AXIOMS, AXIOMATIZATION AND LAW

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Abstract: *This paper examines the possibility and the desirability of axiomatization in law. In the first part, the paper examines the notion of axiom and the ways how it was or could be introduced into law. It is here where the authors openly invite the reader to lose the conventional approach and think about alternative ways to build basic legal concepts. In the second part, the paper continues by presenting several theories which endeavored (or appeared to endeavor) to show that law can (and should be) axiomatized and which even attempted to axiomatize it. After establishing whether these theories were successful at all, the authors add some of their own ideas on the topic of axiomatization.*

Keywords: *axiom, axiomatization, normativity, legal system*

Can we base legal arguments on axioms? Are there even axioms in law? If yes, then what does it mean for the rest of the legal system? It was few months ago when we realized that these questions received very little attention in both legal theory and practice. We then decided to study one set of questions that struck us as particularly interesting: can and should law be axiomatized? Our curiosity resulted in this paper.

Can law be axiomatized? Our null hypothesis is that it can. To falsify this hypothesis, we will search for and critically examine theories which endeavored to show that law can (and should) be axiomatized and which even attempted to axiomatize it.[2] Prior to that, we would like to make a thought experiment and imagine what such axiomatized (formal) legal system would look like. To do it, we will have to abandon some of the most intuitive features of modern law. As a result, conceptual foundations of law will be shaken and they may either fall, or stand stronger than before.

Our research question does not relate to any of the recently broadly disputed questions of legal philosophy and theory – which makes it quite innovative – despite numerous efforts which went this direction in the past (as we will show below). Among modern scholars, we must acknowledge the Hungarian professor C. Varga, who dedicated a great deal of his work to the topic discussed in this paper. Yet, Varga's texts are deep and difficult to read, which puts his conclusions out of reach of interested average students. Below, we would like to be comprehensive, but stay short and simple.

Section one consists primarily of our definitions and theoretical propositions. In section two, we will introduce some of the historical and modern ideas on the axiomatization of law. Then we will analyze the most important theories, which attempted to axiomatize law on the basis of a single or grouped axioms. In conclusion, we will summarize the pre-

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[2] The unfortunate result that no rigorous axiomatization of legal domain has ever been attempted is not hereby excluded.

vious parts and present our own thoughts on the matter. Specifically, we will claim that the possibility of axiomatization has not been demonstrated yet.

I. THEORETICAL BACKGROUND

In this chapter we define the most important concepts used in this paper, as well as introduce the unique notion of law as an axiomatic system and theories, which tried to develop it. First of all, we need to define an axiom.

Axioms have been discussed by logicians since antiquity. Dictionaries usually define them as those self-evident truths that require no proof.[3] Such is the meaning ascribed to them by Euclid who saw axioms as 'self-evident truths' However, this use of the word 'axiom' has long been obsolete in mathematical circles. Robert G. Brown, a mathematician, clarifies that "*axioms are not self-evident truths, they are unprovable assumptions whose truth or falsehood should always be mentally prefaced with an implicit 'if we assume that…*".[4] Against this backdrop, axioms are arbitrarily chosen statements which, together with the rule of *modus ponens,* suffice for us to derive all the statements which we wish to derive. They remain essential in axiomatic-deductive systems, where we need some rules with null number of assumptions in order to infer any formula at all.[5]

Unlike mathematics or physics, law is a normative system based on the rules of deontic logic. Its building blocks are conceptualized as norms, principles and values, rather than axioms. Though value-oriented, modern legal orders remain systems of commands, prohibitions and other deontic modalities ontologically dependent on the power of authority. Does it mean that there is no place for axioms in modern legal orders?

We contend that there are two avenues that axioms use to move between our intuition and legal systems. The first is the 'evidence avenue', which occurs when extra-legal axioms are employed in legal argumentation. For example, if a defendant accused of a crime explains that he is innocent, because he was somewhere else when the crime happened, he is pointing at the axiom that one cannot be simultaneously present at both places at once. This modification is, however, irrelevant for our purposes, because it does not represent an axiom original to law that could be used alone to deduce general legal rules. The court would still need a norm that prescribes consequences for the eventuality of the defendant's absence at the crime scene.

The second modification is 'the principle of proportionality avenue'. We name this modification after its most distinctive example. The proportionality principle states that the

[3] Axiom. In: *Dictionary.com* [online]. [2018-04-18]. Available at: <http://www.dictionary.com/browse/axiom>; see also Webster's Revised Unabridged Dictionary (1913), which defines axioms as '*self-evident and necessary truths, or propositions whose truth is so evident at first sight that no reasoning or demonstration can make them plainer*'. See Axiom. In: *Webster-dictionary.org* [online]. [2018-04-18]. Available at: <http://www.webster-dictionary.org/definition/Axiom>. Alternatively, '*an axiom is a principle widely accepted on the basis of its intrinsic merit or one regarded as self-evidently true. A statement that is axiomatic therefore, is one against which few people would argue.* Axiomatic. In: *Merriam-Webster Dictionary* [online]. [2018-04-18]. Available at: <https://www.merriam-webster.com/dictionary/axiomatic>.

[4] BROWN, R. G. Axioms. In: *Duke Physics Department* [online]. 2007 [2018-04-18]. Available at: <https://web-home.phy.duke.edu/~rgb/Philosophy/axioms/axioms/>.

[5] ŠVEJDAR, V. *Logika: neúplnost, složitost a nutnost.* Praha: Academia, 2002, p. 26.

means ought to be proportioned to the end. It is universally valid, for no measure can be both disproportionate and lawful. Now, it may be argued that the validity of the proportionality principle is, in fact, sociotemporally contingent and therefore not universally valid. For instance, some cultures traditionally kill women guilty of (mere) adultery. What seems like a violation of the proportionality is, in fact, its application with different values ascribed to both means and ends. Supporters of stoning or 'an eye for an eye' principle may consider it strict, but never disproportionate, because they see these measures as necessary to achieve their notion of order in society and to prevent what they see as highly immoral. In similar vein, modern opponents of the use of proportionality principle in the rights adjudication do not reject the proportionality principle itself; they merely reject the idea that the principle should be used *ex post facto* to justify infringements of fundamental rights. Again, proportionate equals lawful and *vice versa*.

