IV
Enlightenment Perspectives

Mathematical Thinking and International Law

A Questionable Relationship

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We examine the hypothesis that natural law philosophy in general and modern international law, in particular from the 17th century on, was based on the successful application of mathematical methods to modern physics and to modern war. However, it was not a case of direct application, apart from a few scattered references, rather modern international law was part of the same broad intellectual movement and change of all the sciences. It is shown that the natural law foundation of international law (by Hugo Grotius) was characterized by a strict method, where deductions from minimalist axioms produced natural laws of universal validity as the necessary relations among normative phenomena, including the important part of the law of war and peace. The power of contracting, axiomatically included among the natural powers of man and human societies, justified the historically contingent positive laws while the natural law made and still is the basis for the validity and obligation of the natural law as well as the positive treaty law.

1 Introductory Remarks

The vast changes, which we now refer to as modernity, gained momentum during the later half of the 16th century. The breakdown of the Respublica Christiana resulted in chaos out of which the European Nation State System slowly emerged (roughly speaking from the Peace Treaty of Westphalia 1648) eventually putting an end to the armed conflict between Catholics and Protestants.

During the very same period of time, the foundations were laid for the revolution of, or rather the establishment of the natural sciences, as it gradually liberated itself from the tutelage of theology. Simultaneously, the quest for a secular theoretical basis for law and justice began.

This was a period of time in which interdisciplinary interests were pronounced. The application of mathematics was particularly important in the process of changing from the medieval Aristotelian observation-based conception of the physical

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world, to that of a theory-based conception. Galileo's physics has been interpreted as a vindication of Platonism and pure theory against empiricist Aristotelianism[1].

2 A Theoretical Point of Departure in Neo-Platonism

Historians of science disagree considerably as to the relative importance of the different factors contributing to this development. However, there is general agreement that it was within the field of mathematized physics that the most important advances were made. For purposes of the present discussion[2] I will depart from Koyre's theory which I take to hold for Galileo, Descartes and in part Newton, though not with respect to Bacon. Koyré's claim was that a theory-based Platonism was vindicated against an empiricist Aristotelianism. Plato claimed the objective cognition of both mathematics and justice to be possible. This led to his well-known idealist philosophy that the forms contemplated by the mind in mathematics and in justice are real, and what we experience as discoveries of new forms, are only reminiscences – a regained memory. Being one with God before birth and after death was to see and grasp the forms in their entirety.

However, the new Platonism where mathematics came to be seen as the 'language of nature' was different. It did not necessarily object to observation and experimentation. Rather theoretically determined experiments become meaningful when we assume the mathematization of nature and discard miracles. In Koyré's point of view, it is the theoretically designed experiments, which make the decisive difference between the skill (the techne) of the craftsman, and the ingenuity of the designer of scientific instruments and machine technology. The vindication of Platonic idealism in physics is therefore only partial.

This line of thought, however, included the idea that what had been established by logical necessity also had to hold for God. Mathematics was particularly important for separating the understanding of nature from the domination of religion. It took more than three centuries to gradually diminish the role of God as the creator, the regulator, the upholder, and the governor of nature before, finally, Laplace could boldly answer Napoleon that he had no need for this hypothesis in his model. The medieval notion of Thomas of Aquino, which had assimilated Aristotle into Christianity, stated that contemplating the laws of nature (classical Greek natural philosophy) was one way of worship. Integrating these notions allowed natural philosophy to have a niche in an otherwise religious universe. However, this way of thinking was eventually replaced by the separation of the physical world that

[1] Koyré, A. *Etudes d'histoire de la pensée scientifique*, ed. Galimard 1973, also in English: Galileo and the Scientific Revolution of the XVIIth Century, *Philosophical Review* 1943, pp. 333–348.
Federico Cesi (1585–1630) founder of l'Accademia dei Lincei wrote in a letter to Galileo Nov.1612 that those to be admitted to the academy should 'neither be slaves of Aristotle nor any other philosopher but noble and free intellects in physical matters' and the common programme should be to 'eradicate the principal dogmas of the presently ruling doctrine' [my transl.], see Montalenti, G. et al, *Federico Cesi e l'Accademia dei Lincei*, Napoli 1988, p. 68.

followed the laws of logical necessity or the mathematical method. Mathematicians, natural philosophers, and engineers could be, and most often were, pious believers, however, religious beliefs had ceased to play an important role in their professional lives.

So it is an attractive hypothesis that mathematics, in this wide sense, in a similar way may have contributed to the establishment of a secular natural and rational law, including the law of the new- nation state system. Below we will produce some textual support for this hypothesis.

The significance of mathematics for the establishment of international law could be based on statements by Grotius himself. For instance in the *Prolegomena*[3] which is a brief exposé of the theory on which the treaty on the law of war and peace is based, Grotius explicitly refers to the method of mathematicians (Prol.58); '*Vere enim profiteor, sicut mathematici figuras a corporibus semotas considerant, ita me in iure tractando ab omni singulari facto abduxisse animum*' which in Kelsey's translation runs as follows: 'just as mathematicians treat their figures as abstracted from bodies, so in treating law I have withdrawn my mind from every particular fact'.

Van Eikema Hommes[4] maintains that the entire treatise is based on the application of the mathematical method, and states as a fact that Grotius knew Descartes. Tuck[5] holds that Grotius cited mathematics as the methodological model for the human sciences and bases his theory on similar programmatic statements from an earlier unpublished work by Grotius, *De iure Praedae*, see below.

Programmatic statements are not in themselves convincing, rather we shall look for ourselves. Furthermore we do not find any important traces of directly applied mathematics in the manner of Hobbes or Spinoza. Grotius probably understood mathematics too well to do that.

It is also a controversial hypothesis. Ethical philosophy of the last century has been almost unanimously negative towards the platonic notion that any objec-

[2] I may stress that this choice is for this particular purpose and that one reason for choosing it is that it leads to falsifiable hypotheses. Other contributions are fruitfull in other respects also for the revolutionary development of political and legal philosophy of the epoch for instance Needham, J.: *Science and Civilization in China*, Cambr. 1954, and following esp. Vol 2, Sect. 18 Human law and the laws of nature in China and the West, pp. 518–583; Kelsen, H.: Causality and Retribution, *Philosophy of Science* 8/4 (Oct. 1941), pp. 533–556; Zilsel, E.: Physics and the problem of historico-sociological laws, same issue, pp. 564–579, and Zilsel, E.: The genesis of the concept of physical law, *The Philosophical Review* 51/3 (May 1942), pp. 245–279.

[3] The *Prolegomena* is quoted from Hugo Grotius: *Prolegomena to the Law of War and Peace*, tr. Francis W. Kelsey, introd. by Edward Dumbauld, The library of Liberal Arts, N. Y. 1957. Quotations are cited by paragraph in arabic.

[4] van Eikema Hommes, J. H.: *Major Trends in the History of Legal Philosophy*, North Holland, Amsterdam, New York, Oxf. 1979, pp. 83–87.

[5] Tuck, R.: Grotius and Selden, ch. 17, in part IV, The end of Aristotelianism, in: Burns, J. H. with the assistance of M. Goldie (eds.): *The Cambridge History of Political Thought, 1450–1700*, Cambridge Univ. Press 1991, pp. 499–523; see esp. p. 505. See also Tuck, R.: *Natural Rights Theories, Their Origin and Development*, Cambridge University Press 1979.

tive basis for justice exists, towards the idea that justice is somehow a reality and towards the idea that right and wrong is within the grasp of human cognition. Non-cognitivism[6] in different versions has ruled supremely.

