



The Social Context of Consciousness: An Integrative Framework for Neuroscience, Psychology, and Law

Chetan Sinha¹

Accepted: 30 January 2025 / Published online: 14 February 2025

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2025

Abstract

This article discusses social context of consciousness, the role of the brain and the psychological processes of their actions in the context of the socio-legal framework. Consciousness is understood without integrating with broader social and cultural situations. The understanding of consciousness also requires one's critical understanding of social context and group processes. Law has a more significant role in demystifying itself from the brain and consciousness trajectory and keeping a balance by considering precedents critically. This article also ventures into how consciousness can be understood in the social arena of decolonization and the possibility of neuroscience in informing the law in its reformation for justice.

Keywords Brain · Consciousness · Decolonization · Meaning-making · Social context

Consciousness is dominantly analysed as a singular entity, untying it from the social context. The shared understanding of the conscious mind links to sociocultural activity situated in the social, political, historical context. The movement to measure these constructs has created debates in different directions. However, we share some standard understanding of any object in the external world. Our brain gets activated with the perception of those objects. The mind and consciousness are also undeniably linked to brain activity, especially in the sciences domain. Consequently, we acquire a qualitatively shared language through which associations of anything, like the mind and consciousness, can be understood. Geertz (1973) showed how the mind is our activity or cultural practice, which shifts its meaning in a variety of spaces, such as families, schools, courtrooms, and football grounds. If the mind shapes our agency of who we are, the consciousness is a state of mind directed towards some object in the sociocultural context (see also Flanagan, 1992; Valsiner

✉ Chetan Sinha
sinchetan@gmail.com

¹ OP Jindal Global University, Sonipat, Haryana, India

& Van Der Veer, 2000). Both are linked, and their understanding is not possible without understanding our sociopolitical, historical, and cultural embeddedness, although we know that there are qualia or qualitative experiences. Vygotsky (1978) clarified how the mind is a social object, and its meaning becomes clear through the different activities one engages with the various social objects along with capable adults. Further, Gergen et al. (2019) noticed that cultural spaces are not stagnant but move with time, as do the mind and consciousness. The long debate about the structure and process of consciousness was never settled. As per the suggestion of Ian Burkitt¹, “consciousness is important in the legal domain because culpability for a crime is based on notions about the intentions behind a person’s actions and to what degree they were conscious and thus responsible for those actions”. The present work revisits the notion of consciousness as mind-generated imagery since the mind also needs to be operationalized and understood in a consensus. It is agreed upon that the brain discourse matters, but this discourse should not shun the living experiences and collected memories under the effect of rising neuroscientific vocabularies. Consciousness issues when well-defined and measured through the brain, non-verbal cues, or whatever language can connect to it. The actual picture of consciousness is in the eye of a conscious person, where his/her consciousness becomes active when people encounter variations in the external environment. Flanagan (1984), in his discussion of consciousness from a neural tapestry, suggested that sensitivity can be categorized into experiential and informational. So, it is possible that one has some information about the subjectivity of others but does not have the authentic consciousness as it was lived and experienced. However, Chomsky (2000) doubted ‘the hard problem of consciousness’ (Chalmers, 1996) as it does not have a concrete picture, and whatever picture is available cannot portray the fundamental notion of consciousness. Burkitt² suggested:

“Based on a cultural-historical approach informed by Vygotsky (1987) and others in that school such as Leontyev (1981), consciousness is historical in that it is based on social activity within a specific cultural context, and that the brain itself is shaped by activity throughout a person’s development. Neurological functions are shaped by activity mediated by language, so that language comes to play a central, organising role in consciousness (Luria, 1973). The brain is then a tool that enables activity in the social world (see also Gergen, 2010), allowing us to achieve social goals and functions and to think in ways that are relatively independent of our social circumstances. Humans therefore have agency, but this is always bounded in some way by the social and historical limits on their actions and thoughts, limits that will also vary according to social position and power”.

Before we plunge into the metaphysics and neuroscientific meta-theoretical understanding of consciousness to have some say about the legal domain, we must figure out how science answers psychological questions. In the legal domain,

¹ I am thankful to Ian Burkitt for his comments. <https://www.qeios.com/read/2EKBBR>.

² <https://www.qeios.com/read/2EKBBR>.

clarifying the meaning of consciousness is significant to understand culpability. At the initial stage, identifying appropriate verification criteria for understanding the authenticity of consciousness matters. However, the appropriateness of any criteria somewhere, for example, in psychology, demands observable proofs and operational definitions. It was observed that every disciplinary stand is based on the rigorosity and originality of the method applied to test the propositions. Still, it is not simply the application of the appropriate methodology to understand some organismic variables like consciousness. There is a hierarchy of methods that any institution uses in the verification of cause. The techniques psychologists and interested social scientists adopt to understand consciousness may differ. As the legal domain relies on precedents to understand consciousness, such as criminal intentions, the empirical method has a more significant role in decision-making. However, pragmatists and functionalists like William James³ de-categorized the dominant understanding of consciousness, which can be structured and seen as a stream of thought. Accordingly, the brain has also gained new experiences and insights, so the intention, culpability, responsibility. However, this kind of assumption is generally underestimated by legal domain as it does not give a reason to envisage responsibility. However, a priori criterion for the law is precedents and the consistency of freely willed action.

Science, Consciousness and Society

The brain is a biological entity, and how it is linked to behaviour is a matter of interpretation (see also Sinha, 2024b). The interpretations depend upon the social construction of knowledge. It is discussed that objectification of the brain reduces humans to mechanistic entities without much space for considering dignity, which makes humans agents of their own actions. The dependence on neuroimaging techniques shows the picture of the brain in the form of localized structure and functions (see Mobbs et al., 2007) rather than the actual state of mind. It was reported that even the judges are driven by the common sense understanding of cause as laden in the everyday understanding, not necessarily the scientific view of the cause that has retreated into the people's understanding about any action (Summers, 2018). Judges are influenced by the legal precedents and the available legal categories, which influence their intuitive structure of the mind, so their scientific understanding is possibly anchored to the societal worldviews of social reality and intergroup relations. Common sense is an everyday reality in which we engage with concepts and categories in a taken-for-granted manner, whether legal or scientific. This ownership of the technical concepts gives meaning to everyday interaction and is always continuous. New categories or subcategories are created, distributed, and mobilized, and gradually, with daily engagement, we form some understanding of popular conceptualization. However, all the social and political dynamics about science and legal categorization are mostly based on these common-sense ways of category formation.

³ William James (2009). *Selected writings* (edited by Graham Bird). Gurgaon: Hatchett, India.

Thus, the anchoring point, as developed by Moscovici (2001), is the public understanding which further gives way to new social and scientific activities. There is always the danger of the emergence of fake science, but the public understanding of the scientific and legal concept does not necessarily portray fake science but the assimilation and accommodation of laboratory knowledge (see also Latour & Woolgar, 1979) and its dynamics in a newer order for the continuous flow in the public discourses and communication. Fake science also seems to be a mobilized form of science that shows the intentions of the progenitors who actively propagate the cause inferred from deceptive motives. This differs from the general understanding of scientific and legal policies where other agents and institutions are involved whose task is to disseminate to the public, belonging to different classes and experiences. Though fake science, in general, is equated with pseudoscience, there seems to be a slight difference, where the former is intentionally mobilized, and the latter is the result of an unintentional and superstitious way of engaging with the phenomenon under observation. For example, Hopf et al. (2019) noted that:

“Drivers of fake science are embedded in the current science publishing system intended to disseminate evidence knowledge in which the intersection of science advancement and reputational and financial rewards for scientists and publishers incentivize gaming and, in the extreme, creation and promotion of falsified results” (p. 1).