From this perspective, the proportionality principle can be seen as an axiom: unprovable, universally valid, irrefutable. Unprovable, because we assume its validity. Universally valid, because it always takes precedence over other considerations. Irrefutable, because to deny it would amount to resigning on the pursuit of justice, which is the main purpose of law. We think this is the difference between legal axioms and absolute norms: their proponents may see absolute norms as universally valid, but to justify this validity, they will frequently use ethical arguments. For example, people defend the absolute right not to be killed by recalling the sanctity of human life. To defend the principle of proportionality, on the other hand, does not mean promoting a certain ethical value or idea of justice. It is technical in the sense that it is but an irreplaceable means of ever attaining justice itself. Perhaps another example of such a technical axiom is that one conduct cannot be simultaneously allowed and forbidden.

This second modification of axioms is normative, because it prescribes what generally ought to happen. It cannot be equated with norms, which are conceived of as definite rules of conduct, just as it cannot be equated with values and principles, which frequently collide and must be weighed against each other.[6] Even the most persuasive of legal principles will ultimately be contested either on conceptual (essentially contested concepts) or ethical grounds. Legal axioms we simply assume to be true.

The position of axioms in natural sciences is, nonetheless, completely different from their position in law. Mathematics or physics deduce various theorems with the help of a few elementary axioms.[7] They are therefore axiomatized systems. In axiomatized systems, the validity of components stands as a necessary consequence of the validity of initial assumptions. When scientists derive new theorems, they actually uncover already existing logical relations.

In what was described as a natural model in legal philosophy, the principles of justice are approached as an objective reality, which is to be discovered by moral intuition (just as physicists discover the laws of physics).[8] From this iusnaturalistic perspective, we can only have obligation not to steal *in virtue of* someone else's moral right to property. The

[6] Or, more precisely, contradiction of values is not an anomaly.
[7] VARGA, C. The Quest for Formalism in Law. *Acta Juridica Hungarica*. 2009, Vol. 50, No. 1, p. 17.
[8] DWORKIN, R. *Taking rights seriously*. London: Duckworth. Chicago, 1977, p. 206 et seq.

relation is one of necessity. However, such iusnaturalistic set of axioms would be infinitely long, because basically every concrete legal question would need its comparably concrete metaphysical counterpart. Such system could hardly be called axiomatic.

Many ethical systems resemble axiomatic systems. For example, the Christian Decalogue, though arguably short, has formed the foundation for plethora of further Christian norms. The command to be thankful for one's family and possessions, to mention one of them, was derived from the prohibition of covetousness.[9] The obvious problem is that two commandments can require two contradictory conducts. Here is where the potential for axioms comes into play. An axiomatic legal system would be based on prescriptions that expand and branch into plethora of further norms while maintaining coherence between one another.

To axiomatize law is to show that any given legal norm is valid because it logically flows from a set of fundamental axioms (or other norms which were deduced thereof). Such process presumes the existence of an ideal, perfectly coherent normative order whose validity can be demonstrated. Any attempt to axiomatize what is called positive law (concrete legal systems), our law here and today, would be nonsensical, because it is a product of 'acts of enactment' rather than a structure of normative statements derived by means of deduction.[10] For this reason, it is more convenient to speak about the axiomatization of legal theory rather than the axiomatization of law.

The conventional understanding of law is one of a social construct where legislators, pressure groups, judges and other agents fight a battle over normativity and where any reference to an assertion that cannot be refuted is wrong in nature. To think of axioms as aliens in legal argumentation means to assume implicitly that law is necessarily argumentative (and not built from the bottom). If we wanted to axiomatize law (or rather a system of normative statements), how should we do it? We decided to give law 'a benefit of a doubt', so to say, and to approach it not as a social construct, but rather as an objective fact that the mankind uses for its purposes. In this system, axioms are operationalized as a basic argumentative tool laying grounds for logical reasoning from abstract principles to concrete conclusions.

The result of axiomatization would be a system of norms fully coherent with the core axioms. Such ideal legal system would have these characteristic features:

Laws deduced from a set of axioms (or conclusions thereof) would need to observe the law of noncontradiction and as such would be in perfect harmony with each other. Here peripheral rules not only comply with the central rules of the legal system, but they follow from them. That adds up to systemic cohesiveness and strongly supports legal certainty, because anyone capable of logical reasoning is thus simultaneously capable of legal reasoning and of knowing the law prior to a legal suit.

Importantly, law-making in axiomatic system would be reduced to logics, legal discourse to an exercise of proofs. A proof of existence of a legal norm would amount to a discovery of a part of normative world, which has already existed outside of man's cognition.

[9] TOLIN, J. *Expository Sermons on the Ten Commandments*. Lulu.com, 2015, p. 345.

[10] SANDRO, P. An Axiomatic Theory of Law. *Res Publica*. 2011, Vol. 17, No. 4, pp. 344–345. Within the constitutional state's paradigm, completeness and consistency cannot be the features of law (p. 349). Legal system is simply too dynamic to tame. We examine validity of this argument elsewhere.

It follows that axiomatic system of law would be as political as its axioms. Any claim of political nature of an inferred norm would be senseless as it is a mere logical consequence of axioms.

Axiomatic laws would be as hyperstable as natural laws, because once discovered, they would be virtually impossible to remove unless the axioms were substituted. Consider that in physics, for instance, Einstein's observations led to these precise paradigmatic changes of assumptions, which were taken for granted for millennia.[11]

Axiomatic legal system would not resolve some of the most painful problems of law's application, such as subsumption. Others would, however, drop out. For instance, grammatical and teleological methods of interpretation would give way to logical deduction.

Most importantly for this paper, law would not leave any room to judge's personal inclinations. To the contrary, once the judge's reasoning does not meet the rigid requirements of logics, we can assume he tried to bend the law one way or another.

Finally, we need to ask according to which criteria should we choose relevant theories which tried to axiomatize law and decide whether these theories succeeded. Indeed, the question of axiomatization of law, i.e. the inference of all its conclusions, cannot be reduced to the search for the source of law. As such the whole analysis would become useless, because any system, where validity and legitimacy derive from the God's will, an act of sovereign, an act of Parliament and so on, could be denoted as axiomatic.