Natural law theory has been the target of often abusive polemics. Instead of making 'speculative' assumptions about what are natural points of departure for deductive reasoning about law, moral philosophers and legal theorists[7] have pointed to emotions, to the authority of absolutist or democratic lawmakers, to popular traditions or case law as the only reality.

According to this contemporary trend in moral and legal philosophy there is nothing beyond the whims and fancies or the emotions of the citizen or the prince or the democratic lawgiver or the courts and their traditions, customs and habits.

Although only few have admitted it, not even the standard and seemingly uncontroversial demands for universality, consistency and coherence can be upheld in non-cognitivist philosophy. Thus we are deprived of a platform on which to take a critical stance, and simply have to accept the given as it is. Legal non-cognitivism slides easily into the decisionism of the leading legal theorist of the Third Reich, Carl Schmitt[8].

Being discontented with this state of affairs, I think that it is necessary to investigate again the natural law that Hugo Grotius claimed was a possible object for human intellectual cognition. And I expect that the subsequent presentation will suffice to convince that the natural law conceived by Grotius was not the free-wheeling speculative invention and disguise of the prejudices of an age and a culture. Rather, it was a sober and disciplined exposition of necessary relations among legal phenomena characterised by adequate definitions, *les relations necessaire de les choses* as Montesqueu called them. Further it will become clear, I hope, that Grotius' theory of law like his theory of religion has a markedly sociological twist and that it is far from narrow-minded prejudice.

Investigating the significance of mathematics in the formation of international law of war and peace is markedly different to investigating the role of mathematics in warfare, where mathematical science based technologies were successfully employed.

The secular natural law enterprise seems only to bear some resemblance to mathematics in so far as both seek to establish something that has no physical tangible existence whatsoever by means of logical necessity.

Recently, some attention has been paid to those phenomena in human society that have no physical factual existence. Modern language philosophers like Austin[9], and successors like Searle and Habermas have called attention to the cre-

[6] Couture, J. and Nielsen, K.: Introduction and afterword to (and eds. of) The Ages of Metaethics, *Canadian Journal of Philosophy Supplementa*, Vol. 21, 1995.

[7] See for instance Ross, A.: *On Law and Justice*, London 1958.

[8] Schmitt, C.: *Die Diktatur*, Berlin 1927, *Politische Theologie, Vier Kapitel zur Lehre von der Souveränität*, München und Leipzig 1934, and *Der Nomos der Erde im Völkerrecht des Jus Publicum*, Köln 1950.

[9] Austin said in his Harvard lectures from 1965 that his first inspiration came from law, see Austin, J.: *How to Do Things with Words*, Oxford 1962, 1975, 1980, footnotes on p. 2 and 7.

ation of institutional 'facts' by verbal acts. Concepts like 'person', 'state', 'republic' etc. are fictitious and not tangible, yet real. Legal fictions are real was the claim of the medieval Roman lawyer Bartolo of Saxoferrato. The point boastfully underlined by Galileo is that, even if the law of free fall only holds in vacuo and never in real life conditions, it holds as a logical necessity, and that is the centre of Koyré's theory.

Likewise the theory of natural law seeks to both establish its own objects as the normative objects derived by pure reason and to investigate and analyse critically the norms established in tradition, by volitions and accepted by authority.

The timelessness of the platonic universe is replaced by an ambiguity with respect to the difference between inventions and discoveries; do we invent or do we discover in mathematics and in law?

Since I am not a mathematician, I am reluctant to propose definitive answers to the question of the possible relationship between mathematics and international law. Rather I shall attempt to present the theory developed by Grotius and his methodological principles for the reader's consideration.

3 From Medieval to Early Modern Warfare and the Application of Arithmetic and Calculus

The applications of mathematics in warfare during the transition from medieval to early modern times were important. However, it did not involve the application of advanced mathematics, only simple methods of calculation and bookkeeping. The need to develop new techniques in warfare, fortification, artillery and navigation may have served as an incentive to pursue mathematics and natural philosophy in its own right. The really decisive changes were in social organisation, especially the operational analysis facilitating the introduction of firearms.

In the early renaissance, Machiavelli revived interest in Roman republicanism and military organisation, mainly drawing upon Titus Livius and through him on Polybius. His Art of War[10] together with works of later humanists such as Lipsius[11] served to stress warfare as an instrument for political ends rather as an end in itself. The Catholic Church had for long advocated the same[12] against the norms of chivalry that tended to see fighting in duels, tournaments, and war as the truest test of male virtue, bravery and valour. The order and discipline of the army or the man of war served to enhance the fighting power of a limited number of men and was ensured by calculated order while marching, in encampment and in battle for-

[10] *L'Arte della Guerra* 1521 , *The Art of War,* tr. Ellis Farneworth, revised ed. and introduction by Neal Wood, Da Capo Press 1965, p. 90.

[11] Lipsius, J.: *Sixe Bookes of Politickes or Civil Doctrine*, tr. William Jones, 1594, facsimile reprint Da Capo Press, 1970.

[12] See Thomas of Aquino: *Summa Theologica,* Quaestio 40.

mation. All three aspects involved the application of arithmetic and calculus, but at a very basic level, namely that of the drill sergeant or the quartermaster.

In turns, the order and discipline of the army and the navy served to facilitate the adoption of technical innovations such as firearms. In both defence and attack on land, the rational architecture that was employed was based largely upon the Roman model described and praised by Polybius. In naval warfare, the mode of fighting changed from close encounters and man-to-man fighting to artillery exchanges between movable naval forts.

These changes in warfare vastly increased the costs of waging war, and military laws were drawn up, not only to ensure discipline, but also to prevent destructive pillaging and marauding. In fact it became part of military discipline to abstain from molesting and plundering civilians.

This was not a particular European discovery. Also the Mongol conquerors of China under Genghis Khan's successor Kublai Khan realised that more revenue was gained from a conquest by letting the civilian production continue and the civilian administration and tax collection proceed.

But purely instrumental restraint tends to break down into anarchy, chaos, and general destruction as in the Thirty Years War, because utilitarian calculus depends on what counts as utilities. If the utter destruction of an enemy and the devastation of his lands and means of subsistence is the object of warfare, restraint is not rational. Polybius records that the final destruction of Carthage included the killing of all, men, women, and children, as definitive destruction of the only competing power was the object of Rome's war. Therefore a general norm of restraint must have another basis.

4 Modern International Law of War and Peace: Hugo Grotius

The establishment of modern law of nations was the achievement of one man Hugo Grotius (1583–1645). There were some before him and many after, but his contribution was unique in that he laid the theoretical normative foundation for the new nation state system firstly in Europe, later universally. Grotius made great efforts to credit his predecessors even if he tended to overdo it with copious quotations. But many of those who came after him lifted long passages out his works as if it were the common heritage of mankind.

His life and political career was intimately connected to his theoretical achievements.

He was born into a family that belonged to the commercial-administrative nobility of the Netherlands. His father Jan was the mayor of Delft and curator of the leading protestant university in Leyden. His uncle, Jan's older brother, had renounced the position as head of the family to become a law professor there. Hugo was a child prodigy, who, from the age of 11, studied at Leyden with Joseph Scaliger, a leading humanist and philologist at the time. As a child and a youth, he

wrote poetry and religious drama in Latin and translated some of it into Dutch. He was renowned as a Latinist and poet, and corresponded with a wide circle of fellow humanists.

Following the family tradition he studied law after his humanistic studies and took up legal practice following the ideals of ciceronian rhetoric[13]. He had immediate success and in 1604 he was engaged by the Dutch East Asia Company, one of the biggest commercial enterprises in Europe at the time, to defend the seizure by admiral Hemskeerk, a relative of the de Groot family, of a richly loaded Portuguese carrack in the Straight of Malacca. The legality of the seizure was duly tried before the Dutch Court of Admiralty in order to determine whether it was a case of piracy, or a lawful prize and booty.

