

## Proportionality and quantitative justice. An introduction to the special issue

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### An introductory stopover<sup>1</sup>

Years ago, a well-known philosopher wrote an educational companion for his son. This book was intended as a moral guide for his son and to strengthen his awareness for the fundamentals of society as well. The philosopher's analysis was based on a utopia. The overall concept of his era and culture was 'harmony'. Harmony was first discovered in the movements of the moon, the stars and the seven planets known at that time. According to the very nature of harmony, the same concept had to be valid at all three stages: in heaven, on earth and in the underworld. The only possibility to express harmony was to use the language of geometry and conceptual equality. The philosopher's utopian world depended on people who had already found their place in the world. Utopia for him meant an ideal society with ideal people holding ideal social functions and positions; a perfectly shaped world, a perfect form—timeless, stated more philosophically a fixed, a being entity because none of its properties will change ever—it has no 'becoming' properties. One of the fundamental principles in his companion was justice. Unfortunately, neither he nor his predecessors were able to grasp this moral phenomenon; it was and still is rather complex. But he found an intriguing way to reduce its complexity to equality. Not our mathematical or formal equality, but a conceptual equality. Ever since, the world has employed the term equality when referring to justice or fairness.

The philosopher we are talking about is Aristotle, the Stagirite, author of *Nicomachean Ethics*, which is named after his son Nicomachos. In the fifth book of *Nicomachean Ethics*, he developed his

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<sup>1</sup> Here, we follow Bengez (2011) *Proportionalität und Quantitative Gerechtigkeit: Eine Einführung und Hinführung*. Switzerland: [www.Jusletter-it.eu](http://www.Jusletter-it.eu), weblaw AG, June 2011 where more information and a long list of references are provided.

concept of justice. Aristotle was a student of Plato who constructed a new concept in his late work *Nomoi*—the concept of proportionality. For Plato, numbers presented a way that enabled people to go back (or come very close) to the underlying true form (idea) of each entity. Nowadays, we would maintain that by using statistics and mathematical models as evidence we can trace the true underlying principles or causality. According to him, these ideas are not part of the real world, but something outside, something extramundane. His student Aristotle took a different approach to explaining the world. For him, it was not necessary to distinguish between pure form (idea) and matter (substance). Aristotle thought that in nature we would always find idea and matter as a real unit. Therefore, nature was something like a good and perfect reference for him. Thus, for him the best state was always a natural one. That explains why he distinguished between a natural and lawful justice. Despite the obvious differences to his teacher Plato, he shared his scepticism in respect of the perfectibility of man-made laws and their validity. This was probably the reason why Aristotle demanded that legal injustice be corrected by equity and moderateness.

Now, justice was reduced to conceptual equality and this equality had to be constructed according to harmony. Harmony in all spheres of being and between all beings was the ancient world view. Within the moral sphere, this meant avoiding extreme positions. Not minimum or maximum should be chosen, but something between these poles. The underlying idea concerning this concept was geometry and the sketched (real) line. To put it differently, the task was to find a good balancing point between the two ends of a finite line. One of those geometrical-harmonic procedures is well known as the golden section.

Since Aristotle, we use the following classification of justice (reduced to conceptual equality):

- a) *iustitia commutativa* (compensational justice) This could be illustrated best as accounting equation and idea that all people are equal before the law.
- b) *iustitia distributiva* (distributive or dispersive justice) This equality does not refer to a general equality (c.f. above), but to a specific purpose. An example could be the (general) wage agreement for public employees within the government.

For Thomas of Aquinas, this system was inadequate for a number of reasons. It is not clear, however, why he added a third item to the Aristotelian classification in the 13th century but we can at least identify two reasons: first, he recognized that the polis was an ideal society and people in the real world had to be responsible for the whole, otherwise the state would collapse. And second, maybe his idea was influenced by the old oriental and (ideal) Jewish concept of dividing a burden among the whole society. In contrast to the relative concept based on the proportionality system (per share), they assigned a burden per capita (absolute). Thomas of Aquinas' concept can be read (or interpreted) as a moderate form of this old oriental (and/or Talmudic) concept because a state and especially its rules need the acceptance and active collaboration of its members. In other words, people have to follow and accept the regulations. Therefore, he added

- c) *iustitia legalis* (justice conforming to the law)

to the Aristotelian classification. For most of the scholars and philosophers, this completed the classification of justice.

## 1. Measures, more measures, fair measures and general principles

Justice and fairness are wonderful concepts, but both are based on emotions and comparison (measurement). The well-known emotion of being treated in an unfair way can be seen as the

original, but we can go back further and identify that this emotion is rooted in the fear of social exclusion.<sup>2</sup> In our everyday life, there occur many situations in which we compare situations, entities and values. These results are assessed and listed. We use different measures and principles that generally do not follow any hard mathematical definition: These are social measures that differ considerably according to culture, society and era. If we have to evaluate complex situations, we are usually confronted with different measures. Lothar Philipps has given a good example in his article on unification of competitive principles,<sup>3</sup> others can be found in the Talmudic literature or in our forthcoming study. One of the open questions is: if there are so many different measures and principles, what do they have in common? Is there really a unique principle covering proportionality and non-proportionality-related concepts? And what about the obvious lack of the Aristotelian–Aquinian system and its inelasticity? Can we include their dynamic factors, the so-called driving principles?

