

CAN ARTIFICIAL INTELLIGENCE TECHNOLOGY REPLACE JUDGES IN DECIDING LEGAL MATTERS?

¹Shidarta, ²Abu Bakar Munir

ABSTRACT

The rapid development of artificial intelligence technology has led to predictions about the decline in the functions of many established professions, including that of the profession of judges. This paper questions whether such technology can substitute judges in deciding legal matters. Artificial intelligence technology assumes there are general patterns that will treat the same way for cases with similar characteristics (*similia similibus*). This view is not completely true because the judge's reasoning actually shows that each case tends to be approached independently (*summum ius summa inuria*). Discretion is also required in the imposition of legal sanctions, and this does not fully capitalize on cognitive ability. There is the danger that artificial intelligence will reduce the values of humanity that actually want to be upheld in the judicial system. Artificial intelligence will also reduce the interpretation space in understanding the contextual meaning of a certain normative provision, so the legal text will become very rigid in its application. This paper is organised with a conceptual approach in which such an approach discusses some main concepts in legal reasoning that are closely related to the work of judges. In order to explain the relevance of these concepts, this paper introduces frameworks as a result of an effective literature review.

Keywords: Artificial Intelligence, Legal Reasoning, Legal Norm, Legal Principle.

1. Introduction

With the development of technology in artificial intelligence, it is estimated that in the next 20 years more and more traditional jobs will disappear. Some of the jobs that are often mentioned will soon be replaced with technology are cashiers, drivers, telemarketers, and referees. However, there are also those who predict jobs such as doctors and accountants, as well as lawyers and judges, will also be left out of the list of professions. They believe that in the future, algorithmic decision-making is presumed not only to assist judges but to replace them in certain types of cases ([Krausova, 2017](#); [Sadeghi et al., 2018](#)).

The debate over whether legal professions such as judges can be substituted for their role by artificial intelligence technology depends heavily on the belief about whether or not a behavioral pattern can be formulated based on studies examining samples from dozens to hundreds of similar legal cases. If these patterns are successfully established, then the opportunity artificial intelligence technology can be able to adopt these patterns.

¹ Business Law Program, Law Department, Faculty of Humanities, Bina Nusantara University, Jakarta 11480.
Email: shidarta@binus.edu

² Faculty of Law, University of Malaya, Kuala Lumpur 50603.

<https://hamdardfoundation.org/hamdard>

Such thoughts were indirectly pioneered by C.C. Langdell, an American jurist and legal academic who was Dean of Harvard Law School from 1870 to 1895. He achieved fame by devising the case method to turn law into a laboratory science divorced from politics and to make his course so rigorous that it would attract able students seeking to test and prove themselves with the severest academic challenge ([Carrington, 1995](#); [Vandevelde, 1996](#)).

Despite the fact that Langdell's method has been immediately subject to opposition, for example by adherents of critical legal studies ([Kennedy, 1982](#); [Matsuda, 1987](#); [Stelmach & Brozek, 2006](#); [Barkatullah, 2017](#)), it is generally true that most of lawyers still believe that there is something unique in legal reasoning because the law always deals with a system of norms designed with very carefully by the authorities. The system is very complete and therefore can be run consistently. If a positive law has been established, and then there is a concrete case in conflict with the legal rule, then the case becomes a legal case. The proposed way of thinking then becomes very simple, often called 'naive deductivism', 'mechanical jurisprudence', 'conceptualism', 'formalism', or 'legalism' ([Prakken, 1997](#); [Atria, 2001](#); [Ambikai & Ishan, 2016](#)).

With the understanding that there are consistent patterns in legal reasoning, today's emerging services are trying to offer expert software tool systems designed to leverage legal advice and dispute solutions. Such self-service legal expert systems are believed to someday be able to replace the functions of the judiciary, particularly the role of judges in handling legal cases. Richard Susskind writes, "Looking ahead, judicial function may then largely be confined either to what computers cannot do, or (on one view) ought not to be doing" ([Susskind, 1996](#)).

However, is it true that the future of the judge's professional will be jeopardized by the presence of artificial intelligence like this? Be right that there are factors in legal reasoning, as practiced in the court room, which is difficult to adopt in artificial intelligence? These questions are issued as part of the answer in this article.