His brief was a lengthy treatise on the law of war and peace, and the freedom of the seas to peaceful passage and commerce. The title is *De Iure Praedae*. Except for the chapter on the freedom of the sea it remained unpublished until it was found in 1868.

The issue of the freedom of the sea was of the first importance in those days. The Portuguese monarchy had extended their slave raids on Western Africa around the South of Africa and with help from Arabic navigators da Gama could open the sea route to the Far East as the first European. The Spanish monarchy sponsored the attempt to open a Westward route to the Far East and discovered the New World. In 1493 pope Alexander Borgia arbitrated between Portugal and Spain and a line was drawn dividing the monopoly on the sea routes and the new foreign lands to be colonized and Christianised. This papal bull was fiercely contested by all others than the two beneficiaries, and also criticized in the Catholic Church. The Dominican Victoria and his school of students in Salamanca openly disputed the competence of the pope to make this decision.

The skirmish between a flotilla of three small armed merchant vessels of the Netherlands East Asia Company and the huge Portuguese armed merchant vessel, a galleon or carrack named Catharina[14] was instigated by a local Malay prince who wanted to break the monopoly of the Portuguese in the spice trade. The Portuguese tried to forcibly block the passage of the Dutch traders, but failed, and had to surrender. The vessel and its rich cargo were brought to the Netherlands where action was initiated at the Court of Admiralty to have it condemned and sold as lawful prize and booty. The case was very tricky on the Dutch side because a number of shareholders in the company were Mennonites and determined pacifists on religious grounds. They threatened to pull out their capital, and set up a competing ship owners and trading company in France to avoid being involved in what seemed to be piracy.

[13] Ciceronian rhetorics was markedly different from the rhetorics of the sophists that were the opponents of the Greek philosophers, depicted in caricature in many Platonic dialogues. The ciceronian ideal was a fusion of philosophy, history, and the art of forensic oratory. Cicero himself was both noted as a jurist and pupil of Scaevola, a famous and courageous orator, and an ardent lover of Greek philosophy. Philosophers nowadays, however, tend to regard him as unoriginal.

[14] According to Grotius' own account in his Annales the prisoners taken on the ship numbered more than 700.

First of all, the defence of the seizure involved the point that the Dutch had a right to sail in the East Indies, in casu the Straight of Malacca. Secondly, if the Portuguese would prohibit them from doing so, they had the right to proceed right away without awaiting a legal ruling. Thirdly, the Dutch had the right to resort to war in order to enforce their right of passage and commerce. Fourthly, also a private person or company had a right to wage a lawful war and finally, that any booty and prize taken in the course of a lawful war would be a lawful booty and prize.

Grotius brief probably settled the matter, and the 76 page long chapter on the *Freedom of the Sea*[15] published anonymously and without his knowledge in 1608, provoked Selden, a leading English lawyer to write a two volume rebuttal *De Mare Clausum* in 1635 to defend the English position of claiming access to sea routes, lands, and waters monopolised by others, while still retaining English monopoly on English routes and waters.

Grotius rose to the highest civil and political positions in the Netherlands, second only to Oldenbarneveldt, the elder statesman, who had by and large shaped the federal constitution of the United Provinces of the Netherlands, the Union of Utrecht. Oldenbarneveldt had taken Hugo under his wing when Hugo was still a boy and used to refer to him as 'my Grotius'.

Grotius then served as ambassador for the Netherlands to England and approached King James on a double mission. One was to resolve the disputes between the Dutch and the English over the herring fisheries. Herring was a key commodity in the Baltic trade. Furthermore, he was to respond to King James' intervention to the estates general of the United Provinces against toleration. King James sided with the orthodox party in the reformed church and warned against more lenient, latitudinarian views in the conflict between so-called remonstrants (latitudinarians, tolerant) and counter remonstrants (orthodox, intolerant).

The educated bourgeois-aristocratic environment of Grotius was not favourable to the primitive strict orthodoxy of the ultra-Calvinists. Arminius, who was the leading theologian of the tolerant party, was a friend of the family. Grotius had already been asked to defend Vorstius when he applied to succeed Arminius in his chair of theology at Leyden University, and was attacked by the orthodox professor Gomarus. Vorstius was successful in obtaining the chair.

The core issue of the struggle was predestination versus free will. The orthodox party held that the perfection of God implied not only God's complete foreknowledge of who were to be saved and who were to be condemned, but also His omnipotence and that consequently whatever happened, was His will. Furthermore, the perfection of God implied that it was perfectly just that some were predestined to be the vessels of evil while others were destined to salvation. Man's free will did not count in any way[16]. The Arminists favoured another interpretation

[15] Grotius: *The Freedom of the Seas or The Right which Belongs to the Dutch to Take Part in the East Indian Trade*, tr. Magoffin, R. New York 1916.

[16] It is understandable how a vulgar dogmatic protestant orthodoxy may be favorable to the callous bigotry and to the propensity to saving and industry of puritan capitalists as Max Weber presented it, but it is beyond my comprehension how Weber could imagine that a religion of

of St.Augustine, namely that man had a free will, for instance to embrace God and thus be saved, and further that predestination did not suspend the duty to do good, since man had the free will to do right or wrong. The orthodox accused the Arminists of the pelagian heresy[17] while the Arminists preached toleration.

Luther, Melanchton and Calvin had preached against toleration fearing sedition and disunity, and King James followed suit as a pious orthodox protestant. Grotius did not succeed in either mission with King James.

Back in the Netherlands the religious conflict intensified. Orthodox preachers incited the lower classes of the townsmen to march against tolerant preachers and their congregations[18]. The Arminists were the leading faction in the province of Holland but not in the other provinces. The Stadtholder, prince Mauritz of Oranje Nassau[19] saw the spreading riots as a chance of establishing himself as absolute sovereign by siding with the orthodox. By a coup d'etat he had Oldenbarneveldt, Grotius and Hoogerbeets arrested and charged before a hastily convened ad hoc synod. The charges were unclear and finally in the final sentence formulated as high treason. The process was irregular and the competence of a church synod dubious, to say it mildly. Oldenbarneveldt was sentenced to death and executed, Grotius to imprisonment for life in the Loevenstein Castle, and Hoogerbeets to imprisonment in his own home for life.

selfrighteousness could be advantageous to the advancement of science, see Weber, M.: *Die protestantische Ethik und der Geist des Kapitalismus*, Tübingen 1920. Weber states in note 48 that the pronounced preference of protestant asceticism for mathematized, rationalised empiricism is well known and need not be discussed further and refers to Windelband, W.: *Lehrbuch der Geschichte der Philosophie*, 1892, pp. 305–307. I have only had access to the 2. ed. of this work and have not found the evidence. It seems that Windelband has omitted this "well-known" fact.

[17] Pelagius, a theologian of British origin, was attacked by St. Augustine for the doctrine that salvation was a just retribution for doing good. Knowing pelagianism only through St. Augustine is to know only the one side of a debate. Revival of the teachings of St.Augustine, especially the attack on pelagianism, was a major concern of Luther, Calvin and the Protestant break with the Catholic Church. Antipelagianism remained a central concern of protestant theology and was the reason behind the break of Søren Kierkegaard with the official Danish church.

