



# The Tree of Knowledge Theories of Sciences and Arts in Central Europe, 1400-1700

**BOOK OF ABSTRACTS**

Faculty of 'Artes Liberales' | University of Warsaw  
28–29 May 2015

**Organizers:**

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# The Tree of Knowledge: Theories of Sciences and Arts in Central Europe, 1400-1700

## SEMINAR SCHEDULE

Thursday | 28 May

### I. Morning session

Venue: Faculty of “Artes Liberales”, Nowy Świat 69, staircase B, 4<sup>th</sup> floor, conference room

10:00–10:15 Official welcome

#### 10:15–11:45 Panel 1: *Space, Objects and Production of Knowledge*

Chair: Simon Burton (University of Warsaw)

Susanne Beiweis (University of Vienna), *Magical Objects as Instruments of Knowledge in Marsilio Ficino's De vita*

Yanan Qizhi (Pennsylvania State University), *Spectacular Knowledge: The Use of Theatrical Spaces in Early Modern Kunstkammer*

11:45–12:15 Coffee break

#### 12:15–13:45 Panel 2: *On the Concept of Method*

Chair: Wojciech Ryczek (Jagiellonian University, Kraków)

Sandra Bihlmaier (Karlsruhe Institute of Technology), *Melanchthon's Concept of Method and its Conversion to Ramism: A Late Sixteenth Century Endeavor*

Daniel Heider (University of South Bohemia), *The Notitia Intuitiva and Notitia Abstractiva of the External Senses in Second Scholasticism: Suárez, Poinsoot and Francisco de Oviedo*

13:45–15:00 Lunch break

## II. Afternoon session

Venue: Faculty of “Artes Liberales”, Dobra 72, floor -1, conference room

### 15:00–16:30 Panel 3: *Between Ramism and Anti-Ramism: Bartholomaeus Keckermann and his Thought*

Chair: Michal Choptiany (University of Warsaw)

Stefan Heßbrüggen (Higher School of Economics, Moscow), *Keckermann on Studying History Philosophically*

Wojciech Ryzek (Jagiellonian University, Kraków), *Lectio difficilior: Keckermann on Allegory*

### 16:30–17:00 Coffee break

### 17:00–18:30 Panel 4: *Theories of Knowledge in Practice*

Chair: Stefan Heßbrüggen (Higher School of Economics, Moscow)

Lucie Storchová (Czech Academy of Sciences, Prague), *Paginarium for School Needs: Reception of Ramism at the University of Prague after 1600*

Michal Choptiany (University of Warsaw), *Danzig readers of Ramus and Ramists: Keckermann & Co.*

Friday | 29 May

## III. Morning session

Venue: Faculty of “Artes Liberales”, Nowy Świat 69, staircase B, 4<sup>th</sup> floor, conference room

### 9:00–10:30 Panel 5: *Method and Epistemology*

Chair: Susanne Beiweis (University of Vienna)

Matthias Mangold (Evangelical Theological Faculty, Leuven), *Lux et testimonium Dei in hominis mente: The Concept of Conscience and its Formative Role in the Cartesian Epistemology of Johannes Braun (1628–1708)*

Andrea Strazzoni (Erasmus University, Rotterdam), *The Hidden Presence of Ramism in Early Modern Dutch Philosophy*

### 10:30–11:00 Coffee break

**11:00–13:00 Panel 6: *Method and Metaphysics – A Longue Durée?***

Chair: Daniel Heider (University of South Bohemia)

Simon Burton (University of Warsaw), *Scholastic Realism and the Transcendentals: The Influence of Julius Caesar Scaliger on Early Modern Ramism*

Audrey Borowski (University College London), *Leibniz's Mathematico-Ontological Method: Transfiguring the Infinite into the Finite*

Hayo Siemsen (University of Applied Sciences, Saarbrücken), *The Long-Term Empirical Relevance of Ramus' Ideas: Comenius, Mach and Genetic Education*

**13:00–14:00 Roundtable discussion**

Chairs: Simon Burton & Michal Choptiany (University of Warsaw)

*"Ye shall know them by their fruits": Research Perspectives on Medieval and Early Modern Sciences and Arts*

# The Tree of Knowledge: Theories of Sciences and Arts in Central Europe, 1400-1700

## ABSTRACTS

Susanne Beiweis (University of Vienna)