At the same time, local knowledge comes into the picture through active engagement with the phenomenon without much respect for the established way of doing science. For example, predicting earthquakes based on signs available in the environment rather than developing scientifically reliable methods approved by the scientific community. Local understanding of any phenomenon is also a part of public knowledge. However, these are some additional knowledge that one holds that never gets its hold, at least in the implications of the scientific policies. Moreover, when it comes to legal decision-making, the latent knowledge of the judges is shaped by these available knowledge systems. In the case of judging the psychology and the brain condition of any legal agent, which now seems to be an enforced activity in the time of surveillance, data capacity building, and increasing reliance on computer software, public view and the public construction of the everyday reality will be limited to the idea of imposition and driving movement to follow certain steps to feed once biodata into the system. The rest of the individual and social activity seems well monitored by the state, and the possibility arises of incapacitating one's data in the process of use and misuse. The cause can be constructed (see also Sinha, 2019), and to the capacity of the powerful, it can also be made a fact. However, common sense and the public understanding of the signs and symbols give some understanding of the social phenomenon to the decision-makers, helping them to construct their logic to the advantage or disadvantage of the person in question. This reliance of judge on the public or common-sense understanding was captured as

“Judges have expressly disclaimed any ‘philosophical’ or ‘scientific’ notion of causation that would preclude selection between but-for causes. Instead, judges have often stated that in deciding questions of legal causation, their

aim is to emulate ‘ordinary everyday life and thoughts and expressions,’ ‘ordinary practical affairs and the views of ‘the man in the street’. Accordingly, in the context of legal causation, ‘common sense’ appears (at least provisionally) to signpost a judicial attempt to incorporate into legal reasoning the way in which ordinary people make causal judgments outside the law” (Summers, 2018, p. 796).

The brain can be observed as the starting point of consciousness (see also Searle, 1997), and when it is conscious in whatever capacity, it is observed through the person’s behaviour, activities, and emotions. To be conscious is a natural correspondence between the person and the world. Any action at the observable level is a conscious act; however, it is human nature to look for the cause of those actions and further decide whether those actions were conscious or unconscious. Many instances from the neuroscientific evidence show the unconscious brain activities as a causal factor behind the person’s actions towards which the person becomes conscious (see also Moore, 2009, 2016). If the brain is the starting point of consciousness, then consciousness shifts as per the brain states. It happens that many events in the brain of which one is not necessary to be conscious. One is conscious that something is a fact, whether a pretence, lie, manipulation or truthfulness. Whether this kind of consciousness is a matter of stimuli registered in the brain or something in the brain that makes any stimuli susceptible to be noticed.

Metaphorically, we can associate the brain with a noncommittal organ like a computer, where information is stored, interpreted, and retrieved through different systems of memory. However, the computer does not operate independently as the brain operates. One can be sure that the computer is not conscious of its operations but the operator who is operating. This idea about the computer lacking consciousness is anchored through the operator’s mind. The computer does not have a natural brain, and thus, it does not have the will to be conscious. If the brain is the starting point, then the brain is the conscious entity. Logically, the brain seems to be active with the variations in the environment, both internal and external, but the brain has no proof of being conscious. If it leads to consciousness, it is crucial to define consciousness with the help of available objects identified in the scientific convention to conclude that the brain is conscious. Since the brain is not conscious but the person (see also Morse, 2006), the whole idea about the brain leading to consciousness is a limited one and is based on the metatheory of methodological individualism, which emphasizes exploring individuals to understand society. The brain language is used in a general way to link with some consciousness events like social anxiety, hearing different viewpoints, being a victim of power, derogation, stereotyping, or, in some situations, cognitive black-out and politics of bodies. Some of the speculation in the sociological literature in the US context (e.g., Pickersgill, 2013) highlighted the obsession of Americans with the health of the brain and the possibility of the brain languages anchoring the neurobiological way of thinking that may get saturated in the public discourse (Thronton, 2011), and impels seeing oneself in neuronal terms as dutiful biomedical citizenship (Pitts-Taylor, 2010). However, human beings in a society are also

socio-legal agents. Naturally, assessing oneself in biomedical terms is against the natural law of human beings as social and physical beings (Harre, 1991, 1993).

Understanding oneself as an individual and in terms of biomedical terminology is reductive and contradictory to what one believes to be in some social milieu. Some scholars proposed the socio-psycho-bio model (Haslam et al., 2019), making a case for the social as the appropriate force where a group shapes the psychology and biology of group members. This happens in a non-reductive manner, and this social process is a basis for the collective experience, leading to a new expression of the person's psychological and biological makeup. Neoliberal political situations have made brain science a time saver and hence transformed into the brain's language and legality. Brain scans appropriate individuality and legal domains, and they are also a matter of individual responsibilities; decolonizing both is understanding the biomedical model of human consciousness better and giving it a better meaning out of the neoliberals' box.

Law, Free Will and Conscious Brain

It is important to note that the judge's assumption about the defendant based on common-sense knowledge can be debated as causing disrepute to the agenda of the judiciary (Stapleton, 1988). However, judges may also consider them concrete assumptions and facts instead of their unnoticeable biasedness. It is the experience of the person that makes the fact workable in the collective context. Suppose a group of people, including all the legal agents in a context, comes to the final understanding about the accused as perpetrator based on the assumed validity of the outdated forensic methods. In that case, it shows one kind of link between law and science. Still, it also creates the possibility of the populist understanding of the person's stereotypes, confirmation bias and rooting of the inferred cause within the person via available methods, which may not be valid and reliable⁴. It is also a possibility that if one unconsciously is driven by group stereotypes, the erosion of that biasedness through the valid method and the appointing of people from a different domain in the jury may generate a good understanding of the nuances happening in the legal procedure to help in the avoidance of these biases. In any case, the public understanding of the cause cannot be indeed based on scientific speculation as laboratory scientists do. The public consciousness is a meaning derived from the broader context. In a very apt linguistic demonstration (as cited in Summers, 2018, p. 38), Hart and Honore (1985, p. 11) gave examples regarding the fire outbreak and construction of cause:

"In most cases where a fire has broken out... the plain man would refuse to say that the cause of the fire was the presence of oxygen, though no fire would have occurred without it: [he] would reserve the title of cause for something of the order of a short-circuit, the dropping of a lighted cigarette, or lightning."

⁴ See Douglas Star. Framed by forensics. Aeon Magazine.

Of all the decisions in the court, both the precedent and the new evidence, the last is framed through the idea derived from common sense understanding and the prevailing discourses. The jury may know the scientific principles, such as that fire is caused by oxygen, but that doesn't force the person to obey the law, become a good citizen of society or fully appreciate giving justice to the plaintiff. What matters are the rules that provide impetus to the existence of law. The same thing applies to the idea of brain science, which may not compel the judges or juries to fix upon the cause of any action as something happened due to the over-activation of the amygdala, but what matters is how this information applies to the existing idea of justice and proving the knowledge and intention of the person in some acts, for example, criminal act.

The actions without the person's consciousness and control were rigorously scrutinised in the legal domain, where legal realism overpowered judges' intuitions (see also Haidt, 2001). Metaphysical entities like the mind emanating from dualistic thought processes have little value unless empirically substantiated by science and appreciated by the law. As mentioned earlier, the intention is nothing but a way of thought, and its location is sceptical, whereas the brain is more objectified. It is too late to know about its propensities to lead to the action as time has passed. The logical inference discounted the brain studies much more than the intuition of the jury or judge to act in the present to review the matter. However, despite the neuroscientific evidence, research has shown that the intuitive belief in free will is relatively intact. Rose, Buckwater, and Nichols (2017) noted that "we suggest that the intuitive commitment to indeterminist free will may be resilient in the face of scientific evidence against such free will." (p. 482). The confidence in the neuro-prediction, as shown by the brain scientist, may not be as prudent regarding the judges' intuitions. However, evidence also shows that the chances are high that the neuroimages may influence judges, and their decisions can be framed accordingly. In both cases, the strength of belief in the ability and intuition of the judges is considered high.

