Reasoning and Representation with Diagrams

History and Philosophy of Science and Technology in East and West

Program

24th-25th November 2016
Café Socrates, National Tsing Hua University
Taiwan

REASONING AND REPRESENTATION WITH DIAGRAMS: HISTORY AND PHILOSOPHY OF SCIENCE AND TECHNOLOGY IN EAST AND WEST

November 24-25, 2016
Café Socrates at National Tsing Hua University, Hsinchu, Taiwan

Program

	11/24 (Thu)		11/25 (Fri)
0830-0900	Reception		
0900-0950	**Inducing Visibility vs. Visual Deduction** Mary Morgan	0900-0950	**Design of Empires: Drawings and Sketches at the Qing Court** Dagmar Schäfer
0950-1030	**Visual Idealization** Hsiang-Ke Chao	0950-1030	**Forms and Visuality: Reflections on Traditional Chinese Conventions of Picturing Machines** Hsien-chun Wang
1030-1050	Break		
1050-1135	**Visualising Ignorance** Marcel Boumans	1050-1135	**Diagrams ≠ Pictures ≠ Maps** Rasmus Winther
1135-1220	**How to Determine Your Own Fate? Moral Accounting and the Choice of a Destiny in Life** Harro Maas	1135-1220	**Representations of Military Tactics in Art of War manuals of Early Modern Europe** Federico D'Onofrio
1220-1340	Lunch		
1340-1430	**Revisiting the Use of Colors in Diagrams from Chinese Sources: Song-Yuan Writings on Equations** Karine Chemla	1340-1425	**Authentic and Reconstructed 'Historical' Maps for Elucidating the Early Chinese Terrestrial Descriptions** Vera Dorofeeva-Lichtmann
1430-1510	**The Procedure of the *Section of Pieces of Areas* in Li Ye and Yang Hui's Works: Genealogy of Diagrams and Equations** Charlotte Pollet	1425-1510	**Diagrams in Japanese Studies: The Case of Gyoki-type Maps as the Model of Visual Representation of Japanese Archipelago in East Asian and Western Cartography** Ekaterina Simonova-Gudzenko
1510-1530	Break		
1530-1615	**Images of Counting Instruments in Mathematical Traditions of East Asia** Alexei Volkov	1530--	Discussion and Exchange (Hsien-chun Wang)
1615-1700	**The Best of Both Worlds? The Uses of European and East-Asian Geometrical Diagrams in the Late-17th and Early-18th Centuries in the Case of Cho T'ae-Gu (1660-1723)** Jia-Ming Ying		**Conference Ends**
1800	**Conference Dinner**		

International Conference

Reasoning and Representation with Diagrams:

History and Philosophy of Science and Technology in the East and the West

Participants and Presentation Titles

Visualising Ignorance
Marcel Boumans
Utrecht University

Visual Idealization
Hsiang-Ke Chao
National Tsing Hua University

Revisiting the Use of Colors in Diagrams from Chinese Sources: Song-Yuan Writings on Equations
Karine Chemla
CNRS & University Paris Diderot

Representations of Military Tactics in Art of War manuals of Early Modern Europe
Federico D'Onofrino
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Authentic and Reconstructed 'Historical' Maps forElucidating the Early Chinese Terrestrial Descriptions: The South-North Division Along the Han River in the *Rong Cheng shi* Manuscript (late 4th century BC) Viewed from the Song&Ming 'Historical' Cartography and the Reconstruction of the *Shanhaijing* Topography by Wang Chengzu (1982)
Vera Dorofeeva-Lichtmann
CNRS-EHESS/IKGF, Erlangen-Nürnberg

How to Determine Your own Fate? Moral Accounting and the Choice of a Destiny in Life
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Inducing Visibility vs. Visual Deduction
Mary S. Morgan
London School of Economics
University of Amsterdam
University of Pennsylvania

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Images of Counting Instruments in Mathematical Traditions of East Asia
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Jia-Ming Ying
Taipei Medical University

