East-West Encounter
in the Science of Heaven and Earth
天と地の科学——東と西の出会い

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‘Inversed Cosmographs’ in Late East Asian Cartography and the Atlas Production Trend

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Abstract
This article seeks to trace the origins of the circular world maps, the distinctive feature of popular atlases, which became widespread in Korea in the 18th–19th centuries. Their confusingly archaic and simplistic maps continued to be produced and reproduced in an almost unchanged form, not matching the mainstream of modern cartography and insensible to its development.

After a critical survey of studies of the circular world maps through the current rise of interest in them, and especially questioning their affinity to East Asian Buddhist-style world maps, established by Nakamura Hiroshi 中村拓 (1947), as well as derivations of these maps from the Kangnido (1402) by Gary Ledyard (1994) or the Western maps of the early 18th century by Richard Pegg (2014), I shall reveal their overlooked affinity with cosmographical maps shaped as inversed “cosmographs.” These maps are found in the Chinese Almanacs of Auspicious Images (17th–18th centuries) and convey the symbolism of the square Earth inscribed into the round Heavens.

At the same time, the atlases will be considered as a hierarchical system of maps. In particular, the link between the circular world maps and maps of China will be demonstrated, as well as the place of these atlases in the global trend of the atlas production.

Finally, some methodological points of map analysis will be raised.

Key words: cartography, cosmography, history, China, Korea

1. Introduction: Late maps of archaic configuration and unclear provenance

This paper is concerned with a peculiar type of atlas, which became extremely popular in

* I am truly grateful to John Moffett for proofreading of my English and to Bill Mak for useful remarks and suggestions. All mistakes found in this paper are my own responsibility. This study was carried out during research stays as a Visiting Fellow at the Research Center for Humanities and Social Sciences of the National Tsing Hua University (Hsinchu, Taiwan, 03–08.2014) and the International Consortium for Research in the Humanities (Friedrich-August-Universität Erlangen–Nürnberg, Germany, 12.2015–03.2017, the last three months stay thanks to an Alexander von Humboldt Stipend).
the late Chosŏn Korea (18th–19th centuries). As a result, by the end of the 19th century such atlases existed in numerous copies (woodblock-printed and manuscript), and became relatively common library, museum and private acquisitions. Extant copies of them are still to be catalogued and classified. These atlases do not have any stable name and are mostly known as circular world maps, due to their peculiar first sheets not found elsewhere, which for convenience sometimes were labelled as “wheel” maps. These maps represent the world as a nest of concentric zones centred on China (see Map 1).

Despite the late provenance of these atlases, the maps show a striking typological similarity to the medieval mappaemundi. Other maps in the atlases are also surprising by their archaic and schematic configuration, which do not match those of the mainstream cartographical production in the 18th–19th centuries. These maps received the conventional name “wheel maps” because of their round shape somewhat resembling a wheel, and in order to stress a supposed impact of Buddhist cosmography through an allusion to charts representing the “wheel of life.” This name, the advantage of which is to immediately conjure up the image of this special map in one’s mind, has, however, not only nothing to do with its true name, but is also completely misleading, as will be discussed below. In this paper I shall use a more neutral reference “circular world maps,” referring to its overall shape, but not to its inner structure, and without any qualifying meaning. The true name of the circular maps, in contrast to the unstable general name of the atlases, is recurrent in the majority of their extant copies: the “Map of Under-Heaven” (Korean Ch’ŏnhado, Chinese Tianxia tu) or its variations, e.g. the “Terrestrial Map of Under-Heaven” (天下地圖 Ch’ŏnha chido/Tianxia ditu), or the “General map of Under-Heaven” (天下總圖 Ch’ŏnha ch’ongdo/Tianxia zongtu). A few times different names are applied—the “General Map of [the world between] the Seas of the Four [cardinal directions]” (四海總圖 Sahae ch’ongdo/Sihai zongtu) and the “Map of the Supreme Ultimate” (太極圖 Taegeukdo/Taijitu). In the latter case, the circular map is framed by an alteration of thick black and white lines, which symbolises the yin–yang.