The law going by these conceptual categories was observed to prejudice people from the oppressed categories as either consciously not choosing or acting rationally when it comes to their struggle against the status quo or demeaning their brain as inferiors during the normal and accepting situation. The paradox of the power discourses in modern times is to authorize and legitimize the power and use science to demean and devalue the oppressed in every form, as we see in neuroscience studies. Still, little is reported about the contextualized notions of brains belonging to the different communities. Understanding a brain mechanism through various platforms, such as neuroinformatics, brain stimulation, neuromorphic computing, and other related associations of neuroscience, such as unifying brain models, provides correlative evidence of one's actions. However, explanations related to complex social behaviour, such as acts of prejudice with the aid of the above mechanism, require acute neuro-social nexus for better understanding. The legal domain is based on the platform of responsibility, will and act based on which legal domain yields insight into the interconnected causes.

Ontology and Epistemology of Consciousness

The debate regarding the ontology and epistemology about the reality of consciousness have persisted with some understanding and meaning-making. Is it our brain that cause behaviour or consciousness was speculated from multidisciplinary perspectives (see Pockett, Banks & Gallagher, 2006; see also, Libet, 1985; Libet et al., 1983; Libet, 1999; Ross, 2006). However, to describe consciousness as it is, we always need some channels and testing of some hypotheses, assumptions, and paradigmatic discourses. So, the ontological existence of any human-constructed entity is resolved epistemic. This happens with all other constructs where the subjective experiences are resolved through some methodological interventions, not necessarily from the established scientific point of view. As dominant science will fix and objectify consciousness, the everyday scientific approach gives new avenues to understand consciousness from a shared perspective. Since consciousness as a word may also symbolize a meaningful understanding of oneself and its communication, indulging in a debate about the hard problem beyond the language was unexplored and manifested in the unconscious and the brain. For example, neuroscience identified and validated the seat of unconsciousness in the limbic system and basal ganglia (e.g., Schleim, 2012). However, identifying an emerging point and location still does not clarify the concept of unconsciousness. We are talking about unconsciousness, with the help of neuroscience, as something that exists and pricks us and which is possibly the bipolar opposite of something that we call consciousness. Does this bipolarity make sense, since all (brain/body) activity that is not directly related to consciousness could be considered unconscious⁵. What is experienced that is not good enough to carry on rather than inferring something that is not obvious? This obviousness of the brain tinkering but unknowingly affecting the person's actions and thoughts has given uneven shape to the unconscious mind. However, this still has not solved the question regarding the truth about the continuums of consciousness. Though it is complicated to identify the exact point where consciousness and unconsciousness intersect, in no way can any sophisticated technique like brain imaging locate those points of intersection. The new brain scanning technologies have made consciousness and unconsciousness more verbal, visible, and legitimized. The rise of trends to create sophisticated techniques to understand the world of consciousness was confined to brain studies and observation and their correlation with intentions, thinking processes, and actions. So, generally, scientists relied on the brain mechanism associated with consciousness and people's self-awareness based on how they appear and act (Sohn, 2019; Owen, 2013).

Consciousness as a disciplinary concept had a confined meaning, and in the legal domain, its interdisciplinary connection was also limited to a few disciplines, such as neurobiology. The holistic view of consciousness's intersubjective aspects has been gradually limited by more dominant characterization and fixed attributes. Do rules bind consciousness? Is there a rule to understand and describe consciousness? Do we have to go into an endless debate about consciousness and falling on shaky

⁵ I am thankful to Hans Liljenstrom for his comments. www.qeios.com/read/W3VBM8.

ground, which is yet again contestable? Since the consciousness of something in the environment denotes the activities in the brain, understanding the brain and environment also requires some perspectives. We need a sensible verification of concepts through collective sensemaking; for example, to see the sun, we look up and not into the picture because the latter is a picture of the sun, not the sun. Similarly, looking at the sun may not give us the ultimate sense of the sun unless it is observed close to the point; we are stopped by the fact that we cannot stand and look at the sun's surface. As a matter of collective reflex, we need a verification ground, and after a certain point in a paradigm, it is useless and futile.

Rethinking Consciousness in Historical, Sociocultural, and Legal Context

Is consciousness a linguistic confusion, as speculated by Wittgenstein? “Wittgenstein’s concept of consciousness is primarily linked to the entirety of the human experience, including feelings, thoughts, desires, actions, and so on”⁶ (as noted by Krkač & Lukin, 2006; Krkač, 2012). As consciousness is subjective and we apply language to understand it, language cannot reach the core of something subjective. We know more than our language expresses it (Polanyi, 1966). How does someone have more authority to talk about the pain of others? Do libertarians have more understanding of severe poverty and its social pain than conservatives? Do we need to go into this political dichotomy to feel the other’s pain? Who reaches the experience of the poor more closely? Do we have the authentic language for these private experiences since once the experiences and consciousness get their congruent vocabulary, the problem may be sorted out better? Some of these questions seek answers to the nature and structure of consciousness through intersubjective meaning-making. Franz Brentano⁷, an introspectionist, described consciousness from the first-person perspective and asserted that consciousness is a unity expressed in acts and processes. He contrasted physical reductionism and assumed that the content of consciousness was a meaningless exercise and destroyed the essential unity of consciousness. He noted that ‘elements of consciousness if they exist, don’t have psychological meaning’ and defined psychology as a science of psychic phenomenon, expressed as acts and processes. He also placed psychology as the study of intentionality expressed in his ‘immanence hypothesis’. However, his approach was a scientific and empirical way of doing philosophy and not dogmatic, defining his position as more phenomenological and later becoming the element of criticism by logical positivists and behaviourists. His approach was critically away from the theological position where something stronger and infallible exists outside the person, acting non-linearly away from human understanding⁸. Brentano wrote that it is impossible to judge, desire, hope or fear anything if they are not presented.

The congruence of knowledge in which one person knows something about the other and the other knows something about himself/herself happens in the

⁶ I am thankful to Kristijan Krkač for his comments. <https://www.qeios.com/read/NJYLBV>.

⁷ Psychology from an empirical standpoint, 1874.

⁸ Frantz Brentano. Stanford encyclopaedia of philosophy.

neurophysiological makeup of the brain of people involved in some circumstances. The relevance of the method, which helps the former to know about the minds of others, as per neuroscientists, is a sort of neuro-connection whose brain structure operates as an expert in some specialized function that is to be deciphered by neuroscientists. However, the judge infers about the other under the boundaries of intersubjectivities of various minds having some notion about this context. Consciousness thus seems intersubjective and bounded.

Consciousness, pragmatically, is also a conventional concept and figuring out its universalized essence beyond the embodied capacities and ecological engagement of different species is like burdening oneself with speculating different kinds of rocks on the moon and naming them at the cost of relishing their beauty holistically. Consciousness and its debate fell into these confusions of obtaining single and pure aspects based on divergent categories. William James speculated about consciousness as a state which is like a stream. However, there are meta-theoretical positions on the place of the brain in the consciousness (e.g., Searle, 1991). If the brain changes as per the societal and internal stimuli, the consciousness (e.g., cognition, acts) also gets the shift. In other words, consciousness is not stagnant. So is identity and, thus, personal, and social selves. Based on this analogy, how does responsibility matter since the person's consciousness shifts and changes in different situations? The action or behaviour committed, which was conventionally wrong and morally incorrect, has the same intensity throughout, even though we know that changes in the consciousness and body are undeniably true. This shift is direct in which William James speculated about the existence and flow of the consciousness. As consciousness is a flow, like a stream or a river, its nature cannot be disconnected. Consciousness moves in oneness, which is the qualitative sense of being connected to oneself and identity. The river never disintegrates but changes its direction because it is no longer a river if it disconnects. Similarly, consciousness never disintegrates but logically connects to the self, community, class, and value system. If the legal system gets valid scientific proof of someone being intentionally involved in the crime, that action is part of the person's activity whose memory and knowledge connect to the time of the crime committed. This is not to say that retributive justice is the only rehabilitating solution. Understanding the science of change of body, brain, and consciousness matters for the person's rehabilitation rather than the fixed categorization based on past actions. We can rely on our transformative belief about consciousness, as we see in several social change attempts, to make people aware of the plight of the oppressed community and thus change their prejudiced knowledge in the direction of affirmative action and emancipation both for the oppressor and the oppressed (Freire, 1970).

