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Realist theory of adjudication to the test of cognitive science

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Abstract

Being characterised by the centrality of legislation, one may say that Western legal theories have been grounded on a sort of Kahneman's deliberative-slow System 2. Kahneman, however, has also outlined how System 2 interacts with heuristics-fact System 1 within decision-making. Over the past decades, a number of inquiries on practical reasoning has grown widely: in the field of moral psychology, it has gone from views of morality based on abstract rules to those emphasising the coexistence of additional factors in moral deliberation. Brought to the legal domain, this has proved the judicial decision-making to be more alive to the influence of heuristics and cognitive biases, then generally admitted. Yet, since the early decades of 20th century, legal scholars such as Frank and Ross explored the psychological grounds of judicial reasoning. Reassessed in light of the latest advancements afforded by cognitive science, their insights show how a realist view is the most viable alternative in both theories of legal sources and judicial adjudication.

Key words

Dual process theories; bias and heuristics; judicial decision-making; Jerome Frank; Alf Ross; law and mind

Resumen

Al caracterizarse por la centralidad de la legislación, se puede decir que las teorías jurídicas occidentales se han basado en una especie de Sistema 2 deliberativo y lento de Kahneman. Sin embargo, Kahneman también ha esbozado cómo el Sistema 2 interactúa con el Sistema 1 heurístico y factual en la toma de decisiones. En las últimas décadas, han proliferado las investigaciones sobre el razonamiento práctico: en el campo de la psicología moral, se ha pasado de una visión de la moral basada en reglas abstractas a otra que hace hincapié en la coexistencia de factores adicionales en la deliberación

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moral. Trasladado al ámbito jurídico, esto ha demostrado que la toma de decisiones judiciales está más sujeta a la influencia de la heurística y los sesgos cognitivos de lo que se suele admitir. Sin embargo, desde las primeras décadas del siglo XX, juristas como Frank y Ross exploraron los fundamentos psicológicos del razonamiento judicial. Reevaluadas a la luz de los últimos avances de la ciencia cognitiva, sus ideas muestran cómo una visión realista es la alternativa más viable tanto en las teorías de las fuentes jurídicas como en la adjudicación judicial.

Palabras clave

Teorías del proceso dual; sesgos y heurísticas; toma de decisiones judiciales; Jerome Frank; Alf Ross; derecho y mente

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1. Introducing DPT. One eye on the past

Over the past fifty years, *Dual-process theories* (DPT) have been developed and widespread in different specific research domains such as cognitive psychology, social psychology and moral psychology. More broadly, DPT has embraced generalised aspects across multipurpose content-domains sharing the common vision of human mind as divided into two parts. Despite the variety of approaches, forms and nuances that makes it impossible to proceed with an explanatory *reduction ad unum*, the conceptual shared nature underlying DPT is, in a nutshell, the partition of human mind into two qualitatively distinct mental processes operating in automatic or nonautomatic fashion, and, therefore, available for a number of cognitive tasks.

That human 'mind' is portioned is a belief as ancient as the history of mankind. Human existence has traditionally been viewed as a struggle exemplified in the twofold co-existing, and yet in contrast sides in human nature: rationality and animality. In that regard, it suffices here to recall Plato's (1993) tripartite division of the soul in *appetitive*, *spirited* and *rational*. Or, also, the Aristotelian virtue ethics in which emotions are embedded into the virtues of character, and are therefore a vital part of decision-making (Aristotle 1999).

Nevertheless, in both Plato and Aristotle is the rational cognitive capability the greatest peculiarity of the human "mental life". Indeed, this vision continued and grew over time. The analytic thinking alongside the belief in a partitioned 'mind' has remained the dominant form in Western philosophical cultures, a sort of myth which has reached us from age to age. This view has taken on in history ever new forms and modalities shaped by different philosophical peculiarities – think of Aquinas, Descartes, Leibniz, Schopenhauer. In the 18th century, however, English and Scottish philosophers, such as Hutchenson, Hume and Smith supported a shift towards emotional primacy. In his theory of motivation, Hume claimed that while both necessary for properly understand motivation (the will), in the last instance *passions* (manifested in desires) are the driving acting-force, whereas *reason* (manifested in beliefs and means) cannot motivate action on its own. As Hume (1896, 415) said:

> Reason is, and ought only to be the slave of the passions, and can never pretend to any other office than to serve and obey them.

And this because, while reason concerns with what *is* the case, passions concern with what *is to be* or *ought to be* the case. What ensues is a gap between *is* and *ought*, and the corresponding impossibility to derive *ought*-conclusions from *is*-premises.

A strong response to Hume's moral sentimentalism came from Kant who strongly emphasised that *is*-questions belong to the sphere of theoretical reason, whereas *ought-to be* questions should be answered by practical reason. The supreme principle of practical reason is the categorical imperative – the unconditionally valid ultimate source of morality representing an action as good and objectively necessary itself, independently of contingent ends. Therefore, for Kant (2000, 272) passions hinder the sovereignty of reason as they are:

> inclinations that make all determinability of the faculty of choice by means of [rational] principles difficult or impossible.

Kant's account of reason would acquire larger resonance on future philosophical thought, both in ethics/metaethics and the law. A prime example comes from Hare's prescriptivism aimed at combining Aristotle's ethics with some aspects of Kant's moral theory. The most eloquent implications of Kantian thinking in legal theory, have been performed by Kelsen in his pure theory of law (1934, 1960), a positivistic programme designed to answering the question of what law *is* and not of what law *ought-to be*.

From the late 19th century, a number of psychologists adopted approaches strikingly compliant with the relevant aspects of Hume's skepticism about the normative authority of general rules. It was in his assumption regarding the partition of the mind, that Freud anchored to tradition, though opened to innovation. Freud's psychodynamic perspective (1963) according to which the human mind is vertically structured and triparted in levels of awareness (conscious, unconscious and preconoscious) and the unconscious mind as the primary guiding and source of human thinking and behaviour, marked a new and important step on what now is generally regarded as DPT or, more extensively, dual-process model (DPM). In the next section, more light will be shed on the origins and developments of DPT across a variety of fast-growing areas of research.

2. Today's DPT

2.1. Specific topic areas. Moral psychology vs. normative ethics

Since the early 1980s, DPT general framework has received worldwide recognition in a substantial body of research with reference to *specific topic areas* such as persuasion, attitude formation and change, behavioural relations, stereotyping and prejudice (Chaiken and Trope 1999, Smith and Collins 2009).[1] DPT has been instrumental in driving innovation in the development of specific domains within moral psychology, particularly with regard to moral cognition, moral judgments and decision-making. In this regard, DPT served to open up new avenues – in contrast to the leading Kantian-inspired American contributions by the psychologist Lawrence Kohlberg, whose well-known experiment coded the six-stage progression in children's reasoning about the social world. More specifically, Kohlberg advocated that morality comes from reasoning, and that a good reasoning is the road to truth and good behaviour (Kohlberg and Kramer 1969, Kohlberg 1976). In this field, two most prominent figures stood against dominant rationalism: Johnatan Haidt and Joshua Greene. According to social intuitionist model (SIM) elaborated by Haidt (2001), morality is the major form of adaption for species. Moral intuitions, for their part, may be *innate*, as they are, he said (2001, 826) "built in some regions of the brain and body", externalized as part of maturation, and then *enculturated* – shaped by cultural norms during development through local cultural environment, customary practices and peer socialization (2001, 827).[2] For Haidt, moral

[1] For a more thorough instructional overview of the various specific DPT topic areas see: Gawronski and Creighton 2013.