In addition to the confusingly archaic configurations of their maps, the atlases never bear any original date or the author’s name. The only indication to a certain date and a person who had some relation to them is found in the preface provided in some copies in slightly differing

1 The name was popularised by Yi Ch’an, see Yi Ch’an 李燦 (Chan Lee) “Han’guk ū ko segye chido” 韓國의古世界地圖 (Old Korean world maps), Han’guk Hakpo 韓國學, Vol. 2 (1976): 47–66, with nine map plates, whose work became known to historians of cartography due to reference to it by Gari Ledyard, “Cartography in Korea”, in: J. B. Harley and David Woodward, eds., The History of Cartography, Vol. II.2: Cartography in the Traditional East and Southeast Asian Societies (Chicago—London: The University of Chicago Press, 1994). pp. 259–263.

2 This name is found, for instance in a copy of an atlas found in the British Library, which was described by Henri Cordier, Description d’un atlas sino-coreen manuscrit du British Museum (Description of a Sino–Korean Manuscript Atlas from the British Museum) (Paris, Ernest Leroux, 1896).
versions, but none is of much help\(^3\). Not much is known about the person mentioned who in any case is rather a later editor or publisher. The date according to the sexagenary cycle to the year \(\text{kiyu/jiyou} \) (己酉 old earth—cock) only allows one to date it to any year at sixty-year intervals forward or backward over a large time span. Nakamura Hiroshi 中村拓 (1891-1974) claims the year to be 1849\(^4\), while Kim Yangsŏn 金良善 assigns to it 1789\(^5\). This is the only fixed date that can be associated with the atlases, which certainly existed before either 1789 or 1849.


2. Former studies and work-in-progress

Studies of the atlases started at the end of the 19th century with a short article by Korean scholar Yi Ik Seup, published in English in 1892 in the first volume of *The Korean Repository* journal.\(^6\) This article focussed on one example of a circular world map, provided as a redrawing, and was followed by two important and still pertinent studies by French Koreanologists, which discuss the atlases in their entity:

- Short description of an atlas acquired by Maurice Courant in the second volume of his *Bibliographie coréenne* (1895). The description is supplied with re-drawings of three maps from the atlas, and is followed by a short reference to another copy\(^7\);
- Detailed study of a copy of an atlas, acquired on behalf of the British Museum in 1894 by Henri Cordier, who coined the conventional title “Sino-Korean Atlas” (Atlas sino-coréen), which I use for convenience and because it justly stresses the importance of Chinese influence.

To the same cluster of early studies belongs a short article by Hulbert (1904)\(^8\), still often cited for its redrawing of a circular world map with some identifications of place-names (sometimes rather fantastic), and a reference in the book on Korea by Rosetti (1905)\(^9\), who was the first to establish parallels between the circular maps and the medieval *mappaemundi*.

After this, interest in the atlases diminished for a long period of time, only to be revived by Nakamura Hiroshi, whose paper published in the journal *Imago Mundi* in 1947 is still the most thorough and influential study of the atlases\(^10\). A distinguished biochemist of international statue, Nakamura was also a passionate collector of maps, and became one of Japan’s most accomplished historians of East Asian cartography. A few words are necessary about the

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\(^7\) Maurice Courant, *Bibliographie coréenne*, vol. 2 (Paris: Ernest Leroux, 1895), Liv. VI ‘Histoire et géographie’, chap. VI ‘Géographie’, pp. 480-482, entries 2187 and 2188, respectively. The described copy is now part of the digitalised collection of manuscripts in the *Fonds Maurice Courant* possessed by the library of the *Institut d’Études coréennes* of the *Collège de France* [https://salamandre.college-de-france.fr/ead.html?id=FR075CDF_00E00MC#! %22content%22:[%22FR075CDF_00E00MC_e0000018%22, true, %22%22]] Ledyard in “Cartography in Korea,” p. 257, reproduces a black & white redrawing of this map from Maurice Courant, *Bibliographie coréenne* (Paris: Ernest Leroux, 1895, vol. 2, plate 10 facing p. 480), but refers to its actual whereabouts as unknown.