[18] Tex, J .den: *Oldenbarnevelt*, 2 Vols., Cambr. 1973, describes the start of controversies between liberal and strict calvinists already in 1608 in Alkmaar (Vol 2, p. 511). He mentions that Oldenbarnevelt attempted to even out matters by letting preachers of the conflicting factions debate in public, presumably hoping that the uneducated audience would tire of the often unintelligible dogmatic details. He was not succesful, and it seems that the lower classes of townspeople positively craved for orthodoxy, dogmatism and strict discipline.

[19] Prince Mauritz was not only an outstandingly successful general but also the author of the rationally designed new model army later developed by Gustav Adolf and the English Puritans. It was based on the Roman conscript army as described by Livius, Tacitus and Polybius and given a renaissance by Machiavelli and Lipsius. Mauritz had studied with Lipsius in Leyden. Mauritz' preoccupation with morale, uniformity of belief , unity of command and suppression of dissent is typical of the military way of thinking advocated by Lipsius. It is worth noting that Gustav Adolf in the last part of his career was a much less dogmatic lutheran protestant that in his youth and consequently much more disposed for reconciliation of the warring churches, see Ahnlund, Nils: *Gustav Adolf Den Store*, Stockholm 3. opl. 1932.

A year later, Grotius was helped to escape by his courageous and determined wife. He fled to Paris, where his wife and children joined him. There he wrote in one year the Law of War and Peace, which immediately became universally famous. Still, they suffered economically difficult circumstances until he was appointed ambassador for Sweden at the French Court. France was to make a treaty with protestant Sweden to oppose Austria in the Thirty Years War.

Once the treaty was concluded, Grotius became more attracted to scholarly pursuits, especially religious conciliation, which many thought of as an obsession. At the centre of his teaching – for we may call them so – he placed the Christian commandment of brotherly love as a continuation of the stand, which he had taken when supporting the Arminists. Gradually it became a theology of his own, where he sought reconciliation between not only the various Protestant Churches but also the Catholic Church, which led to him being eyed with suspicion by all camps.

Through the late 1630s and early 1640s he published a series of irenical works in which he saw the church as the visible social institution, as a body, not in any mystic sense, but as a social reality. The *Votum pro pace ecclesiastica*, the vote for peace among the churches (1643) should be concord between Christian states and concord as the soul of the church that Christ wanted to be one and united. Most explicitly he exhorted all who sought to establish peace among Christians to demolish all dogmas that destroy public peace, *demolire dogmata, qua pacem civilem perturbant. Prius est, bonum civem esse, quam bonum Christianum*[20] (Being a good citizen is prior to being a good Christian). But this statement lead an otherwise sympathetic theologian as Posthumus Meyes to conclude that Grotius was no theologian, for in his view no theologian could say so, only a statesman and jurist, "For the church will never be confined to tangible or ethical visibility, and that it is not concordia either which represent its profoundest being, but the Holy Spirit"[21].

He renounced his post as ambassador for Sweden and went to the court of Queen Christina, heir and successor of Gustavus Adolphus to collect his rear pay, and on the way back to the continent in 1645 he suffered shipwreck, fell ill, and died on the coast near Rostock.

5 The New Law of War and Peace

Its significance was first and foremost its generality and the *formal equality of all* before the law. This was highlighted recently by a group of Japanese scholars in a joint volume on the Grotian normative theory of war[22]. They added a precise critique against the (otherwise progressive) advances made by the Spanish school

[20] Quoted from Meyes, G. H. Posthumus: Hugo Grotius as an Irenicist, in: Feenstra, R. (ed.) *The World of Hugo Grotius*, Amsterdam & Maarsen 1984, pp. 43–63. Meyes made a minor error in referring to *Via ad Pacem Ecclesiasticam*. The quote is taken from *Votum pro Pace Ecclesiastica* from 1643.

[21] Ibid., p.63.

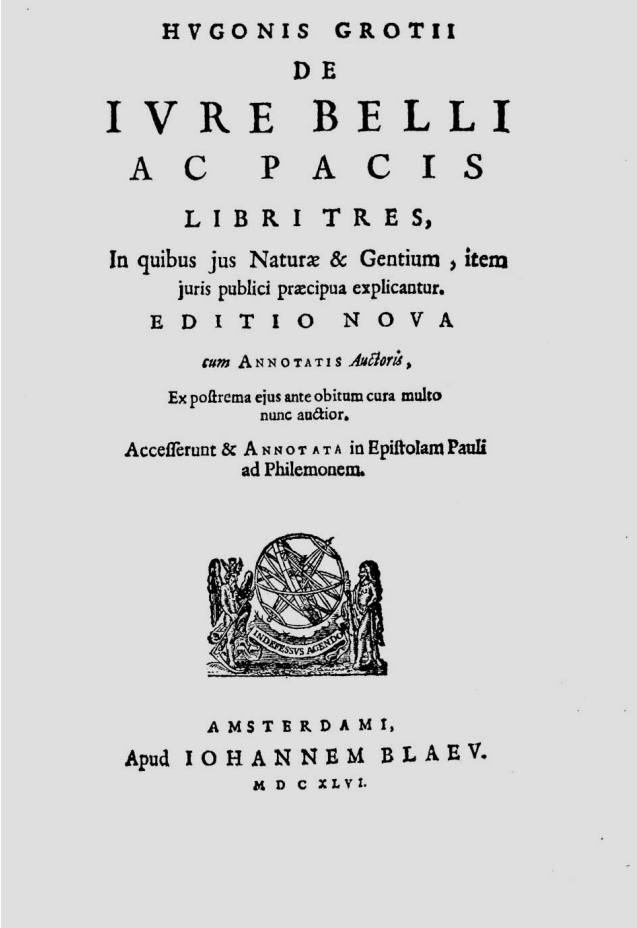
HVGONIS GROTII
DE
IVRE BELLI
AC PACIS
LIBRI TRES,
In quibus jus Naturæ & Gentium, item
juris publici præcipua explicantur.
EDITIO NOVA
cum ANNOTATIS Auctoris,
Ex postrema ejus ante obitum cura multo
nunc auctior.
Accesserunt & ANNOTATA in Epistolam Pauli
ad Philemonem.
INTERESSVS AGENTIS
AMSTERDAMI,
Apud IOHANNEM BLAEV.
M D C XLVI.

Figure 1.
Title-page of the second edition of Grotius' *De iure belli ac pacis*. As indicated by the armillary sphere, the publisher was also engaged in mathematical publishing. Historians of international law credit Hugo Grotius with the creation of modern international law, as in particular established in the Peace Treaty of Westphalia of 1648 and the Charter of the United Nations of 1945, and trace the origins of it back to patterns of mathematical thinking of striking public appeal in Grotius' time. Military analysts of our time blame the striking public appeal of mathematics supported modern warfare for undermining international law.

of Salamanca prior to Grotius for still being christocentric and thus subjecting formal equality of peoples, creeds, and states to the priority of Christianity.

When Grotius started out on his major opus, the treatise *On The Law of War and Peace,* the full title of which runs *De iure belli ac pacis libri tres, in quibus ius naturæ & gentium, item iuris publici præcipua explicantur*[23], he looked back upon the hostile relations of city states of antiquity, where each judged according to its own particular code of justice, to the imperial Pax Romana which judged

[22] Yasuaki, Onuma (ed.): *A Normative Approach to War, Peace, War and Justice in Hugo Grotius*, Oxford Clarendon Press 1993; see also the review Gordon, E., *American Journal of International Law* 1995, pp. 461–463.

[23] Amsterdam 1625 and several later editions which until the 1646 edition were revised by the author. Here is used the English translation by A. C. Campbell, London & New York 1901, in the Hyperion reprint ed. 1979. Quotations are cited by book, chapter and paragraph in roman numerals and with arabic numerals for sections within paragraphs.

according to the priority of Roman law, to the Respublica Christiana, where the normative ordering of war and peace was judged according with its own internal fusion of Greek philosophy, Roman imperial law with the priority of Christianity. This ethnocentric bias is prominent also in the law of war and peace of the other great cultures, the Hebrew, Chinese, Japanese, Hindu and Moslem.