### **Magical Objects as Instruments of Knowledge in Marsilio Ficino's *De vita***

In the 15th century theories of magic were an integral component of astrological, medical and natural philosophical discourses. Magical concepts in particular experienced a theoretical and philosophical rebirth through Marsilio Ficino's *De vita libri tres* ("The Three Books on Life"), published in 1489. With more than twenty-six editions in the following one hundred and fifty years, it became a 'bestseller' of its time and established the tradition of scholarly Renaissance magic. Based on the ancient theory of universal sympathies and antipathies, Ficino described in *De vita* the medical and therapeutic effects of natural objects, such as herbs and stones, on the *spiritus* which links the body to the soul. Besides his account of natural magic, Ficino also handled the artificial fabrication of magical images like talismans, which allowed humans to draw down the rays of planetary constellations and to manipulate their effects. Ficino revitalized and textualized not only classical and medieval magical theories, syncretising them with Platonic, Neo-Platonic and Aristotelian-Scholastic teachings, but he also combined them with technical achievements of his time, such as the planetary clock. The physical and mental visualization of these magical artefacts and scientific objects, by which they became instruments of knowledge, were meant to open up a new epistemological approach to reality. But Ficino recognized an apparent contradiction between the Christian doctrine and the aims of talismanic magic. Therefore, he sought to reconcile these different ancient and medieval magical theories with the teachings of his cultural environment. In my presentation I will analyze Ficino's synthesis of different and ambiguous natural philosophical, artificial and magical theories and how it provided an impulse for a new scientific knowledge in the following centuries.

Sandra Bihlmaier (Karlsruhe Institute of Technology)

## **Melanchthon's Concept of Method and its Conversion to Ramism: A Late Sixteenth-Century Endeavor**

My paper deals with the emergence of Philippo-Ramism in late sixteenth-century Germany. In particular, it focuses on certain pieces of doctrine in Melanchthon's *Erotemata Dialectices*, which were also emphasized by his successors in their attempt to link Ramist methodology to their master's view on the subject. By extracting particular fragments of Melanchthon's dialectics – his views on the definition, structure, purpose and object of dialectics, as well as his concept of method – and comparing them to their renderings in the work of the German Philippo-Ramists, I intend to trace the development which the understanding of dialectics underwent after Melanchthon's death, especially in the process of the assimilations of Ramistic doctrine.

First, I argue that Melanchthon's reframing of the central parts of Aristotelian logic determined his successors to bring together his teachings with those of Petrus Ramus. Melanchthon believed dialectics to be an innate ability or at least to stem from the natural ability of the intellect. He understood dialectic as a fundamental science leading to the principles of all other arts, he emphasized its independence from any scholastic 'substantialist ontology' and highlighted its practical orientation. These are some of the elements that are pointed out by Johannes Riger and Paulus Frisius, when they explicitly compare the views on dialectics of Melanchthon and Ramus, arguing for the essential compatibility of the two. Sleutner and Buscher mingle the two doctrines eclectically in an attempt to show that Ramus only brought to fulfillment what Melanchthon had started.

Second, since their compilations also imply the toning down or the complete disregard for the differences between the two views, I show that doctrinal differences, such as those concerning the disposition of dialectics and the assessment of dialectical method have been either dealt with by an attempt to argue for substantial agreement of the doctrines or by preferring one view over the other. These attempts shaped the way in which the discipline of dialectics and its purpose was understood in the Protestant schools at the end of the sixteenth century. They also disclose some of the inner-theoretical reasons why Ramistic doctrines were assimilated in a Lutheran setting.

Audrey Borowski (University College London)

## **Leibniz's Mathematico-Ontological Method: Transfiguring the Infinite into the Finite**

In the preface to his *Theodicy*, Leibniz described the problem of the composition of the continuum which made up the contingent world – and beneath it, that of infinity – as one of the ‘two famous labyrinths’. For how was man to understand reality, reconfigured as dynamic and infinitely unfolding, from his finite standpoint?

To solve this problem, Leibniz formulated his mathematical Law of Continuity, which is most clearly formulated in his *Cum Prodiisset* in 1701: ‘In any supposed continuous transition, ending in any terminus, it is possible to institute a general reasoning, in which the final terminus may also be included’. In his 1702 letter to French mathematician Pierre Varignon, Leibniz reiterated the idea that ‘the rules of the finite are found to succeed in the infinite’.