\(^9\) Carlo Rosetti, *Corea a Coreani impressioni e ricerche sull’ Impero del Gran Han* (Bergamo, Istituto d’Arte Grafiche Editore, 1905), see the reference to the circular world maps as a “mappemonde [Tchien-ha-do], ‘Carta della terra – Da un antico atlanta coreano’ at p. 138”; translated into Korean in 1996.

outstanding personality of Nakamura in order to understand why he became interested in these atlases and why his study has still not been surpassed, through a few points were developed or questioned, in particular, by Gari Ledyard, the author of the part on Korean cartography in *Cartography in the Traditional East and Southeast Asian Societies* (1994), which is now the main reference work in the field¹¹.

Nakamura graduated from the Faculty of Medicine of Tokyo Imperial University in 1920, and wishing to pursue advanced study in biochemistry, went to Paris to join the research staff at the Pasteur Institute. It was in Paris that he made his first discovery of old maps, having spotted one day an old map of Japan in a small antiquarian’s bookshop on the quay of the Seine. From that time onward all his spare time was taken up with the study of early cartography and building up his growing collection of old maps, especially of maps of Japan and East Asia. When he returned to Japan in 1929, he was appointed Professor of Medical Chemistry at Seoul Imperial University in Korea, which was a Japanese colony at that time. There he kept up his search for old maps, travelling and looking for maps and related documents all over Japan. By 1932 he had already completed the manuscripts for nine voluminous works on Japanese maps, their European derivation and relation to Western cartography, opening up an undeveloped field in the history of East–West interaction. However, the war with China, which began in 1931, made its publication impossible. In April 1933 Nakamura had an opportunity to revisit Europe, and soon after returning to Japan he received a letter from Leo Bagrow (Лео Баргров, 1881–1957), another great historian of cartography, a founder of contemporary history of cartography and of the main scholarly journal in the field, the *Imago Mundi*¹². Bagrow asked Nakamura to write an article for *Imago Mundi*, who in response submitted his manuscript entitled “Old Chinese World Maps Preserved by the Koreans,” which after a long delay caused by World War II in 1947, in the fourth volume of *Imago Mundi*, winning the *Imago Mundi Award*¹³. Its Japanese version appeared in 1966¹⁴.

Nakamura distinguished twelve groups of woodblock-printed atlases, and also considered some manuscript copies, many from his personal collection¹⁵. This is still the most extensive account of the atlases. At the same time, Nakamura’s broad and profound erudition in both Oriental and Occidental cartographies, which has now become a rare quality among historians

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¹¹ Ledyard, “Cartography in Korea,” colour plate 16.
¹² For a recent tribute to Leo Bagrow by several leading historians of cartography, see *Imago Mundi*, Vol. 66 (2014), Supplement 1.
of cartography due to growing specialisation, opened up an intercultural perspective of their study. In this study, an attempt is made to pursue this approach, considering the atlases as an entity and in the context of complex interactions between different East Asian and Western cartographical traditions.

At the same time, the authority of Nakamura had a negative effect on further exploration of the atlases. In particular, his interpretation of the circular world maps in the context of Buddhist cosmography became taken for granted, and their conventional name is one of its clear manifestations. Nakamura’s attention to Buddhist cosmography is, however, understandable because of its outstanding place in the Japanese cartographical tradition. Ledyard reasonably criticises Nakamura’s exaggeration of the Buddhist influence, but, while doing so, completely excludes it, stressing instead a generally overlooked Taoist aspect of these maps. Ledyard’s point of view, however, has not yet received much response. At the same time, his study made available to a large community of historians of cartography Korean scholarship of the second half of the 20th century relevant to the atlases. The main point of his study is an attempt to derive the configuration of the central zone of the circular world maps from the Korean world maps, known under their abbreviated name Kangnido.