2. Literature review

Law as a system of norm

Universally, law is usually referred to as a system of rules of conduct. Thus, the law is never a value-free system, but on the contrary it has always been rich in value that teaches what is good and bad in human behavior. According to Paul Scholten, a prominent Dutch legal scholar, all laws have roots in distinction of good and evil principles ([Scholten, Scholten, & Bregstein, 1949](#)). This is logical, that anyone encounters difficulties in understanding law if he is unable to differentiate between goodness and badness of a legal norm. Naturally, law has to prioritize goodness and repudiates badness. This principle becomes the main spirit of law enforcement ([Hallevy, 2010](#); [Teik Ee & Aman, 2015](#)).

This first principle departs from the simple assumption that everyone has the same instinct that tends to like goodness rather than evil. With that instinctive basis, then there will be a desire to uphold the second principle, i.e. the principle of equality. This principle wants everyone, without exception, to be treated equally before the law, that is to be rewarded for

doing good and otherwise be sanctioned for committing an offense. Such a perspective is commonly known as the 'similia similibus' principle ([Örücü, 2006](#); [Postema, 2003](#)).

The two principles mentioned above apply to the norm of law in general, namely norms when the law has not come into contact with concrete cases. In fact, the law is in fact not enough just to be stored into a treasury of law, but must be applied to the reality of life. As Oliver W. Holmes Jr. says, "The life of the law has not been logic, it has been experience" ([Holmes & Childress, 2010](#)).

When the law comes in contact with concrete cases, there will be two principles facing each other, namely the principle of personality and the principle of collectivity. In the area of public law, the principle of collectivity that upholds the interests of the people will be more dominant. Meanwhile, in the realm of private law, the principle of personality is prioritized. However, in a legal case, there can be no one principle between personality and collectivity that mutually excludes one another.

In the end, there will be one final principle which Paul Scholten called the principle of authority. This principle runs counter to the principle of equation. That is, when the abstract law encounters a concrete case in which there is a personal and public interest, then the law becomes no longer necessary to be treated equally for everyone. It is interesting that the law actually wants to treat people differently. This is because each legal case is unique, so the law applied must be subject to this uniqueness. In Latin, it is common knowledge in the jargon that is in line with this principle of authority, which states that if the law is strictly enforced following the sound of the law, then the law actually hurts very deeply for showing injustice (*summum ius summa iniuria*). Following is the description of Scholten's thought ([Shidarta, 2006](#)):

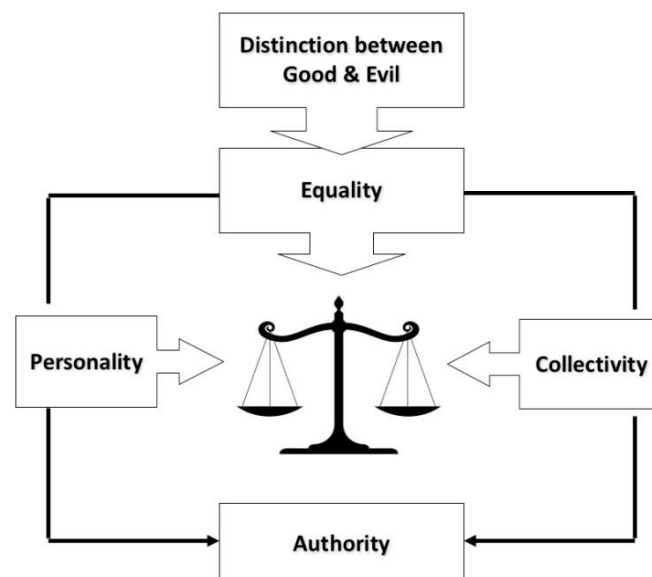


Figure 1 Universal Legal Principles

Difficulties in Building the Pattern

Artificial intelligence has difficulties especially when the system must build the algorithmic pattern on so many variations of legal cases. There are in essence no two or more cases, which are absolutely identical in relation to the subject of doing, place, and time, along with the motivation surrounding the perpetrators or the parties involved. In case of theft, for instance, the principle of good and evil distinction will assume all theft is just as bad, so every theft perpetrator must be treated equally (X), that is to be punished (Y). The relationship between X and Y is a deterministic causality. In legal reasoning, the first step to do is to ensure that X really happens. For this reason, all elements in the rules governing the criminal act of theft are then spelled out one by one.