[2] For Haidt, the interaction between innate moral intuitions and cultural evolution produces a variety of moral matrices. This explains the diversity of moralities and policies across cultures. By combining studies of evolutionary theory with anthropological observations, Haidt lists five innate moral foundations: care/harm; fairness/cheating; loyalty/betrayal; authority/subversion; sanctity/degradation. Like a tongue with six taste receptors, such moral foundations are good candidates for being receptors of the righteous mind (Haidt 2012, 141-143, 149-179).

intuitions cause moral judgements as they arise automatically and effortlessly.[3] A captivating metaphor used by Haidt for illustrating that the mind is divided in two mental processes and that intuition and reasoning are two different kinds of cognition (being moral emotions only a type of the former) is that of "the rider on the elephant": the rider's job (the conscious reasoning) is to act as the spokesman of the elephant (the unconscious process). Their relationship is dignified as the elephant is open to reason, therefore, is not despotic though being a ruler, while the rider is not a slave though being servile. However, as Haidt's motto (2001,1) goes: "intuitions come first, strategic reasoning second".

Placing greater emphasis on intentions and intuitive moral judgments, the cognitive neuroscience of moral judgments has taken a specific significance on normative ethics, too. Greene's DPT of moral judgment reflects a more general distinction between deontological and consequentialist judgments. In the wake of the most recent brain studies showing the underlying neural dynamics of *now/later* responses, Greene (2014) suggests that moral judgements may display characteristic patterns in the brain disclosing their own cognitive structure. More particularly, by reflecting the outputs of distinct and (in some cases) competing neural systems (Greene 2011), Greene also showed (Greene and Young 2009) that these patterns result in different moral decisions on high-conflict moral dilemmas, such as the *switch* and the *footbridge* cases. DPT was notoriously inspired by the Trolley dilemma, a thought experiment in moral philosophy first devised by Philippa Foot (1967) and then revised by Judith Thomson in 1985. In short: in the *switch* case, the driver of a runaway trolley headed toward five people can trigger a switch to steer from one track to another, in order to hit one instead of five people. Should the driver divert the trolley toward the less occupied track thus killing one to save the five other workers?[4] In a variant called the *footbridge dilemma*, Thomson (1985) integrated the dilemma with the possibility to throw a fat man off a footbridge into the path of the trolley, in order to avert the death of the five workers. Should the bystander at the switch intervene and shove a fat man who happened to stand next to him onto the track, thus causing the death of one instead of five people?[5]

Judgments concerning the un/acceptability of these types of actions have been described as characteristically *deontological* (as consistent with notions of moral norms and duties)

[3] SIM proves to side with DPT: a) the intuitive process is primary, effortless, and operates quickly resulting in moral judgments; b) the reasoning process is effortful, occurs more slowly and intervenes only when intuitions conflicts or a social pressure makes it necessary a closer examination of the automatic moral judgments; 3) moral reasoning is a post-hoc construction made of reasons justifying automatic moral judgments, for moral reasoning is, indeed, not enough to motivate moral decisions.

[4] The dilemma is posed by Foot is made for rejecting, with regard to abortion, the "doctrine of the double effect". Such doctrine invoked by Catholics refers to the effect of an action may produce and is based on a distinction between "an aimed at" actions supported by a direct intention and "a foreseen but not aimed (intended or desired) action" supported by an oblique intention. Recalling Sir John W. Salmond's correspondence between positive/negative rights and positive/negative duties (Salmond 1907, 245-267), Foot (1967, 11-14) concludes that determining for what is at stake is weighing conflict duties between avoiding injury (negative duty) and bringing aid (positive duty).

[5] In solving the dilemma, Thomson (1985, 1409-1410) suggests that an infringement of a right of the one's is at stake. Different is the case in which a bystander intervened to hit the switch to prevent the death of the five workers and let the one die. In this regard, the bystander would maximise utility or minimise the number of deaths that would be caused by something that already threaten their lives, whatever he does. Therefore, turning the trolley is not itself an infringement of a right of anybody's.

or, conversely, characteristically *consequentialist* (as consistent with utility maximising principle). For Greene (Greene and Young 2009), instead, the different patterns of decision-making reflect the outputs of distinct competing neural systems. While the "personal" *footbridge* dilemma involves brain regions associated with emotions, the "impersonal" *switch* dilemma involves brain regions associated with controlled cognition.[6] Accordingly, neuroscience provides preliminary evidence of how emotional intuitions play a greater role in characteristically deontological judgments, and just as important, may explain why moral judgments are *preferentially* supported by automatic emotional settings or manual controlled mode. Therefore, an approach such as of Greene is clear evidence that the decision-making is more emotional than reasoned. Simply put: moral reasoning stands for moral rationalisation as moral reasoning primarily serves to justify preexisting intuitions and/or moral judgments.

2.2. DPT: domain-independent basic principles. Kahneman's impact and legacy

As appeared so far, *domain-specific DPT* has provided social-cognitive explications on particular phenomena. What is instead shown in this section is how DPT has focused on the identification of *domain-independent basic principles* that are proved to be hold true and apply across all areas of human information processing. This has come to be popularised and worldwide known through earlier joint contributions of Tversky and Kahneman (1974) on heuristics and biases. Working on judgments under uncertainty – i.e. decisions on uncertain events based on the often indefinite or incalculable incomplete likelihoods, with unknown outcomes – Amos Tversky and Daniel Kahneman primarily questioned what determines the beliefs concerning the likelihood of occurrence for an event and how people assess the probability of such uncertain event. In their view, heuristic principles drive the intuitive judgments of probability. If on the one side, heuristics turns out to be useful in the sense that they reduce the complex works of predictability and assessment, from the other heuristics lead to systematic errors and common biases. In their early work, a number of heuristics or cognitive biases – to which one is exposed when thinking intuitively in assessing (prediction or estimation) uncertain events – are placed under scrutiny. The list of heuristics and biases includes, for instance, the *representativeness* (evaluating by comparing an event to an already existing prototype); the *availability* (evaluating by assessing the frequency or the ease with which occurrences can be brought to mind); the *adjustment* (evaluating by starting from initial value and adjust it for the final decision), the *anchoring* (evaluating by heavily relying on initial or pre-existing piece of information). For the two authors, the heuristics and biases employed in the judgements under uncertainty not only prove the complexity of human thinking and how difficult is to determine whether they do aid or harm a decision, but also, on a broader level, the great challenge of defining and measuring the rationality in a decision.

The interaction of three major topics jointly investigated with Tversky over years of close collaboration – risky choice, the framing effects, heuristics and biases (Kahneman and

[6] Greene (2009, 2014) refers also to the major/minor activity elicited by two correspondingly distinct brain regions: the footbridge-like dilemmas produce a stronger early neural response in regions consistent with VMPFC activity (ventromedial prefrontal cortex), while switch-like dilemmas elicited more utilitarian responses and a more pronounced later component consistent with the engagement of the frontoparietal control network including DLPEC (dorsolateral prefrontal cortex).

Tversky 1979) – has flowed into Kahneman's more comprehensive DPT. In the work based on the lecture Kahneman delivered for Nobel Prize (2011), Kahneman distinguished intuitive and reasoned thought processes on the basis of two qualitatively different models of cognitive functions with which judgments are reached. Borrowing the neutral labels coined by the psychologists Stanovic and West (2000) "System 1" and "System 2", Kahneman identified the two different types of cognitive processes leading to different types of task-construals characterised by different properties. He called *System 1 thinking* the fast system whose operations are typically automatic, effortless, associate and often emotionally charged (as habit-governed, difficult to control and modify); and the *System 2 thinking* the slow system whose operations are typically serial, effortful, consciously monitored and deliberative controlled (as rule-governed). Some capabilities of System 1 include innate skills, while others are acquired through repeated over time practice.

The two systems interact and often compete. One of the general functions of System 2 is to control thoughts and behaviour and actions "suggested" by System 1. More specifically, its task is to monitor the activities of System 1. This is especially the case when System 1 runs into difficulty with regard to questions for which it is uncapable of answering. System 2 is then mobilised through an intuitive response generated by System 1 counting as an input for System 2. System 2 may, in turn, endorse or rationalise ideas and feelings originally generated by System 1, but also adjust, correct or even shout down the response. When things become particularly hard, System 2 takes over and has the final say.