Even if the great theologer-jurists of Salamanca Victoria and his followers denounced the conquest of Mexico and Peru by Cortez and Pisarro, the plunder, indiscriminate killing, the enslavement of the original inhabitants and the forcible baptism of them, and instead held that all the reasons given for the justifiability of the conquest, including the bull of pope Alexander were unfounded, they still maintained the truth of Christianity and the obligation to propagate the faith. This clause provided the cause for just war. If Christian missionaries were prevented by pagan rulers from preaching the one and only true faith to the pagans and the pagan rulers prevented their own subjects from listening to the gospel, then there was a just cause for war, namely to depose the unjust rulers and conquer their lands.

This particular cause for just war did, and does, only apply to the one and only true faith of Christianity and could not or cannot admit any reciprocity to, say, Moslem, or Buddhist missionaries. The edict guaranteeing the French Huguenots their right to liberty of conscience, denied them the right to propagate their faith in catholic France.

Grotius, very cautiously, mentions only persecution of fellow Christians as a cause of just war, but actually uses more space to warn against the abuse of pretexts. He states that "it is plain that no force should be used with nations to promote its acceptance" [Book II, ch. XX, § XLIIX] "[...] but to obstruct the teachers of Christianity by pains and penalties is undoubtedly contrary to natural law; for the doctrine of Christ, apart from all the corruptions added by the inventions of men, contains nothing hurtful, but everything beneficial to society [...] Nor indeed can any danger be apprehended from the spreading of doctrines, calculated to inspire greater sanctity of manners and the purest principles of obedience to lawful sovereigns" (Book II, ch. XX, § XLIX).

Grotius did not exclude the commands of God from the law of war and peace, but he included them in a secular system of law. All others Christian jurists preceding him included secular norms into an overarching religious system. So his way of circumventing the preoccupation with the dogmatically correct Christianity is to include it into a system of laws of nature, where God is the creator of nature, but explicitly also bound by the laws of nature.

Thus the solution offered by Grotius belongs on the level of the system of law rather than on the level of particular laws. This may be why Grotius proudly and correctly states "That body of law, however, which is concerned with the mutual relations among states…few have touched upon. Up to the present time no one has treated it in a comprehensive and systematic manner; yet the welfare of mankind demands that this task be accomplished" (Prol.l) .

According to the Japanese scholars formal equality in the eyes of law was the unique achievement of the modern European international law as shaped and developed by Grotius.

The method of arguments *a priori* and *a posteriori*

The arguments a priori are pure reason, while the arguments a posteriori are factual evidence. Natural right – which seems to be used as synonymous with natural law (Book I, ch. I, § IX) – "Natural right is the dictate of right reason, shewing the moral turpitude, or moral necessity of any act from its agreement or disagreement with rational nature, and consequently that such an act is either forbidden or commanded by God, the author of nature." (Book I, ch. I, § X).

"We are said to reason a priori, when we show the agreement or disagreement of any thing with a reasonable and social nature; but a posteriori, when without absolute proof, but only on probability, anything is inferred to accord with the law of nature, because it is received as such among all, or at least the more civilised nations." (Book I, ch. I, § XII).

The assumption about human nature is the stoic term *sociableness* "Among the traits characteristic of man is an impelling desire for society, that is, for the social life – not of all and every sort, but peaceful, and organised according to the measure of his intelligence, with those who are of his own kind" (Prol. 6).

Concerning the inclination to be sociable Grotius quotes Seneca, *On Benefits*, Book IV, ch. XVIII on ingratitude, where Seneca argues that men are weak compared to animals, but superior because of reason and society – "he who in isolation could not be the equal of any creature, is to become master of the world [...] It was society which gave man dominion over all other living creatures [...] it can be invoked against Fortune" [chance, IMJ].

To the appetitus socialis is added the "power of discrimination" between what is "agreeable or harmful" and thus "to follow the direction of a well tempered judgment [...]. Whatever is clearly at variance with such judgment is understood to be contrary to the law of nature, that is, to the nature of man" (Prol. 9).

The reason underlying this judgment is not to be understood as the dictates of appetite and instinct[25]. Anticipating the analysis of the concepts of law and freedom in Rousseau and Kant[26], Grotius declared appetite and instinctive drives to be subordinated; "agreement with reason, which is the basis of propriety, should have more weight that the impulse of appetite; because the principles of nature recommend right reason as a rule that ought to be of higher value than bare instinct" (Book I, ch. II, § l, 2).

"To this exercise of judgment belongs moreover the *rational allotment* to each man, or to each social group of those things which are properly theirs [...] leaving to another that which belongs to him, or in fulfilling our obligations to him"

[24] Tuck in his study of rights theories naturally stress the natural rights theory of Grotius. Sometimes Grotius distinguishes between rights and laws. Property is a right and so is the right to wage just war to recover property or even to inflict punishment. But the duty not to steal is a law.

[25] Thomas Hobbes conceived of freedom as the unimpeeded movement towards satisfaction of appetites and other needs.

[26] The concept that freedom consists in subjecting one's appetites and instinctive drives to the norm one has set for oneself.

thereby drawing a sharp demarcation between law and other principles of distribution (Prol. 10).

To the human power of discrimination is added the general human *power of contracting* "[...] since it is a rule of the law of nature to abide by pacts (for it was necessary that among men there be some method of obliging themselves one to another, and no other natural method can be imagined) out of this source the bodies of municipal law have arisen. For those who have associated themselves [...] or subjected themselves [...] had either expressly promised [...] or impliedly to have promised [...]" (Prol. 15).

I will stress not the social-contract theory of the origin of society which had its roots in the conciliar movement in the Catholic Church in the Middle Ages and was later lifted out of Grotius' writings by Locke, Rousseau and others, but rather call attention to the legal power of all men to create obligations with everyone else.

In the course of the advent of bourgeois society, certain nuclei of the preceding society survived, in particular the obligation of children to parents, and wives and servants to the master of the household. Otherwise all obligations, including the entire system of municipal laws, were to be based upon or construed as being based upon the legally accepted exercise of human will as the one and only legal power. All other social obligations were discarded. All considerations of what was due to holders of status and rank, or due to the deserving poor, or to the church and the holy Christian societies, were subjected to the human will. The magnitude of this conceptual change may be the reason for the awkward yet unmistakeable way of expressing it.

Thus, the elements of the natural law, as expressed by Grotius, are only the assumptions about sociableness, the duty to honour pacts, and the powers or reason, of discrimination between right and wrong and of contracting.

The position of the Christian God in the system of natural law

God is, as has been stated in the quotes above, the author of nature, thus we obey God by following natural law; but God is unable to change it. "Now the *Law of Nature is so unalterable*, that it cannot be changed even by God himself. For although the powers of God are infinite, yet there are some things, to which it does not extend. Because the things so expressed would have no true meaning, but imply a contradiction. Thus two and two make four, nor is it possible to be otherwise; nor again, can what is really evil not be evil." (Book I, ch. I, § X, 3; author's italics). Furthermore "God himself suffers his actions to be judged by this rule" (ibid. with Biblical references).

And finally the famous *etiamsi daremus* "What we have been saying would have a degree of validity, even if we would 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." (Prol. 11).