On the contrary, axiomatic legal theories need to work with a complex of material postulates (be them technical, axiological or any other), where the person of producer or way of enactment is besides the point. Here, the validity and legitimacy of legal norm are fully content-based, as opposite to theories which emphasize the form of legal norm. And yet, the system of law under these theories is very formalized, it is a formal system much like mathematics. Therefore, we shall call these theories 'the formal legal theories', notwithstanding what was said above.[12]

Correct identification of the theories which endeavoured to axiomatize legal system (formal legal theories) needs to consider four criteria: (a) in axiomatic theory law should be understood as rationally recognizable (explorable); (b) this theory should establish a set of elementary, rationally deduced axioms or principles for the entire legal system; (c) it should as well try to logically bind every single legal rule to aforementioned elementary axioms in order to maintain the inner coherency of the legal system; (d) finally the whole legal system should be understood as independent on any specific social conditions or the will of legislator.

[11] The limitations to Aristotle's logics were only demonstrated in 20th century. Aristotle's Logic. In: *Stanford Encyclopedia of philosophy* [online]. 18. 3. 2000 [2018-04-18]. Available at: <https://plato.stanford.edu/entries/aristotle-logic/>.

[12] C. Varga speaks about formal logical reconstruction of the law's operations (VARGA, C. *The Quest for Formalism in Law*. p. 13). L. Ferrajoli's project of axiomatization was also described as its formalization (SANDRO, P. *An Axiomatic Theory of Law*. p. 346). F. Weyr distinguished between two pyramidal normative systems, where the first elements are not derivable and which thus need to be assumed: first with an ultimate norm-maker on the top (subjective), second with an ultimate norm on the top, without regard to its norm-maker (objective). In this sense, the formal legal theories depict law as an objective system. WEYR, F. *Teorie práva*. Praha: Wolters Kluwer, 2015, pp. 49–50.

II. HISTORICAL AND MODERN IDEAS ON THE AXIOMATIZATION OF LAW

Axiomatization was initially employed by mathematics, which historically verified its theorems on the basis of mathematical proofs. The first use of this account is attributed to Euclid's Foundations from the end of the 4th century BC, in which he built his elementary geometry on the series of axioms and statements proven thereof (deductive method was actually regularly used by Socrates in Plato's Gorgias). Although many of Euclid's conclusions were, in fact, advanced by preceding mathematicians, Euclid was the first to show how these conclusions can be put into a single, comprehensive and logical system.[13]

Euclid's axiomatic-deductive method ruled for centuries both mathematics and related sciences.[14] Kolman summarizes that every area of knowledge stands upon certain elementary truths, axioms, out of which other sentences are deduced. Axioms (or 'first prepositions') are, he continues, considered unprovable, which is advocated by the possibility of immediate insight of their validity.[15]

Framework for axiomatic-deductive method was described even back in times of Aristotle, who wrote in his *Rhetorics* that 'a statement is persuasive and credible either because it is directly self-evident or because it appears to be proved from other statements that are so'.[16]

Nevertheless, the first considerations about law as an axiomatic system can only be traced to the beginnings of modern history. Then the state and church appeared to be in crisis in many parts of Europe during a process which would be called Enlightenment. Consequently, 'law, stripped of its natural authority as a *ratio scripta*, confronted its subjects as mere will, the decision of one with the power to enforce it'.[17] Law, too, needed a change of paradigm.

'The progressing course natural sciences had been taking instigated jurists to lay the foundations of a new jurisprudence which could prove to be scientific, reliable and certain to the degree as the new science of Newton and Copernicus did.' Accordingly, *'many theorists wanted to ensure that choices among competing rights [were] constrained by clear and unambiguous principles, so that judicial judgment could be separated from the uncertainties of political rhetoric and metaphysical theory. The lawyers of the Enlightenment were, in a word, looking for a legal science in which certainty was guaranteed through method. Ever since the Enlightenment this implied that legal story [...] would have to be transformed from a religious fable into a scientific dissertation.'*[18]

The system of law, too, was in structural decay. On the continent, there was a mixture of often conflicting statutes and customs both at regional and municipal level. Common law, as Legaré reports, seemed to be a mass of irregularities and inconsistencies, which consisted rather in particular usages and occasional decisions, than in immutable prin-

[13] EVES, H. *A Survey of Geometry*. Allyn and Bacon, 1963, p. 10.
[14] SOCHOR, A. *Klasická matematická logika*. Praha: Karolinum, 2001, p. 21.
[15] KOLMAN, V. *Filosofie čísla. Základy logiky a aritmetiky v zrcadle analytické filosofie*. Praha: Filosofia, 2008, pp. 672.
[16] ARISTOTLE. *Rhetoric*. Dover Thrift Editions, 2004. Translated by W. Rhys Roberts. See Book One, Chapter Two.
[17] BERKOWITZ, R. From Justice to Justification: An Alternative Genealogy of Positive Law. *Irvine L. Rev*. 2011, Vol. 1, p. 613.
[18] VARGA, C. *The Quest for Formalism in Law*. p. 11.

ciples, or in consequences deduced immediately from the rules of natural justice.[19] Another well-known critique of the state of English judge-made law in that era comes from J. Bentham.[20] The chaos of 17th and 18th century legal order was at odds with the clarity, consistency and precision contained in the writings of Roman jurists (such as *Corpus Iuris Civilis*), which were then newly discovered.

These observations make it hardly surprising that prominent European and American jurists – who were often educated mathematicians – aimed at formalizing law into a coherent logical system.[21] For F. Bacon, law was – same as astronomy or chemistry – a science and as such we can apply reason and scientific method thereupon.[22] On the continent, J. Althusius examined law as part of the real world in attempt to describe it academically.[23] R. Descartes amazed others with his vision of logical interconnectedness of everything a man can perceive.[24]

A leading figure of a generation which hoped to overcome the crisis of authority via the enlightened Reason and a renewal of science, was G. W. Leibniz.[25] Before he became a mathematician, Leibniz educated himself in law. He claimed in his *Nova Methodus Discendae Docendaeque Iuris*, that the law must be understood *'as a principled deductive science on the model of classical geometry and that legal reasoning must follow the deductive, demonstrative model used in geometric proofs*'.[26]

As such, he was the first thinker ever who argued extensively for the axiomatization of law and who himself attempted to organize it according to the axiomatic-deductive method, which is why many see him as the most important author, who popularized this method in legal science.[27]

The most eloquent advocates of Leibniz's approach come from his own pandectist school. C. F. von Wolff, who attended lectures held by Leibniz in Jena and exchanged with him a long series of intellectual letters, called for *'truer and stricter logic of law*', where *'individual terms are defined by exact definitions, individual propositions are adequately demonstrated, and, no less, definitions are thus properly arranged, so that not only may consequences be entirely understood through their prior propositions, but also that the truth of these results be demonstrated through [the truth] of these preceding statements*'.[28]