Nevertheless, also with regard to complex matters, our mind is capable of generating intuitive opinions. If a satisfactory answer to a complex question cannot be reached quickly, then our mind finds a related easier question to be responded. Substituting one question (the target question) with an easier one (the heuristic question) is a psychological strategy operated by System 1 for solving difficult issues. The *affect heuristics* is an example of instance of substitution. In this case, the judgment is reached by substituting the hard target question with an easier one by consulting emotions (Kahneman 2001, 138-140).[7]

For Kahneman (2011, 98) *heuristic* is technically:

> a procedure that helps find [the same root as *eureka*] adequate, though often imperfect, answers to difficult questions

a 'jumping to conclusions-mental shortcut' activated as:

> consequence of the mental shotgun, the imprecise control we have over targeting our responses to questions.

However, *heuristics* lead to errors or cognitive biases in specific circumstances resulting in flawed-decisions and judgments. On their part, *biases* are identified as a sort of side-effects of heuristics being often the product of the misapplication of heuristics. So, it may be argued that a bias is an average recurring error in thinking referring to a systematic

[7] The significance of affect-heuristic in guiding judgments and decisions, was primarily highlighted by Slovic *et al*. 2007.

pattern of deviation from the standards and norms of logic.[8] There are different types of biases affecting our thinking, such as the *egocentric bias* relying on a tendency to view the world from our own egocentric perspectives, thus over/underestimating our own percepts and capabilities; the *hindsight bias* extended to our understanding of the narratively-coherent past, thus grounded on the illusion of understanding coherent narratives based on "our almost illimited ability to ignore our ignorance" (Kahneman 2011, 201). The ease with which the past is explained rebounds on the overconfidence in forecasting abilities. The illusion of validity, as Kahneman states, is rooted in our unreasoned subjective confidence that springs into the deep-belief in the validity of our impressions and opinions (the illusions of pandits). Of the wide range of predictable biases of judgments and choice, for Kahneman (2011, 85-88) important roles are also played by *overconfidence* (the confidence on our own beliefs depending on our own associative coherent story pattern) and the *framing effects* (the susceptibility to see only one option depending more on how it is presented than its inherent qualities). The operations of associative memory-System 1 contribute to a general *confirmation bias*: System 1 is prone to search for data supposedly compatible with the hold beliefs, thus causing uncritical acceptance (Kahneman 2011, 80-81). Although skilled to a more systematic and thorough approach to evidence, System 2 is mostly prone to endorse System 1-intuitive judgments.

Difficulties increase progressively up due to further unexpected occurrences of internal factors concurring to affect the one's judgments. *Noises* cover another broad spectrum of systematic errors, often plaguing the decision-making. Like bias, noise is a component of human error in judgment, but unlike bias that is a systematic error leaning in a more specific direction, noise is a random flaw. Noise may be better described as a random scatter. Kahneman (*et al*. 2021) adopts the 'shooting-range' metaphor for illustrating the difference between biases and noises. While biases are like arrows missing the mark systematically, noises are like arrows missing the mark randomly. So, while bias is unidirectional and mostly predictable error, visualisable and explainable, noise is an unpredictable error, uneasily to view and explain. Noise is, then, an "invisible enemy" (Kahneman *et al.* 2021, 244) difficult to eradicate, the amount of which is so alarmingly high especially in judgments requiring great accuracy.

Furthermore, Kahneman claims that biases and noises may be reduced by implementing strategies targeted to *decision hygiene* against the "unidentified enemy". Such strategies may be aimed at, for instance: a) reaching the goal of accuracy in judgements (against individual expressions or personal views) by recognising how others are thinking if they were in our place; b) promoting the outside view when one thinks statistically about a case as a member of a class of similar cases; c) fighting the excess of coherence by deconstructing complex judgments into multiple independently-taken judgments and then aggregating them; d) favouring relative judgments and relative scales (Kahneman 2021, 370-375).[9]

[8] As shown before, for Tversky and Kahneman (1974), cognitive biases arise and follow from people's use of fast task-assessment reducing but fallible cognitive strategies known as heuristics.

[9] Kahneman frequently resorts to rules of algorithms: for the purpose of counteracting biases and a massive amount of system noise may be allowed to replace judgments with noiseless rules or machine-learning algorithms. Yet, algorithms may be noiseless but biases-affected. It is definitive easy and possible to create

3. A realist legal theory. From Frank to Ross

A whole array of benefits in understanding law and legal reasoning are reaped from Kahneman's view and, more in general, from theories on human cognition based on DPT framework. The value of cognitive science and behavioural psychology is essential to decline or downsize the held traditional belief in rational deliberations taken by rational individuals, whether they be legal or economic actors (this will be shown more closely in section 4).

Nevertheless, long before the advent of empirical research and the dawn of cognitive sciences striving to explore and develop a complete comprehension of human mind, for over a century a portion of legal scholarship has been concerned with the understanding of the judge's mind and the impacts of subjective (or extra-legal) factors on decision-making. This approach refers to a variety of views entering into the mainstream of the commonly known *legal realism*, a distinctive anti-formalistic trajectory within legal philosophy fighting against Western formalism dominating in the legal thought throughout late 19th and early 20th centuries. In a nutshell, legal realism(s) aimed to: a) depict law and adjudication neither abstractly nor deductively; b) unhinge the conventional perception that the judge is a rational actor who reasons logically and unemotionally without prejudice, accordingly. Legal realism(s) share, therefore, a common scepticism about rule-application and/or facts-finding.

This section is devoted to the salient aspects of the works of two most representative exponents of legal realism. Different in architectural thinking, used methodologies and theoretical results, the views of the American Jerome Frank and the Danish Alf Ross can be assumed – as shall be shown – to be on the leading edge of research into the psychological grounds of judicial decision-making.

3.1. Getting inside the judge's mind. Frank's legal realism

Developed mainly in law schools, American legal realism posed a challenge to the Western view on rule-based decision-making in both legal interpretation and adjudication. The underpinning authoritative formal-law ascertainment of legal sources has been since opposed by legal realists – and even derided. At the dawn of the last century, Roscoe Pound (1908) ridiculed formalism as "mechanical jurisprudence" arguing against the use of deductive logic in legal thinking and in the application of legal rules to specific facts. In diminishing the value of legal language, legal method, and legal certainty to general illusions, a few years before Oliver Wendell Holmes had emphasised the longing for certainty in every human mind showing that behind the logical form and method in judicial decision lies an unconscious judgment that is for him (Holmes 1897, 466)

> the very root and nerve of the whole proceeding.

And also elsewhere, Holmes (1881, 36-37), when discussing the role of precedents within judicial adjudication, he pointed that:

a noise-free algorithm but also biased – for instance, racist or sexist biased. This could be due to the use of predictors highly liked to race or gender, or to the source data selection (Kahneman *et al*. 2021, 334-338).

> The very considerations which judges most rarely mention, and always with an apology, are the secret root from which the law draws all the juices of life […] Every important principle which is developed by litigation is […] most generally, to be sure, under our practice and tradition, the unconscious result of instinctive preferences and inarticulate convictions […].

Max Radin (1925, 359) argued, for his part, that judges are like all ordinary people acting:

> by discovering the desirable result first and summing their category to justify it.

To get rid of personal interests require, for Radin, a big amount of mental efforts while, at the same, this gives, as he said (1925, 359):

> judges the opportunity of working their judgments backword from a desirable conclusion to one or another of a stock of logical premises.

insofar as a desirable conclusion, in his word:

> is snugly bundled up, ready to be discovered by strictly logical reasoning according to the rules of the Aristotelian syllogism.

