The Interaction of Law and Nature

Wang Tianshi
Laws, New Asia College

I. Introduction

Prima facie, it seems hard to find any link between "law" and "nature". Roscoe Pound in his "Theories of Law" mentioned three meanings of "law"—first is "positive law", namely the sum of authoritative and judicial decisions; second is "natural law", as the ordering of human conduct through the systematic application of force in organized society; third is what natural scientists refer as the general rule in nature.

Inferred on this transaction of scientific and legal boundaries, the polysemous characteristic indicates some intrinsic linkages between nature and legal principles. As a law student, I indeed perceive this conception of nature is imbedded in the legal development in sense of legal values and knowledge towards ultimacy of justice. I believe for a legal profession, it is of vital importance to identify the possible weakness of values and knowledge influenced by our views of nature. For convenience, I would only confer "law" its legal meaning below.

II. Direct Influence—A Historical and Philosophical Perspective

"Law is not merely a practical end, but as anthropological documents"

(Holmes), reflecting the changes in law along with significant transitions in our attitude of science. Improvement in our apprehension of nature impacts directly to shape law towards more rational and reasonable standard.

Back to the Middle Ages (particularly before the abolishment in 1215), trial by ordeal was a popular method and mandatory procedure in certain criminal courts to judge whether the accused is guilty or not. ("Trial by Ordeal") It involves putting the suspected into some dangerous torture for some time, like holding a hot burnt iron rod and the priest would examine whether God intervenes to heal the wound several days later. The serious punishment up to death relying on the uncertain result of ordeal, I believe, would surprise every rational modern man due to its mere attribution to God hence lack of logical correlations. This is an era of superstition precedent to the revitalization of Greek philosophical science of an orderly world (Lindberg 11–48). Perhaps Aristotle's idea can readily raise doubt on the ordeal—if heat of burning iron is the **efficient cause** of the wound, why would each trial produce various results for the purposes of this invention? Different types of trial correspond to different assumptions about nature. It was **religion** rather than **logic** that directly formed part of law at that time.

One may argue if comparing our conception of nature with the dated, it is questionable that our current legal system is totally reliable since it is common sense that scientific discoveries and reforms constantly occur, with consistent flaws and deficiencies. But the impossibility should not frustrate us. Plato in his **allegory of cave** suggests it is impossible and unnecessary to change the shadow, i.e. the restrictions of sense perceptions in the cave, implying the reality of our society. It corresponds with legal principles, which ought to be a reflection of citizens' wills containing various values, including perceptions of nature. Despite the eternal and normative form

of law (what it ought to be) is debatable and seemingly non-achievable, it inspires the legal profession to pursue the ultimate good of rule of law rather than particular social values.

III. Procedural Justice—Proof and Logic

Procedural rules as it literally shows, exclusively concern with whether certain objective requirements on court procedure are satisfied, rather than substantive issues of legality. It provides an even ground for both parties, enabling parties to formulate logical arguments following the same set of rules and thus greatly enhances substantial fairness of court judgment.

Scientific Revolution, initiated by Giants as Newton and Galileo, substantially transformed previous philosophical-based scientific theories and knowledge; and most importantly, the way how scientists work and think, leading to **an objective and uniform approach** based on **proof** and **mathematics**. I speculate this transition did not only see its existence in science but extended to the legal realm since this time point coincided with the origin of procedural fairness, both in 16th Century. (Edelman) This connection perfectly makes sense since areas of knowledge are not isolated, yet some scholars even categorise law as one area of science due to its systematic nature (Singer; qtd. in Wise 334–335). Though controversial, in any event, one common characteristic two systems share is **logicality**, that rule of law requires positivity and rationality.

David H. Kaye proposes proof in law, influenced by proof in science, is a mixture of **inductive and deductive reasoning**. One example of procedural fairness is the requirement on the prosecution to prove on balance of probability (>50%) in civil proceedings. The inference process

from evidence is inductive, measuring the probability of the truth from specific evidence to a general civil liability. On the other hand, the deductive process is often seen in formulating case *ration decidendi*, as a mandatory procedural safeguard the court has duty to give reasons. Deduction assesses if a particular set of facts fits into all elements of legal rule, for example in assault is apprehension plus immediacy plus intention to perform act. By deduction along with the induction of sufficient probability above, the court is actually completing a quite sophisticated proof which leaves hardly any room for wrongful conviction. Compared with the unpredictable ordeal, it is impressive that the court approach criminal liability in a logical and mathematical way.