The aim and genius of this mathematical method lay in the possibility it offered through the recourse to fictions of transfiguring and expressing the infinite into the finite, the complex into the simple, thereby making it accessible to man. Leibniz's work on calculus and infinitesimals are some of the most striking examples of this.

Leibniz did not confine his newly founded methodology to the realm of mathematics, but turned it into a general epistemological formalism applicable to a broad array of fields. This eventually culminated with his projects for a *scientia generalis* and a universal characteristic.

Ultimately, such a methodology found its justification in the very structure of contingent reality itself. According to Leibniz, the contingent world unfolded logically and therefore ‘homogonously’, in a process of continuous change whereby one species naturally ‘vanished’ into its opposite whilst upholding ‘the permanence of the same reason’.

Leibniz is, all too often, regarded as an antiquated thinker, whose work, steeped in a predominantly medieval mindset, is riddled with contradictions and insurmountable paradoxes. I would like to offer a fresh take on his work and the spirit which suffused it.

Leibniz's view of the world – and the epistemological tools we should use to decipher it – was a thoroughly dynamic one: a continuum in which apparent multiplicities concealed unity, and which, in spite of what mainstream scholarship



would have us believe, admitted of no stark dichotomies or insuperable conundrums.

Simon Burton (University of Warsaw)

## **Scholastic Realism and the Transcendentals: The Influence of Julius Caesar Scaliger on Early Modern Ramism**

Recent studies of Ramism and its reception in early modern Protestant Europe have argued for the intimate relation of pedagogical, philosophical and theological dynamics in its uptake. It has become clear that Ramism was intended not only to provide an easy and compendary route through the disciplines, but also, in so doing, to sanctify the minds and hearts of young students and orient all their studies towards God. This spiritual dimension became embodied in Ramism's Realist claim to reflect both the external world and the divine Wisdom that patterns it. While the general contours of this claim are becoming increasingly well known, particularly due to the work of Howard Hotson and others, its metaphysical underpinnings have not been the subject of detailed discussion since the work of Perry Miller and Keith Sprunger.

Extrapolating from Ramus' own marked hostility to metaphysics it has often been assumed that Ramism as a movement was intrinsically anti-metaphysical. In fact, in the later sixteenth and seventeenth centuries we find a complex discussion within the broader Ramist movement over the relation of logic to the external world. Within this discussion the thought of Julius Caesar Scaliger played an important role. While Scaliger himself was hostile to Ramism, his own blend of scholastic and humanist thought clearly proved attractive to many Ramists under pressure to justify their own logic. In particular, both Scaliger's moderate Realism and his doctrine of the transcendentals became highly influential.

My paper will seek to trace the main lines of this influence from Amandus Polanus von Polansdorf and Rudolph Goclenius the Elder through to Richard Baxter and Jan Amos Comenius. In doing so it will show how the kind of Scotistic Realism espoused by Scaliger became crucial to the attempt to relate Ramist logic to Aristotelian scholastic logic and metaphysics. Fascinatingly, through an alliance with Lullist principles, it also helped to engender a new Trinitarian method, something which is implicit in Polanus but became fully explicit in Baxter and Comenius. At the same time it is clear that not all Ramists welcomed Scaliger's influence or the attempt to differentiate logic and metaphysics. In this way the

uptake of Scaliger may point to important differences between pure and post-Ramism, as well as between British and Continental approaches.

Michał Choptiany (University of Warsaw)

### **Danzig Readers of Ramus and Ramists: Keckermann & Co.**

The analysis of the reception of Ramist doctrine by means of analyzing marginalia left by early modern readers, both scholars and students, has become thus far a well-established mode of research. The studies created to date have allowed scholars to get a partial glimpse of the procedures that took place in Ramist classrooms and of the way in which the textbooks and commentaries to classical literature produced by Ramus, Talon and their, by no means always entirely orthodox, followers were used. This bottom-up perspective can still shed some light on the winding paths through which the doctrine of Parisian scholars was spreading across early modern Europe and the way in which it interacted with other intellectual traditions.