For example, in a rule it is said that theft is an act of human being who takes the property of another person without permission from the rightful owner of the object. At least there are certain elements that must be ensured, such as 'human being', 'take', and 'thing'.

The term 'human being' is a legal concept belonging to the category of the legal subject. It must be ensured that the legal subject is a person or a group of human being, not for example a wild animal. Then the criterion of the word 'take' must also serve as clear. In the legal literature, the word 'take' is understood as 'moving things from one place to another'.

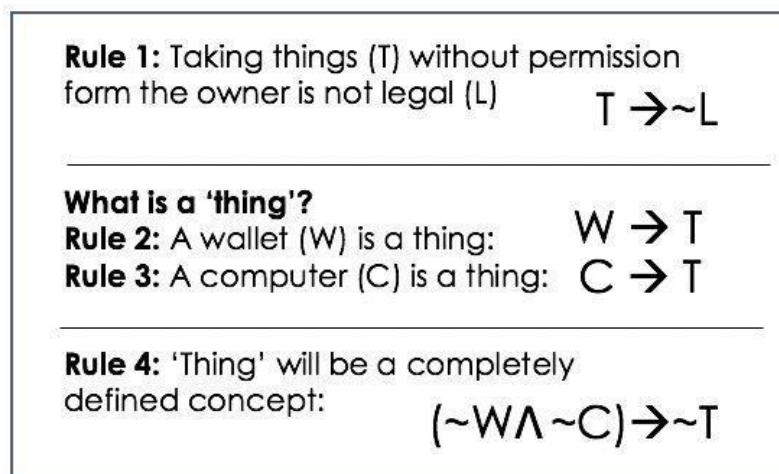


Figure 2 Logical Formalization

Then the 'thing' (Figure 2) must also be understood in its specific meaning, even though it is formulated in general (Rule 1). For instance, a wallet belonging to another person is an object or thing (Rule 2) that cannot be moved around without the permission of the owner. If this is done, then this action may be called theft. If there are no further rules about what objects are things, the concept 'thing' is not defined at all. The lawgivers can add other things, like computer, car, and book (Rule 3), but the term 'thing' is still defined only partially. The

<https://hamdardfoundation.org/hamdard>

logical formalization does not imply that the Rule 2 and 3 are the only possible instantiations of the concept 'thing'. This becomes different only if the formula is added by Rule 4.

Artificial intelligence may not automatically add to the legal formula as requested by the Rule 4, so that when there are new objects outside the scope of things such as wallet and computer, the rule becomes invalid. For example, if the stolen object is electric, can be the category of electricity be aligned with the category of wallet and computer? Here legal formulation requires continuous creativity that may not yet be reached by the machine.

Propagation of behavioral patterns arising from these legal cases is carried out using inductive inference methods. Meanwhile, when the patterns want to apply to cases, the inference method used is deductive. The judge does not start his reasoning in a deductive, but inductive way. The first thing the judge does be to structure the facts of a case, to then determine whether there is a correspondence between the facts and the patterns as set forth in the norms of positive law. All of these physical elements are used to determine whether there is wrongdoing in terms of the actors' apparent actions, commonly known as 'actus reus' ([Robinson, 1993](#)).

Given the law is the norm system aimed at humans, the human factor on which the norm is targeted is also very important to recognize. When a theft occurred, for example, the suspect must be ensured by law that he was in a healthy mental state. In legal science, this aspect is known as 'mens rea', namely a person's mental element or awareness of the fact that his or her conduct is criminal ([Mueller, 1957](#)). Here the scheme of Paul Scholten (Figure 1), again can be used as a reference. In criminal cases, the circumstances of the perpetrator and the circumstances surrounding himself at the time he committed an offence must be carefully considered. On the other hand, there is a collective interest that requires this perpetrator to be tried and if found guilty, to be punished.

Another important factor for judges to assess is the certainty of the absence of negating elements of a crime. The factor so-called 'the absence of valid defence' will make the perpetrator unpunished, even though the 'actus reus' and 'mens rea' elements have been met. For example, For example, a policeman who shot dead a thief who refused to surrender despite being warned repeatedly, then this police cannot be prosecuted as a criminal.