The detection of consciousness can be a polarized attempt to downgrade the subjectivity of others cognitively. This inter-subjectivity is not democratic and shared but imposing, unsympathetic and dehumanizing. But no doubt, this is also a kind of consciousness. The movement to sketch a mental and linguistic boundary between authentic and inauthentic consciousness is needed. From different group perspectives, reaching the common thread is difficult and degrading one group's history at the cost of others. So, how does the legal domain evolve to these inter-subjectivities where the democratic form of consciousness is preserved or modified under

the broader movement of social change? If it is for humans, then subjectivity must be maintained and respected or, in other words, considered. In one sense, detecting consciousness is not difficult, but due to the long history of human interactions, the folk-psychological notion of consciousness is automatic and reflexive. However, it is also in human nature to do something like lying, which is socially undesirable but typical, as differentiated from the highly appreciated behaviour but looks pathological (see Spence et al., 2004). The scientific understanding of the brain and its public understanding has also affected the change in language and the use of symbols. The consciousness detected through the help of changing or prevalent discourses has also changed the perspective on consciousness. The ontological purity of consciousness is still laden in the language, and its essence is felt as a qualitative and subjective experience. The paradox between what is communicated and what is felt is not that pronounced, and everything is laden in the context of communication. What is hidden, unspoken, and not seen is not unconsciousness, and at the same time, the mental content that cannot find its language or the symbols to communicate is not consciousness either. What is conscious has a meaning made in the social context through the connection of symbols and languages, essentially a mark of awareness in the legal domain. The picturizing of consciousness from one's eye is impossible for others, but it can only be shown through language, actions, and emotional expression. Understanding consciousness, a-historically, may be fallacious since it is connected to historical activities. In one sense, consciousness does not require definition since it seems like a spontaneous meditative act; we do not think about our consciousness but are conscious. However, it will be contradictory to suppose consciousness is historically contingent and spontaneous simultaneously⁹. Consciousness is social as it emerges in the sociocultural context with its subtleties of language, culture, historical rooting, and socialization. Defining consciousness as a simple awareness and phenomenological may disconnect its roots from the indigeneity, cultural use of symbols in the formation of community and the erosion of languages, which created everyday meaning-making and systems of thoughts. To universalize consciousness and break it into its purest form is missing out on the decolonial experience extrapolated on the holistic weaving of one identity.

The demystification of given consciousness is possible when we decolonize ourselves from the shackles of given and imposed languages and meanings (Markova, 2003). We not only live by the language and think of the more sophisticated others but also bootstrap those languages with the new one (see Trilling, 1972). We extrapolate consciousness and create our world. When this happens at the collective level, a large part of our consciousness is shared, which occurs in the legal domain where shared views about the use of neuroscience in law become less critically taken and necessary. In the legal domain, how disciplinary languages are utilized and juxtaposed with the legal categories is a matter of interdisciplinarity and cultural context, where the meaning consciousness can either be driven by the majority view or some new language is adopted to enrich the justice system to replace the populist sense of

⁹ I am thankful to Michella Feldberg for her insightful comments. <https://www.qeios.com/read/N50VPM>.

justice with the novel one. Any concept and terminology are not adopted just based on novelty, but that novelty is upheld by groups considered authentic and reliable. The neuroscience language of consciousness has become prominent because of rising interest and research based on high funding (Rose & Abi-Rached, 2013), which must integrate with the law, as neuroscience is directly connected with the mind in no other way.

Consciousness is anchored through the hierarchy of disciplines and identities. For example, if the methodology and strategy of neuroscientists are considered superior to the methods employed by psychologists or sociologists, as it happens in the tussle between hard and soft science, consciousness will get its concrete definition and, at the same time, lose its essence, which people try to achieve through the interdisciplinary reflections as if the poet's way of understanding the memory is going to be discarded by more scientific and sturdy methods of natural science. The various brain scanning techniques add further to the aesthetic of science rather than humanities. Ironically, the brain is visible, and so is consciousness and dominant discursive practices. The interdisciplinary dialogue between neuroscience and other humanities and social sciences disciplines is needed to understand the meaning of consciousness, possibly eliminating the hierarchy of disciplines.

Is Consciousness a 'Social' Entity?

Sinari (1984) called consciousness a correlate, always having something as its subject matter. Whatever the logic and impression about something called as consciousness, though undecipherable, it comprises the socially shared property which makes someone or a group aware about one's social existence. Here, the brain becomes essential, but neural registering of many events and suppressing its expression has become more intact and regulatory. The study of consciousness in law matters to the point it makes the person's uniqueness more pronounced. For example, while committing any reckless act, the person could not judge the ethics and consequences. So, when the person acted, it was unintentional and unconsciously driven by some neurological defects. The reliability can be established through the number of observable instances. As Flanagan (1991) stated, "consciousness is essential to human nature" (p. 365). People holding a false belief or some lie against any group is also a consciousness technically because a person is aware and has knowledge about the contents of the mind, but holding any false information or belief is either added or counteracted with new logical propositions. Consciousness does not exist in its pure form but has various forms. However, neuroscience assembles the localized function in a few higher-order brain areas responsible for consciousness about something (e.g., deception) (see Spence et al., 2004).

Research about the brain-consciousness interface in the case of stereotype threat and stigma (e.g., Derks et al., 2008) shows the importance of context and its signature on brain events. Truth corresponds to action and words; truth is a matter of one's consciousness, which comprises intentions, memories, deception, and lying. The consciousness of these sorts in the legal domain is filtered through the available evidence. However, the legal domain uses science to rationalise decisions based

on past legal categories (Santosuosso & Bottalico, 2009). The instances available to us and their refutation by new instances move the science ahead, but what are the verifiable criteria through which the earlier proposition was taken as truth and later falsified by the latest cases?

How can a new instance refute truth if truth is so clear and pure? However, this context shows that truth is embedded in its ontological understanding. Its epistemological stances shift as per the new kind of evidence and instances. Here, the true value does not change as truth is there, but knowledge about it makes a shift or changes. Karl Popper's (1968) falsification criteria refuted any scientific theory consisting of logically verified truth statements by new instances, but what was the guarantee that earlier held propositions by the scientific community were valid? Hence, does any new event also not guarantee its status as accurate? According to Berlin (1999), in what sense is any proposition true or not identical to the new statement of truth? He stated thus:

“But while this may provide a valid criterion of significance for general propositions about observation data, it throws no light on whether the sense in which they are called true is or is not identical with that in which singular propositions are so called” (p. 20).

In the case of legal domains, which look for stringent criteria to understand consciousness and its correlates objectively, they usually try to avoid false alarms and misses, which may lead to false positives and false negatives. Though consciousness is phenomenal, its epistemology varies in different disciplines, so which discipline is most suited for the legal domain to conclude that the person's mind is based on dominant and institutionalized metatheory that regulates the law (metatheory preferred by the legal domain to understand the truth and false, justice and injustice, stereotypical understanding of the context or weight of the corroborating evidence) and those other disciplines, like, neuroscience. Thus, true statements about consciousness pertain to human nature and how human phenomenology intends to be, and this is collectively shared and affirmed. This is complex philosophical speculation, but for law and other disciplines of social sciences and sciences, if the disciplinary agents are trained in metatheory, which is a matter of long history dealing with many cases, the drawing of boundaries becomes natural. In any case, the bipolarity and duality between right and wrong, truth and false, moral and immoral are so clearly embedded in the practices that any form of logic beyond the stated and specified understanding becomes odd. The role of brain science and various techniques of understanding the brain gave a picture of the brain that is difficult to ignore in the legal domain (e.g., Greely & Farahany, 2019). What is beyond observation and still a mystery is less in the discursive zone of scientists. Similarly, for the legal domain, what is under reach through current scientific understanding matters, and what is beyond the human capacity to understand, for example, the soul, at least in the scientific and legal domain, is unnecessary and regressing.