Since the beginning of the 21st century, interest in popular Korean atlases has continued to rise, both in East Asian and Western scholarship. The most important recently published studies are as follows:

- An investigation of the Tenri Library copy of such as atlas by the great historian of Japanese cartography and a contributor to the History of Cartography Project, Kazutaka Unno 海野一隆 (1921–2006);
- An article by Huang Shijian 黃時鑒, mostly summarising studies by Nakamura Hiroshi;
- Systematic studies of the circular world maps by the prolific Korean scholar Oh Sang-Hak (Jeju University), as well as occasional studies by a group of other Korean scholars. One of these studies is focussed on the copy of a popular Korean atlas in the possession of the Collège de France (Fonds Maurice Courant); a series of papers, one by Oh Sang-Hak, were published in the issue of the Old Map quarterly journal focussed on the circular maps and supplied with a

17 It played a much less significant role in Chinese cartography.
18 Ledyard, “Cartography in Korea,” pp. 262–263.
19 Ledyard, “Cartography in Korea,” pp. 264–267, especially the “Comparison of continental outlines between the kangnido and the chŏnhado” on Fig. 10.13 (p. 264).
21 黃時鑒 Huang Shijian, “從地圖看歷史上中韓日 ʻ世界’ 觀念的差異——以朝鮮的天下圖和日本的南贍部洲圖為主” (Cong ditu kan lishi shang Zhong Han Ri ‘Shijie’ guannian de chayi—yi Chaoxian de Tianxiatu he Riben de Nanshanbuzhoutu [=Jambu-dvipa wei zhu], junxue xuebao (Fudan xuebao), No. 3 (2008): 30–41.
folded coloured copy of a circular world map from the National Library of Korea.

- Study of copies of the popular Korean atlases in the McLean Collection by its curator, Richard Pegg (Chicago, US), who is also the only Western contributor to the Old map quarterly issue.

Pegg proposed a typologically similar deduction of the central zone of the circular maps, with the difference that he derives it from the Western maps of Asia dating from the 18th early

century. The main methodological drawback in both cases is a speculative interpretation of subjectively determined similarities between configurations of the maps, and a comparison of a large format wall map (dimensions of the extant copies of the Kangnido differ between each other, but vary around two square meters) with a much smaller map about a book-page format. Both seem to be inspired by the wall maps of the world by Matteo Ricci (1552-1610) and their simplified book-page version, overlooking the direct link between them through the same authorship. This is, however, not the case of the Ch’ŏnhado and the Kangnido or the Western maps of Asia. Below I shall provide some evidence that the Ch’ŏnhado originates from other cartographical sources.

The growing attention to the circular world maps is also manifest in the book published in relation to a recent exhibition of Asian maps, which took place in the Musée Guimet (Paris)—

LE MONDE VU D’ASIE—AU FIL DES CARTES (16.05-10.09.2018, Musée Guimet, Paris). Two copies of the atlases in the collection of the Musée Guimée, as well as a copy from the Collège de France were included in the exhibition. Ten years earlier, the attention of the Japanese public was called to Korean maps and especially to the popular atlases due to an exhibition at the Aizu Museum of Waseda University (Japan). Interest in Korean maps in general and to the popular atlases is also vivid in the country of their provenance, where several map catalogues were recently published, the last being the catalogue of the exhibition “500 Years of

24 One of his numerous studies, published as articles or included in his books is available in English, see Oh Sang-Hak, “Circular World Maps of the Joseon Dynasty: Their Characteristics and Worldview,” Korea Journal 48-1 (2008): 8-45, for his recent book focussed on the circular maps, see Oh Sang-Hak 오상학, Ch’ŏnhado: Chosŏn ui k’oseumoguiraep’i 천하도, 조선의 코스모그래피 (Ch’ŏnhado: Korean Cosmography), Paju: Munhak dongne, 2015; see also Chosŏn shidae segye chido wa segye insishik 조선 시대 세계 지도와 세계 인식 (Korean world map and image of the world in Chosŏn period), Paju: Changbi, 2011.