An outline of the classification of types of law

The statements above lead to define Gods volitional law as a special class of law. They are directives binding for those to whom they are addressed. The platonic Greek Zeus, and the stoic Roman Jupiter may direct them to all mankind. Gods directives may be applicable to some, for instance to Jews and to Christians together. Certain prescriptions of the Old Testament are binding on Jews only. Other prescriptions of the New Testament are obliging for Christians only (Book I, ch. I, §§ XV–XVII incl.).

Another class of law is that which is "allowed by the law of nature, not absolutely, but according to a certain state of affairs. Thus, by the law of nature, before property was introduced, everyone had a right to the use of whatever he found unoccupied; and before laws were enacted, to avenge his personal injuries by force" (Book I, ch. I, § X in fine). Here we find the notion of original communism and the notion of original appropriation of the fruits of nature, and the notion of the natural right to punish others from primitive revenge.

Human volitional right is either a civil right or a right that is more or less extensive. "The civil right is that which is derived from the civil power. The civil power is the sovereign body of free men, united together in order to enjoy common rights and advantages. The less extensive right, and not derived from the civil power itself, although subject to it, is various, comprehending the authority of parent over children, masters over servants, and the like. But the law of nations is a more extensive right, deriving its authority from the consent of all, or at least of many nations." (Book I, ch. I, § XIV) and "by mutual consent it has become possible that certain laws should originate as between all states or a great many states; and it is apparent that the laws thus originating had in view the advantage, not of particular states, but of the great society of states. And this is what is called the law of nations, whenever we distinguish that term from the law of nature." (Prol. 17).

The concept of the sovereign state is defined thus "That power is called sovereign, whose actions are not subject to the control of any other power, so as to be annulled at the pleasure of any other human will [...] the common subject of sovereign power is the state" (Book I., ch. III, § VII).

The law of nature relates not only to what exists independently of human will, but also to what follows from the exercise of human will. "Thus property, as now in use, was at first a creature of the human will. But after it was established, one man was prohibited by the law of nature from the seizing the property of another against his will" (Book I, ch. 1, § X, 2).

Thus international law, sovereign states, municipal law, and law of property are defined as created by man, as acts of will. This act of creation is made possible and meaningful by the law of nature and the law of nature consists of the relations of the concepts so created.

Grotius assumes, without stating it, a parallelism between law among men and law among nations. But the latter is incomplete in the sense that the enforcement of justice is by means of self-help. He therefore proceeds to investigate the justice of war, the ultimate means of self-help.

Investigations a posteriori

The detailed and meticulous record of empirical evidence for the doctrines and practices of international law is by far the bulk of the text. It displays vast erudition, it is not easy to read, and at times it seems self-indulgent. But though he frequently uses the term authorities his method is critical in two ways.

Although the hurried writings, which took him only one year, made him make many errors, his early humanistic training in critical examination and edition of classical texts served him well. In the many editions in his own lifetime, he made thousands of corrections.

The abstract natural-law theory served as a method of criticism of the logical consistency of the received wisdom, where even his favourites, such as Cicero, do not escape criticism (Book I, ch. III, § III in fine).

A modern reader, however, will find the lack of attention to the historical socio-economic and cultural context a grave shortcoming. Like other humanists he quoted presocratic Greek philosophers alongside post-socratic, with Biblical texts and Christian philosophers and historical experiences from any age in one pell mell.

His answer to the first question 'is war at all justifiable', is affirmative (Book 1, ch. II)

Hence, a just war by natural law as well as tradition is war waged for the following reasons: defence, recovery of property or debts or punishment of offences committed. This is a decisive break with the age of feudalism where the lay or monastic orders of the knights existed for the purpose of warfare. Not only does Grotius repeat Lipsius' saying that war must be waged in order to restore peace (Book I, ch. I), he also circumscribes the causes that can justify it.

With respect to defence the concept of pre-emptive strike is expressly rejected, it may be expedient but is not just.

With respect to recovery of property he dedicated nine chapters to a detailed analysis of property law.

With respect to obligations he dedicated the next six chapters to promises, contracts, and treaties and one chapter to damages out of contract.

The most difficult subject by far is punishment as a just cause for war

At first it seems that he bases it on historical evidence (Book II, ch. XX, § XXXVIII), but then he also claims that it is a right resulting entirely from the law of nature (§ XL in fine) He expressly rejects Victoria and the Salamanca school who "suppose punishment to be an effect purely arising from the authority of civil law" (ibid). The natural law basis is "the liberty of inflicting punishment for the peace and welfare of society, which belonged to individuals in the early ages of the world" (ibid).

There seem to be some conceptual and theoretical confusion. When Grotius defines war as a test of force or as a duel (Book I, ch. I), the parties are obliged to abide by the law of war, as the law of duel obliges duellists. They are to treat each other with respect, and certain deceptions are dishonest and unlawful, while

others are part of the game. If these rules are followed, there is no kind of reproach involved in the struggle[27]. Punishment is different, involving a relation of superiority and inferiority and involves a notion of the end of "punishment, which some philosophers have called correction, some chastisement, and others admonition" (Book II, ch. XX, § VI). "The power of inflicting the punishment, subservient to this end, is allowed by the law of nature to any one of competent judgment, and not implicated in similar or equal offences." (Book II, ch. XX, § VII). After a long discussion "it may be inferred how unsafe it is for a private Christian, whether from motives of personal interest, or from those of the public good, to take upon himself the punishment of an offender, and particularly to inflict death." (Book II, ch. XX, § XIV). With these provisos, few, if any, would ever be justified in punishing others, and what comes out of the discussion is the cautious "pronouncing all wars to be just, that are made upon pirates, general robbers, and enemies of the human race [...] those who have renounced the ties and law of nature" (Book II, ch. XX, § XL).

Offences against God are considered as primarily a relation between the soul of one man and his maker (Book II, ch. XX, § XLIV) and it is held to be "plain that no force should be used with nations to promote its acceptance" (Book II, ch. XX, § XLVIII). "But to obstruct the teachers of Christianity by pains and penalties is undoubtedly contrary to natural law and reason", the reason why being that "Nor indeed can any danger be apprehended from the spreading of doctrines, calculated to inspire greater sanctity of manners, and the purest principles of obedience to lawful sovereigns" (Book II, ch. XX, § XLIX).

It seems that Grotius' position is very close to that of the theologians and jurists of Salamanca, but still it is definitely different. It was no longer the obstruction of missionaries per se that was contrary to law of nature, rather it was the obstruction by pains and penalties, and further this obstruction was not declared a just cause of war, it was only contrary to natural law. And the reason for declaring it contrary to natural law was not the unique truth of Christianity, but the inoffensiveness of its teachings.

Neither popular sovereignty nor absolutism from natural law

Although Grotius held that civil law, also called municipal law within states is based upon the social contract, he vehemently rejects the theory that "sovereign power is vested in the people, so that they have a right to restrain and punish kings for an abuse of their power" (Book I, ch. III, § VIII).

Rather he claims that this is solely a matter of the positive arrangement of a constitution. Some people subject themselves unconditionally and "entirely relinquish their rights" (ibid) while in the Athenian Republic "The city is not governed by one man, but in popular form" (ibid). The estates general may "In some places [...] serve as a greater council to the King [...] leaving him [...] full liberty to exercise his own discretion [...]. But in other places they form a body with power to inquire

[27] Hampshire, S.: *Justice is Conflict*, Princeton University Press, Princeton New Jersey, USA 2000.

into the prince's measure and to make laws" (Book I, ch. III, § X). His arguments in this respect are purely positivist. Direct or indirect democracy, republicanism, unlimited monarchy, limited monarchy all depend upon the actual and particular constitutional arrangements, and not on natural law of either the inalienable sovereignty of the people as maintained by the Spanish theologians and jurists and later Rousseau and Kant or the absolute royal sovereignty as maintained by Bodin, Hobbes, and Filmer.