Is there any truth statement for unconsciousness or preconsciousness? Since the formal inception of the unconscious mind, in the Freudian notion of the dominant and hidden aspect of personality, the unconscious has taken a banal and hegemonic

form¹⁰. It is slowly getting its truth statement in discourses and now in neuroscience. Of all the epistemological criticisms to measure unconsciousness, no doubt, the dominant scientific community did not reject the ontology of consciousness and, hence, its metaphysics. The only problem was the measurement and operationalization; it stayed, which never got its operational definition. Ironically, unconsciousness began to be understood better than consciousness. At least what is hidden is recognized and gets its name; something at the backseat pulling the person from his/her consciousness has more weight and, like an undercurrent of the ocean, seems to stimulate the consciousness. Whatever memory went into the unconscious is still a mystery, as wherever the seat of unconsciousness is, we see through some changes when the person tacitly and unknowingly engages in any task and area of the brain becomes active. However, the seat of consciousness in the brain is probably recognized, though brain studies gradually advance our understanding of localized functions (e.g., Gazzaniga, 2012). Sometimes, these localized functions are interconnected to other parts of the brain, and the same part of the brain performs many functions. For example, researchers asserted that the “function of brain regions is characterized via multidimensional diversity profiles”, in other words, there is a dynamic affiliation of a particular region with the other brain network (e.g. Pessoa, 2014; see also Horwitz, 2014; Uddin, 2014), but the hard problem of consciousness is never resolved.

Whose Consciousness?

Franz Fanon (Fanon, 1963) pointed to the colonization of mind in his prominent account, ‘The Wretched of the Earth’. There, he showed how, in the history of humanity, colonization played enough part in degrading the agency of the indigenous social group. From the colonial point of view, colonialists’ approach was considered rationale, the others need a taming. The idea was to occupy, reject and expand. This also tamed the ideology of Eugenics that lurks in people’s minds, even within the past colonized. For historically oppressed people, their consciousness of being in a collective humiliation, as some feature detectors common to all, determine their consciousness in a collective context. This inter-subjectivity corresponds to the qualitative experiences concentrated until it is not saturated or diluted. Consciousness verification beyond that point corresponds to the logical impossibility and, thus, absurdity.

Eric Fromm (1962) indicated how “Marx, like Freud, believed that man’s consciousness is mostly ‘false consciousness’. He further stated that “man believes that his thoughts are authentic and the product of his thinking activity while they are in reality determined by the objective forces which work behind his back” (p.101). These objective forces are explained to be varied, from biological (for Freud), socioeconomic and historical (Marx) to cultural and political (see Fromm, 1962).

¹⁰ According to Eric Fromm (1962), “Freud recognized that most of what is real within ourselves is not conscious and that most of what is conscious is not real”. This devotion to the search for inner reality opened a new dimension of truth” (p. 85).

Among humans in general, how can consciousness go beyond human nature? And so, with other species in this world. We figure out consciousness through our prism of humanity, and we do not always need the cause to understand our nature as much as we can know about it. Even shifting one's position of awareness and knowledge or being cognizant of information that feeds our notions of awareness does not go beyond our nature. We infer the state of mind of humans or other animals verified in those states of affairs. For example, we know that someone is lying and verify through the consensus. So, the knowledge about something and verifying it through the language, appearance, actions, and neural pathways, what appears best is the consensual conscious detection whether it is based on the collective sense about the person's way of speaking, interpretation of brain events or behaviour in the diverse circumstances. Here, one's subjectivity about self-consciousness also matters. For example, the persons from the oppressed group had to bear the prejudiced folk-psychological notion of the powerful outgroup. As we have seen, consciousness does not have a pure meaning, but it can be understood through the true statement about something as consciousness about some object, person, or event. Legal decision-making considers various aspects such as responsibility, guilty mind and guilty act, intention, and free will.

The power to understand the cultural contexts through reflexive understanding, which is one of the folk psychological notions of perspective-taking, has been objectified by corroborating it with the evidence of neural firings and brain activation (e.g., the activity in the temporal-parietal junction in the situation of perspective-taking (Saxe & Kanwisher, 2003) and the role of posterior superior temporal sulcus in the movement inferences (Saxe et al., 2004). However, the hard problem of understanding the mechanism of consciousness, as an emergent substance out of the brain activation, does not solve the quest for real empathy towards the other's pain and dignity. Situating the above discussion into psychological principle, Premack and Premack (2003) stated that 'there is no need to teach the child empathy' (p. 233) as it is already a part of socialization and children are schooled enough in their home from their parents. They advocated the need to strengthen the child's disposition to practice empathy by allowing him to act. However, it is another matter when the same quest to know any behaviour which is not normative is discovered in the brain differences. For example, the consciousness, estimation, and prediction of the other's mental status in the given context, as Frith and Frith (2007) called the brain's mirror system, is a description of brain events when the observable actions are either imitated or felt by the observer (e.g., Gallese, 2007).

Brain studies matter to the point they help the legal domain decipher the cause of behaviour reliably across time and space. Here, the behaviour anchors the cause, as we infer from the action about the cause. The cause is undefinable, nonsense or absurd in the legal domain. If the starting point to understanding others' minds or identities is a preconceived cause, it is nothing but previously held prejudice or some stereotype (See also Harris & Sen, 2019). Thus, juries or judges looking at the experts' reports may restructure them or anchor from their own preconceived or hindsight biases (see also Zeki et al., 2004; Zeki & Goodenough, 2006). However, the strongly verified neuroscientific evidence giving insight into the injured or different brain structures may be necessary for biological justice and the person's

dignity (e.g. Sinha, 2024a, 2025). Usually, the defendant's inability to take others' perspectives, understand others' mental status, lack of control over the movements and be empathetic may become important insights for neuroscience. However, a normalized public understanding of those rigorous scientific findings is needed to affect legal decision-making for rehabilitation. Thus, the story of the people narrated becomes important when affirmed through the consensus and under the realm of necessary and sufficient conditions implied by human nature. What is mysterious or based on false beliefs and looks like a conceptual confusion or incoherent (see Bennett & Hacker, 2003), as in the case of understanding whether the defendant was conscious of his intentions, cannot give a burden of proof to the judges to change their opinion about the defendant's responsibility (see Jones et al., 2014), unless the exact cause is located fixing upon the intentions based on information on mental and neurological status.

Decolonizing Brain Science: Critically Conscious Brain and Law

The radical publication by Szasz (1974) titled "The Myths of Mental Illness" critically handled the dominance of institutions legitimizing mental illness and psychiatric myths. This has led to paradoxes for the criminal justice system handling the notions of insanity leading to rehabilitation, reduction of sentences, or punishment based on a person's freely chosen action assumed to be intended and objectively verified. This rise of the brain science or neuroscience in the criminal justice system (see Greely & Farahany, 2019) and many other domains, such as education, organization, and other significant areas apart from medicine, has given new critical understanding and speculation about the revival of eugenic discourse (see also Rose, 2000, 2013). For example, one of the originators of critical psychiatry in the colonial context, Fanon (1963), reminded us how psychiatrists were seeing criminal tendencies among the indigenous population in Algeria. The kind of culmination of brain discourse was framed along with free will, such as the inability of the native people to use their frontal lobes or the underdevelopment of the cortex (see Sartre, 1963). The way determinism is attributed to the brain and neutralized can be observed more critically in the discourses which attribute a form to the people who are the victims of colonial prejudices. The imposition of the neuroscientific and psychiatric categories, where the former is limited to the brain categories and the latter's the socially constructed language whose meaning is created and reified in diagnosing (e.g., insanity), limits the free will to rise above the limits ascribed and imposed by one's social positioning.