In line with Benjamin Cardozo, for Joseph Hutcheson (1929, 285) the judge is a human being, and as such doesn't arrive at a verdict by the abstract application of rules of justice, but:

> by taking up his search for some category of the law into which the case will fit.

That is to say with Hutcheson, as for Radin, that the decision-making is a rational selection of categories and concepts accomplishing the result which the intuitive sense of the judge feels or thinks to seem desirable. While hunches are the driving motivating impulses for reaching the best and desired result for the particular case, the eager search for legal-based grounds is his struggle not to make the decision appear arbitrary (Hutcheson 1929, 286, 287).[10]

However, pioneering in supporting the interconnectedness between psychology of judging and the doctrine of legal sources was Jerome Frank. Despite not being entirely representative of the American legal realism, his programme remains since early the 1930s a major breakthrough thinking in disrupting *that* Western-inspired traditional legal doctrine and, revised in the light of today's results, a touchstone for *contemporary* judicial psychological literature. Contrary to the "conventional view" of law "as a complete body of rules" and of judges like "living oracles of law" (Frank 1949b, 32), Frank reverted the legal myth or illusion that law can be predictable. The belief in the judge's word-magic power and mystical "approximately unalterable legal world", is likened by Frank to the children's world pivoted to the desire for a "fixed-controlled universe, free of chance and error due to human fallibility" (Frank 1949b, 34, 35). A myth manufactured as the result of "a false affirmation made without complete knowledge of its falsity", wrapped by "magical phrases", "verbomania", "scholasticism" and legal fictions fooling both the judges themselves and the public (Frank 1949b, 63, 64, 67, 68, 75). The axiom that in trial-courts the truth will burst forth, conceals, for Frank (1949a,

[10] Nevertheless, not all the American legal realists supported the view that judges are driven by unconscious forces. Karl Llewellyn (1951, 1960), for example, did not downplay the application of rules of law. Influenced by Pound and Holmes, he disregarded, indeed, the belief that such rules came from law books and not, as it actually happens, by pursuing law in action, that is the judges' own social and professional culture.

21) the several elements of subjectivity in the decisional process "lacking of any adequate mechanical means of [being detected]". Legal statements and legal rules are, as he said: "our own brand of legal magic" (Frank 1949a, 330), whose function is comparable with that of magic in primitive communities. As Frank (1949a, 62) said:

> They are magical verbal devices for concealing what I have stressed – that one's right to life, liberty or property are subject to the effect of such variable factors as crooked lawyers, crooked witnesses, mistaken witnesses, absence or death of witnesses, loss of documents, competence of lawyers, mistaken judges, biased judges, inattentive judges, stupid judges, crooked judges, inattentive juries, biased juries.

Such verbal devices create the illusion of ruling out judicial discretion in order to maintain a similarly illusory legal certainty, whereas the essential function of legal statements and legal rules is to disguise the various unverifiable subjective factors behind the judicial decision. Only in theory, indeed, judges apply syllogism by logically relying on two propositions as premises (rules or legal principles) in order to reach a conclusion (verdict). However, with the exception of a limited number of simple situations where judges, as all human beings, arrive at conclusions by means of deductive reasoning, the judicial decisions are "worked out backword from the conclusions tentatively formulated" (Frank 1949b, 101). For Frank, the judicial decisions are based on judges' *hunches*. Figuring out what produces such hunches is the way to understand the judicial process and the law in its entirety. Hunches or stimuli are, therefore, multiple and complicated causing factors operating in the judges' mind depending on peculiar personality traits. In this regard, Frank (1949b, 106) stated that:

> These uniquely individual factors — often are more important causes of judgments than anything which could be described as political, economic, or moral biases.

Unlike another leading figure in American legal realism, the rule-skeptic Cohen – who claimed (1935, 809) that a reasonable predictability of judicial decisions was possible only on the basis of reference scientific work (still unpublished in his day) showing the motivating forces on various judges such as "political, economic and professional backgrounds and activities" – Frank (1949a, 149) was persuaded, on his own part, that a number of psychological factors come into play in "trial-courts fact-finding". The axiom that in trial-courts the truth will burst forth, conceals the several elements of subjectivity in the decisional process "lacking of any adequate mechanical means of detecting" (1949a, 21). As mentioned before, Frank regards legal statements and legal rules as "our own brand of legal magic" (1949a, 330), a magic whose function is like that of magic in primitive communities.

As relevant as timely are Frank's farsighted realist view on how grievous is to admit that since humans are not governed by reason but controlled by weaknesses and biases, they "manufacture *ex post facto* a host of "principles" which we induce ourselves to believe them as conclusions reasoned out by logical processes from actual facts in the actual world. So – as he concluded (Frank 1949b, 29):

> we persuade ourselves that our lives are governed by Reason.

The rationalisation to which Frank refers (or, reformulated in SIM or DPT's terms, *post-hoc justifications* of intuitive judgments) is a practice concealing the real foundation of our biased beliefs as well as our inherently antagonist and incompatible beliefs. Since lawyers and judges are made to work on adaptions, tentativeness and incompatibilities,

rationalization is the very essence of their professional technique. The practice of law is then, with Frank (1949b, 31), the major art of rationalization, an art

> which cannot be thought rationally, but must be grasped intuitively.

Frank's conclusion (1949b, 120-127) is, therefore, that judges are not *machine-tenders* insofar as law – as alleged by Holmes – is not a machine constituted by rules deciding the case in any given way. Text-books, statues, precedents, opinions are just a few among a number of sources through which the judge makes the law of the case. Law is, therefore, made up of the judges' decisions themselves. In the wake of Cardozo's thinking, Frank concluded that the decisions are reached by the means of rules and legal principles aimed at providing formal justifications (rationalisations) of the conclusion at which they otherwise arrive (Frank 1949b, 130).

This is, however, not the same as denying the existence of rules. In the words of Frank (1949b, 132):

> To deny that a cow consists of grass is not to deny the reality of grass or that the cow eats it. So while rules are not the only factors in the making of law, i.e. decisions, that is not to say there are no rules.

This is because, the pivotal factor in the application of law is the judge's own personality manifested in the creative exercise of discretion during her unique experience of individualising abstract norms-decision (Frank 1949b, 132, 133, 136, 137).

Though Frank was confident in the possibility for psychology to produce remarkable results as to the explanation of the hidden factors of decisions, he was wary of being over-optimistic about scientific-based investigations on the motives and biases of the judges. Frank's general reluctance in questioning introspection was linked to the childish need, as proclaimed by Piaget, "for being victim of illusion that it knows itself thoroughly" (1949b, 117). Yet, despite the slight stage of knowledge about the psychological factors operating below conscious awareness, Frank suggested that trial judges should undergo psychoanalysis. The engagement in self-explorations would help to gain awareness of their own hidden prejudices, temper and minimize the adverse effects of judicial biases and thus become better judges (Frank 1949b, 250-253).

Overall, throwing light on both the illusionary rule-fetichism and the veneration for superhuman judge, was neither a motive for ridiculing judiciary nor for depreciating democracy. In Frank's opinion (1949a, 410), the fact that "judges are human" and vulnerable to biases, so sharing with all humans (1949a, 146) "the virtues and weaknesses of mortals generally", creates awareness of the deceptions, limits and pitfalls, strengthens knowledge and, no less importantly, develops and enhances impartial justice. Rather, it is the traditional legal view embodied in the slogan "government of laws, and not of men", insofar legal decisions are assumed to be the products of emotionless logic thinking machines, to distort democracy. He said (Frank 1949a, 414):

> The belief that government can ever consist of perfect creature is alien to democracy.

Therefore, recognizing judges as humans is to recognize the coexistence of biases and prejudices when rendering decisions. However paradoxical as it may seem, a conscientious and well-trained judge is the best guaranty for fighting personal

government and dictatorships. As he stated: "the sunlight of awareness has an antiseptic effect on prejudices" (Frank 1949a, 414).