In a legal provision that not only gives regulation, but also coercion, its normative formula is usually divided into two types; in the form of primary and secondary norms. The primary norm contains all elements that comprise of the subject of norm (legal entity), operator of norm (behavior mode), object of norm (certain required behavior), and condition of norm. Each component of the primary norm will be made into each categorical syllogism. Computers can run this syllogism; the gaps that are formed really have to be wary of. This is because the syllogism is related to the evidence, which must be assessed through direct observation in the trial. Artificial intelligence usually cannot observe events, let alone evaluate evidence because this is where the human values are needed.

If the primary norms are met by all categories of elements, then the next step for judges is to do hypothetical syllogism. The antecedents of this hypothetical syllogism state that if all the elements alleged to the perpetrator were proved to be genuinely empirical, then the perpetrator is subject to sanctions. What type and weight of sanctions are listed in the secondary norm? For example, if the perpetrator is proven to steal, he or she will be sentenced to a maximum imprisonment of five years. So, suppose a criminal has fulfilled all the factors listed in 'actus reus', 'mens rea', and 'absence of valid defence', then to this person shall be liable to appropriate sanctions as long as the sanction does not exceed the maximum limit set by law. The greatest difficulty in artificial intelligence exists at this momentum because legal reasoning no longer relies on cognitive ability. The reasoning modality used in determining the weight of sanctions relies heavily on the affection and intuition of the judge.

The fundamental logic structure of legal knowledge is related to the defeasibility of legal reasoning, which can be conceptualized as non-monotonicity. The consequences derivable from a set of legal and factual premises can be invalidated by further information (Bankowski, & Hahn, 1995). This non-monotonicity affects the model of causal law between antecedents and consequences, resulting in non-deterministic causality characteristic (Hage, 1997). There is a deontic logic that arises in this connection. Namely, the relationship between antecedents and consequences is not necessary, but should be. If X steals, he is not necessarily punished, but should be punished. So, there is the possibility of X being punished or not punished. This is the non-monotonicity and non-deterministic nature in legal reasoning.

Therefore, artificial intelligence will certainly have difficulty in reaching out to all the disparities that are often created in judges' decisions. This disparity occurs because the modalities used by judges are not only cognition, but also affection. The question of whether fair if X was sentenced to three years imprisonment, while Y who also stole elsewhere turned out to be jailed for five years, is a matter beyond cognitive reasoning. The judge has the discretion to decide and he is professionally accountable for his decisions. Because of the different facts, the legal authority also demands that the decisions for those cases be different too.

MacCormick says, "Such determination can only be made by beings with intelligence and will as well as a capacity for evaluation of evidence and understanding of values implicit in rules. It is therefore arguable that only a person, not a machine, can possibly answer them. In any event, it is better that they be determinations made by humans who can be directly held to account for the determination they issue" (MacCormick, 1992). And, Sunstein (1996) adds, "Judges often proceed on a case-by-case basis; they are practitioners of the old, much-reviled, and indispensable art of casuistry."

3. Methodology

This paper is organised with a conceptual approach in which such an approach discusses some main concepts in legal reasoning that are closely related to the work of judges. In order

to explain the relevance of these concepts, this paper introduces frameworks as a result of an effective literature review.

4. Future Directions

Until now, there is still an objection to authorize non-human actors with their artificial intelligence, to answer the legal problems faced by human beings. Artificial intelligence can not compete with human intelligence, but it just completes it. Artificial intelligence technology is not wholesale replacing judges in deciding legal matters, but it can amplifying their skills and collaborating with judges to achieve productivity gains that have previously not been possible (see [Daugherty & Wilson, 2018](#)).

5. Conclusion

It is important to review some dangers that have been either explicit or implicit in the idea of replacing judges role in deciding legal matters with artificial intelligence. First, there is the danger that artificial intelligence will reduce the values of humanity that actually want to be upheld in the judicial system. Second, artificial intelligence will narrow the interpretation space in understanding the contextual meaning of a certain normative provision, so the legal text will become very rigid in its application.

In this study, it can be concluded that the judge's profession is unique and cannot necessarily be replaced with artificial intelligence technology. In general, artificial intelligence desires to have the same patterns as the guidelines in judgment. The assessment tool is purely cognitive. In fact, in the work of judges, there is often a complexity that does not merely ask for cognitive function, so decisions generated on similar cases are not always required to be identical. This is the essence of jargon in the law: 'summun ius summa iniuria'.