Abstracts
24th November 2016

Inducing Visibility vs Visual Deduction

Mary S. Morgan
London School of Economics
University of Pennsylvania

This analysis of scientists' use of diagrams begins by looking at two types of practice. One focuses on the way scientists work with visually portrayed patterns of statistical data to infer something about the behaviour of things scientific – a project which goes back to the early 19th century and became serious in the early 20th century. The other considers the way scientists reason deductively with diagrams, a practise that began in the late 19th C and continues through today. Ostensibly different, both are concerned with the active ways in which economists 'see' things in, and with, diagrams. But they overlap more than this simple dichotomy suggests: both practices required considerable economic imagination and conceptual categories; both practices involved figuring out keys that would link imagined objects to things in the world; both practices depended upon a certain repleteness in diagrams - beyond simplicity - to create fruitful tools of visualization.

Visual Idealization

Hsiang-Ke Chao
National Tsing Hua University

Idealization has been well discussed in the philosophy of science literature since the emergence of accounts for scientific models in the 1980s (Cartwright 1983, Giere 1988, McMullin 1985, Nowak 1980, Wimsatt 1987). It is argued that models are idealized in which the only selected aspects of the real world are included in the model. When models are regarded as representations, they are justified by the purpose that the model-builders use them to achieve. In particular, Morgan (2012) argues that model-making understood as a process of selecting, synthesizing, and transforming elements, which can be understood as a series of idealizations. Scientists can apply processes of idealization not only to some quite well-formed materials they already have in hand but also from a more complicated description and exaggerate from a representation already available. That us they are *re-made versions* of a world.

The case in study is G. William Skinner's seminar work on marketing and social structure in rural China (Skinner 1964, 1965a, 1965b). Skinner adopted the "central place theory" developed by German geographical economists Walte Christaller and August Losch in the early 20th century. The central place theory states that at different sized cities serve different functions in the shape of a *hexagon*, in which the largest city is at the center surrounded by smaller towns and villages. The central place theory provide a *diagrammatic model* illustrating how settlements locate in relation to one another, and explaining the reasons behind the distribution patterns and numbers of cities and towns. Accordingly, Skinner (1964, 1965a) use the model to explain the Chinese marketing area in Szechwan. His three models, from factual to abstract, illustration of spatial system of such an area, depicts 19 market towns 35-90 km northeast of Chengtu. We could explain Skinner's methodology as an attempt of idealizing economic landscape.

The research questions are the following: (1) What are Skinner's idealization, historically and methodologically. (2) How does Skinner use the hexagonal diagrammatic models to reason and justify his explanation for the marketing structure of rural China. (3) How does Skinner's case can be generalized as a theory for rural China as a whole.

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Visualising Ignorance

Marcel Boumans
Utrecht University

Since 1996, the *Bank of England Inflation Reports* include "fan charts" that shows distributions of uncertainties around inflation projections. These charts are actually quantitative representations of Knightian uncertainties, and are arrived at by a "subjective assessment" of the members of the Bank's Monetary Policy Committee. This assessment is the calibration of three key parameters of a two piece normal distribution, its mode, variance and skewness. Although the sources of uncertainties are countless and vary in nature, uncertainty is homogenised by a calibrated normal distribution. To better understand this specific epistemic activity, this paper will discuss the associated "ontological principle" that enables this activity and makes it intelligible (Chang 2009), namely the "principle of the equal distribution of our ignorance" (Hanson 1969).

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How to Determine Your Own Fate? Moral Accounting and the Choice of a Destiny in Life

Harro Maas
University of Lausanne

In my contribution I will look at the use of diagrammatic tools in self-control and regulation. Though I would love to include the ledgers of merit and demerit that were popular in China in the sixteenth and seventeenth century, I will limit myself to an area and period that I can claim some familiarity with, eighteenth and nineteenth century Britain and America. In particular, I will look at the use of tabular accounting tools to regulate one's moral economy, i.e. one's individual, social, and financial self. Such tools could range from Benjamin Franklin's moral table (which resembled to some extent the Chinese ledgers), Franklin's moral algebra, tables for phrenological self-assessment, to household accounts. I will investigate to what extent such tools necessitate to rethink individual deliberation as a back-and-forth between tools and the self, which will have consequences for contemporary theories of rationality.