In conclusion: while not yet particularly sophisticated, the arguments advocated by Frank are groundbreaking. Indeed, for the attention devoted to hidden factors in judicial decision-making, Frank's own and, more in general, American legal realists' insights, remain an amazing legacy. Also for this reason, American legal realism needs not be regarded as being a school speaking the sceptical language of "law as only a matter of what the judge had for breakfast" (Dworkin 1986, 36).

3.2. Realism reconfigured. Ross' theory of validity and the judicial adjudication

In calling attention to the variety of factors underlying the decision-making, Ross's arguments are also relevant, but philosophically far more complex than those of Frank. In one of his early 1930s work, *Virkelighed og gyldighed i retslæren*, Ross explained that the sources of law are the motivational factors of the legal decisions. Such an assumption cannot be dissociated from his psychological analysis of the concept of 'validity'. Briefly, for Ross validity (value or duty) as a category of thought or as sphere of existence coordinated with reality is nonsense, a meaningless word with no knowledge-based value.[11] For Ross validity is (1946, 77):

> a conceptually rationalized expression of certain subjective experiences of impulses.

to which the mind confers the character of illusory objectivity. Being the product of rationalisation generated by the experience of duty, the notion of 'validity' is, therefore, replaced by Ross with "experience of validity". Only thus the emotional experiences become an integral part of the idea of "validity".

Unlike Kelsen (1934, 1960) who, in the wake of Kantian is-ought distinction, had kept separate the factual and the normative components in law, for Ross factuality and normativity in legal phenomena cannot be isolated. As Ross said (1946, 76-77):

> the interpretation by means of reality cannot be carried through without recourse to the category of validity, and the reverse.

Law has, then, a dual nature as it results from the intimate fusion of validity (in terms of experience of validity) and reality (the element of compulsion), combined with their logical interdependency. More particularly, for Ross (1946, 78-79) these three aspects correspond to three factors in the psycho-physical realities of law: an interested behaviour attitude (reality); a disinterested behaviour attitude (validity); an inductive interaction (of both factors). It then follows that, what lies at the heart of validity of legal norms (and all normative notions) is a projection upon legal phenomena of a mental experience: the fear of compulsion felt by legal subjects. Therefore, a theory of law claiming to be scientifically realistic cannot inquire legal phenomena but through psychological and sociological characterizations based on the study of the factors or psycho-physical realities existing in law. Against the traditional legal views according an alternatively exclusive role to 'validity' or 'reality', by assuming law to be either embedded in objective validity (as for legal formalism and Kelsen's pure doctrine of law) or inductively determined through its application (as for American legal realism), for

[11] This view was developed in his previous book: Ross 1933.

Ross the concept of law cannot be accomplished without referring to both categories. The science of law is, on its own part (Ross 1946, 78):

> a branch of the doctrine of human behaviour insofar the legal phenomena are psycho-physical phenomena pertaining to the domain of psychology and sociology.

According to Ross, the mistaken dualism underlying the concept of law had been perpetuated to the concept of the sources of law assumed to be belonging to two distinct 'worlds': that of 'reality' (as an active factor motivating the judicial authorities (cause), and that of 'validity' – as a creative factor of supra-empirical nature (reason). To Ross's realist view, a source of law means, indeed, the factor in the motivation-process of the judicial decision. Unlike the traditional view, the doctrine of legal sources is for Ross a fictive rationalisation based on the distinction between authoritative and free factors: legislation, customary law and equity. Nevertheless, unlike Frank's view that rules are but ingredients in the making of law, for Ross the task of a true realist doctrine of legal sources is neither to spirit away all notions of validity, nor to understand the concept of the sources of law in terms of all factors that may psychologically influence the decision-making. In order to discern law from morality and arbitrariness, a source of law is, for Ross, what actually provides a judge a motive, in such a way that his decision also acquires and bears the stamp of validity. Therefore, only the factors of motivation (Ross 1946, 146):

> owing to their collective and universal nature also give the decision the stamp of legal validity.

This means that for Ross (1946, 145-146) are excluded from the source of law as not bearing the stamp of legal validity:

> the factors of motivation which cannot be regarded as the expression of a common, socially determined tendency towards a certain regulation, but exclusively as the expression of the individual attitude of a judge.

And then, he continues (Ross 1946, 146-147) by affirming that:

> It is more convenient to say that the decision may be supposed to be motived partly by legal partly by non-legal factors, and that a knowledge of the law, therefore, is not sufficient for anyone who wishes to predict how a juridical decision will fall out.

Ross's early insights opened for reinterpretation of 'validity' as an element of reality, and offered a point of departure for further development then expounded in his major work *On law and justice*. The primary aim here is that behaviourism and psychologism merge into a unique frame in accordance with the main tenets of logical positivism. The assumed principle underlying his theory of validity is that law is a *valid* system of rules if it can serve as a scheme of interpretation for social actions, a scheme which enables prediction to some extent. It is the fact that the direct addresses of rules, the judges, effectively *apply* the rules and *feel* bound to them, to determine the validity of a rule. In other words, validity relies on both the empirically verifiable effectiveness (application) of the rules and the psychological acceptance of the same. Validity is, however, a matter of degree in the sense that a norm is valid in greater or lesser extent depending on the degree of probability of its future application, that is the degree of probability with which a norm becomes an element of judge's motivation. Therefore, a *valid* norm may be reformulated into a prediction in terms of a statement concerning valid law. The

future application relies on the judicial behaviour which, in turn, can be predicted on the assumption concerning the existence of a psychological-ideological-normative background, the shared "normative ideology", which, in his words (Ross 1953/1959, 37):

> animates the judges and motivates his actions.

This clearly has two implications. The former is that such an "ideology" fills the gap of a purely behaviouristic interpretation of the judge's mode of action grounded on his outward regular compliance with rules. As not phenomenon of individual psychology, a judge, when acting in her capacity as judge, feels socially bound to rules within a given fellowship, by treating normative ideology as her own ideology. The latter is that the shared normative ideology is a sort of set of guidelines shaped by the sources of law providing an objective basis for doctrinal predictions. While not pointing the manner in which a legal dispute is to be settled, the normative ideology points how a judge shall proceed in order to discover the directive in each individual case (Ross 1953/1959, 76). This entails that the decision-making is, admittedly, a mental process through which the judge reaches a conclusion, though not being "a capricious or arbitrary matter" (Ross 1953/1959, 75). Shared normative ideology is, therefore, the subject of a doctrine of the legal sources, whereby the legal sources consist in a set of unfinished-factors shaping the norm underlying the judge's decision in concrete case: a "ready-to-use-product" (legislation); "half-finished-product" (precedent and customs), and "raw-materials" (the nature of the matter).

In Ross's *reconfigured* realism, judicial decision is not only based on this set of objective doctrinal motivating factors (sources of law) underpinned by a shared normative ideology, but also on subjective factors operating in the mind of the judge. Nevertheless, from the framework of his neo-positivistic inspired theory of validity, only objective factors provide accurate predictions and a comprehensive picture of judicial decision-making. Indeed, Ross recognises that individual factors underlie legal decision, but they are to be ignored from the viewpoint of a scientifically empiric-based predictive theory of law.