According to Kant, Wolff was *'the greatest of all dogmatic philosophers.*'[29] Wolff's 'strict method' in science, Kant explains, is predicated on *'the regular ascertainment of principles, the clear determination of concepts, the attempt at strictness in proofs, and the prevention*

[19] HOEFLICH, M. H. Law & Geometry: Legal Science from Leibniz to Langdell. *The American Journal of Legal History*. 1986, Vol. 30, No. 2, p. 113.
[20] BENTHAM, J. *Codification Proposal, Addressed to all Nations Professing Liberal Opinions,* 1822.
[21] Their endeavors were mapped by Hoeflich, thanks to whom it was much easier to present the summary below.
[22] SHAPIRO, B. J. Law and Science in Seventeenth Century England. *Stanford Law Review*. 1969, Vol. 21, p. 736 et seq.
[23] VARGA, C. *The Quest for Formalism in Law*. p. 11.
[24] HOEFLICH, M. H. *Law & Geometry*. p. 99.
[25] BERKOWITZ, R. *From Justice to Justification*. p. 615.
[26] HOEFLICH, M. H. *Law & Geometry*. p. 100.
[27] HOEFLICH, M. H. *Law & Geometry*. p. 99; BERKOWITZ, R. *From Justice to Justification*. p. 615.
[28] HOEFLICH, M. H. *Law & Geometry*. p. 103.
[29] HETTCHE, M. Christian Wolff. In: *The Stanford Encyclopedia of Philosophy* [online]. 2016 [2017-08-17]. Available at: <https://plato.stanford.edu/archives/win2016/entries/wolff-christian/>.

of audacious leaps in inferences'.[30] Like many other philosophers of the Modern period, such as Descartes, Hobbes, and Spinoza, Wolff believed the method of mathematics, if properly applied, could be used to expand other areas of human knowledge.[31]

Jena brought up another axiomatic thinker, A. Thibaut, who wrote about the need for the law to have systematic unity. If the authors of the positive law had proceeded from a simple principle of law, and had they remained consistent in its implementation, he argued, there would be substantive unity, and each rule would be derived from the highest principle of law.[32] Here, Thibaut was in agreement with his opponent Savigny, who claimed that the law has certain fundamental principles, out of which the rest of law may be derived in the same vein as the properties of a triangle.[33] Savigny's theory was, unlike others, analytical and as such limited in time and place.

In our opinion, G. W. F. Hegel would also answer the question of axiomatization of law in affirmative. Hegel argued that just as the Nature is rational in itself and own task is only to discover its laws, so the society, state and morality are naturally internally rational. A man has to find Reason in law; therefore he is to analyze the rationality of law. Rationality is an idea of law, which is subject to attention of legal philosophy, contrary to positive jurisprudence, which only treats the realization of law.[34]

Axiomatic-deductive method was later adopted by Anglo-American legal philosophers, who – despite not sharing the huge admiration of Roman law – were fighting a battle over the legitimacy of then so chaotic common law, which was regularly theorized at the inns of courts rather than at the established universities.[35] According to the Scottish mathematician and philosopher D. Stewart, for instance, demonstrative argumentation could be used also in social sciences. Should it be able to agree on certain fundamental (moral and political) principles, the jurisprudence is the ideal candidate for this construction.[36] J. Austin, who also studied the Pandectists, applied their methodology to law and used Bentham's utilitarianism for the fundamental principles.[37] Just like Stewart, he concluded that the difference between geometric and legal deduction rests in the intensity of precision, with which their terminology is defined; the more precise the definitions, the more accurate the deductions.[38] On the American continent, for the rationalization and systematization of law (and its promotion to a university subject) fought D. Hoffman, D. Mayes and – most prominently – C. C. Langdell, who famously proclaimed that the libraries are the same to law students as the laboratories to the chemists and physics.[39]

[30] Ibid.
[31] Ibid.
[32] HOEFLICH, M. H. *Law & Geometry*. p. 105.
[33] BERKOWITZ, R. *From Justice to Justification*. p. 621.
[34] HEGEL, G. W. F. *Základy filosofie práva*. Praha: Academia, 1992. See Foreword.
[35] HOEFLICH, M. H. *Law & Geometry*. pp. 115–118.
[36] Ibid., 109–110.
[37] In fact, Bentham, too, is considered by some as an advocate of the use of scientific method to achieve legal clarification and certainty. *'By reducing 'law' to an internally consistent structure of principles and rules Bentham hoped to create a legal system which would eliminate the ambiguities inherent in the common law.*' HEZEL G. M. The Influence of Bentham's Philosophy of Law on the Early Nineteenth Century Codification Movement in the United States. *Buffalo Law Review*. 1972, Vol. 22, No. 1, p. 256.
[38] HOEFLICH, M. H. *Law & Geometry*. p. 112.
[39] HOEFLICH, M. H. *Law & Geometry*. p. 120.

From the modern theorists, C. Varga posits that law could be conceived as an axiomatic 'system S of normative concepts and propositions, whose property is that (a) all theses of S relate to the same domain of human behaviors and the relations among such behaviors; (b) all theses of S are valid; (c) providing that certain theses belong to S, every further thesis inferable from these according to the rules of logic has to belong to S; (d) there has to be a finite number of concepts in S whose meaning needs no explication, and the meaning of all other concepts belonging to S has to be definable by that finite number of concepts; (e) there has to be a finite number of theses in S whose validity is evident, and all the further theses of S are inferable from that finite number of propositions according to the rules of logic.'[40] But then he goes on to problematize this model, because law lacks fundamental concepts with meanings evident in themselves, because validity (unlike truth) derives (tautologically) from the norm's mere belonging to law without the organic coupling that exists between truth and evidence of truth and because it is likely we would choose the axioms from provisions with lower legal value (making it impossible to arrange law into a deductive order).[41] He concludes that '*in the law's proper domain, be it either made or applied, instead of purely formal logical connections there are only interrelations of contents, which delimit the field of formal deductivity to a sheer hyperbolic ideal*'.[42]

III. ANALYSIS OF ATTEMPTS TO AXIOMATIZE LAW

Let us now pay attention to some of the most interesting attempts to axiomatize law. In his article from 1986 *Law & Geometry: Legal Science from Leibniz to Langdell,* M. H. Hoeflich tracked the evolution of the so-called geometrical paradigm from G. W. Leibniz to C. C. Langdell. Hoeflich observed that in Europe the popularization of the scientific approach to law was inseparably connected with the rediscovery of Roman law. What staggered the modern jurists about *Corpus Iuris Civilis* was not, Hoeflich points out, its language or systematics, but rather the order, logics and precision which they found in Roman legal argumentation.