This paper is aimed at examining one of the chapters in the reception of Ramism in sixteenth- and seventeenth-century Danzig (Gdańsk). Taking as a point of departure copies of Ramist prints preserved at the Gdańsk Library of the Polish Academy of Sciences, I will show the way that they were annotated and used by Danzig-based readers and then make an attempt to show possible links between these documents and further intellectual developments.

One of the key figures for this paper will be Bartholomaeus Keckermann, an omnivorous polymath and professor in the Danzig Gymnasium Academicum, who incorporated elements of Ramist doctrine into his own logical system and methodology. I will show what modern scholars can learn about his way of reading Ramist prints and, most interestingly, what other trajectories can be drawn out from this material, i.e. what was the further impact of Keckermann's studies on the way he thought about logic and the systematization of sciences, and how these ideas were later incorporated by his students. This last step will be illustrated by the rich legacy, in both print and manuscript, of Peter Crüger, a disciple of Keckermann's and also a professor of poetics and astronomy in the Danzig Gymnasium.

Daniel Heider (University of South Bohemia)

## **The *Notitia Intuitiva* and *Notitia Abstractiva* of the External Senses in Second Scholasticism: Suárez, Poinsoot and Francisco de Oviedo**

All that we know of nature, or of existence, may be compared to a tree, which hath its root, trunk, and branches. In this tree of knowledge, perception is the root, common understanding is the trunk, and the sciences are the branches.

Thomas Reid, *An Inquiry into the Human Mind. On the Principle of Common Sense* (Edinburgh: Millar, Kincaid & Bell, 1764), p. 424.

In my paper I shall focus on the way the second scholastics came to challenge and defend the experiential certitude of external sensory cognition, considered not only by Thomas Reid but also by the majority of the scholastics to be the root of the tree of knowledge. Much like the late medieval authors of the 14th century, such as William Ockham and William Crathorn, the Baroque scholastics *ex professo* approached the question whether the external senses (above all vision), as a kind of *cognitio intuitiva*, the nature of which is to apprehend the *hic et nunc* existent objects, can be – either naturally, or supernaturally – also of completely absent entities. In my presentation I bring in two contrasting scholastic positions treated in early modern scholasticism. One is proper to two ‘progressive’ Jesuits, namely to Francisco Suárez and Francisco de Oviedo – who under certain circumstances admit the possibility of perception of fully non-existent objects. The second pertains to the ‘conservative’ Dominican John Poinsoot, who unambiguously refuses this possibility. In my contribution I intend to compare the authors’ theories of mental (in fact, sensory) representation, based on their sharing the main assumption of the existence of the impressed sensible species (*species impressa*), with regard to the following two sub-issues: a) the ontology and the type of causality these intentional species generate in the production of a perceptual act, and b) the character of the endpoint (terminus) of sensation, or, in other terms, in regard to the question whether the cognitive acts of external senses produce, or not, the so-called expressed species (*species expressa*). Finally I plan to assess the given doctrines from the historico-epistemological point of view, i.e. I aim to establish whether they anticipate (and, if so, how they eventually reply to) the skeptical device of the *Deus deceptor*, which not many years after the publication of the philosophical texts of the abovementioned Baroque scholastics was employed by Descartes in his *Meditationes de prima philosophia*.

Stefan Heßbrüggen (Higher School of Economics, Moscow)

### **Keckermann on Studying History Philosophically**

The paper argues that some readers of Keckermann's *De natura et proprietatibus historiae commentarius* (1610) (Vossius, Wheare) misunderstood his position on the role of historiography in academic teaching. In fact, Keckermann did not deny the value of an education in history for younger students. In order to see why, we must first embed this specific debate in a broader context. The question whether moral philosophy should be taught to the young, originating in Aristotle's *Nicomachean Ethics*, sparked a comprehensive debate between defenders of Aristotelian orthodoxy and those who believed in the value of education in questions of moral philosophy regardless of age. Ramists (Talon, Scribonius, Goclenius) defend the value of moral education of the young unequivocally. Keckermann does not go against this Ramist consensus. He, too, believes that teaching moral philosophy to the young is beneficial. And he asserts that the study of history can make up for the lack of experiences typical for young students. The discipline is therefore indispensable for all students of the three Aristotelian disciplines of practical philosophy (ethics, politics, and the philosophy of the household, economics). But these students must first have received a thorough schooling in logic, because only the conceptual tools of logic enable them to process historical information in a meaningful way. History is thus useful in educating the young, but it only has value when combined with philosophical insights that direct the student towards the two main goals of education, knowing the world and living the good life. Keckermann's later readers failed to understand this, because they did not appreciate the systematic character of his philosophising.