Revisiting the Use of Colors in Diagrams from Chinese Sources Song-Yuan Writings on Equations

Karine Chemla
CNRS & University Paris Diderot

In a first article, published in 1994, I had addressed the issue of the meaning of colors as we see them used in pre-Tang visual auxiliaries evidenced by 3rd century mathematical writings. In this contribution, I would like to resume the work begun on the continuities and changes of visual representations in mathematics in China between the Han-Tang dynasties and the Song-Yuan by addressing how Song-Yuan mathematical texts attest to the use of colors. I will first deal with the problem of the critical edition of diagrams in this respect. I will then argue that colors are used in some respects as they were already used in earlier texts, and in other respects, in new ways. This will lead me finally to discuss how colors offer a basis for the use of diagrams in the context of reasoning.

The Procedure of the *Section of Pieces of Areas* in Li Ye and Yang Hui's Works: Genealogy of Diagrams and Equations

Charlotte Pollet
National Chiao Tung University

The study of algebra in China has often focused on the 'procedure of the Celestial Source' (*tian yuan shu*), which is used to set up polynomial equations. The geometrical ancestors of this procedure are less known. The *Yigu yanduan*, authored by the 13th century mathematician, Li Ye (1192-1279), however, presents the procedure alongside its two geometrical counterparts, the 'Section of Pieces [of Areas]' (*tiao duan*) and the 'Old Procedure' (*jiu shu*). The three procedures are known to represent three generations of algorithms to set up quadratic equations. A same geometrical procedure named 'Development of Pieces [of Areas]' (*yan duan*) appears in a treatise written by another mathematician, Yang Hui (second half of 13th C). Although the procedure looks similar to the Section of Pieces [of Areas], the two treatises emphasise different stages of its elaboration. The stage in the *Yang Hui suanfa* is a precursor to the one represented in the Section of

Pieces [of Areas]; however, interestingly, the 'Old Procedure' seems to predate the one in the *Yang Hui suanfa*. This study aims to make the geometrical procedure 'speak' about its genealogy. That is to say, to attempt the reconstruction of the evolution of the geometrical roots of the famous procedure of the Celestial Source. The construction of negative coefficients plays a pivotal role in this evolution. It also is possible to distinguish several layers of composition that reflect several episodes in the development of the quadratic equation with negative coefficients. In other words, this analysis raises a philological problem pertaining to the question of textual transmission and the nature of authorship.

Images of Counting Instruments in Mathematical Traditions of East Asia

Alexei Volkov
National Tsing-Hua University

The paper is devoted to visual representations of two counting instruments, the counting rods (*suanzi* 算子, *chousuan* 籌算) and the abacus (*suanpan* 算盤), found in mathematical treatises compiled in East Asia prior to the advent of Western-style mathematics. The former instrument is generally believed to be replaced in China by the latter in the first half of the second millennium AD, but remained in use in Japan and Korea for much longer. The role of the visual representations of these two instruments in mathematical treatises has never been given due attention by historians of mathematics. The goal of the present paper is to offer a preliminary discussion on three categories of images found in mathematical texts: (1) those representing configurations of counting rods, (2) those featuring positions of beads on an abacus in the course of computations, and (3) pictures representing individuals operating with the instrument(s). Diagrams of the two former types arguably were designed for educational purposes, and, most probably, were supposed to be used by the learners, yet it remains unknown whether the learners were supposed to reenact the operations described in the texts exactly as they were shown in the diagrams, or simple inspection of the provided diagrams would have sufficed; both options appear possible. It will be argued that, despite the conventional view, the diagrams showing counting rods can be found in Chinese mathematical texts produced as late as the mid-16th century, that is, at the time when, according to a number of authors, this instrument was generally replaced in China by the *suanpan*. As for the diagrams representing configurations of beads on abacus, it should be noted that they became especially widely used only relatively late, while early textbooks featuring abacus computation contained only descriptions of operations without depicting the configurations of beads. This phenomenon may have reflected a considerable change in the didactical practices related to teaching arithmetic, as well as a change of the audience targeted by the authors of these arithmetical manuals.