On-going research on the circular world maps is currently pursued by a Chinese scholar specialising in Korean and Chinese general maps, and a former student of Huang Shijian, Yang Yulei 楊雨蕾 (Zhejiang University), with whom we share many points of view on the atlases and their circular world maps.

1° We both question the Buddhist interpretation of the circular world maps, and instead seek their origins in Chinese cosmographical tradition, where the Earth is symbolized by a square and the Heavens by a circle. The same point of view may be traced in Oh’s studies, but he does not develop on the possible Chinese prototypes of the circular maps.

2° We both question the taken-for-granted interpretation of the round shape of the circular world maps as depicting the shape of the Earth, and argue that it represents the heavenly circle covering the Earth. This supposition is consistent with the original titles of the maps—“Map of Under-Heaven” (天下圖 Tianxiatu).

3° We are both trying to compose a list of atlases in libraries and private collections, and develop on their classification proposed by Nakamura.

Before examining the maps, an important point that results from the techniques for producing the popular Korean atlases should be elucidated. Nakamura considered manuscript copies of the atlases inferior to their printed editions, as all manuscripts known to him were apparently copied from woodblock-prints and quite often contained copyists’ mistakes. Woodblock-prints may be black & white or tinted by hand after printing; manuscripts are always coloured. For this reason they are more useful for grasping the structure of maps and their details, and despite Nakamura’s reservations about them, they are not only preferred by publishers, but also by librarians, who tend to treasure manuscript copies more than...
woodblock-prints. In this paper I shall use the manuscript versions for illustration, but the relation between the manuscripts and the woodblock-prints is an interesting issue to be investigated.

I have had the chance to examine about a dozen originals of popular Korean atlases, both block-printed and manuscript, and the same number of high-resolution scans of the atlases, as well as printed and electronic copies of some separate maps. In this article I shall use maps from a manuscript atlas in the collection of the Bayerische Staatsbibliothek [BSB] (Munich, Germany), which, in contrast to the British Library and the Musée Guimet copies, has not yet become a commonplace reference in relevant studies, despite it being a well-preserved copy with contrasting colours, especially for mountains and rivers, which the library has recently made available on its website. It is quite similar to, but not completely identical with one of the two copies from the Musée Guimet, and the general map of Korea is unfortunately missing. Bayerische Staatsbibliothek also possesses two monochrome block-printed copies of the atlas, a map from one of which will also be used in this paper.

3. Circular world maps as “cosmographs”

The overall view of the world conveyed by the circular world maps is based on the Shanhai jing 山海經 (“Itineraries of Mountains and Seas”), the most comprehensive and systematised of the terrestrial descriptions to have survived from Ancient China. This text was compiled about the beginning of the 1st century BC, and the extant copies of the circular maps are almost two millennia later. Far removed in time from their main textual source, the maps obviously include later geographical information, for instance, foreign countries

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33 Shelf-marks: 2 L. cor. D 4 and 2 L. cor. D 5. I am truly grateful to Hans van Ess (Institut für Sinologie und Koreanistik, Universität München) who called my attention to the copies of the maps in the Bayerische Staatsbibliothek, and to Wolfgang Schmitt-Garibian (BSB) for being most helpful with locating and digitalising the copies.
enumerated in the dynastic histories, especially the *Hanshu* 漢書 (The History of the Former Han, compiled by Ban Gu 班固 [AD 32–92]), landmarks from Taoist cosmographic literature, and the main countries of East Asia, such as Korea, Japan, Ryūkyū and Annam. These are usually present in Chinese maps, beginning from the famous general (key) map of the *Guangyu tu* 廣輿圖 ("Expanded Comprehensive Atlas", 1st printed edition 1555) by Luo Hongxian 羅洪先 (1504–1564), which relies on the now lost *Yuditu* 輿地圖 ("Comprehensive Earth Map", ca. 1315) by Zhu Siben 朱思本 (1273–1337).

