

INTERNATIONAL RELATIONS AND THE BURDEN OF CLASSICAL TWO-VALUED LOGIC

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Abstract

This paper argued that international relations has for a very long time been driven by commitment to the classical logic of bivalence, and that today, this logic is a threat to world peace. Using the philosophical methods of critical analysis and historical exposition, the paper highlighted that commitment to classical two-valued logic augured well for the expansion of empires in ancient, medieval and modern times because it provided the logical tool for the justification of the exclusive elimination of the sovereignties of weaker nations by stronger ones. The paper argued that lessons from recent developments in philosophy of logic and quantum physics have exposed the weakness of classical two-valued logic in handling differences which should rather be seen as valued-contraries relative to possible worlds. The paper submitted that there is need to adopt approaches founded on logics of complementarity because the elitist approach of bivalent logic, which is reflective of the principle of conjunction-elimination or simplification has become a burden to diplomatic relations. Many of the nations adjudged to be weak and less developed are beginning to resist the supremacy of the world powers, whereby between two entities, the weak, the underdeveloped, or less-valued can be justifiably eliminated or overruled.

Keywords: Classical Two-Valued Logic, International Relations, Non-Classical Logic

Introduction

Western ontology depicts reality in dualistic conflicting modes. One can see in the philosophy of Plato, the division of reality into two worlds, forms (real) and shadows (pseudo). Similar dualistic divisions can also be found in the works of many other thinkers in the history of Western Philosophy. A study of empiricist

epistemology reveals a distinction between reality as reality (*being qua being*) and reality as it is perceived by human senses. The enduring impression has been that ‘reality as it is in itself’ eludes human faculties because all that human beings can assess is ‘reality as it appears to the senses’. ‘Senses’ here could mean the five senses (by the account of the empiricists) or the intuition (in Kant’s description of what the *Self* means in his *Critique of Pure Reason*). In this regard, Aristotle’s concepts of substance and accidents, Descartes’ concepts of mind and body, Kant’s concepts of *noumena* (things-in-themselves) and *phenomena* (things as they appear to human faculties), are all good examples indicating the ‘unknowability’ of reality as it really is in itself per excellence.

Innocent Asouzu¹ observes that the dualistic feature of Aristotle’s metaphysics gives rise to a valued-system that is biased, such that between two poles, say substance and accidents, the former is elevated to an absolute instance to the somewhat forgetfulness of the latter. In this regard, substance is treated as having a superior value or status than accidents. For Asouzu², this is a weakness that introduces the latter’s ineffectiveness in reconciling opposites as well as in managing conflicts. It is on this note that it is not out of place to say that an ontological worldview that presents reality in dualistic, conflicting, value-biased modes, simply produces a logic that preserves these characteristics.

Classical two-valued logic retains the characteristics of Western ontological dualism because first, the two truth values, true (T) and false (F), are bivalent opposites. Secondly, the truth-value ‘true’ (T) is accorded a greater epistemic status and value than ‘false’. To be true ‘is to be’ and to be false is ‘not to be’. For this reason, in classical two-valued logic, certainty is the underlying ontological phenomenon. Where the phenomenon of certainty underlies epistemic judgments, it becomes easy to understand why the principles of identity, contradiction and excluded middle must be validated. For instance, if one is to make a judgment about the declarative proposition, ‘All men are mortal’, one can only decide between the two values, that is, true or false. That one out of the two must be the truth-value of judgment hangs on the presupposition that judgment in this context is about certainty. Under this circumstance, the commitment to certainty would imply that what is true is true (identity), as what is true cannot be true and false at the same time (contradiction). However, if a proposition cannot be both true and false simultaneously, then between true and false there is no middle point (excluded middle). The entanglement of reality with certainty explains why Plato’s dualism favoured the world of forms as the ontological realm where truth as certainty

¹Innocent Asouzu, *Ibuanyidanda: New Complementary Ontology Beyond World Immanentism, Ethnocentric Reduction and Impositions* (Zurich: Litverlag, 2009), 267.