Do animals need to understand their brain mechanism to understand another member of their species or different species? Why do only humans need neuroscience to be more precise about their understanding of themselves and others? As far as we know, the animal's thought process is true to their behaviour, and it is complicated to make sense of their understanding of deception as we humans do. We have at least a theory of mind about ourselves that may be true or false. In the case of animals, it is limited to their repeated behaviour directed towards their interaction in response to threats or other behaviour. How do judges and other legal agents become critically conscious of existing stereotypes about the defendants and plaintiffs

belonging to different social groups? The rise of neuroscience has made brain studies interpreted from one domain. As it seems, neuroscience does not discriminate based on colour as it is focused on the brain, though it is a different story than whose brain it is studying. There was a case when racial discrimination was observed to be processed un-intentionally in the brain, while social decision-making and attitude formation between black and white social categories (see Bradley et al., 2020) and how unintentionally race attitude affects legal decision-making (see Kubota et al., 2012; Matten, Wei et al., 2018). Neuroscience does not talk about mysteries of the brain but reveals something unknown earlier and correlates with the intention and behaviour. How it reveals and categorizes the brain structure based on the localized functions is a scientific disclosure of the mechanism rather than the mystery. However, this is taken as mysterious, deeply connected, mystical, and fascinating in the typical neuroscience domain. This is because we hold our brain with us but never notice that we are deterministically regulated by it. Neuroscience bears the insurmountable responsibility to understand the brain and, thus, humanity, which is very complex. Many disciplinary cultures engage in revealing the mystery of our being conscious. Neuroscience reveals the brain facts and creates a kind of neuro-essentialism, unquestionable general brain categorizations. We have names of brain structures and knowledge of their localized functions; they are translated into many local languages. In an interdisciplinary circle, academic domains and institutions worldwide, as well as different centres and departments, are looking into new avenues of neuroscience. Even the neuroscientific approach has advanced the consciousness of different group members through the same observation lens and came out with reductive results. The brain of colonizer and colonized, local and Western, powerful and powerless, indigenous and occident, has been subjected to the same observation method. It is embracing to talk critically of all neutral scientific methodologies operating on all social groups in an even manner.

How does the sense of agency emerge? Does the sense of self and agency emerge from the brain or be embedded in the person's social activities and meaning-making with social objects? Decolonizing the brain, or neuroscience, which studies the brain, is a mark of social change and a critique of the normalization of neuroscientific methods. Decolonization also gives space to the alternative sciences (Nandy, 1980). The increasing reliance on brain scanning techniques for lie detection is shown to be unreliable scientific standards, though some of them (EEG and fMRI) are established technology and are frequently used to graph and map brain activities (Rose, 2004; see also Langleben & Moriarty, 2013). The sociocultural experiences of socially neglected people who do not have the channel to keep their viewpoint regarding technological dominance, such as brain mapping. Technology, market, and power influence the reality of the oppressed in a coercive manner, and the rising brain science, if not checked through the critical lens, will concretize the social structure without any space for social change. The simultaneous occurrence of intention and brain activity in the framed or actual situation does not provide a sure mechanism that corresponds to historical context and collective memories (Pickersgill, 2013; Rose, 2007). In the brain scanning techniques, there is variation in superiority, which seems more reliable than the others. The question about the hard problem of the brain and consciousness is not yet resolved, and the validity of these

techniques is still in question. Consciousness and how it emanates from the brain are correlative assumptions. However, the availability and rise of these sophisticated brain-scanning instruments have clarified scientific studies on consciousness. However, it seems short-sighted for the people who anchor from the first-person phenomenological point to understand the hard problem of consciousness (e.g., Chalmers, 1996; see also Poldrack, 2018).

The cultural variation in using these instruments and the differences in the way and socialization of concealing, controlling, denying, and affirming offers an important point of contestation. For example, US polygraph analysts are not very interested in the concealed information test as it corresponds to the perpetrators as compared to the Japanese, where CIT is in the law enforcement model (Ben-Shakhar, 2001; Nakayama, 2001; see Langleben & Moriarty, 2013, p. 224). This may be connected to how US people express their emotions more than Japanese people (See Markus & Kitayama, 1991). This is not to say that the expression of emotions does not correspond to the knowledge of the truth. What matters is how people's belief system corresponds to the universal sense of morality and deceptions and in what way modern tools are good at deciphering. Suppose ever-evolving modern tools are generative and correspond to the human consciousness leading to justice. How was justice seen, and how did it come to enforcement when these modern tools were unavailable? Further, their vocabulary also limits how these modern techniques come into the modern discourse. We do not have a critical vocabulary at the general level to discuss the different perspectives on brain scanning techniques. Whatever language and vocabularies are available, we generate our arguments by creating a picture of consciousness. However, these vocabulary words are not detached from experiences and knowledge; they only seem limited in reproducing the thoughts exactly. If we imagine looking into the class or caste consciousness in the Indian situation, brain scanning nowhere seemed to disclose the exact point where one is programmed to discriminate or get discriminated against, making the situation deterministic and unchangeable, but these brain activations are matched with the self-report and the behaviour, as it was observed in the Black-White context (Azarian, 2018¹¹; Gorman & Gorman, 2017¹²). Decolonization of the brain focuses on the forced marketing of a mechanized form of consciousness subjected to visible brain activities through commercialized brain study techniques. It is a matter of choice made by the voiceless and classless, who are expected to not have any choice in the power-technology nexus. This article tries to raise the debate between philosophy and psychology to an extent where the link between the brain and consciousness is not taken for granted as an emergent human cognitive system but understood as an integrative socially connective phenomenon embedded in the sociocultural context (e.g., Valsiner & Rosa, 2007; Valsiner & Van Der Veer, 2000). If dealt with critically, modern neuroscience and its integration into other social science disciplines can contribute

¹¹ Understanding the racist brain: What are the psychological and neural underpinnings of these nasty bias? *Psychology Today*.

¹² Can Brain Imaging Teach Us Anything about Racism? What neuroscience can and cannot tell us about discrimination. *Psychology Today*.

immensely to the idea of justice. However, its over-reductive demeanour needs a tint of decolonization and a better platform for interpretations. Sociocultural factors have an immense role in facilitating this process.

Conclusion

The discussion facilitated the consciousness movement in psychology. Consciousness is a matter of identity, where one belongs, has a relation with time and space and makes sense of others. Denying the understanding of consciousness is to deny the reality of existence and ignore the fact that the world exists; otherwise, all the struggle for being and becoming of humanity is myth and farce, and the fundamental question of life becomes meaningless. Positioning oneself destined to the will of the permanent cause or mechanical working of the brain will not deny the fact that a person is responsible for his/her consciousness, and in the long struggle between determinism and free will, it was all consciously done the way we move into the present every time. Forgetting, memories, thinking, perception and making sense of the world through language, action, and mind are all consciousness and processed in some state of mind. Consciousness is in the will of the beholder, and the practical aspect of understanding is investigating what consciousness is not. Here, the law had constructed its domain out of conceptual confusion, and what matters is our consciousness since the world is a matter of free will (e.g. Freeman, 1999; Liljenstrom, 2018). Alternatively, the world is not filtered through our eyes, but we act in a community to fit into some framework called 'my world'. We try to build up our consciousness in the preferred social realm or in which we are supposed to be involved, for example, in service towards one community or the social norms and exigencies. Since we have so many pictures of consciousness framed through the different theoretical models and stances, it automatically shows that consciousness doesn't have a singularity of its stand and that what consciousness is in terms of its understanding is incomplete. Searle (1999) opined that even the illusion of consciousness is consciousness, but here, we must be clear about the fact being different from the non-fact. The objectivity of scientific findings is in the congruence of what is shown to exist, but what if we fall into illusions and ignorance without putting any scientific knowledge about our illusions? We are generally conscious of that, and it is our reality till our ignorance (avidya) becomes falsified by new evidence that can be demonstrated. So here we see the differences among all other pictures of consciousness. So, there are facts and non-facts, right and wrong, true and false. The legal domain is not neutral to their accumulation of facets of mind and consciousness, such as memories, experiences, desires, etc., as it gives them the standard of evaluating others' actions to be accepted by society.

Author Contributions This is to inform you that author Chetan Sinha is also the corresponding author.

Funding The authors did not receive any funding from any organization for the submitted work.

Data Availability No datasets were generated or analysed during the current study.

Declarations

Ethical Approval Not Applicable.

Competing Interests The authors declare no competing interests.