The Best of Both Worlds? The Uses of European and East-Asian Geometrical Diagrams in the Late-17th and Early-18th Centuries in the Case of Cho T'ae-Gu 趙泰耉 (1660-1723)

Jia-Ming Ying
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The years 1607 and 1723 mark two major publications of "Western" mathematics in East Asia: the translation of the first six books of Euclid's *Elements* in the early 17th century and the imperial canon *Shuli jingyun* in the early 18th century. Between the publications of these two texts, classical Chinese mathematical knowledge was largely, though not entirely,

unavailable for Chinese scholars. Meanwhile in Chosŏn Korea, mathematical methods and texts from the Song-Yuan periods of China were relatively well-preserved, so the mathematical texts written by Chosŏn scholars and by Chinese ones in the 17th and the early 18th centuries usually have different features, one of which is the applications of geometrical diagrams. Cho T'ae-Gu (1660-1723) was a Confucian scholar, high-ranking official and mathematician in Chosŏn Korea who wrote for beginners a mathematical text *Chusŏ kwangyŏn* 籌書管見 (Narrow View of Mathematical Text) in 1718 about the nine traditional branches of mathematics. Under Western influence, and also possessed the knowledge of Song-Yuan mathematics, Cho seemed to have freely used geometrical diagrams of different traditions to aid his argumentations in his work, especially compared to those written by Xu Gaungqi 徐光啟 (1563-1633), Li Zhizao 李之藻 (1565-1629) and Mei Wending 梅文鼎 (1633-1721). While staying neutral on the issue of the "best of both worlds," this paper argues that Cho intentionally used diagrams of the two traditions to fit different purposes in his arguments, thus demonstrating his educational concerns in his work.

Abstracts
25th November 2016

Design of Empires: Drawings and sketches at the Qing Court

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In a world connected by wires and wireless communication, the idea of digitizing artefacts seems mainly a technical challenge. Attempts to replicate material artefacts in a "near-to-perfect" state on the web hence discuss computer codings and 3D imaging, while ideas of organizing those unique items into databases beguiles by the promise of unconditioned, perpetual access. Traditional realia, linear in nature, when transferred to a more interactive and flexible medium, become "virtual realia", as Bryan Smith has named digital imaging efforts in 1997, as new educational technologies allow the academic and teacher to access culturally-based authentic materials all across the world. The question lingering in the room is then not only how far the "virtual" can really approximate or substitute the "real" 3D thing (or issue such as touch, smell, taste can be conveyed). Of equal is in our globalized world the issue of the objective/objectified view: do all "see" the same thing on the flat screen? This question was equally relevant in historical contexts with regard to the use of sketches or the real artefact. In bureaucratic procedures the Qing often used objects to convey ideals as much as technical or aesthetic information, but then again also resorted to sketches and diagrams. This contribution will follow up on this question by inquiring the role of three-dimensional artefactual exchange — the circulation of samples, templates or even one-to-one copies of artefacts — in the late Ming and early Qing state (17th century) in comparison to sketches (visual two dimensional representations) or diagrams (as synergized and abstracted information in a visual format). I am particularly interested in how meanings were preserved and technical information flows were designed, continued or changed, under changing political and social influence and which role did political rhetoric have on the validity of such technical „facts" in the process of circulating know-how?

Forms and Visuality: Reflections on Traditional Chinese Conventions of Picturing Machines

Hsien-chun Wang
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I would like to reflect on Chinese traditional drawing conventions of picturing machines. I do not follow the arguement that Chinese traditional conventions resemble their European counterparts long before the latter came into being. Nor do I agree with the suggestion that they were the manifestation of China's failure to have its own industrial revolution. I would like to examine the diagrams in the printed and hand-copied technological treatises between the seventeenth and nineteenth century to reflect on the visual and intellectual effects.