²Innocent Asouzu, 267

belongs, and why Aristotle believed substance is reality per excellence and accidents are only its properties. It also explains why Descartes in his '*cogito ergo sum*' announced that the certainty of his existence and the indubitability of this existence can be proven mentally. Indeed, it also explains why the empiricist thought that only what could be perceived with the senses is real.

Consequences of Classical two-valued logic for International Relations in Human History

Aristotle may be celebrated as the father of classical logic because of his achievements in logic, as can be found in the *Organon*. But it appears that his commitment to a value-biased dualistic ontology and logic of bivalence, especially in his treatment of political relations, allowed him to justify man's inhumanity to man. Sabina Lovibond's reading of Aristotle's *Politics* sheds light on this position, thus:

Nature is hierarchical in the division of purpose of things; some things are just meant to serve the purpose of others as serving food...For instance, animals that are lower in the hierarchy are by nature to serve human beings as food. In this way, there is a natural principle of domination by the one who is higher. Therefore, it is only natural that the things that are higher in the hierarchy must dominate or rule the ones that are lower. This principle should also exist in human society both in the private household and in the public³.

The foregoing indicates Aristotle's commitment to a value-biased worldview of bivalence that allows him to adopt classical two-valued logic to justify social inequality as something that necessarily follows from natural inequalities. Human beings, over generations, have followed this Aristotelian mentality. Reading through world-history, one discovers that this mentality has conditioned international relations for a very long time. The result of the influence of this worldview on international relations has had its toll on the human race. It is at the foundation of all manners of slavery and slave trade, wars and genocide, extermination of certain races of humankind, imperialism and empire expansion and colonialism. A blind commitment to this type of mentality justifies the domination, elimination, extermination of certain categories of peoples, races, tribes, ethnic group and even religions by those who are adjudged to be superior on account of some kind of elitist indices. On account of this, developed nations think it is natural and proper to dominate, control and undermine the sovereignties of

³Sabina Lovibond. "Feminism in Ancient Philosophy: The Feminist Stake in Greek Rationalism." In *The Cambridge Companion to Feminism in Philosophy*, eds. Miranda Fricker and Jenifer Hornsby, 27 (Cambridge: Cambridge University Press, 2000).

less-developed or under-developed nations. There are good reasons to say that this practice still defines internal relations today. What has happened in human history as a result of the blind and unquestioned commitment to this mindset can be summarized by the classical principle of conjunction elimination or simplification.

Conjunction elimination, otherwise regarded as simplification, holds that where there is a conjunction of the kind $p.q$, one can infer one of the conjuncts, that is, p or q . Conjunction elimination in propositional calculus may not have much empirical meaning for some scholars who do not share the opinion that logic is empirical. But for others who think that logic is empirical to some extent, this principle has dangerous empirical implications for human relations at all levels. Conjunction elimination means that between two real things, X and Y , the one that has lesser value or status, or importance, can be eliminated. Following from this principle, human history is filled with instances of conjunction elimination. The elimination of the sovereignty of nations judged to be of lesser status was the underlying reason for the rise of different empires in their historical successions. This occurred either by military conquest or by forced submission. The Ottoman Empire, the Eastern Roman (Byzantine Empire), the Umayyad Caliphate Empire, the Persian Empire, the Han Dynasty, and Modern Empires like the British Empire, the Russian Empire (Soviet Union) are all good political examples of the application of the principle of conjunction elimination. The elimination of weaker sovereign states by powerful ones in human history is, indeed, a reflection of the commitment of humankind to the two-valued logic.

In his *Politics*, Aristotle thought that whereas some human beings are free by nature, others are slaves by nature, and others are slaves by conquest. He also thought that those who were natural slaves had no deliberative faculties and that, as compared to males, females generally had low deliberative faculties. In justifying this social injustice, Aristotle regarded natural inequalities as a principle of nature that must be preserved in the human society. And because of this, he thought that the rule of men over women is not only justified on grounds of nature, but also for the good of women. It is clear that from world history, human beings have found it very difficult to forestall absolutely in theory and practice the dehumanizing practices of eliminating the sovereignties of other nations and the marginalization of women because of this cultural commitment to two-valued logic.