As far as the possible cartographical prototypes of the circular world maps are concerned, Kim Yangsŏn dates them to the late Koryŏ or early Chosŏn (14th–15th centuries), but the only support for his suggestion is that similar map titles to those of the circular world maps—天下圖 Ch’ŏnha chido/Tianxia ditu and 天下總圖 Ch’ŏnha Ch’ŏndo/Tianxia zongtu—are found in Korean records of the 15th–16th centuries. Nakamura concluded in his examination that the circular world maps in their present form could not go back earlier than the 16th century, although obviously relying on earlier textual and cartographic sources, the nomenclature of its landmarks being for the most part that of the Han period. This remains the best consensus view up to the present time. However, his dating of the content of the maps, taking into consideration the periods at which the few additions to their nomenclature were made as no later than the 11th century, may be questioned.

Whatever one believes to be the date of their content and shape, the circular maps reflect a traditional Chinese picture of the world with China at the centre. Traditional and especially historical maps co-existed with topographically accurate maps made under the impact of Western cartography for a long period of time in China and, apparently, in Korea. Yet, even for Nakamura the practical advantage of such maps in late modern times was a puzzle that he could not solve: He had to admit that the frequent circulation of the atlases or the circular maps separately in a portable folded format provided evidence of some practical use. At the same time, the circular world maps, while conveying a China-centred picture of the world, possess an attribute that distinguishes them from the mainstream of traditional Chinese maps—they are rare cases of cartographic representations of the world, where the periphery largely outweighs the territory of the Chinese Empire. The majority of Chinese general maps are focused on the Chinese Empire, and the outside world is, in contrast, reduced to a thin margin around it, so that to a Western scholar such maps appear to be maps of China, rather than maps of the world. From this respect the circular world maps also differ from the *Shanhai*.

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34 Taoist landmarks are put forward by Ledyard, “Cartography in Korea,” pp. 262–263.
jing on which they are supposed to be based. The Shanhai jing also gives its primary attention to the central part of the world, most of which is the territory of the Chinese Empire and its close periphery. The description occupying its first part (Shanjing 山經, ca. 21000 characters) being almost twice the length of the description of the far-away peripheral lands in its second part (Haijing 海經, ca. 10000 characters).38

The circular world maps show only a few of the multiplicity of landmarks mentioned in the Shanhai jing, and these are mostly far-away countries (guo 國) described in its second part, the Haijing, that is peripheral lands about which the text is rather vague.39 Rather surprisingly, the most convenient subjects for mapping—landmarks supplied with precise distances, such as the 447 mountains of the Shanjing and the rivers related to these mountains—are not evident in the maps, with the rare exceptions of the few most famous mountains and rivers. Therefore, in contrast to the Shanhai jing, the circular world maps, while being centred on China, are focused on the distant periphery.40 The correspondence between the circular world maps and their main source text—the Shanhai jing—is an interesting question, which is not limited to simply listing the place-names from this text that appear in the maps, as is the case in the relevant literature. It is also important to compare the structure of the inhabited world, as derived from the textual analysis of the Shanhai jing, with the one underlying the circular world maps.

The top of the map is oriented to the north. It provides a view of the world as a nest of concentric zones. Four zones can be distinguished, alternating land and sea (their schematic


39 For the list of place-names from different parts of the Shanhai jing that appear in the circular world maps, see the tables by Ledyard, “Cartography in Korea,” pp. 260-261, who summarises and revises tables provided in Nakamura “Chosen ni tsutawaru furuki Shina sekai chizu.” Lists of landmarks borrowed from the Shanhai jing supplied with a scheme showing their arrangement in the circular maps are provided by Oh Sang–Hak, Chosön shidae segye chido wa segye inshik, pp. 272 and 276-277, Ch’ŏnhado: Chosŏn ui k’oseumog’iraep’il, pp. 83 and 86-87 and Oh Gill–sun.김순 “Ch’ŏnhado ūi jimyeong haeseol 천하도의지명해설 (The place names on Cheonhado),” Old Map quarterly/古地圖季刊, No. 4 (Winter 2014): 32–43, who also illustrates his study with pictorial representations of people of these countries, usually with fantastic attributes, from commentaries to the Shanhai jing.