Matthias Mangold (Evangelical Theological Faculty, Leuven)

### ***Lux et testimonium Dei in hominis mente: The Concept of Conscience and its Formative Role in the Cartesian Epistemology of Johannes Braun (1628-1708)***

Although recent decades have seen a considerable resurgence of interest in the early Dutch Enlightenment, scholars have given only a little attention to the so-called 'Cartesio-Cocceian movement' among theologians in the Netherlands in the later seventeenth century. According to notable intellectual historians (Jonathan Israel; Wijnand Mijnhardt), however, it was this 'movement' or 'school'

that exerted a formative influence on intellectual developments in the eighteenth-century Dutch Republic. Thus, in order to address this hiatus, the present paper focuses on the Groningen theologian and philosopher Johannes Braun (1628-1708), who ranks high among Cocceius' pupils and made no bones of his sympathies for Descartes' philosophy. More particularly, this paper will present an analysis of Braun's concept of *conscientia* against the background of the debates between the 'Voetians' and the 'Cartesio-Cocceians'. While the former group adhered to the traditional approach and terminology, the latter not only abandoned established scholastic distinctions, but also transformed the concept of *conscientia* into a central anthropological category. In his popular magnum opus *Doctrina foederum* (1<sup>st</sup> edition 1688, five editions up to 1711; Dutch translation 1694, four prints up to 1737) Braun discusses the human conscience in the context of the doctrine of God and in relation to the truthfulness of God. In line with Descartes' epistemological theory, he argues that man can attain indubitable knowledge by means of 'clear and distinct perception'. Unlike Descartes, however, he attributes this perception to human conscience, which is viewed as an infallible inner judge not only in matters pertaining to morals but also in questions concerning truth. Moreover, Braun applies a lot of effort to give his Cartesian epistemology a decidedly theological interpretation, to clarify misconceptions and to defend it against the various charges coming from his anti-Cartesian opponents. As it turns out, Braun's concept of conscience provides a fine example of the way in which Dutch theologians sought to accommodate Descartes' epistemological insights within their theological outlook and use them for their purposes. Moreover, it might also provide some new insights into the intricate question concerning the nature of the Cartesio-Cocceian alliance.

Yanan Qizhi (Pennsylvania State University)

### **Spectacular Knowledge: The Use of Theatrical Spaces in Early Modern *Kunstkammer***

In 1565, when Samuel Quiccheberg published the famous museological treatise entitled *Inscriptiones: vel, tituli theatri amplissimi*, his patron Albrecht V, the duke of Bavaria was building a *Kunstkammer* in his palace. From the very beginning, the history of *Kunstkammer* in early modern Germany reveals the interactivity between schematic construing of knowledge and the practice of princely collection. Furthermore, framing his project upon the idea of *theatrum*, Quiccheberg also

envisions the *Kunstammer* in terms of theatrical spatiality in the Renaissance context. Consequently, knowledge produced by the *Kunstammer* not only possesses an empirical outlook, but also becomes highly visualized, as if being displayed and performed in a theater. Recent Scholarship uncovers the Ramist traditions in the epistemological origin of Quiccheberg's museology, while attributing his pragmatic approach to knowledge to the utilitarian culture at Albrecht V's court. In this paper, I intend to reopen the discussion on early modern *Kunstammer's* visual accessibility and examine how Quiccheberg's grand design, as well as the Munich courtly museum's actual architectural layouts, speaks of the spatial characteristics of sixteenth-century theaters. I will argue that Quiccheberg uses the term *theatrum* not merely in a metaphorical and rhetorical sense, as a conceptual paradigm or a symbolic conception, but also as a working guideline for the construction and the management of the courtly museum. Moreover, the presence of theaters in the Wittelsbach court and the experience of watching plays also contribute to Quiccheberg's sense of space in *Inscriptiones*. Additionally, a comparison between Quiccheberg's work and other *theatrum* writings of his time will allow for further speculation on the use of theatrical spaces in the representation and production of knowledge in early modern Europe.