According to Marvin Perry⁴, the notions of 'survival of the fittest' and 'the elimination of the unfit' are some of the themes in Charles Darwin's evolution theory. That Darwin observed the elimination of weaker species by the natural processes of adaptation does not mean that he identified the principle of elimination

⁴Perry Marvin, *Man's Unfinished Journey: A World History*. (Boston: Houghton Griffin, 1978), 6

as a necessary law that must bind human inter-personal affairs and relations. Darwin's elimination principle should not be interpreted out of context because, according to Darwin, this principle bordered around scarce environmental resources, genetic wellbeing and adaptability prowess; and not that species should exterminate some members of its class. On the contrary, even if Darwin were to have described 'survival of the fittest' and 'the elimination of the unfit' as a natural law inherent in human beings because they are animals by virtue of their evolutionary ancestry, would it be correct then to say that the elimination of other sovereign states by conquest or forced submission is an indication of the failure of human beings to reason above their animal instincts?

That between two sovereign states, one must necessarily differentiate the strong from the weak is a reflection of the attitude of supposing that between two nations, value-bias must apply. This explains why different nations strive to develop or acquire superior weapons. From ancient times, military might and weaponry, associated with very mean, strict and crafty qualities of political leadership helped to establish empires. This method of approaching international relations is still very much present today. The holocaust and Hiroshima-events were sorrowful activities of human beings that reflected the adherence to the application of the principle of conjunction elimination. The Hiroshima-tragedy was not only an event but an announcement of the arrival of a technologically sophisticated weapon of mass destruction. Granted that the arrival of nuclear weapons was revolutionary in the history of human weaponry, the immediate effect it had on international relations was the willingness of nations to cooperate so as not incur the wrath of the owners of this powerful weapon. For instance, the event of the Hiroshima solidified the position of the United States as a world power at the time; thus, giving rise to the supposition that whoever possesses this technological mastery becomes a world power. The good thing is that unlike the other world powers in history, America rather than pursue empire-expansion and imperialism at the time, sought to preserve the sovereignties of states by spearheading what can be called the first world assembly, a social contract where international stakeholders resolved to honour the United Nations Declaration of Human Rights in 1948.

As already noted, the commitment to this model of logic in international relations has brought different manners of 'man's in humanity to man'. A worldview that is dualistic and anchored on a logic that is bivalent, stands less effective where reconciliation of differences without exclusive elimination is

needed. What has been observed to be the trend today in international relations is the clamour by nations to build nuclear plants so as to establish themselves also as world powers. So long as things remain this way, distrust, tension, suspicion and a looming propensity to a full-scale world war that will allow the possessors of this weaponry test their veracity cannot be swept underfoot. The effects are better dreamt, imagined than experienced. Where a sovereign-state adjudged to be inferior, by globalized standards, refuses to submit to the dictates of those adjudged to be 'world powers', then it is inviting its own elimination. Submit and co-exist, rebel and get eliminated, thus summarizes it all. It is a reflection of what Innocent Asouzu describes as 'world immanentism, ethnocentric reduction and imposition'.

Contemporary Burden of Classical Logic to International Relations

The acquisition and development of nuclear technology has been observed by 'obeying' sovereign states to be the key to attaining the status of world power or to be included among the G_n , where n here stands for the number of nations that belong to the class called 'world power'. Members of the G_n head the Security Council meetings of the United Nations and their decisions are final, even where they are unfavourable to some sovereign nations who do not belong to this class. Times are changing because reality is proving to be larger than dualism such that a thorough going commitment to classical two-valued logic has become a burden, not only for international relations but for explaining reality in general.