References

- Azarian, B. (2018). Understanding the Racist Brain: What are the psychological and neural underpinnings of this nasty bias? *Psychology Today*.
- Ben-Shakhar, G., & Elaad, E. (2001). The Guilty Knowledge Test (GKT) as an application of psychophysiology: Future prospects and obstacles. In M. Kleiner (Ed.), *Handbook of Polygraph Testing* (pp. 87–102). Academic Press.
- Bennett, M. R., & Hacker, P. M. S. (2003). *Philosophical foundations of neuroscience*. Blackwell Publishing.
- Berlin, I. (1999). Verification. In H. Hardy (Ed.), *Isiah Berlin: Concepts and categories: Philosophical essays*. Pimlico.
- Bradley, A., Mennie, N., Bibby, P. A., & Cassaday, H. J. (2020). Some animals are more equal than others: Validation of a new scale to measure how attitudes to animals depend on species and human purpose of use. *PloS one*, 15(1), e0227948. <https://doi.org/10.1371/journal.pone.0227948> Mattan, B.D.
- Chalmers, D. (1996). *The conscious mind. In search of a fundamental theory*. Oxford University Press.
- Chomsky, N. (2000). *New Horizons in the study of Language and Mind*. Cambridge University Press.
- Derks, B., Inzlicht, M., & Kang, S. (2008). The neuroscience of stigma and stereotype threat. *Group Processes & Intergroup Relations*, 11(2), 163–181. <https://doi.org/10.1177/1368430207088036>
- Fanon, F. (1963). *The wretched of the earth*. Grove Press.
- Flanagan, O. (1984). *The science of the mind*. Cambridge: The MIT Press
- Flanagan, O. (1991). *Varieties of moral personality: Ethics and psychological realism*. Harvard University Press.
- Flanagan, O. (1992). *Consciousness reconsidered*. MIT Press
- Freeman, W. J. (1999). Consciousness, intentionality and causality. *J Consc Stud*, 6(11–12), 143–172.
- Freire, P. (1970). *Pedagogy of the oppressed*. The Continuum Publishing Company
- Frith, C. D., & Frith, U. (2007). Social cognition in humans. *Current Biology*, 17(16), R724–R732.
- Fromm, E. (1962). *Beyond the chains of illusion: My encounter with Marx & Freud*. Abacus.
- Gallese, V. (2007). Embodied simulation: From mirror neuron systems to interpersonal relations. *Novartis Foundation Symposium*, 278, 3–12.
- Gazzaniga, M. (2012). *Who's in charge? Free will and the science of the brain*. HarperCollins.
- Geertz, C. (1973). *The interpretation of cultures*. Basic Books.
- Gergen, K. J. (2010). The acculturated brain. *Theory and Psychology*, 20(6), 795–816.
- Gergen, K. J., Sharma, C., Sameshima, T., Wu, S. J., & Yang, L. (2019). Cultures in motion: Challenges to Future Inquiry. *Asian Indigenous Psychologies in The Global Context*, 47–67. https://doi.org/10.1007/978-3-319-96232-0_3
- Greely, H. T., & Farahany, N. A. (2019). Neuroscience and the criminal justice system. *Annual Review of Criminology*, 2(1), 451–471.
- Gorman, S., & Gorman, J. M. (2017). Can brain imaging teach us anything about racism? What neuroscience can and cannot tell us about discrimination. *Psychology Today*.
- Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review*, 108(4), 814–834.
- Harre, R. (1991). *Physical being*. Blackwell.
- Harre, R. (1993). *Social being*. Blackwell.
- Harris, A. P., & Sen, M. (2019). Bias and judging. *Annual Review of Political Science*, 22, 241–259.
- Hart, H. L. A & Honoré, T. (1985). *Causation in the Law*. Oxford University Press.

- Haslam, S. A., Haslam, C., Jetten, J., Cruwys, T., & Bentley, S. (2019). Group life shapes the psychology and biology of health: The case for a sociopsychobio model. *Social and Personality Psychology Compass*. <https://doi.org/10.1111/spc3.12490>
- Hopf, H., Krief, A., Mehta, G., & Matlin, S. A. (2019). Fake science and the knowledge crisis: ignorance can be fatal. *Royal Society Open Science*, 6(5), 190161.
- Horwitz, B. (2014). The elusive concept of brain network. Comment on understanding brain networks and brain organization by Luiz Pessoa. *Physics of life Reviews*, 11(3), 448–451. <https://doi.org/10.1016/j.plrev.2014.06.019>
- Jones, O. D., Buckholtz, J. W., Schall, J. D., & Marois, R. (2014). Brain imaging for judges: An introduction to Law and Neuroscience. *Court Review: The Journal of the American Judges Association*, 50(2), 44–51.
- Krkač, K. (2012). *A Custodian of Grammar, Essays on Wittgenstein's Philosophical Morphology*. University Press of America.
- Krkač, K., & Lukin, J. (2006). Wittgenstein on Consciousness in Philosophical Investigations, In G. Gasser, C. Kanzian, E. Runggaldier, (Eds.) *Culture: Conflict-Analysis-Dialogue, Proceedings of 29. International Wittgenstein Symposium, Kirchberg am Wechsel*, 2006:156–159, Conference Papers.
- Kubota, J., Banaji, M. R., & Phelps, E. A. (2012). The neuroscience of race. *Nature Neuroscience*, 15, 940–948.
- Langleben, D. D., & Moriarty, J. C. (2013). Using brain imaging for lie detection: Where science, law, and policy collide. *Psychology, Public policy, and Law: An Official Law Review of the University of Arizona College of Law and the University of Miami School of Law*, 19(2), 222–234.
- Latour, B. & Woolgar, S. (1979). *Laboratory life: The social construction of scientific facts*. Princeton University Press.
- Leontyev, A. N. (1981). *Problems of the development of the mind*. Progress Publishers.
- Libet, B. (1985). Unconscious cerebral initiative and the role of conscious will in voluntary action. *The Behavioural and Brain Sciences*, 8(4), 529–539.
- Libet, B. (1999). Do we have free will? *Journal of Consciousness Studies*, 6(8–9), 47–57.
- Libet, B., Gleason, C. A., Wright, E. W., & Pearl, D. K. (1983). Time of conscious intention to act in relation to onset of cerebral activity (readiness-potential). The unconscious initiation of a freely voluntary act. *Brain*, 106(3), 623–642.
- Liljenström, H. (2018). Intentionality as a driving force. *Journal of Consciousness Studies*, 25(1–2), 206–229.
- Luria, A. R. (1973). In B. Haigh (Ed.), *The working brain: An introduction to neuropsychology*. Trans.) Basic Books.
- Marková, I. (2003). *Dialogicality and social representations: The dynamics of mind*. Cambridge University Press.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224–253.
- Mobbs, D., Petrovic, P., Marchant, J. L., Hassabis, D., Weiskopf, N., Seymour, B., Dolan, R. J., & Frith, C. D. (2007). When fear is near: Threat imminence elicits prefrontal-periaqueductal gray shifts in humans. *Science*, 317(5841), 1079–1083.
- Moore, M. S. (2009). *Causation and responsibility: An essay in Law, Morals, and Metaphysics*. Oxford University Press.
- Moore, M. S. (2016). The Neuroscience of Volitional excuse. In Dennis, & Patterson (Eds.), *Philosophical foundations of Law and Neuroscience* (pp. 179–230). Oxford University Press.
- Morse, S. J. (2006). Brain overclaim syndrome and criminal responsibility: A diagnostic note. *Ohio State Journal of Criminal Law*, 3, 397, 2006, *U of Penn Law School, Public Law Working Paper No. 06-35*. Available at SSRN: <https://ssrn.com/abstract=896753>
- Moscovici, S. (2001). Why a theory of social representation? In K. Deaux & G. Philogène (Eds.), *Representations of the social: Bridging theoretical traditions* (pp. 8–35). Blackwell Publishing.
- Nakayama, M. (2001). Practical use of the concealed information test for criminal investigation in Japan. In M. Kleiner (Ed.), *Handbook of Polygraph Testing* (pp. 49–86). Academic Press.
- Nandy, A. (1980). *Alternative sciences*. Allied Publishers.
- Owen, A. M. (2013). Detecting consciousness: A unique role for neuroimaging. *Annual Review of Psychology*, 64, 109–133.
- Pessoa, L. (2014). Understanding brain networks and brain organization. *Physics of life Reviews*, 11(3), 400–435. <https://doi.org/10.1016/j.plrev.2014.03.005>