Wojciech Ryczek (Jagiellonian University, Kraków)

### ***Lectio difficilior*. Keckermann on Allegory**

The paper gives a detailed description and analysis of allegory (literally translated from Greek into Latin as *aliud dicere* – ‘speak something different’) in the rhetorical theory elaborated by Bartholomaeus Keckermann (*Systema rhetoricae*, Hanau 1608). The major purpose of the study is to discuss the nature, examples, forms and functions of allegory. According to humanists, ‘allegorical discourse’ (*oratio allegorica*) is one of the evident manifestations of ‘tropical discourse’ (*oratio tropica*) – speech consisting of many tropes. Drawing theoretical inspirations from classical and contemporary sources, Keckermann criticizes Quintilian's belief that irony is a kind of allegory and Talon's view that allegory may be considered as a figure of affectation. The analysis of Keckermann's dichotomous divisions in speaking of allegory (*unius tropi – diversi tropi, apertior – obscurior*), although not evident and clear at first glance, will elucidate his contribution to the Renaissance debate on tropes and figurativity.

The meaning of the formula spelling out the mechanism of allegory ('speaking something different') may be treated as a universal description of figurative language (as Quintilian says: *aliud verbis, aliud sensu* – 'one thing in words, another in meaning'). For the humanist from Gdańsk allegory is not an autonomous form of language, but a complex structure of many tropes. Indicating four tropical elements of allegory (metaphor, metonymy, synecdoche, and irony), Keckermann reminds us, although not in a direct way, of the relevance of Ramist doctrine for elaboration of these four master tropes.

Hayo Siemsen (University of Applied Sciences, Saarbrücken)

### **The Long-Term Empirical Relevance of Ramus' Ideas: Comenius, Mach and Genetic Education**

Is there a common influence of ideas from Petrus Ramus and ideas shaping modern science and science education, especially by Ernst Mach? According to A. Einstein ('Ernst Mach', *Physikalische Zeitschrift*, 17/7, 1/4/1916, 101–104) in his obituary on Mach, all the physicists of his generation have been influenced by Mach on an *erkenntnis*-theoretical level (theory of knowledge). Mach made their thinking about basic concepts more flexible by showing them, what is empirical and what is metaphysical (and thereby arbitrary) in their meanings.

Interestingly, Howard Hotson (*Commonplace Learning. Ramism and its German Ramifications, 1543–1630*. Oxford: Oxford University Press, 2007, p. 50) in his evaluation about the (for him) most important influence of Ramus and his followers makes a very similar observation:

Ramus and his followers came to perceive the disciplines far more clearly as systems of definitions and divisions, precepts and rules organized according to the logical rules of method, therefore ultimately independent of any authority, classical or modern, and formally superior to any works, which did not consistently apply such principles.

There is of course an obvious link between Ramus and Mach in education and scientific method, which is Comenius and his 'genetic' education. Already Comenius in his further development of Ramus' ideas observed, that one can improve learning by a factor of five. Today, one can observe an improvement of a factor of five to ten for empirical genetic education (see for instance H. Siemsen, 'Ernst Mach: A Genetic Introduction to His Educational Theory and Pedagogy',

in: Matthews, M. (ed.), *International Handbook of Research in History, Philosophy and Science Teaching*. Vol. III, Springer: Frankfurt (M.), 2014, 2329–2358; ‘The Transformation of Mind’, working paper 2015). This improvement is consistently replicable. It can be observed in dozens of cases, for top-level scientists as well as making science understandable for all learners (as in Finnish science education, see H. Siemsen, ‘Ernst Mach and the Epistemological Ideas Specific for Finnish Science Education’, *Science & Education*, 20 (2011), 245-291, or for the lowest 10% of students in Binet's intelligence test, see Siemsen, ‘Alfred Binet and Ernst Mach. Similarities, Differences and Influences’, *Revue Recherches & Éducatives*, 3/2010, 352–403).

Although there was no ‘statistical method’ at the time of Ramus, it is now possible to evaluate Ramus’ ideas empirically and compare them systematically depending on common basic elements. Modern adaptations of Ramism, such as ‘Schaume’s Outlines’ or the programming language of UML (Unified Modeling Language) clearly show that Ramism is not a historical phenomenon. Still today, its potential is not being fully understood and utilized.