Nevertheless, according to Ross the judicial decision-making is not to be regarded as an "impersonal step-by-step to a conclusion" process grounded in reason, as relying upon hierarchical structuration. Indeed, Ross's concern on the relevance of hidden factors in what *appears to be* a rational judicial decision-making, makes his contribution valuable and stay abreast, to some degree, of the current trends in cognitive science. This applies in particular in Ross's enquiries on factors and argumentation techniques employed in interpretation and legal practice. Here, Ross (1953/1959, 136) remarked that "the task of the judge is a problem of practical action" – and as all deliberate decisions, the judge's decision, too, is by its very nature, an act of will. As an act of will, the decision is not (only) a purely rational cognition consisting in grasping meaning, comparing legal facts with the law's descriptions, drawing inferences and deductions. The judge, as every human, is not an automaton, and her decision, as all human decisions, is a constructed evalutative deliberation whose underlying motives are underpinned by his entire personality. The obedience to law (formal or institutional legal consciousness) is only one of the motives driving the decisions and working in the mind of the judge. Along with the formal consciousness, the exercise of legal authority is co-determined by the substantive legal consciousness, a label generally denoting, for Ross, the legal and

cultural tradition – the whole of ideals, attitude, objectives and evaluations – through which the judge 'feels' his decision-making to be correct and just. For Ross, the interaction of combined intellectual, evaluative and deliberative factors operating in the judges' mind when administrating justice is, as he said (Ross 1953/1959, 139):

> The resultant in a parallelogram of forces in which the dominant vectors are the formal and the material legal consciousnesses.

4. Cognitive science and the judicial decision-making

Viewed in the light of contemporary cognitive theories, particularly relevant are Ross's analysis of the argumentation techniques employed by the judge for constructing a *façade of justification* – that is, in his words (Ross 1953/1959, 152):

> Often differing from that which in reality made him decide the way he did.

In the language of cognitive science, one may say that as Ross's shame legitimation is post-hoc justification, a fictionalization, a way for System 2 of concealing the automatic operations (intuitive judgments, impressions and feelings) of System 1 and fabricate verbally deliberate choices. When discussing the argumentation techniques, Ross (1953/2019, 179) admits that:

> It is not the methods that determine the conclusion: it is the conclusion that determines the methods.

However, Ross, just as Frank, neither developed a psychological theory, nor undertook an empirical study to examine the wide number of variable factors, other than the objective ones, concurring in the determination of judicial decisions. This last controversial aspect raised, indeed, many doubts and much severe criticism on Ross (Serpe 2019, 2020). In very truth, an empirical study would have weakened, if not undermined, the assumed-adamant neo-positivistic roots of his theory. It is likewise true that in their days, socio-psychological empirical research was still at an early stage.

In fact, it is only since the 1990s that extensive empirical researches made of experiments or simulations using hypothetical cases on the one hand, and neuro-psychological studies based on statistical and empirical evidence on the other, have offered valuable insights into how the judicial decision is processed and what factors contribute to decision-making. Let's take a glance at the principal scholarly research conducted in this area.

One of the first experiments conducted by Landsman and Rakos (1994) demonstrated that judges, not only jurors, are equally exposed to potentially biased material in a civil trial. In cases of product liability, both subjects, regardless their different professional capacity, grounded their decisions on inadmissible facts, although being informed about the inadmissibility. More recent empirical researches in psychology have shown how judges, not only jurors, struggle mentally to deliberately disregard what they know, despite being inadmissible information (such as, prior sexual history, prior criminal convictions of a plaintiff). What judges are supposed to ignore ends up, instead, with undermining seriously their commitment to just and accurate adjudication (Wistrich *et al.* 2005). Other studies attempted to show how other individual extra-legal factors, such as political ideology (Maveety 2003, Epstein and Knight 2013), or implicit stereotypes (Wistrich *et al.* 2015, Spamann and Klöhn 2016) exert untoward influences on the judicial

decision. From the neuroscience perspective, Damasio was one of earliest scientist to reflect upon the separation between intellect and emotions. Without employing strictly philosophical arguments, he suggested that in reasoning and decision-making somatic marker signals, which arise in bioregulatory processes, influence the response processes to stimuli in both consciously and non-consciously manner. Damasio (1996) demonstrated his "somatic marker hypothesis" by researching on patients with compromised ability to express emotions, due to damage to their ventromedial prefrontal cortex. Despite their normal intellectual functioning, such patients suffered severe impairments in personal and social decision-making. He explained this phenomenon by assuming those patients to have an impair access to 'somatic markers'. Therefore, the decision-making undertaken in complex situation involves unconscious factors related to body-state structure in the sense that a person in an already-experienced situation recalls automatically the previous information, jointly to the emotional feelings assisting the early experience. This means that through the mechanism of somatic marker humans are able to make unconscious or intuitive decisions that may be still rational. As Damasio (2006, xviii-xix) said:

> the quality of one's intuition depends on how well we have reasoned in the past; on how well we have classified the events of our past experience in relation to the emotions that preceded and followed them.

In sum, Damasio's hypothesis results in rejection of the attempts to constrain human reasoning to the exclusive cognition domain.

Other experimental research has shown how the judges are vulnerable to implicit biases or stereotypes. For example, social-cognition research has proven that racial stereotyping of facial-traits features of black Americans have caused higher punitive sentencing. This experiment has supported the view that although such a racial stereotype has been removed from sentencing decision, yet the bias goes unnoticed insofar it affects the judge's decision (Blair *et al.* 2004). Other empirical studies have demonstrated the automatic activation of negative stereotypes in white adults equating African Americans with hostility and violence (Kang 2005), or that implicit racially biases cause the judge and jurors to unconsciously overlook case facts, thus affecting the legal decision-making (Levinson 2007). Further studies still, have found how highly both men and women associate female with family life and not with professional career. In this latter regard, it has also been significantly emphasised that implicit biased associations in human mind may either fail to behaviourally manifest or be correlated to real-world behaviour. However, in neither case does it simply mean demonstrating disparate treatment in final decisions (Kang and Banaji 2006).

Decades of a growing body of empirical research and extended psychological studies have shown how biases and heuristics affect judicial decision-making. More particularly, it has been proved that even highly qualified and well-trained judges are vulnerable and produce systematic errors and biases in judgments (Guthrie *et al.* 2001). Judges are, indeed, influenced by a wide variety of extra-legal factors such as demographic characteristics (personality, race, gender, religion, etc.), time-pressure, public feedback, and so on (Rachlinski and Wistrich 2017). In relying on intuition and mental shortcuts (heuristics), the judicial decision-making (like those of the juries and professionals in general) is imbued with cognitive illusions, this leading to predictable

mistakes impacting the quality of adjudication (MacCoun 1989). A large variety of cognitive errors contaminating the alleged rationality of decisions has become the subject of extensive investigation. Hereinafter, some common biases are illustrated.

The judge's decision-making may be plagued by *coherence-bias*. As shown earlier, the intuitive judgments might be guided by a desire for cognitive consistency, thus resulting in the elaboration of coherent narratives to make sense of the world around us. When an unpredicted event occurs, our mind is unconsciously powered by a seeking-tendency of finding, offering and then idealising a coherent plot of meanings and patterns, despite logic and normative rationality. The high confidence on our own presumed narratives may generate in the judge's mind the *representativeness bias*. For instance, the way in which the plaintiff or the defendant fit an already existing prototype may determine the decision. Or, again, in judging guiltiness judges might find an evidence, the defendant's conduct, representative or resembling to a certain category. This may lead to undermining or excluding relevant statistic information. By connotating the tendency of muddling up the representativeness of information with its probability, such a heuristic is emblematic of the low capability of engaging in probabilistic reasoning.

The same applies to *confirmation-bias* equally arising from associative memory-System 1 as seeking/collecting/interpreting tendency of favouring information that might suit the judge's previous beliefs and storytelling. In legal domains, decision-making can therefore be plagued by an excessive reliance on an intuitive response and intuitive strategies when one assessing legal facts patterns or when one tackling complex choices or hard cases.

The tendency of sticking *egocentrically* into our own abilities and beliefs, or, more crucially when presented with multiple alternatives, is an additional cognitive bias producing unfortunate consequences in legal decisions. These include interpreting information or likelihood that a verdict would be confirmed, reviewed or overturned on appeal. In the sentencing process, the judge may be spurred by *anchoring-bias*, too, by heavily relying on initial or pre-existing piece of information serving as an exclusive basis for his assessments. Empirical studies have demonstrated that such a bias take place in a number of numerical estimates relying on the initial values of an item or in numerical guesses about an unknown. To avoid providing any reliable or relevant information about the actual value, the anchoring biases detrimentally plague the judgement (Guthrie *et al.* 2001).