'The ability to derive general principles, both explicit and implicit, from The Digest and the application of such principles in a syllogistic manner to a detailed factual pattern was viewed by jurists in the seventeenth and eighteenth centuries as contrary to and superior to the simple method of reasoning, closely fact-based, that had become traditional in national customary law texts.'[43]

As a result, the biggest European thinkers educated both in empirical and abstract sciences - such as F. Bacon, R. Descartes or H. Grotius – hoped that modern law, too, can operate with such precision and clarity. We dedicated previous section to these enlightened approaches. The first to attempt to axiomatize legal system, was G. W. **Leibniz**. Leibniz admired the Roman law not only for its deductive structure, which he likened to geometry, but also the precision, with which the jurists interpreted it. *'All the jurists of the Pandects*,'

[40] VARGA, C. *The Quest for Formalism in Law*. pp. 17–18.
[41] VARGA, C. *The Quest for Formalism in Law*. pp. 19–22.
[42] VARGA, C. *The Quest for Formalism in Law*. p. 23.
[43] HOEFLICH, M. H. *Law & Geometry*. p. 97.

Leibniz applauded *'no matter how far in time from each other[,] seem to speak in a single voice so that it would be virtually impossible to tell them one from the other were it not for the fact that their names are at the head of each [Digest] fragment; just as one is hard put to distinguish Euclid, Archimedes, and Apollonius in reading their proofs.*'[44]All in all, it seemed the Roman lawyers explored the Truth, which exists there somewhere objectively.

Leibniz's concept of law followed his ontological philosophy. Leibniz reasoned that if motion and change are possible, the beginning of motion and change cannot be found among the aggregate of extended substances. In all contingent or changing things, there must be reasons for the existence of the objects outside of the series of objective things themselves. Every thing, insofar as it is, must have a formal – that is, nonphysical – reason from which it proceeds.[45] As a forceful substance, law too must be governed by the first principle of science: nothing is without a reason. By the principle of sufficient reason, all law must have a reason for why it is rather than for why it is not.[46] It ought to be possible, therefore, to discover a "universal jurisprudence" – "a system of justice and law common to God and man."[47]

At this point, Leibniz introduced the idea that all of the law can be inferred from a single principle of justice, which he called *caritas sapientis* (the charity of the wise). For Leibniz, justice stands above and before God and God is capable of discovering it thanks to His endless wisdom. Hence, God's wisdom is the source of justice for us. We can see into God's wisdom scientifically using the so-called *scientia felicitatis* (the science of happiness).[48]

It is well-known that Leibniz worked tirelessly on *Corpus Iuris Civilis Reconcinnatum*, a reconstructed legal compilation modelled along deductive lines.[49] Unfortunately, he did not get to complete his ambitious project. Moreover, translations of his juristic writings are – even three centuries after his death – very scarce and most of them remain in Latin. Our research is thus necessarily limited in its scope and great deal of legal archeology still lays ahead of us.

Nevertheless, despite presenting itself a kind of a formal legal theory, Leibniz's line of reasoning is hardly sustainable. First of all, it is unclear how Leibniz meant to discover caritas sapientis using only logical reasoning. It seems, on the contrary, that he was still much too influenced by Christian dogmas.[50] This, in fact, corresponds to his long-time effort to protect Christian morals from materialist, deist, or worse, atheist tendencies.[51] If

[44] HOEFLICH, M. H. *Law & Geometry*. p. 101. Hoeflich also cites Stewart: '*… the Roman lawyers all resemble each other like twin-brothers.*'

[45] BERKOWITZ, R. *From Justice to Justification*. p. 617

[46] BERKOWITZ, R. *From Justice to Justification*. p. 618.

[47] BERKOWITZ, R. *The Gift of Science: Leibniz and the Modern Legal Tradition*. Harvard: Harvard University Press, 2005, p. 19.

[48] DUNCAN, G. M. *Philosophical Works of Leibnitz*. New Haven Tuttle, Morehouse & Taylor Publishers, 1890, pp. 379–380.

[49] HOEFLICH, M. H. *Law & Geometry*. p. 102.

[50] 'Therefore, that highest law of right receives its force, which commands us to live honorably (i. e., piously). And in this sense it is rightly put among the things to be demanded of learned men, that the natural right and the right of nations be taught according to the doctrine of Christians, that is (from the example of Christ), the sublime, the divine of the wise.'

[51] HÜNING, D. Liberty and determinism: the approach of Christian Wolff. *Studies in East European Thought*. 2016, Vol. 68, No. 2–3, pp. 119–126, [2018-04-18]. Available at: <http://https://link.springer.com/article/10.1007/s11212-016-9252-y'>.

Leibniz was able to imagine other forms of reason than God's Wisdom, we do not think it can be deduced from his writings. It seems H. Grotius, his predecessor, did not feel so limited and he proclaimed that the science – liberated from Church theology and moral philosophy – can only be limited by Nature and common sense.[52] As emphasized by H. Arendt, he insisted that *'even God cannot cause that two times two should not make four'*, he expressed the conviction that *'only mathematical laws were … sufficiently irresistible to check the power of despots.'*

Another author, who built his theory in a similar manner, was H. **Kelsen**. Kelsen wanted to create a pure theory of law which ought to be independent on any influences coming from extra-legal spheres.[53] According to Kelsen, law is nothing more than just a system of norms,[54] which are defined as normative hypothetical statements by which are real merits connected with their legal consequences. Every legal norm must lay down a duty and determine a legal consequence for its violation which needs to be enforceable by the government.[55]

The entire system of law is in Kelsen's view positive. There is no such thing as the natural law because every norm is just a will of its author limited by the frame determined by the norm of higher legal power.[56] If we asked what makes a norm legally binding, Kelsen would answer that only another norm.[57] This brings us to the first important question. What actually gives legal force to the highest (e. g. constitutional) norm if there is not any higher norm? Kelsen's answer is that there is a fictive basic norm[58] used as a presupposition of the legal force of entire legal system.[59] The function of basic norm in the theory of positive law could be in this point of view likened to the function of axioms in mathematics.[60] Therefore we consider the theory of basic norm as another example of an attempt to establish a formalized system of law based on an axiomatic core.