The interesting research questions are therefore, where genetically Ramus' ideas come from and where else they might be observable from his time to today (and which *erkenntnis*-theoretical elements are common or not common in specific cases). Some educational phenomena are typical and unique for empirical genetic learning, which have been partly observed also at Ramus' times. This work will therefore focus not so much on the historical link of ideas between Ramus and Mach, but on the observable educational and scientific phenomena, which are unique for empirical genetic learning. Ramus was probably the first to enable such learning for everything by in principle everybody. To fully implement and develop this vision further remains today more necessary than ever.

Lucie Storchová (Czech Academy of Sciences, Prague)

### **Paginarium for School Needs: Reception of Ramism at the University of Prague after 1600**

The main goal of my paper is to discuss the ways in which Bohemian humanist scholars adapted Ramist models for educational purposes. With some exaggeration, we might, along with Ian Green, consider Bohemian humanists ‘second-class citizens and ‘denizens’ of the republic of letters’. If we set aside the unique intellectual network of Bohuslaus Hassisteinius in the first decades of the



16<sup>th</sup> century, it was not until the early 1550s when the first regular scholarly communication was established in the Bohemian lands. In the following decade, a literary field tied to the University of Prague emerged. A particular form of Melanchthonian Ciceronianism was practised within this field, which was apparently also typical for other Central European lands impacted by Melanchthon's school reform with its emphasis on drill, excerpting, memorizing and imitation. Under this influence, instruction at the University of Prague was oriented primarily toward the composition of occasional poetry, grammar and other elementary disciplines.

My presentation will cover a period after 1600 when – in connection with the university reforms of that time – classes on natural and moral philosophy became more common and Bohemian scholars tried to develop a new methodology of structuring knowledge and of teaching. Ramism was reflected not only in the textbooks and grammar manuals, but also in theses written by students themselves. In my paper, I will discuss first attempts to translate Ramus into Older Czech (Simon Gelenius) and 'average' student works reflecting Ramist models written by Samuel Sabatecius and Venceslaus Ripa. It is precisely the 'average level' of school humanism in Bohemia which provides a stimulating model of analysis of how Ramism developed in Central and East European regions.

Andrea Strazzoni (Erasmus University, Rotterdam)

### **The Hidden Presence of Ramism in Early Modern Dutch Philosophy**

The aim of this paper is to unveil the presence of Ramist methodology in early modern Dutch philosophy between 1630 and 1690: in particular, in the natural-philosophical method and in the logical theories of the Dutch Cartesians. For this purpose, I will analyse three cases of philosophers who variously embraced a Ramist methodology:

I) Henricus Regius, who developed a Cartesian physics even before the appearance of Descartes' *Principia Philosophiae*, whilst grounding his theories, instead of on Descartes' 'metaphysical' demonstrations, on definitions and divisions bearing witness to the Ramist method of dichotomies (cf. T. Verbeek, *The Invention of Nature. Descartes and Regius*, in S. Gaukroger, J. Schuster and J. Sutton (eds.), *Descartes' Natural Philosophy*, London: Routledge, 2000, pp. 149–167).

II) The case of the *novantique* logic of Johannes Clauberg, aiming at integrating the Scholastic logic systematized by Bartholomaeus Keckermann with

Descartes' method. In his attempt, he adopted a division of logic between *genetica* and *analytica* inherited from the Ramistic tradition (cf. M. Savini, *Johannes Clauberg: methodus cartesiana et ontologie*, Paris: Vrin, 2011, pp. 197–208).

III) The critique of Johannes de Raey of the philosophical value of Ramist logic, and, at the same time, his maintaining the use of such logic in practical disciplines (medicine, law and theology), as these deal with notions based on experience, witness and 'beings of reason' instead of pure ideas (cf. A. X. Douglas, *Spinoza and Dutch Cartesianism. Philosophy and Theology*, Oxford, Oxford University Press, 2015, p. 59).

Eventually, I will be able to argue that Ramism had not just the function of bridging the gap between various philosophical traditions (i.e. in integrating Descartes' theories with other philosophical alternatives) but also played a more substantial role in Dutch academies. In fact, 1) it represented a viable alternative to Descartes' methodology in physics, 2) served as the backbone of a new logic, and 3) maintained its instrumental role for academic disciplines.