But even in the event that a judge may revise her judgment, she might tend to overestimate the foreseeability of an event, by perceiving the first judgment as near as possible to the new judgments than they actually are. This is emblematic of the *hindsight-bias*, the tendency of seeing past unpredictable events as being more predictable than they actually were when they took place. Whether or not judges are aware of it, the usage of known outcomes to assess the predictability of facts or events occurred at some earlier times that could not have had in foresight, may distort thinking and impair the rational judgments, concurring to deliver faulty decisions. Recent studies have also demonstrated that especially the hearing process may be affected by confirmation and hindsight biases (Peer and Gamliel 2013). Notably the hindsight bias exerts particular influence on judgments of legal liability (Guthrie *et al.* 2001). The fact that judges are

often called upon to ex post assess ex-ante probabilities renders the hindsight bias one of the giants in judgments (Hoffman 2021).

No less grave are the forensic science failures that empirical studies have detected. In this regard, Kahneman offers the inspiring examples of fingerprints, the judicial evidence that for the difficulty in proving it wrong has been regarded as incontestable axiom in forensic science. Indeed, as for other professional judgments, fingerprints have proved to be affected by occasion noise, due to the variability of judgments carried out by the same forensic experts when looking at the same evidence twice (Dror and Rosenthal 2008). This especially occurred when the experts are provided additional biased information having a conditioning effect on the case (forensic confirmation bias). Even more striking is that even in the absence of biasing information, the experts frequent change their minds about a set of already-examined fingerprints happened nonetheless. To contrast bias and noise, Kahneman (2021, 245-258) suggests a necessary methodological change appliable to various professional domains: sequencing information to limit the formation of premature intuitions. This means that in order to protect the independency and the accuracy of professional judgements, experts must be provided gradually with the only necessary information, be kept ignorant about the details of the case, and record their judgments on the evidence before accessing to contextual information.

The aforementioned cognitive biases are only a small part of systematic errors in thinking identified by an extensive literature over the past few years (Keren and Wu 2005).[12]

4.1. Challenges or perils for future legal theory and adjudication? Legal realism to the test of cognitive science

The current cognitive researches have profound implications for law. Exploring the characteristics of our thinking and the interactions between intuitive and deliberative thinking provide significant insight into how lawyers and judges process information and make decisions. Theories on human cognition such as DPT unhinge the conventional ingrained belief steeped both in legal theory and economics studies by which to think like legal operators is equivalent to think rationally, unbounded from 'emotions'. In the fields of law and economics, to think rationally is also meant as deciding and acting so as to increase justice and utility. However, dissecting the

[12] In the field of law, *noise* may also lead to dramatically unfair consequences when judges hand out widely varying sentences for equivalent crimes. Sentencing discrepancy is emblematic of unwanted variations in judgments in which uniformity is expected. As reminded by Kahneman (2021, 13-22), during the 1970s, an American judge, Marvin Frankel was among the first to bring attention to biases and noises in the criminal justice system by emphasising the high unjustified disparities in the treatment of similar court cases. A large-scale empirical study on hypothetical identical court cases was chaired by Frankel himself. The study revealed a highly substantial differences in judges' decisions. Frankel's first studies were soon followed by other studies that ultimately confirmed sentencing discrepancy. In 1984 the Congress enacted the Sentencing Reform Act, the purpose of which was to reduce the far-reaching discretion conferred on judges through mandatory guidelines. In imposing the sentence, judges had to take two main factors into account, like the crime and the defendant's criminal history. According to some empirical researches conducted at that time, the implementation of the guidelines resulted in a reduction of disparity across judges. Nevertheless, the harsh criticism raised by numerous judges over the years, brought to the remotion of the guidelines by the Supreme Court.

machinery of thought into "fast" and "slow" system not only unveils the complexity of the entire decision-making enterprise, but also serves to judges for becoming more aware of innate biases and noises shaped in the mental architecture framework. This can serve as a bolster for improving the decision-making abilities.

As shown above, Kahneman's strategy has had a knock-on effect on multiple fields of research. Kahneman matters and means for the law, too. As Kahneman (2021, 55) stated, in all kinds of professional judgments

> bias and noise play the same role in the calculation of overall error.

Hence, court judges and legal experts are prone to cognitive biases insofar heuristics thinking is involved both in sentencing processes and in forensic science. Cognitive biases can steer the legal professionals when accepting/ignoring information, admitting/not-admitting evidence, overestimating/underestimating information and evidence, and so on. This ends up tarnishing the images of neutral and impartial judges and of outstanding forensic experts.

Nevertheless, current researches on the judge's decision making are, admittedly, not invulnerable to doubts. Experiments and simulations are mostly carried out in laboratory and the artificial results might differ from multiple real-life encounters. This might bring about uncertainty with respect to the reliability of data and findings, and the representability of results from experiments conducted in artificial circumstances involving, over all, laymen. Moreover, much literature on the psychology of judging seems to ignore the peculiar multifaceted dimensions of judicial behaviour which diverge somewhat from untrained and unexperienced laymen. The interplay of factors such as education, legal training, self-selection, judicial role along with the operating institutional-legal context features such as the obedience to law, the compliance with legal sources, the accordance with legal method and specific legal reasoning techniques, may unleash quite substantial different cognitive mechanisms operating in the judges' minds.

Furthermore, the judge is engaged in peculiar tasks. In this latter regard, Schauer has outlined how judges' expertise and reasoning differ from ordinary folk as the peculiar components of judging is about far more than just fact-findings and verdict-rendering. In inquiring facts, the law requires the judges what is to be done on the basis of these facts. Moreover, the "art" of legal reasoning distinguishes itself from ordinary reasoning and decision-making as it includes specific tasks of selecting, interpreting and sometimes making law (Schauer 2007).

While still relatively young, cognitive research has increased radically in sophistication. Although there is room for optimism in future, currently still few researches provide a comprehensive picture of factors and sources mis/guiding the judicial decisions. While there is much literature concerning the psychology of juries and group dynamics, the psychology of judging remains an under-researched area. This is probably due to a conventional thinking that legal reasoning is unique kind of decision and that hypothetical behavioural experiments would be unrepresentative of how judges make decisions in real cases (Hoffman 2021).

It is also against this background that Frank's and Ross' contributions strike us as primitive, outmoded, or charmingly naïve. But, at their times, no data or studies were

available to support or disregard their theories. Arguably, today either. For Frank, cognitive processes are not prominently different in judges than those of laymen. Extra-legal factors constitute the main drivers behind the judge's decision, insofar as the legal materials – constitutional provisions, statutes, regulations, precedents, maxims – do not cause the decision: they serve the purpose of ex-post justifications. Without developing any theory of judicial psychology, Frank arrived at the conclusion that the psychology of judicial behaviour and decision is *simpliciter* the same as the psychology of decision-making. Neither Ross in his reflections upon judicial behaviour elaborated an evidence-based psychological theory, nor a coherent theory of legal argumentation. As shown earlier, along with the "normative ideology" Ross (2019, 177) mentioned other *combined factors* not openly expressed in the judge's ratio decidendi prompting him to construct:

> a sham legitimation […] which, to a larger or smaller extent, differs from what in reality has determined the judge's decision.