This theory has its weak points. Firstly, the basic norm does not have any a priori rationally derived specific content. On the contrary its content varies depending on the form of law and state. The principle of efficiency is in this case superior to the principle of law.[61] This is why basic norm cannot limit or determine the content of legal system even though it should be the axiom with the power to legalize this entire system of lower norms. In

[52] "What we have been saying would have a degree of validity even if we should concede that which cannot be conceded without the utmost wickedness, that there is no God, or that the affairs of men are of no concern to Him." VARGA, C. *The Quest for Formalism in Law*. p. 11.

[53] KELSEN, H. *Reine Rechtslehre,* Leipzig und Wien, 1934, § 1.

[54] KELSEN, H. *Reine Rechtslehre*, § 7.

[55] KELSEN, H. *Reine Rechtslehre*, §§ 11-13, 16.

[56] KELSEN, H. *Reine Rechtslehre,* § 32.

[57] KELSEN, H. *Všeobecná teorie norem*. Brno: Masarykova univerzita, 2000, p. 267.

[58] KELSEN, H. *Reine Rechtslehre*. §§ 29-31.

[59] Basic norm cannot be understood as a fact, but rather as an assumption made by the doctrine in order to create a basis for the theory of positive law. Without the basic norm it would be impossible to eliminate ideological, ethical, religious, political or other value-based principles from the theory of law. Cf. KELSEN, H. *Všeobecná teorie norem*. pp. 267–268.

[60] The basic norm is not a hypothesis, which might be proved true. Instead, it is a fiction making it possible to establish a juridical *discourse about the validity of norms and relation between a volitive act* of political authority and normative expression of such an act (PŘIBÁŇ, J. Legalist fictions and the Problem of scientific legitimation. *Ratio Juris*. 2003, Vol. 16, No. 1, p. 19).

[61] KELSEN, H. *Reine Rechtslehre*, § 31.

other words, every legal system complies with such basic norm which makes this axiom materially useless. To conclude this argument, the basic norm is nothing more than universal delegating norm and therefore cannot perform functions of axiom in the way we defined them in the introduction of this paper.

Secondly because of its fictional nature and lack of material content cannot be rationally established. Although its existence is in the frame of Kelsen's theory necessary and therefore reasonable we do not know and furthermore cannot find out if this axiom is logical or rational as far as both its content and its origin is concerned. The only thing we know is that basic norm was fictively created by a fictive original author of the first constitution which is not satisfying. If the axiomatic core of legal system was not established through the rational and logical deduction, the only explanation left would be the voluntary act of the author of the first constitution.[62] In that case however the legal system cannot be understood as autonomous and independent on other spheres of society because in its core there can be found an influence of the political, ethical and social spheres concentrated in the will of the author of the first constitution. To sum this analysis up neither Hans Kelsen was able to establish a satisfying theory of law as a formal axiom-based autonomous legal system.

It can therefore be concluded that H. Kelsen did not create a fully axiom-based autonomous system of law, because his theory met only some of the aforementioned requirements for axiomatization. Kelsen's sharp distinction between ethical and legal norms suggests he would agree. Ethical norms are viewed as normative due to the force of their content. Their content has immediately obvious quality, which gives them their validity. For example, the norms such as 'you should not lie', 'you ought not to cheat' or 'you ought to meet your promises' derive from the basic norm of 'truthfulness'. Each and every norm of morality is part of its basic norm in the same vein as the specific is part of the general; they can be derived from this basic general norm using a mental operation, i.e. a judgment from general to specific.[63]

Legal norms, on the other hand, do not take their validity from their content. Indeed, any content can form the law; there exists no human behavior that would be excluded from being part of a legal norm. Legal norm is valid, because it was created in a certain way. 'Individual norms of legal system cannot be derived from the basic norm using logical thinking. They have to be created by a special norm-making act, which is not a cognitive, but a volitive act.' In this respect, for Kelsen, legal system is something completely different from ethical system, which is inherently axiomatic.

Although H. Kelsen did not develop his ethical system to the level of his pure theory of law, it can still be concluded that it is his ethical theory, where certain features of axiomatization can be observed.

However, it would be unjust to impute any ideas into Kelsen's theories unless Kelsen himself explicitly expressed them. That is why will devote the last part of this brief analysis to finding an attempt of axiomatization - so to say - beyond any reasonable doubt. This area is the axiomatization of legal science. Right in the first paragraph of his *Pure Theory of Law*

[62] KELSEN, H. *Reine Rechtslehre*, § 29.
[63] KELSEN, H. *Reine Rechtslehre*. § 28.

Kelsen states that *"the pure theory of law is a theory of positive law.* (...) *its exclusive purpose is to know and to describe its object. The theory attempts to answer the question what and how the law is, not how it ought to be. It is a science of law (jurisprudence), not legal politics."* He further notes that *"its aim is to free the science of law from alien elements."*[64]

Indeed, the 'purity' of a theory of law based on its evasion of all alien elements is one of the characteristic features of axiomatization. This purity can only be achieved by meeting the aforementioned criteria of axiomatization. However, it is necessary to realize that the object of axiomatization here is not the law itself but the legal science, e. g. the way how we scientifically approach the law. From this point of view, Kelsen's theory of legal normativism can be understood as an attempt to build a set of axioms as a basis for legal science. Kelsen offers us a specific paradigm for the research of law itself. This paradigm can be either accepted or denied, which is another characteristic features of a set of axioms. From this paradigm we can further deduce more specific research questions and hypotheses for the examination of law itself. These research questions and hypotheses are both methodologically and content-determined by the said paradigm.

From this argumentation we can assert that H. Kelsen actually managed to outline an interesting way how to axiomatize at least a legal science. On the other hand, the axiomatization of law cannot be observed in Kelsen's theory.

