and Decision Making*. Blackwell Publishing
- Lord, C. G., Ross, L., & Lepper, M. R. (1979). Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *Journal of Personality and Social Psychology*, 37(11), 2098-2109. <https://doi.org/10.1037/0022-3514.37.11.2098>
- Lueke, A., & Gibson, B. (2015). Mindfulness Meditation Reduces Implicit Aged Race Bias: The Role of Reduced Automaticity of Responding. *Social Psychological and Personality Science*, 6(3), 284-291. <https://doi.org/10.1177/1948550614559651>
- MacCoun, R. J. (1989). Experimental research on jury decision-making. *Science*, 244(4908), 1046-1050. <https://doi.org/10.1126/science.244.4908.1046>
- Maroney, T. A., & Gross, J. J. (2013). The Ideal of the Dispassionate Judge: An Emotion Regulation Perspective. *Emotion Review*, 6(2), 142-151. <https://doi.org/10.1177/1754073913491989>
- Masicampo, E. J., & Baumeister, R. F. (2008). Toward a physiology of dual-process reasoning and judgment: Lemonade, Willpower, and expensive rule-based analysis. *Psychological Science*, 19(3), 255-260. <https://doi.org/10.1111/j.1467-9280.2008.02077.x>

- Mayer, E. A. (2011). Gut feelings: The emerging biology of Gut-Brain Communication. *Nature Reviews Neuroscience*, 12(8), 453-466. <https://doi.org/10.1038/nrn3071>
- McDonald, C. J. (1996). Medical heuristics: The silent adjudicators of clinical practice. *Annals of Internal Medicine*, 124(1_Part_1), 56. https://doi.org/10.7326/0003-4819-124-1-part_1-199601010-00009
- Nisbett, R. E., & Ross, L. (1980). *Human inference: Strategies and shortcomings of social judgement*. Prentice Hall.
- Olson, C. L. (1976). Some apparent violations of the representativeness heuristic in human judgment. *Journal of Experimental Psychology: Human Perception and Performance*, 2(4), 599-608. <https://doi.org/10.1037/0096-1523.2.4.599>
- Peer, E. Gamliel, E. (2013). Heuristics and biases in judicial decisions. Court Review: The *Journal of the American Judges Association*, 422 https://digitalcommons.unl.edu/ajacourtreview/422?utm_source=digitalcommons.unl.edu%2Fajacourtreview%2F422&utm_medium=PDF&utm_campaign=PDFCoverPages
- Pennington, N., & Hastie, R. (1992). Explaining the evidence: Tests of the story model for juror decision making. *Journal of Personality and Social Psychology*, 62(2), 189-206. <https://doi.org/10.1037/0022-3514.62.2.189>
- Plous, S. (1993). *The psychology of judgment and decision making*. McGraw-Hill.
- Priel, D. (2020). Law Is What the Judge Had for Breakfast: A Brief History of an Unpalatable Idea. *Buffalo Law Review*, 68, 899 Priel, D. (n.d.). Law Is What the Judge Had for Breakfast: A Brief History of an Unpalatable Idea. Digital Commons @ University at Buffalo School of Law. <https://digitalcommons.law.buffalo.edu/buffalolawreview/vol68/iss3/4>
- Rassin, E., Eerland, A., & Kuijpers, I. (2010). Let's find the evidence: An analogue study of confirmation bias in criminal investigations. *Journal of Investigative Psychology and Offender Profiling*, 7(3), 231-246. <https://doi.org/10.1002/jip.126>
- Resnick A., Myatt K. A., & Marotta P. V. (2011). Surviving bench stress. *Family Court Review*, 49(3), 610-617. <https://doi.org/10.1111/j.1744-1617.2011.01396>
- Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and Review. *Research in Organizational Behavior*, 30, 91-127. <https://doi.org/10.1016/j.riob.2010.09.001>
- Shah, S. A., Balasingam, U., & Dhanapal, S. (2018). Legal Education in Pakistan: An Overview. *IJUM Law Journal*, 26(2), 401-432. <http://dx.doi.org/10.31436/ijumlj.v26i2.380>
- Sprang G., Clark J. J., & Whitt-Woosley A. (2007). Compassion fatigue, compassion satisfaction, and burnout: Factors impacting a professional's quality of life. *Journal of Loss and Trauma*, 12(3), 259-280. <https://doi.org/10.1080/15325020701238093>
- Tamir, D. I., & Mitchell, J. P. (2012). Disclosing information about the self is intrinsically rewarding. *Proceedings of the National Academy of Sciences*, 109(21), 8038-8043. <https://doi.org/10.1073/pnas.1202129109>
- Teigen, K. H., & Keren, G. (2003). Surprises: Low probabilities or high contrasts? *Cognition*, 87(2), 55-71. [https://doi.org/10.1016/s0010-0277\(02\)00201-9](https://doi.org/10.1016/s0010-0277(02)00201-9)
- The Crime Report. (2014, December 3). Judy Harris Kluger: *Building a Court System 'Designed for Humans.'* <https://thecrimereport.org/2014/12/03/2014-12-judy-harris-kluger-building-a-court-system-designed/>
- Torbert, C. J. (1983, January 14). *First Ala. Bank of Montgomery, N.A. v. Martin. Legal research tools from Casetext.* <https://casetext.com/case/first-ala-bank-of-montgomery-na-v-martin>
- Watson, J. M., & Strayer, D. L. (2010). Supertaskers: Profiles in extraordinary multitasking ability. *Psychonomic Bulletin & Review*, 17(4), 479-485. <https://doi.org/10.3758/pbr.17.4.479>