REFERENCES

- Atria, F. (2001). *On law and legal reasoning*. Oxford: Portland Oregon.
- Bankowski, Z., White, I., & Hahn U. eds. (1995). *Informatics and the foundations of legal reasoning*. Dordrecht: Springer Science & Business Media.
- Carrington, P.D. (1995). Hail! Langdell!. *Law and Social Inquiry*, 20(3): 691-760.
- Daugherty, P.R. & Wilson, H.J. (2018). *Human+machine: Reimagining work in the age of AI*. Boston: Harvard Business Review.
- Hallevy G. (2010). *A modern treatise on the principle of legality in criminal law*. Heidelberg: Springer.
- Holmes, O.W. & Childress, S.A. (2010). *The annotated common law: with 2010 foreword and explanatory notes*. New Orleans: Quid Pro Books. Lecture 1.
- Kennedy, D. (1982). Legal education and the reproduction of hierarchy. *Journal of Legal Education*, 32(4): 591-615.
- Krausova, A. (2017). Intersection between Law and Artificial Intelligence. *International Journal of Computer*, 27(1): 55-68.
- Mac Cormick, D.N. (1992). 'Legal deduction, legal predicates and expert systems.' *International Journal for the Semantics of Law*, V/14: 181-202.

- Matsuda, M. J. (1987). Looking to the bottom: Critical legal studies and reparations. *Harv. Cr-cll rev.*, 22: 323-399.
- Mueller, G. O. (1957). On common law mens rea. *Minn. L. Rev.*, 42, 1043.
- Örücü, E. (2006). Methodological aspects of comparative law. *European Journal of Law Reform*, III(1): 8-29.
- Postema, G.J. (2003). Classical Common Law Jurisprudence (Part II). *Oxford University Commonwealth Law Journal*, 3(1), 1-28.
- Prakken, H. (1997). *Logical Tools for Modelling Legal Argument: A Study of Defeasible Reasoning in Law*. Dordrecht: Springer Science & Business Media.
- Robinson, P. H. (1993). Should the criminal law abandon the actus reus-mens rea distinction?' in Robinson, P.H., ' in Shute, S., Gardner, J., & Horder, J. eds., *Action and Value in Criminal Law*. Oxford: Oxford University Press. 187-211.
- Scholten, G.J., Scholten, Y., & Bregstein, M.H. eds. (1949). *Verzamelde Geschriften van Wijlen Prof. Mr. Paul Scholten*, Deel 1. Zwolle: N.V. Uitgevers-Maatschappij W.E.J. Tjeenk Willink, 405.
- Hage, J.C. (1997). *Reasoning with rules: an essay on legal reasoning and its underlying logic*. Dordrecht: Springer Science & Business Media.
- Sadeghi, S., Sajjadi, S. N., Nooshabadi, H. R., & Farahani, M. J. (2018). Social-cultural barriers of muslim women athletes: Case study of professional, female athletes in Iran. *Journal of Management Practices, Humanities and Social Sciences*. 2(1), 6-10.
- Barkatullah, A. H. (2017). Implementation of limited liability principles and doctrine of piercing the corporate veil in management of local liability companies. *Journal of Advanced Research in Social Sciences and Humanities*, 2(6), 348-357
- Ambikai., & Ishan, Z. (2016). Comparative analysis of law on tort of deviant behaviors in Malaysia and India. *Journal of Advances in Humanities and Social Sciences*, 2(4), 243-249.
- Teik Ee, G., & Aman, R. C. (2015). Prevalence of self-hurt behaviour among Chinese adolescents in Malaysia . *International Journal of Humanities, Arts and Social Sciences*, 1(2), 108-113.
- Shidarta. (2006). *Moralitas profesi hukum: Suatu tawaran kerangka berpikir (morality of legal profession: a frame of thought)*. Bandung: Refika Aditama.
- Stelmach, J. & Brozek, B. (2006). *Methods of legal reasoning*. Dordrecht: Springer Science & Business Media.
- Sunstein, C.R. (1996). *Legal reasoning and political conflict*. Oxford: Oxford University Press.
- Susskind, R. (1996). *The Future of law*. Oxford University Press.
- Vandavelde, K.J. 1996. *Thinking Like A Lawyer: An Introduction to Legal Reasoning*. Oxford: Westview Press.