Diagrams ≠ Pictures ≠ Maps

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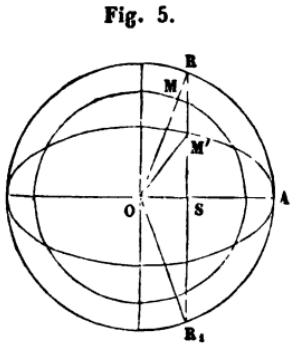
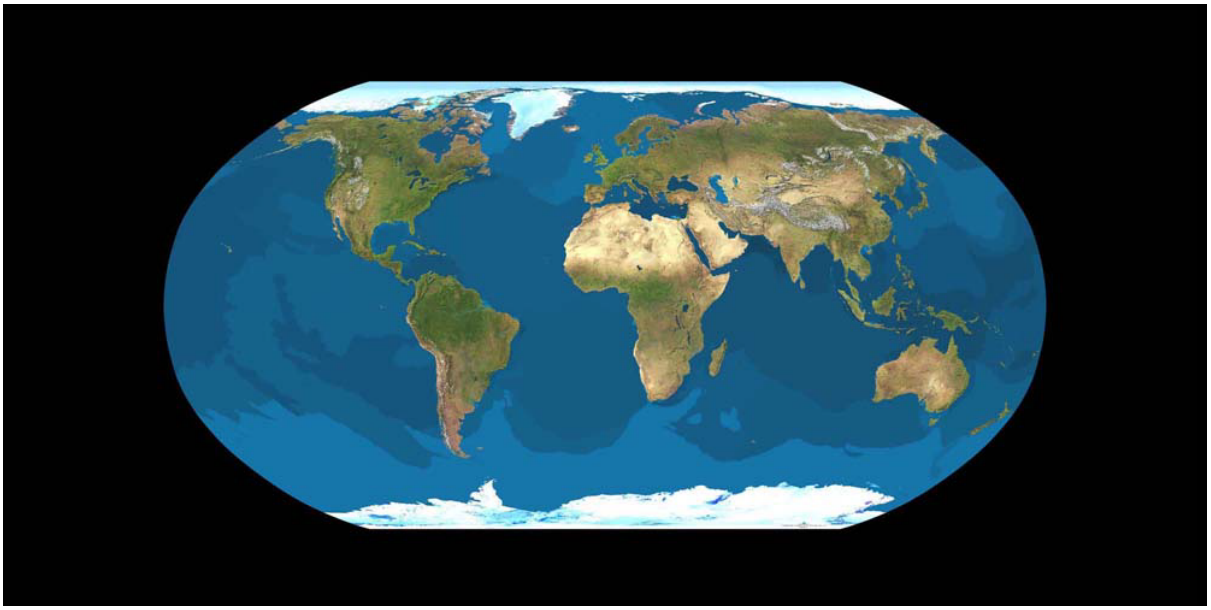
Visualization is crucial to amassing data and to generating models and theories across the sciences. Geometric proofs and biochemical mechanism sketches often involve diagrams. Electron micrographs and fMRIs are pictures. The United States Geological Survey and the China Geological Survey produce maps. Scientific visualizations abound. But important differences in the practices and representational content associated with diagrams, pictures, and maps require illumination. Diagrams are not pictures are not maps. Each is something other than the other. Even so, there can be representational multifunctionality in that diagrams or pictures can be "taken to be" maps, for instance via analogy.





Representations of military Tactics in Art of War manuals of Early Modern Europe

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Ever since the invention of the printing press, drawings and graphs were an essential part of European books on the art of war. Drawings and graphs conveyed to the reader crucial information on military tactics. In combination with text, they displayed the "orders of the battle", the battle's basic components. Commanders would then be able to recombine such basic components on the battlefield in order to win their battles, thus taking quick and successful decision. Military treatises and their engravings give us important insights in how

early modern Europeans understood the relationship between learned theory, experience, and practice.

In recent years, the graphic rendering of complex movements in disciplines such as dancing or fencing has attracted a significant amount of attention from historians of science, but military treatises of the early modern era remained an unexplored subject despite the wealth of engravings that usually enriched them. These often lavish publications were destined to a diverse world of readers, ranging from antiquarians interested in the reconstruction of the battles and military tactics of the past, to the soldiers themselves willing to reflect on their practice.