Another attempt to establish an axiomatic ground for law was made by J. Rawls. In his most famous book called A Theory of Justice, Rawls introduces the set of three principles of justice which he deems universal. Those principles should form the core of law itself and regulate the entire political and social system through it.[65]

Although the content of these principles is not as important for us as the method which Rawls used to establish them, we decided to bring in this place their brief description and explanation. First and the most important principle states that "each person is to have an equal right to the most extensive scheme of equal basic liberties compatible with a similar scheme of liberties for others" and the second principle which consists of two sub-principles and therefore can be understood as two separate principles states that "social and economic inequalities are to be arranged so that they are both (a) reasonably expected to be to everyone's advantage, and (b) attached to positions and offices open to all."[66]

Rawls construed his principles of justice hierarchically. This means that in case of their collision the latter principle is overruled by the former. The individual formal freedom limited only by the freedom of other subjects which is typical for liberal political theories is in Rawls' view absolute and therefore inviolable, whereas principles of equal opportunities and only reasonable and advantageous inequalities could be limited in the name of individual formal freedom. Rawls argues that only society based upon these principles of justice can be governed truly justly.[67]

[64] KELSEN, H. *Reine Rechtslehre.* § 1.
[65] In Rawls' words "*Justice is the first virtue of social institutions, as truth is of system of thought*". RAWLS, J. *A theory of justice.* Revised Edition. Cambridge: Belknap Press of Harvard University Press, 1999, p. 3.
[66] RAWLS, J. *A theory of justice.* p. 53.
[67] RAWLS, J. *A theory of justice.* p. 10.

This brings us to the key question of this analysis. If Rawls believes that only his principles are the correct ones, how did he actually devise them? And is his way tenable? In order to persuade us, Rawls introduces his original proposition of a fictive moment before the society, when there are free and rational individuals trying to reach consensus on the elementary principles of justice. This original position is characterized by the veil of ignorance which *"ensures that no one is advantaged or disadvantaged in the choice of principles by the outcome of natural chance or the contingency of social circumstances."*[68] Without the veil of ignorance the consensus would be unreachable, because every individual would prioritize his own interests over the universal principles of justice. This presumes that behind the veil of ignorance should every rational citizen accept an identical set of principles as Rawls did. To bring this analysis to the end, Rawls sustains that these principles are universal and just not because people have agreed on them, but because they are rational and therefore objectively correct. That is why we understand these principles as an attempt to create axioms in a meaning explained in the introduction of this paper.

If we are to consider whether this attempt was successful or not, we need to focus firstly on Rawls' thought experiment based on the original position behind the veil of ignorance and secondly on the way how he connects his elementary principles of justice with the rest of the legal system (e. g. with more specific legal norms).

Rawls' thought experiment was quite convincingly criticized by the communitarian political and legal philosophers, especially by Michael Sandel[69] who argues that Rawls' presupposition of society consisting of autonomous moral subjects is philosophically unsustainable. What is more, even if we accepted this presupposition, we would not be able to logically derive Rawls's second principle of justice from it.

The first objection is based on an argument that human features we need to ignore by accepting Rawls' veil of ignorance, such as religion, nation, gender, occupation, family and so on are in fact constitutive for our identity. By ignoring these features we become nothing more than just indifferent universal beings without character and moral depth. Or to put this point another way, if we became truly autonomous only through abandoning every community and breaking every social bonds, we should probably rather give up our moral autonomy for its lesser importance compared to our social identity.[70] Rawls replies that his theory is created only for western individualistic and plural societies where the plurality of values, interests, ends and so on causes a danger of losing individual autonomy and rights in the name of common Good. The only reasonable solution of plural society's clash of values is the value-independent principles of justice creating a space for every individual to specify and follow its own ends and interests.[71] This argumentation shows us key problem of Rawls' presupposition as far as our topic is concerned. This presupposition is not universal. On the contrary, it focused only on western society which means that Rawls' principles of justice cannot be understood as *universal* axioms for law as such.

[68] RAWLS, J. *A theory of justice*. p. 11.
[69] SANDEL, M. J. The procedural republic and the unencumbered self. *Political theory*. Vol. 12, No. 1, 1984, pp. 81–96.
[70] SANDEL, M. J. *The procedural republic and the unencumbered self*. pp. 90–91.
[71] RAWLS, J. *Justice as Fairness: A Restatement*. Cambridge: Belknap Press, 2001, pp. 80–89.

Sandel further claims that even if we accepted Rawls' liberal point of view, his difference principle still would be problematic. This principle is in fact based on the moral duty of more successful members in the community to share the benefits with less successful ones. The question is how we can state this moral duty if our first and most important presupposition is the priority of individual and its rights over the society and the common Good? If we accept liberal point of view, we also need to reject such principle as unacceptable. The only reasonable result of liberal presupposition is in fact the libertarian free market and elimination of any redistribution of values as an unjustifiable measure.[72] From our point of view we can conclude that Rawls's attempt to create basic axioms for law was not successful for both philosophical and logical mistakes.

Finally we would like to mention that even though Rawls managed to demonstrate few specific situations which could be resolved by the help of his basic principles of justice,[73] he have never offered us a general mechanism of logical connection between these principles on one side and specific legal rules on the other. This is another reason why we could not accept Rawls' theory of justice as a formal (axiomatized) one.

The last attempt that will be examined was made by Luigi Ferrajoli (2007), who – according to C. Varga – resembles Leibniz in his lifetime vocation to axiomatization.[74] Unfortunately, Ferrajoli's major work *Principia iuris* has not been translated to foreign languages yet, which is why we will have to refer to his colleague, Paolo Sandro, and his article An Axiomatic Theory of Law for further information. Ferrajoli successfully manages to axiomatize legal theory. From his point of view, the legal science begins with a set of postulates and builds its theories upon it by using logical deduction to derive conclusions from primal presuppositions.[75] Ferrajoli's theory of law consists of three dimensions of law. First, there is a dimension of efficacy which analyses the gap between what ought to be according to the law and what actually is. The second dimension focuses on the validity of the law. Featuring the gap between what politically or morally ought to be and what the law actually states. The third dimension describes the justice of law trying to explain the gap in the legal system as such, e. g. the gap between the demands of the constitutional level of law and the legal theory and the content of statutes and case law.[76] This actually means that every level of the legal system can be understood both as a norm and as a fact. As a norm for the levels of lower legal force or in the case of the lowest level of the social reality and as a fact for the levels above. The only exception is the highest level of the system, e. g. the constitution which can always be only a norm.[77]

Unfortunately, this does not bring us closer to axiomatization of law, which Ferrajoli, too, understands as a system of commands produced by appropriate authorities. Only legal theory, not law itself, can be axiomatized.[78] In other words, we are able to axiomatize

[72] SANDEL, M. J. *The procedural republic and the unencumbered self*. pp. 87–90.
[73] See for example Rawls' application of principles of justice on the problematic of religious tolerance (RAWLS, J. *Justice as Fairness: A Restatement*. pp. 216–221).
[74] VARGA, C. *The Quest for Formalism in Law*. p. 12.
[75] VARGA, C. *The Quest for Formalism in Law*. pp. 343–345.
[76] VARGA, C. *The Quest for Formalism in Law*. pp. 347–348.
[77] VARGA, C. *The Quest for Formalism in Law*. p. 348.
[78] VARGA, C. *The Quest for Formalism in Law*. p. 349.

the "ought to of law" but not the "is of law". To conclude, Professor Ferrajoli does not offer us a way how to axiomatize law as such.