Newer doctrines of natural law hold democracy to be a natural right and to follow from reason.

Human rights

To a modern reader interested in human rights Grotius seems passé. In his analysis men can sell themselves to slavery as well as to servitude.

He wrote before the civil rights of the Magna Carta were declared to be universal rights of man[28]. In his analysis they were positive volitional law and his position was close to that of the common lawyers. They were fiercely contested in England in the first half of the 17th century. The civil rights and freedoms were based on the pact between King John and the magnates and popular representatives of the Realm in the two houses of Parliament. Interpretation thereof was to be agreed by both parties to the pact. Only after the Glorious Revolution the new King William of Oranje Nassau and his Queen Mary had to accept the sovereign power of Parliament to pass the Bill of Rights as legislation, as statute law. In the American Colonies the settlers also wanted a constitutional Bill of Right, even if they were setting up a Republican Constitution with a popularly elected president and a representative legislator. In response to the popular wish for something even stronger and more binding upon future rulers, the civil rights and liberties were formulated as inviolable and inalienable universal rights in line with the new philosophies of John Locke. The US declaration was exported back to Europe and further elaborated in the Declaration de les Droits des Hommes and further in the 2nd half of the last century in the UN Declaration of 1948 and the European treaty on Human Rights of which the latter definitely is positive treaty law.

The ambiguity between discovery and invention persists. Human rights are both established by human will of what shall be and claim to be discoveries of what is.

6 In Conclusion

The critique of natural law as freewheeling dogmatic speculation is clearly unreasonable in this instance. But another more refined standard critique by modern positivist legal theorists is that natural law is simply tautological. All deductions must be contained in the assumptions. But this is not a serious objection, however.

Tautology is circular, but there is nothing surprising or objectionable in circularity when you analyse complex concepts by means of their relations to other concepts. Not infrequently you may go in a circle and arrive at one of the concepts that you have touched upon before. Circularity is empty and objectionable only if you move in small circles[29].

The method of progressive complexity in abstract moral and legal reasoning was characterised by Grotius in the above mentioned discussion of war as punishment where he repeats and sums up his warnings against being carried away by the opinion that custom is a part of natural law. The third warning is "to make an accurate distinction between general principles, such as the duty of living according to the dictates of reason, and those of a more particular though not less obvious meaning; as the duty of forbearing to take what belongs to others. To which many truths may be added though not quite so easy of apprehension: among which may be named the cruelty of that kind of punishment, which consists in revenge, delighting in the pain of another. This a method of proof similar to that which occurs in mathematics, the process of which rises from self-evident truth to demonstrations, the latter of which, though not intelligible to all alike, upon due examination obtain assent" (Book II, ch. XX, § XLI–XLIII).

The question raised above concerning the character of the natural law developed by Grotius as the system of the necessary relations between moral legal phenomena has been answered, I hope.

The distinction drawn by Grotius between natural unchangeable law and volitional and diverse law is tenable, I think, and resolves the problem of the blurred border between discovery and invention.

But new developments create new ambiguities between discovery of what is and invention of something new. Among these I have only touched upon the issue of human rights. Another is so-called humanitarian intervention[30]. Both are exceedingly complex, yet most often reduced to simplistic slogans.

Grotius' reasoning about international law may in some aspects be similar to the reasoning in mathematics. But the lean style of writing is not that of Grotius. He turns instead every stone on his path and wanders often far off the track and demonstrates his superior classical humanistic learning.

In his writings on international law Grotius was first and foremost a man of practical affairs, a statesman and a jurist, who presented his case as convincingly

[28] I have presented a more detailed examination of the struggles from the petition of rights to the bill of rights and the transformation of the rights from particular rights to universal in Jarvad, I. M.: *Fra sædvaneret til konstruktivisme – Om menneskerettighedernes retsfilosofiske grundlag, Filosofi og videnskabsteori*, RUC, 3.række Preprints and reprints No. 3, 1999. For the present purpose I will make the presentation very brief.

[29] Strawson, P. F.: *Analysis and Metaphysics: An Introduction to Philosophy*, Oxford University Press 1992. I have attempted to apply Strawson's analytic philosophy to legal theory in Jarvad, I. M.: *Refleksivitet og selvreferens i retten – eller magt*, Blume, Ketscher, Rønsholdt (eds.) *Liv Arbejde og Forvaltning, Festskrift til Ole Krarup*, København 1995, pp. 55–68.

[30] I have tried to discuss it in another paper: Enforcing human rights and democracy and European consciousness, in: Mongardini, C. (ed.): *La Nascita di una conscienza europea*, Roma 2001, pp. 81–89.

and persuasively as possible. When not engaged in such pursuits he was attracted to literature and to theology.

Above I have tried to lay bare the foundations of his natural law and shown in some respects how it was applied as a critical standard towards what was received from state practice, history and authorities. I do think these foundations of his natural law theory deserve attention for they became the point of departure for lawyers and philosophers for centuries to come.

The first point to stress concerning Grotius' *basic concepts of natural law* is the fact that they are narrow. In comparison to the rich Aristotelian, Thomist and neo-Thomist notions of the good life[31], they are lean. What constitutes the good life is for everyman to decide.

The second is characterizing *man as a being with a social appetite*. It is not clarified directly in the text what it really means to repeat this stoic commonplace. However, I suggest that we must infer that is not an appetite or a drive as in Hobbes' mechanical concept of man, Nor is it an idea in man's mind. It must be concluded from the presented arguments, that it is innate, but unlike the instinctive sociablenes of – some – animals, it seems to be to be an orientation of the rational mind, a *directedness of reason*.

The powers of man are twofold

The *power of discrimination* is presented as the power to discriminate between beneficial and harmful. This seems conceptually unclear. Grazing animals know instinctively to avoid certain poisonous vegetables, and may learn by experience to avoid others. Carnivorous animals learn that toads taste bad. This is not the sense of good and bad, which Grotius had in mind. The issue for the power of discrimination is not the utility or the satisfaction of appetites or instinctive drives as in Hobbes and those moral philosophers and economists who propagated the self-love theory. It might be an ability to discriminate between what is good and what is bad for society. But even if we assume a functional usefulness for society as the (phenomenological) orientation of reason, the concept of justice still escapes us. For it may be functional, yet unjust, for society to punish someone innocent as a scapegoat.

From the text even in the brief excerpts here presented it is clear that Grotius is not concerned with survival as the quote from Seneca could suggest, nor with the agreeable, or the good life, *eudaimon*, but with justice tempered with mercy and compassion. This capacity must therefore be the *human intuition to grasp what is right and wrong and therefore just and unjust*.

The second power of man is the *power of obliging oneself* by explicit declaration of one's will or by tacit consent. All that is not natural law or God's volitional law is human law based on contract and therefore obligations derived from explicit or

31 See for instance the neo-thomists Maritain, J.: *Natural Law*, South Bend, Indiana 2001, originally articles from 1943, 1951, 1952 and Finnis, J.: *Natural Law and Natural Rights*, Oxford 1980, For a non catholic neo-aristotelianism see Nussbaum, M.: *The Theraphy of Desire: Theory and Practice in Hellenistic Ethics*, Princeton Univ.Press 1994, and *Loves' Knowledge: Essays on Philosophy and Literature*, New York Oxford Univ. Press 1990.

tacit *human will to be obliged*. This is not a commonplace tautology but a total repudiation of the medieval notion of justice as based on consuetudines and/or authority. Consuetudines in themselves constituted law and justice, just as authority per se implied the justice of lawmaking, *rex ius in pectore habet*; the king has justice in his breast. Instead Grotius based all human law on consent as auto-obligation. In order to do so he stated the power of *auto-obligation* as a natural capacity of man only in the restricted sense of a self evident truth or tautology, namely that otherwise the term of promise and contract would be without meaning, and that the role of authority is to reinforce what is obligatory. The contract theory is not the path for pre-social man to enter society individually or to constitute it collectively; it *is the meaning of the society of the legally competent citizens*. Alongside this revolution in the general theory of law, Grotius also had the daring to create a normative theory of international relations as a proto-society of the legally competent states.