In my contribution I analyze some of the major treatises in early modern European art of war showing how graphs and drawings expressed the main concerns of the main military theoretician of the period. I start with the rediscovery or reinvention of Roman military tactics that took place in the early sixteenth century in Florence and Venice, underlining how the convergence of geometry and antiquarian studies favoured the adoption of the graphical tools already available to Byzantine military theoreticians. The Venetian architect Andrea Palladio played an extremely significant role by means of his graphical illustration of Roman and Greek books of military history (Caesar and Polybius). The key concept behind Palladio's battle scheme was the idea of "order" that he took from the Roman architect Vitruvius. At the end of the seventeenth century, French theoreticians concentrated instead on the idea of *coup d'oeil*, the ability to intuitively recognize the appropriate circumstances in which to apply the different tactical schemes. In response to these concerns, graphs became more complex and more abstract, by showing broad configurations of troops and depicting entire scenarios. In the course of the 18th century, instead, theoreticians increasingly looked to Newtonian physics for scientific foundations of tactics. The engravings that illustrate the *Memoires* of de Saxe and the countless works of Jomini (whose theories dominated the field of tactics until the First World War) show how tactics – and, increasingly, strategy – came to be conceived in terms of masses and forces.

The concepts of "order", "coup d'oeil", and "line of force", therefore, enable me to outline the development of the early modern European art of war. They also contribute to a renewed understanding of the way practical decision-making in a complex environment was conceptualized.

Authentic and Reconstructed 'Historical' Maps for Elucidating the Early Chinese Terrestrial Descriptions: The South-North Division Along the Han River in the *Rong Cheng shi* Manuscript (late 4th century BC) Viewed from the Song & Ming 'Historical' Cartography and the Reconstruction of the *Shanhaijing* Topography by Wang Chengzu (1982)

Vera Dorofeeva-Lichtmann
CNRS-EHESS, France/IKGF, Erlangen-Nürnberg

In the proposed paper I call attention to the crucial importance of visual representations issued through the long history of the Chinese tradition of mapping space for understanding the corpus of its fundamental terrestrial descriptions shaped about the 5th-1st centuries BC.

I argue that the early Chinese descriptions of terrestrial space cannot be adequately comprehended without taking into consideration traditional Chinese cartography, which

belongs to a continuous tradition of representing space, and especially without 'historical' maps drawn as elucidation on early texts. The earliest survived maps encompassing the entire territory of the Chinese Empire date from the Southern Song dynasty (1127-1279), the great majority of these maps is associated with the "Yu gong" (禹貢 ca. 5th-3rd centuries BC), although many maps also comprise data from the other early texts. A dozen centuries time gap between the *source texts* and the *derived maps* is the main reason of reservation with respect to the latter in the Early China scholarship. Many studies of the Chinese maps, in their turn, underestimate the importance of their 'textual' basis. Keeping in mind the inevitable influence on these maps of their late provenance, they are nevertheless closer to the early Chinese texts, both in time and tradition, than modern Western cartography, still used as the basis of reference for geographical data found in early Chinese texts. The principal difference of the Song maps of the "Yu gong" topography from modern physical maps of China is that the former are 'relational maps', which aim was to show relative locations of selected landmarks without much care for topographical accuracy. *Structuring selections of landmarks into a system of interrelated 'positions'* was a means to convey conceptions of terrestrial space, the "Nine Provinces" (九州) in the case of the "Yu gong" topography maps. I refer to these 'historical' maps as to *authentic maps,* since they are a product of the continuous Chinese tradition, but distinguish them from *original maps,* which should be roughly contemporary with the source texts and are up to now missing.

Attempts to derive representations of terrestrial space from early texts by modern scholars resulted in a series of *reconstructed diagrams and maps*, which impact sometimes encloses to those of authentic maps and diagrams. This is the case of a map-like representation of the central part of the world, according to the *Shanhaijing* 山海經, suggested by Wang Chengzu 王成組[Wang Sheng-tsu] (1902-1987) and first published in 1982 [post-mortem reprint in 1988]. In the *Shanhaijing* the centre of the world is focused on the basins of the Yellow and Yangzi rivers and delimited from the peripheral lands by the seas. It is mapped through a system of cardinally-oriented itineraries marked by mountains, which Wang depicted as mountain ranges. Wang's reconstruction is a typical 'relational' map, to a considerable extent relying on the Chinese cartographical tradition. In a way Wang continues the practice to derive maps from texts, established in Chinese cartography at least beginning from the early 12th century onwards.