- Pickersgill, M. (2013). The Social Life of the brain: Neuroscience in Society. *Current Sociology*, 61(3), 322–340. <https://doi.org/10.1177/0011392113476464>
- Pitts-Taylor, V. (2010). The plastic brain: Neoliberalism and the neuronal self. *Health*, 14(6), 635–652.
- Pockett, S., Banks, W. P., & Gallagher, S. (Eds.). (2006). *Does consciousness cause behavior?* MIT Press. <https://doi.org/10.7551/mitpress/9780262162371.001.0001>
- Polanyi, M. (1966). *The tacit dimension*. Routledge & Kegan Paul.
- Poldrack, R. A. (2018). *The new mind reader: What neuroimaging can and cannot reveal about our thoughts*. Princeton University Press.
- Popper, K. R. (1968). *The logic of scientific discovery*. Harper & Row.
- Premack, D., & Premack, A. (2003). *Original intelligence: Unlocking the mystery of who we are*. Tata McGraw-Hill.
- Rose, N. (2000). Government and control. *British Journal of Criminology*, 40(2), 321–339.
- Rose, S. (2004). Introduction. In D. Rees, & S. Rose (Eds.), *The new brain sciences: Perils and prospects* (pp. 3–13). Cambridge University Press.
- Ross, P. W. (2006). Empirical constraints on the problem of free will. In s. Pockett, W. Banks, & S. Gallagher. (Eds.), *Does consciousness cause behavior?* (pp. 125–144). MIT Press.
- Rose, N. (2007). *The politics of Life itself: Biomedicine, Power, Subjectivity in the twenty-first century*. Princeton University Press.
- Rose, N., & Abi-Rached, J. M. (2013). *Neuro: The new Brain Science and the management of the mind*. Princeton University Press.
- Rose, D., Buckwalter, W., & Nichols, S. (2017). Neuroscientific prediction and the intrusion of intuitive metaphysics. *Cognitive Science: A Multidisciplinary Journal*, 41, 482–502.
- Santoso, A., & Bottalico, B. (2009). Neuroscience, accountability and individual boundaries. *Frontiers in Human Neuroscience*, 3, 45. <https://doi.org/10.3389/neuro.09.045.2009>
- Sartre, J. P. (1963). *Preface to Frantz Fanon's "wretched of the earth"*. Grove Press.
- Saxe, R., & Kanwisher, N. (2003). People thinking about thinking people. The role of the temporoparietal junction in 'theory of mind'. *Neuroimage* 19, 1835–1842. [https://doi.org/10.1016/S1053-8119\(03\)00230-1](https://doi.org/10.1016/S1053-8119(03)00230-1)
- Saxe, R., Xiao, D. K., Kovacs, G., Perrett, D. I., & Kanwisher, N. (2004). A region of right posterior superior temporal sulcus responds to observed intentional actions. *Neuropsychologia*, 42, 1435–1446. <https://doi.org/10.1016/j.neuropsychologia.2004.04.015>
- Schleim, S. (2012). Brains in context in the neurolaw debate: The examples of free will and “dangerous” brains. *International Journal of Law and Psychiatry*, 35(2), 104–111.
- Searle, J. R. (1991). Consciousness, unconsciousness and intentionality. *Philosophical Issues*, 1, 45–66.
- Searle, J. R. (1997). *The mystery of consciousness*. New York Review Books.
- Searle, J. (1999). *Mind, language and society: Philosophy in the real world*. Phoenix.
- Sinari, R. (1984). *The structure of Indian thought*. Oxford University Press.
- Sinha, C. (2019). What if Discipline is not interdisciplinary? The case of social psychology in India. *Integr Psych Behav*, 53, 504–524.
- Sinha, C. (2024a). Critical psychology and the brain: Rethinking Free will in the legal context. *Integr Psych Behav*, 58, 1751–1768.
- Sinha, C. (2024b). Interpreting neuroscientific evidence in the legal domain: Do the stereotypes come in? *Integrative Psychological and Behavioural Sciences*, 58, 946–962.
- Sinha, C. (2025). How does the Brain Matter for the dignity of mind and law? *Integrative Psychological and Behavioural Sciences*, 59, 4.
- Sohn, E. (2019). Decoding the neuroscience of consciousness. *Nature*, 571, S2–S5.
- Spence, S. A., Hunter, M. D., Farrow, T. F., Green, R. D., Leung, D. H., Hughes, C. J., & Ganesan, V. (2004). A cognitive neurobiological account of deception: Evidence from functional neuroimaging. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 359(1451), 1755.
- Summers, A. (2018). Common-sense causation in the law. *Oxford Journal of Legal Studies*, 38(4), 793–821.
- Stapleton, J. (1988). Law, causation and common sense [review of causation in the law, by H. L. A. Hart & T. Honore]. *Oxford Journal of Legal Studies*, 8(1), 111–131. <http://www.jstor.org/stable/764415>
- Szasz, T. S. (1974). *The myth of mental illness: Foundations of a theory of personal conduct* (Rev. ed.). Harper & Row.
- Thornton, D. J. (2011). *Brain culture: Neuroscience and popular media*. Rutgers University Press.
- Trilling, L. (1972). *Sincerity and authenticity*. Harvard University Press. <https://doi.org/10.2307/j.ctvjhzrdp>

- Uddin, L. Q. (2014). Dynamic connectivity and dynamic affiliation. Comment on understanding brain networks and brain organization by L. Pessoa. *Physics of life Reviews*, 11(3), 460–461. <https://doi.org/10.1016/j.plrev.2014.05.003>
- Valsiner, J., & Rosa, A. (Eds.). (2007). *The Cambridge handbook of sociocultural psychology*. Cambridge University Press.
- Valsiner, J., & Van Der Veer, R. (2000). *The social mind: Construction of the idea*. Cambridge University Press.
- Vygotsky, L. (1978). In M. Cole, V. Jolm-Steiner, & S. Scribner, Soubberman E., (Eds.), *Mind in Society: Development of higher psychological processes*. Harvard University Press.
- Vygotsky, L. S. (1987). Thinking and speech. In R. W. Rieber & A. S. Carton (Eds.), *The collected works of L. S. Vygotsky: Volume 1, Problems of general psychology* (N. Minick, Trans., pp. 39–285). Plenum Press.
- Wei, K. Y., Cloutier, J., & Kubota, J. T. (2018). The social neuroscience of race-based and status-based prejudice. *Current Opinion in Psychology*, 24, 27–34.
- Zeki, S., & Goodenough, O. R. (2006). *Law and the brain*. Oxford University Press.
- Zeki, S., Goodenough, O. R., & O'Hara, E. A. (2004). How neuroscience might advance the law. *Philosophical Transactions of the Royal Society of London Series B: Biological Sciences*, 359(1451), 1677–1684.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.

Chetan Sinha is a Professor of Psychology at OP Jindal Global University (JGU), Sonipat. holds PhD in Social Psychology of education from Jawaharlal Nehru University, New Delhi. He is a senior research fellow at the Office of Interdisciplinary Studies (IDEAS) and the International Institute for Higher Education Research and Capacity Building (IIHED), JGU. He is also a Collaborator: Sociocultural Lab, Kings College London. His academic interest broadly connects to critical social psychology, educational psychology, political psychology, and the interdisciplinarity between psychology, the brain, and law. His approach is derived from social identity theory and social representation theory. Specifically, he ventures into the critical aspects of social cognition, leadership, and power. He recently published a monograph titled *The power dynamics of education: shaping the structure of school education in India* with Routledge.