Yet, the questions addressed by the realist outlook to adjudication and law more generally fits the patterns of cognitive science to an extent that cognitive science matters for law. The naturalist account of law and legal phenomena aligns with the naturalist approach to cognition framework underpinned by contemporary cognitive science. Nevertheless, this is certainly not the first genuine cognitive breakthrough in the history. The attempt of naturalising social sciences, including jurisprudence, by introducing scientific criteria or by means of application of models developed and pertaining to other disciplines such as psychology, sociology and economics, or of by applying the findings of natural science has been coming and going nearly over the past two centuries. So hard, in fact, both Frank's and Ross's works were among the strongest evidence of how 'unrealistic' is to confer to normative sciences – such as law – a distinctive ontological and epistemological status, on the false assumption that normative and natural sciences must be kept at arm's length.

What can we learn from the outcomes and results achieved by cognitive science and the inquiries on the psychology of human cognition? Indeed, what is at stake is the great emphasis placed by such views on how people are less rational than they seem to be. Cognitive scientists across a wide array of domains have long converged on the same idea that two modes of human reasoning occur in the psychology of thinking. This has been made popular by Kahneman who advanced the study of dual processing reasoning system through which the mind works: the intuitive or belief-based reasoning system and the deliberate or analytic-logic reasoning system. But Kahneman did not simply sink rationality of decision-making into the vast and unsafe grounds of irrationality. Indeed, he challenged the Western long-standing dogma of rational decision-making, by offering deep insights into the nuanced complexity of human choices. As already shown, in introducing the 'bias-heuristic-noise'-inventory, Kahneman addressed global challenges to the decision-makers within behavioural economics. But, also significantly, these findings have suggested an equal caution in taking rationality as the exclusive guide to human decisions, thus revisiting the allegedly rational basis of logical-deductive reasoning. Every human, be he aware or not, deviate systematically from normative standards when evaluating and/or deciding. The same is true for judges. Being the product of race, ethnicity, religion, gender, etc. the judge is vulnerable to cognitive individuating factors that can lead to systematic errors in judgment. Therefore, theories of human decision-making matters for law, insofar as they downsize the reigned-

supreme Western image of rational and responsive man behind the law, whether they be interpreters, reasoners or administrators of the law. This is the very first relevant challenge.

Another significant outcome achieved by cognitive science and, more in particular, by the studies carried out in the field of psychology of human cognition has a more expansive theoretical worth: the challenge posed to the classical *is-ought* gap, an uncrossable chasm within legal-positivism landscape. Put otherwise and more colourfully, cognitive science shatter the unattainable dream of relegating normativity to a mystical *ought*-realm. For Kelsen, the foremost representative of normativist legal theorists, law is law only if it is considered belonging to the *ought*-sphere, while legal science, in preserving the independence of law from facts and values, is, in its turn, relegated to a solitary non-empirical domain. For Kelsen's *Reine Rechtslehere* (1934, 1960), science can only inform the *is*-sphere, thus it is irrelevant for the understanding of law. Although Kelsen claimed that legal norms were suitable objects for scientific investigations from both normative jurisprudence and legal sociology, his account of law remains incompatible with the main tenets of contemporary debates in cognitive sciences. Being law not a part of psychological or social reality, natural science cannot contribute in explaining or determining the content of law. It is evident that normative approaches to law regard as pointless as harmful the impact of cognitive science or empirical findings. A scientific approach to law in terms of studies on human mental capacities underlying legal phenomena and the mechanisms behind legal cognition is unworthy of interest. As discussed above, the matters raised from a realist viewpoint and the outcomes achieved by scholars such as Ross not only prove against the Kantian/Kelsenian *is-ought* gap that factual and normative components in law cannot be kept separate (Ross 1946), but also that the exploration of the behavioural/psychological grounds of judicial decision-making does not run counter to a scientific approach to law (Ross 1959). As already pointed out, it makes no difference whether that his scientific empirical-based predictive theory of law and his theory of judicial decision-making were obsolete or far from sophistication. Indeed, if reassessed with new sensitivity Ross's (and no less Frank's) contributions have pioneered the view that a realist outlook is the most viable alternative in the theory of adjudication as it better combines with the patterns of cognitive science.

Certainly, the adoption of a cognitive approach in legal science and legal practice carries a number of perils associated with innovation and accompanying the implementation of a cognitive perspective. The first peril is intuitive: to jump over the fence separating professional inquiries and amateurish inquiries (Chiassoni 2021). The thirst for interdisciplinary may generate spiritual and material extravagance: a non-legal expert would turn to a legal expert, and a non-cognitive scientist, conversely, to a cognitive scientist. The peril of relativising either law or psychology might have a detrimental effect on the degree of expertise and the level of scientific rigour. Secondly, it should be added that legal theory and legal practice vary considerably as to the possibilities of innovations and experimentation. The legal practice is persisting in remaining true to its methodological roots, recklessly disregarding philosophical and theoretical debates. This may be due to lack of education, opportunistic reasons or simply laziness (Stelmach 2021, 514-515). Thirdly, but no less importantly, the adoption of the language of psychology or neuroscience for redefining legal and judicial notions such as capability,

guilt, innocence, liability, intentionality, etc., would release uncomfortable consequences on interpretative paradigms so entrenched in the law and in legal reasoning. Lastly, as Chiassoni (2021) pointedly states, it remains the question whether "legal interpretation" and "legal reasoning" have to be understood as mental activities developing in the 'mind' of the legal professionals or as external outputs of such mental activities. In the latter case, the outputs of legal interpretation and legal reasoning are to be regarded as discursive entities. Therefore, a theory of legal interpretation and legal reasoning of this kind cannot be psychological, being its task restricted to analysis of the forms of arguments employed,

> that are, can be, or ought to be put to work to argue for a certain legal conclusion (interpretative or otherwise). (Chiassoni 2021 504)

Nevertheless, from the fact that law is not a purely psychological matter does not necessarily follow that law cannot fit purely scientific inquires on the architecture of mind, and that a more specialised knowledge developed in cognitive sciences – including experimental psychology, evolutionary theory, philosophy of mind and of action, AI, neuroscience – may not provide new tools suitable for reshaping the foundation of legal theory and legal practice. Overall, the issues addressed and the insights from the perspective of cognitive sciences have fresh light on cognition in law and on the judge's performance when determining, interpreting and assessing the facts of the case and the contents of law. No less significantly, cognitive science can make a major contribution in the making of good rules, thus improving the efficaciousness in motivating the legal subjects and in achieving the intended purposes (Hage 2021).

To borrow from Gigerenzer (2007, 4), many prefer to describe an idealized world, "a land where the sun of enlightenment shines down in beams of logic and probability", instead of describing a land "shrouded in a mist of dim uncertainty". The uncertainty he contemplates that hovers on the horizon rests on the *gut feelings*, intuitions, which differently from caprices and impulses, have their own rationale consisting of two components: the rules of thumb – a term synonymous with heuristics – and the evolved capacities of the brain. Embedded in the field of psychology of judging, this assumption fits with Posner's claims (2008, 110) that intuitions in judicial decision-making are inevitable not only because the judge's reasoning, like for all humans, is primarily intuitive, but also because such "great economizer" is compelled "by the institutional structure of adjudication" encouraging cognitive shortcuts and pre-determined conclusions.

The more we acquire a clearer and wider understanding about the psychology of human cognition, perception, reasoning, the more we can learn about the psychology of judging. If true, this would have important implications in the conscientious judge whose self-scrutiny would aim at self-knowledge of personal biases and prejudices entering the decision-making process. In the words of Frank (1949a, 414):

> Frankly to recognize the existence of such prejudices is the part of [the judge's] wisdom.

Our knowledge on the brain's mechanism is still defective. Given the current state of knowledge any matter concerning the decision-making cannot be answered conclusively as yet. Nevertheless, it is relevant for today's research, including the one undertaken by legal scholars, to carry on exploring and probing the various branching pathways of the psychological dimension of judging. Any piece, no matter how large,

cognitive science places into the fascinating and endless puzzle of human behaviour, remains a must-have piece essential for legal theory and the practice of law.

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