IV. Limitation to Justice—Latent Impact of Notion of Nature

As mentioned above, procedural fairness is one way to reduce deficits of subjective perceptions of contemporary awareness of nature. However, procedural restrictions have limitations as well. Sometimes it is inevitable that the notion of nature exerts a subtle influence on our values and knowledge. As our society integrates knowledge and beliefs in law, even with conscious realization, limitations still cannot vanish. The rationale hides itself in the unexplored field of which human cannot discover, explain or solve even after we have noticed its objective existence.

A bold example is gender discrimination. Due to the long history of inequality, many jurisdictions expressly list it out and right in **Article 1 of Hong Kong Bills of Rights Ordinance** “men and women shall have an equal right to the enjoyment of all civil and political rights set forth”. This formal requirement of gender equality is based on our awareness of the

general gender difference physique, logical mind and etc. One could argue the cause as social attitude but David A. Strauss suggests the root of female-male inequality is biological or genetic, rather than socially influenced. **Darwin's natural selection theory** demonstrates sexual selection tends to give male and female inherent distinguished characteristics. If inequality inevitably exists, how would law overcome unequal nature of nature? The attempted solution of substantive justice, by offering different treatment to each gender, is necessary but it can only develop on piecemeal style with limited effect and new risks.

Jury system is the cornerstone of natural law, given decisive power on matter of conviction. The purpose of using jury is to reduce the possible bias by the judge alone and receive more well-rounded reasoning from people selected among various sectors of the society. This is logically true and many statistics evidence are found to support the jury decisions which are transparent, unbiased, fair and consistent (Thomas).

Searle and Nagel's proposition that ***consciousness*** is **unified and subjective** (Kandel 184–187), recalls me to doubt the fairness of the jury related to an experienced judge. Unification is probably not required because jurors are meant diversified but subjectivity, as opposed to the supposedly established legal standard is a big issue. Particularly in murder cases, in which the degree of intent is crucial to distinguish from manslaughter, different jurors may find "virtually certain" mean different degrees. Yet the current science cannot address this subjective experience, leaving uncertain legal standards in the statute. Perhaps with the ongoing science devote, one day it will be possible to understand the mechanism of human experience (if it does fall into the realm of human cognition), then it will be feasible to set a real certain standard of "virtual certainty".

Unconscious influence inside human brain poses greater mystery. It is a common knowledge for lawyers to manipulate the jury decision process indirectly without jurors' alertness (Mattimore), through language, dress or by inducing the jury evaluate evidence illogically. The danger appears when jury think they are deciding according to an unambiguous standard, their unconscious and biased mind has already made a decision before they consciously recognise a decision made. Again, scientists confront immense mystery in this area. Therefore, the legal profession should not over-estimate the impartiality of the jury.

V. Law's Influence on Science Development

As the history witnessed, the emergence of modern science modified much on its preceding legal system. We are still in the era of rapid science development. The relationship between law and science is never one-sided, rather, same set of values and knowledge may impact on both fields. **Carson** argues science development should be morally based balanced against economic factors since human and nature are interdependent. In reality, science today take into account a range of factors, such as utility, politics, aesthetics and so on. The law should impose reasonable restrictions onto the science development to make sure technology invented by human would not turn around to harm human being.

VI. Conclusion

Through the study of "In Dialogue with Nature" and my major courses side by side, I have realized how our notion of nature has enormous impact

on what appears the other uncorrelated area—law. With further grasp of natural facts, society's legal system tends to further down the road towards substantive justice through logic construction and application of rules. On the other side, the legal profession should recognise the hindrance brought by unknown human nature. In any case, we should remember law and science are still developing, possible much overlap, hence the flexibility and regulatory nature of law could set up a moral ceiling to preserve human health and safety.

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Teacher's comment:

When asked about the place of nature in our lives the two most common answers are probably: "I don't know" or "Nature enters all aspects of my life", stated without further qualifications. Wang Tianshi tries to go beyond the two common answers and tries to identify specific ways in which nature affects her professional field, law, and vice versa. Through such an endeavor she shows how the criteria we use to assess the guilt or innocence of a defendant depend on common, and sometimes implicit, beliefs about the natural world. Being aware of such beliefs or assumptions, which vary across cultures and historical periods, constitutes also the basis for understanding different positions on human rights, such as for example gender equality or gender non-discrimination.

Another fundamental interaction between nature and the legal domain, described by Wang Tianshi, consists in either taking into account

or neglecting scientific knowledge about mental processes that can affect the impartiality and accuracy of a jury deliberation. The role of scientific knowledge of nature in the legal process is exemplified by the above case. Such a role can nowadays be considered pervasive, given the need to provide empirical evidences and rigorous logical arguments based on well tested scientific theories.

Finally, Wang Tianshi reflects on the role that laws can play to protect individuals by prioritizing human well-being over commercially driven technological development and by regulating what humans can do with nature. (Klaus Colanero)