Conclusion and Critique of Axiomatization

In this paper we brought an analysis of in our opinion the most ambitious attempts to axiomatize law. The axiomatization of law was defined as a process of making law a formal (axiom-based) system which is logically coherent and independent of any extra-systemic influences. The axiomatization of law is considered as one of the tools to achieve its objectivity.

Even though the selected formal legal theoreticians belong to the greatest thinkers of legal philosophy, their assertions were unconvincing as they failed to demonstrate how we can produce the basic axioms rationally (Leibniz)[79], did not reach universality of their model (Kelsen), or depended too much on volitive acts (Kelsen, Rawls). This leads us to the conclusion that none of these theories can actually be considered as completely successful in axiomatizing law. That is why we consider our null hypothesis, which states that the law can be axiomatized, successfully disproved. No theory has established a truly formal legal system, e. g. meet all criteria for axiomatization yet.

The last aim of our paper is to offer several arguments against axiomatization of law as such. Our primary concern is the non-descriptive character of legal system. While in mathematics, an assertion is true if the premises that lead to it are true as well, it can be hardly decided whether normative statement (such as legal norm) is true or false.[80] A norm saying 'You cannot smoke' can be (in)valid, (in)effective or (un)just, but never (un)true, because it is simply a different category. Since it prescribes the future and not describes the past, the conclusion based on other prescriptions (you cannot drink alcohol; you cannot use drugs; therefore, you cannot smoke) is nonsensical, while conclusion based on descriptions (you were forbidden to smoke; therefore, you cannot smoke) amounts to a logical foul described by Hume. The only imaginable inference (which has always been part of legal reasoning) is the inference of a prescription from the combination of descriptive and prescriptive statements (you cannot smoke tobacco; cigarettes contain tobacco; therefore, you cannot smoke cigarettes). The hypothetical question is whether the step from 'is' to 'ought' always needs to mean a logical fallacy, as certain accepted social norms show us.

Unfortunately for law, it cannot verify validity of its premises with experiments and conclusions with yes or no answers. Language, being socially construed, simply lacks the precision. Its semantic potential is, as Wittgenstein showed, equally limited.[81] Within narrow conception of logic, linguistic expressions which are not statements, simply cannot be handled logically.[82]

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[79] In the manner of Descartes' philosophy, for example.

[80] WOLCHER, L. E. *Law's task: the tragic circle of law, justice and human suffering.* Aldershot: Ashgate, 2008, p. 89 et seq.

[81] For Wittgenstein, legal norms cannot even mean anything in advance of their actual application (WOLCHER, L. E. *Law's task: the tragic circle of law, justice and human suffering.* p. 89 et seq.)

[82] NAKHNIKIAN, G. Contemporary Ethical Theories and Jurisprudence. *Natural Law Forum.* 1957, Paper 17, p. 18 [2018-04-18]. Available at: <https://scholarship.law.nd.edu/cgi/viewcontent.cgi?article=1016&context=nd_naturallaw_forum>.

Furthermore, as J. Stone (1964, 55-6) articulated, unlike logicians a jurist is not concerned merely with the validity of the argument whether the conclusion follows from the premises, but also with other categories, be it justice, truthfulness or effectivity. What interests lawyers and judges, in other words, is not so much whether a conclusion follows from certain premises, but rather with (1) whether those premises are true, i.e. correspond to what exists or occurs (finding facts),[83] (2) whether the premises as formulated are precise, have the authority as law and are the only available premises which have that authority (finding law); or (3) whether the results that they bring about are just, i.e. consistent with whatever theory of justice is adopted (ethical side). What Stone asserted implicitly is that in legal argumentation we can never rely solely on logical reasoning.

We fully agree with his second remark, which refers to the evergreen problem that even if we were to produce a fully coherent set of legal norms based on fundamental axioms, it does not mean that this is the only coherent system that can be thought of, which puts the universality of axiomatic system in jeopardy.

In fact, there are reasons why law *should not* be axiomatized, too, especially if we understand it in the context of other social subsystems such as economy, politics, culture and so on.[84] Law is neither isolated nor autonomous phenomenon. Society consists of relatively autonomous individuals with free will which means it changes and develops through time. Every subsystem of the society, if it is to survive, needs to adapt to societal changes. If we indeed axiomatized law, we would necessarily break its connection to other spheres of society and as a result damage its adaptability, functioning and authority.

To sum this argumentation up, if we agree upon the premise that only normative statements can form the axiomatic core on legal system,[85] there is only limited number of possibilities for creating an axiom-based theory of law. First we could try to create a set of core axioms using rational deduction (as Rawls or utilitarian theorists unsuccessfully tried). Second it is possible to claim that the set of axioms established by us is the emanation of *ius naturalis* (this attempts are domain of non-positivist schools of law). This argumentation is a bit dogmatic and improvable though. Third there is a possibility to argue that our axioms are only fictive and have no specific material content (as we could see in Kelsen's theory). This line of argumentation is undoubtedly strong and precise. However, we find it impossible to base a formal system only upon procedural and fictive axioms, because we cannot rationally derive the content of more specific legal rules from such axioms. Finally, the fourth possibility is to admit that "axioms of law" are formulated historically, socially, culturally or voluntarily. This in fact means that law is not a formal but on the contrary the value-based system of norms. This fourth possibility is in our opinion the least problematic and the most convincing. To conclude our text, we have to admit that the possibilities of axiomatizing law are truly limited.

[83] "Geometry can provide the laws governing a perfect circle, but it says nothing definite about the properties of actually existing circles" (BERKOWITZ, R. *The Gift of Science.* p. 18).

[84] For deeper understanding of systems theory see PARSONS, T. and SHILS, E.. *Towards a general theory of Action.* Cambridge, Mass.: Harvard University Press, 1951; ALMOND, G. A and POWELL, B. G. *Comparative Politics. A Developmental Approach.* Boston: Little Brown and Co., 1966.

[85] For further and more specific argumentation arguing that only norm can be an axiom for legal system see VARGA, C. *The Quest for Formalism in Law.* pp. 19–21.