I shall demonstrate, how revealing both *original and reconstructed visual representations* can be for interpretation of controversial spatial concepts found in early texts, on the example of a confusing reference to the Han 漢 River as the demarcation line between the South and the North in the *Rong Cheng shi* 容成氏 manuscript (late 4th century BC, slips 27-28).

Diagrams in Japanese Studies
The case of Gyoki-type 行基 図 Maps as the Model of Visual Representation of Japanese Archipelago in East Asian and Western Cartography

Ekaterina Simonova-Gudzenko
Moscow State University

The proposed paper is devoted to investigation of representation of Japanese islands on the Gyoki-type maps and its influence on the representation in Korean, Chinese and Western maps.

The first known Japanese visual representation of archipelago is attributed to Gyoki Bosatsu (668-749), Korean monk who spread Buddhism around the country, constructed roads, bridges, canals and said to be the founder of mapping Japan. First written record of monk Gyoki as a founder of mapping in Japan dated fourteenth century (Tendai source *Keiran shuyoshu*), the same 14 c. dated the creation of earliest extant Gyoki-type maps – *Shomyo-ji nihon zu* 称名寺日本図, 1305 (map of Japan preserved in Shomyo temple) and *Ninna-ji nihon zu* 仁和寺日本図, 1305/1306 (map of Japan preserved in Ninna temple). The data on the maps (the centre marked as Heian, the capital since 789) testified that first maps of Japanese archipelago seemed to be drawn not earlier than 13-14 centuries.

Today at least 18 manuscript Gyoki-type maps are preserved, they date from the beginning of fourteenth century through the second half of the eighteenth century in different formats, single sheet map, hand scrolls, illustrations in books, folding screens and a fan owned by Toyotomi Hideyoshi (1536-1598).

The first representation of Japanese islands on Korean maps is found on the oldest of surviving Korean maps — Kangnido (1402, the earliest extant copy 1472). The outline is comparable to the Japanese maps of the time and the territorial division that was marked seemed to have been borrowed from Gyoki-type maps. In the earliest printed map of Japan made in 1471 by Sin Sukchu, secretary of the Korean embassy in Japan in 1443, the same Gyoki map prototype is clearly visible.

The depiction of Japan as a little oval island with the name Nihon is prevalent in Chinese maps beginning with the earliest extant maps of Chinese Empire dating from the Song dynasty (960-1279). In the Ming period (1368-1644) when separate maps of Japan appeared, the insular Gyoki-type prototype could be easily identified in them. As an example I show 'Map of Japan' in 'Ribenguo Kaolue' 日本国考略 (Concise Treatise on Japan) by Xue Jun 薛俊 1530.

The earliest European map on which the name Japan is stated seems to have been the 1459 Fra Mauro circular map showing the island of Zimpagu near the coast of China. Beginning with Fra Mauro map the representation of archipelago seems to exert influence of East Asian cartography. On the European globes and maps of 15th and first part of 16th century Japan appears to be one island, as it was represented on Chinese maps with the name Nihon. Maps made by Homem (1554, 1558), Velho (1561), Dourado (1568) and even the first separate map of Japan by Teixeira (1595) were to a great extent based on the Gyoki-type maps.

Beginning with the 17 c. East-Asian cartographers, first of all Japanese map-maker Ishikawa Ryusen (1661-1720), modelling their maps on the representation of the Japanese Islands on visually ascetic Gyoki-type maps, used in their mapping methods geographical data they adopted from European maps. In less than a hundred years Japanese cartographers changed their restrained depiction style to a colourful description of nature, celebrated sights etc. Korean cartographers borrowed the western tradition of making atlases (uniform publishing format of maps collection) and produced a rather rare, unique tradition in the East Asian cartography – atlases for everyday use. Korean map-makers took the western form and filled it by rather archaic East Asian and peculiar content.