The failing absolutism of classical two-valued logic is continually being experienced in different areas of human institutions, politics, education, religion et cetera. This paper cannot capture all the experiences, but mentions few examples. According to Andrew Irvine⁵, the *mathematization* of logic by George Boole and the *logicization* of mathematics by Frege and Whitehead entangled logic to mathematics. But this entanglement was given a biased definition by Rudolf Carnap⁶ when he gave the conditions of what should be accepted as logic and specifically admonished that syntactic features were a necessity for the identity of logic. But in trying to apply this *mathematized* expression of logic to a future contingent proposition, Jan Lukasiewicz, as mentioned by Kneale and Kneale,⁷ had to introduce a third value as a glut between T and F , that is, T , I , F , where the

⁵Andrew Irvine, 'Philosophy of Logic'. In. *Routledge History of Philosophy of Science, Logic and Mathematics in the 20th Century*, ed. Stuart Shanker, 12 -13 (London and New York: Routledge, 2004).

⁶Rudolf Carnap. *The Logical Syntax*. (New York: Harcod, 1937), 51

⁷William Kneale & Martha Kneale. *The Development of Logic* (Oxford: Oxford Clarendon Press, 1962) 570-571

indeterminate I is a set containing T , F . As noted by Kneale and Kneale,⁸ Lukasiewicz observed that if asked today whether he would be at Warsaw tomorrow, his answer could not be certain but probably true or false. By this development, Lukasiewicz argued that the laws of classical logic fail with respect to making certain value-decision about a future contingent proposition. In a similar way, Birkhoff and Neumann⁹ had to assign a different meaning to classical conjunction to preserve within *mathematization* the ontological experience of non-simultaneous measurability of the properties of quantum mechanics. The result of this is the failure of the distributive principle for the logic of quantum mechanics. More so, classical logic generated paradoxes when used as explanatory tools for quantum mechanics as opposed to classical mechanics, where its efficacy prevailed for simultaneous measurements of classical properties.

The hard lessons from these expositions are that the laws of classical logic are not universal and do not apply to all possible worlds. The use of different logics to explain reality at the classical level and at the quantum level respectively is contradictory in classical two-valued logic. But that the physicist has no choice but to revise classical logic on ontological grounds is an indication that no single kind of logic is adequate for all explanations, and that indeed reality is larger than logic. Instances where some of the rules of classical logic fail to apply and the adoption of non-classical alternatives to handle such matters have made any strict reliance on classical two-valued logic unsustainable.

The limitations of classical two-valued logic have awoken in the minds of developing nations, the realization that no one country has the absolute right to command, while others obey; and that no group of nations is sacrosanct to possess nuclear weapons and decide that other nations have no such rights. The more diplomatic talks proceed in absolute commitment to old classical mindset, the more resistance is generated. This explains the scenario between the United States of America and Iran and North Korea in recent times. The rising realization that no single kind of logic applies to all possible worlds has resulted in further realization that no one system of governance is beneficial across the world. For this reason, while the states regarded as world powers are struggling to enforce obedience on the states that are not world powers, the latter are resisting this domination strongly. Nuclear deals, deals bordering on climate and weather, deals bordering on trade, et cetera, have continued to generate tensions because some sovereign states have chosen not to obey and recognize the supremacy of the world powers. Given the

⁸William Kneale & Martha Kneale, 571

⁹Gareth Birkhoff and John von Neumann. "The Logic of Quantum Mechanics." *Annals of Mathematics* 37, no 4 (1936): 823.

danger of nuclear weaponry and its massive destructive consequences to human life and the ecosystem in general, the situation of one state having nuclear plants and the other not having is dangerous to world peace.

Conclusion

It would be better that no country possessed nuclear weapons, since there is no absolute guarantee that those who possess them will not misuse them. The failure of absolutism in human state of affairs, in logic, in science and in religion has been proven beyond reasonable doubt. The world needs a logic that values complementarity rather than exclusive elimination; only a recourse to such a logic can accommodate differences in a manner that those that fall out of certain valued standards will not be eliminated but somewhat allowed to co-exist in their own respects.

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