His method was not *induction* or the search for general principles in a mass of empirical data, such as the work of Gratian from around 1140 on the collected mass of the decrees of popes and ecclesiastical authorities to establish some order and system in the canon law called by himself *Concordia disconcordantium canonum* (bringing consistency among the inconsistent canons) to name an illustrious example.

Nor is his method *axiomatic deductive* as the systems of law of Hobbes or of ethics by Spinoza.

But his method is the *confrontation between deductively produced theorems with empirical observations stressing repeatedly that natural law is the law that make volitional or customary positive law valid and obliging.*

7 Perspectives: Is the Grotian Approach Still Relevant?

The application of mathematics to physics and civil and military engineering in the 16th and 17th centuries revolutionised warfare. In war between equals it was imperative to mobilise all available resources, scientists included. It is not unreasonable to point out that the application of mathematics to population statistics, health, education, productive capabilities and resources, and means of taxation was necessary to meet the rising costs of war. Alongside new technologies of administration appeared a growing awareness of nationalism and religion as means to obtain ideological support for bellicose activities.

In this paper I have examined the hypothesis about the relation between mathematics and international law of war and peace, leaving Grotius' theology and its significance for the law of war and peace for another occasion. The international law of war and peace presented an alternative to the mobilisation of societies to defence. Grotius performed this theoretical breakthrough amidst the 30 Years War between Protestants and Catholics.

Grotius broke with the medieval fusion of Aristotelianism and Christianity and like his contemporaries in mathematics, he grounded his theory on minimalist

axioms. He did not reject the modern way of thinking; rather he embraced it and put it to constructive use as foundation for his theory about the normative relations between states.

His theory was and is controversial. The opposed theory of international relations is the so-called 'realist' theory of international relations. Realists see his theory as naïve and idealistic. At the end of the day only crude physical power counts.

Hobbes formulated the realist theory a few years after Grotius. Hobbes held that the state of nature is a-moral and a-legal and only self-interest reigns. Everyone is free to grab everything and only fear of retaliation by others will lead the prudent to restraint. There is really no difference between means of defence and of attack in so far as both may be seen as threatening; countermeasures are imperative; armaments must spiral and armament costs will frustrate the satisfaction of appetites. Hobbes held that this logic must lead rational agents to create by contract a sovereign monopoly on physical force. Hobbes held further and in opposition to Grotius that international relations must remain an a-moral state of nature. It is not very clear how or why Hobbes arrived at this position.

Most often the relevance or irrelevance of the Grotian approach is argued in terms of whether international relations are best described as a lawless Hobbesian world or as a moral-legal Grotian world. This debate, however, misses the point of the axiomatic-deductive method of international law.

The debate over whether the world of international relations is best described as a Hobbesian lawless anarchy or as a Grotian moral legal society is in itself an application of the Grotian approach. The empirical observations of shortcomings do not disprove the Grotian approach. Instead they demonstrate the various moral and legal shortcomings of the actors in international relations.

If we consider European international relations, including North America, the Grotian approach has by and large been a success. This underscores the soundness of his assumption of the natural moral-legal capacity of man and human societies. Norms of war have been established between belligerents and their uniformed armed forces and towards third parties. Since the WW II the two main pacts held each other in check by mutual fear (MAD) and even if the Western alliance threatened with pre-emptive strike on enemy territory, which is outlawed as aggression under the UN-Pact this has been on a verbal level only.

If we consider the global international relations, however, asymmetrical warfare has been going on all the time since the great discoveries in the 15th century. Even if the extension of nationhood to old and new states in the formal organisations of the League of Nations and the UN was a relative success for the building of a Grotian *world community*, the national sovereignty of states on the periphery of the global economy remains precarious.

Intervention and staging of coups d'etat in states in the 'spheres of influence' of great powers has been and still is the disorder of the day.

Technologies of aerial bombardments, rockets and steering systems nourish fascinating and dangerous illusions about the possibility of conducting war to punish wrongdoers with minimal risks to the executioner. It seems reasonable that neither airplanes and their crews nor the home bases can be hit back immediately. The targets of modern asymmetrical war are like sitting ducks.

Such warfare may be conducted for humanitarian reasons as former colonial wars were fought to spread Christianity and civilisation, but motives were and are mixed. Conquest and free access to the valuable resources of other nations were and are the tempting spoils of war.

The weakness of the Grotian approach in this respect is the notion of punitive war to which he expressed numerous reservations, but which he was not ready to dismiss from his system of law. Punitive war may easily be a pretext and it unavoidably hits the innocent, and is therefore unjust. War as proper self-help and duel is not.

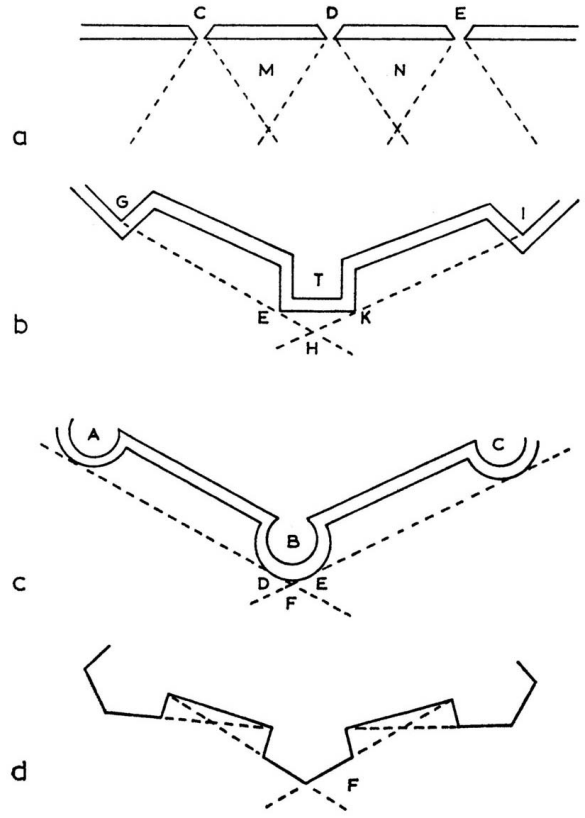

Figure 2. Genuine mathematical rationality was important in 16th century's changes of military practices. Around 1500 a new efficiency artillery called for re-design of fortifications. Simon Stevin's *Art of Fortification* from 1594 shows the evolution of the mathematical principles inherent in fortification, beginning with the high-medieval pre-fire-arms military castle (a) through the introduction of square protruding towers reducing dead angles (b), how this was improved by making the towers circular (c), and finally the system which lasted from Stevin's to Napoleon's times (d). Such innovations, together with the bookkeeping of Dutch commerce provides the background for Grotius' appeal to almost-mathematical reason. It might be interesting that the Latin translation of Stevin's *De havenvinding* of 1599 was by the young Grotius. [Acknowledgement: Simon Stevin's *De Stercktenbouwingh* (The Art of Fortification), 1594. Reproduced from Dijksterhuis, Simon Stevin - Science in the Netherlands around 1600, Martinus Nijhoff, The Hague 1970, p. 107]

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