## 2. The aim of the conference and future concepts

We certainly cannot provide an exhaustive answer to these questions. Going through historical and empirical studies dealing with these questions, however, helped us find a kind of minimal theory covering the static properties of both Aristotelian–Aquinian and non-proportionality-based principles (measures) of justice and fairness. We also identified some dynamical parameters and these could be the basis for an empirical, socio-scientific approach. In 2009, we started to present our results step by step and discovered not only a vivid interest in our findings and the issues but also the need for an interdisciplinary discourse.

In 2010, we started with a conference in Munich from which we learned a lot, especially which kind of practitioners and professionals from all over the academic world we would like to discuss the topic with. In 2011, we crossed the European borders and could welcome many participants from North America. In other words, this year we have become really international. In 2012, our conference will take place in Lisbon and some Chinese colleagues and e.g. the IRC will be our guests as well and we hope to broaden our cross-cultural understanding and discussion.

Our conferences aim at developing an open interdisciplinary discussion addressing legal and ethical issues through formal and quantitative models and their computable implementations because quantification promotes not only comprehensibility and computer-based applications, but also communication between cultures and disciplines. As mentioned above, its roots can be found in different cultural traditions. We particularly want to focus on proportionality and cross-cultural concepts of justice and fairness and investigate the extent to which formal and quantitative models are resilient on issues pertaining to balancing interests and values of different individuals, social groups and institutions as well as to balancing different sources of information in different legal, political or social contexts. In general, our conferences address the use of formal and quantitative methods in connection with:

- Ethics, moral theories and theories of human rights (e.g. assessment of harms and benefits to other persons; quantitative models of justice and fairness)

<sup>2</sup> This is not only related to human beings but also to certain animals. We will publish these results in July/August.

<sup>3</sup> Lothar Philipps (2009) *Die Vereinigung konkurrierende Prinzipien der Gerechtigkeit - Zu einem Text von Erich Fechner*. In: *Auf dem Weg zur Idee der Gerechtigkeit: Gedenkschrift fr Ilmar Tammello*. (Hrsg) Jakob R. et al. Mnster: LIT Verlag 2009.

- Legal theory (balancing rights and duties; formal and quantitative models of legal argumentation/justification)
- Law (quantification and the application of the law, e.g. compensation for economic harm, for pain and suffering; criminal punishment and deterrence)
- Analytical philosophy (ontology and metaphysics of quantification)
- Science, technology and legal responsibilities (neurosciences and the measurement of the mind, assessing environmental and human impacts of dangerous technologies, responsibilities of scientists)
- Mathematics and computer science (mathematical and computational approaches to model justice and fairness, e.g. game theory, geometry, fractals, etc.)
- Evidence (mathematical and statistical analysis of factual inferences in trials; burdens of persuasion and proof)
- Economics (economic and decision-theoretic models of justice and fairness)
- Medicine and health care (e.g. measuring the quality of medical care; allocating medical resources, etc.)
- Theology (views in Buddhism, Christianity, Islam, Judaism, etc., on quantitative aspects of justice and fairness).

Within these general issues we focus *inter alia* on aspects of ‘proportionality and (quantitative) justice’ such as the following:

- The emergence of the ideal of proportionality in different philosophical, religious and legal traditions
- Teleological arguments, goals, values and deontology in legal and moral thinking
- Multicriteria decision-making and social choice
- Quantitative and non-quantitative models of proportionality
- Proportionality in distributive and corrective justice
- Balancing rights and values in moral and legal reasoning
- Proportionality and judicial review
- Proportionality and the assessment of evidence
- Proportionality and justice in tort and criminal law.

### 3. Contributions to this special edition

Based on these concepts, we founded a group ([www.quantius.org](http://www.quantius.org)) that will go online with a professional website in August 2011. This website shall become the home of the quantitative methods, justice and fairness network. It is dedicated to putting emphasis on revealing hidden and/or used

quantitative methods in practice to make them comprehensible, and open them to a broad discussion (c.f. e.g. Peter Tillers' paper). Furthermore, we think that the reflected use and application of such methodologies can help us provide a stable and fair society by avoiding discrimination (c.f. e.g. paper by Joseph Gastwirth et al.). We will follow Vern Walker's suggestion to work together on concrete topics to focus our interdisciplinary qualifications and viewpoints to avoid becoming lost in vagueness.<sup>4</sup> One suggestion would be to work on the nature of arguments. Because of different reasons, industrialized countries intend to develop semi-autonomous systems, i.e. decision-making bots. But how should we teach them to make moral or good decisions if we do not have a comprehensible idea about our own argumentation structures? Scott Brewer's paper provides an analytical approach to arguments made by humans. This could be the basis for developing a framework for analysing arguments by machine as well as a framework for empirical investigations in the changes of accepted argumentations. The first steps of the latter we can learn from Tiscornia and her colleagues. They investigated the changes in the perception of justice in legal practice in Italy. An idea how we could formalize and combine arguments and motives has been given by Douglas Walton. Using his work might enable us to close the gap between empirical investigations and machine education.

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