40 There are other differences between the structure of the circular world maps and the survey scheme of the world that can be derived from the Shanhai jing. I discuss the conception of space according to the Shanhai jing and the issue of its maps in “Mapping a ‘Spiritual’ Landscape: Representing Terrestrial Space in the Shan hai jing,” in Political Frontiers, Ethnic Boundaries, and Human Geographies in Chinese History, eds. Nicola di Cosmo and Don Wyatt (London—New York: RoutledgeCurzon, 2003), pp. 35–79, and “Mapless Mapping: Did the Maps of the Shan hai jing Ever Exist?” in Graphics and Text in the Production of Technical Knowledge in China: The Warp and the Weft, eds. Francesca Bray, Vera Dorofeeva–Lichtmann and Georges Métailié (Leiden—Boston: Brill, 2007), pp. 217–294. A detailed comparison between the Shanhai jing and the circular world maps is a special issue beyond the scope of this paper.
representation is given in the lower left corner). The outside zone is the sea, devoid of any inhabitants, but containing markers of the “extreme east” and the “extreme west,” the places where the sun rises and sets, respectively. In both cases the extreme points are represented by an island with a mountain and a cosmic tree growing out it, supplied with short textual elucidations. These images originate from the *Shanhai jing*, but do not depict data from this text exactly, rather selectively assembling elements from different references in the *Shanhai jing* to these markers of the cardinal extremities. The next zone is a strip of land with many countries and mountains, and also two rivers. Names of countries are formed into rectangles (in some copies in circles). The third zone from the outside is again the sea, with many countries depicted as rectangles with their names placed inside the sea zone—Japan 日本 and Ryûkyû 琉球 among them in the eastern section—and several islands with mountains.
Finally, the central zone represents China among its closest continental neighbours. Korea 朝鮮 and Annam 安南 are depicted as oversized peninsulas. Its western part bears the early Han dynasty term for the territories nested in the Tarim basin (roughly corresponding to contemporary Xinjiang)—“All the countries of the Western Region” (Xiyu zhuguo 西域諸國), written in outstandingly large characters, thus showing its prominent place in the picture of the world. In the detailed versions of the circular world maps found, for instance, in the British Library and the Collège de France atlases, and also in a separate sheet with a circular world map and a map of China from the Library of Congress, the lists of countries of the “Western Region” (Xiyu 西域) are provided. The lists neatly arranged into regular lines densely fill out the west of the central zone, accentuating its importance. The lists originate from the Huayi tu 华夷圖 (“Map of the Chinese and barbarian [territories]”, engraved in 1137), which includes a graphical representation on the “Western Region” based on its description in the *Hanshu*.

Above the “Western Region” in the circular world maps, in the northwest of the central zone, there is a raindrop-shaped element. This is characteristic of the circular world maps, and in this and many other similar versions bears the name Ruoshui 弱水, literally the “Weak River”, sometimes Shule 疏勒 (Kashgar). It is often coloured the same as the sea zones, making it look like a lake, or does not have any colour. Ruoshui is one of the rivers described in the *Yugong* 禹贡 (“Yu’s [System] of Tribute”, ca. 5th-3rd centuries BC), the only river that flows in a western direction and fades into the “Floating Sand” (Liusha 流沙). Ruoshui cannot be precisely identified with a real river, apart from its being a small river to the northwest of the core Chinese territories. However, in the more detailed versions of the circular world maps, this element, while having the same distinct rain-drop shape, has a different name—the “Sand Mist” (Shamo 沙漠), the Chinese name for the Gobi Desert, which often stands for the entire desert zone, as is the case for the *Guanyu tu*. In some copies of the detailed versions of the circular world maps the “Sand Mist” is pointedly coloured differently from water—it is orange

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41 The “Western Region” is described in the “Memoir on the Western Region” (Xuyu zhuan 西域傳) of the *Hanshu* 漢書 by Ban Gu 班固 (AD. 32-92).
in the British Library copy and red in that of the Library of Congress. The error in the abbreviated versions seems to have been introduced through the numerous versions, block–printed in particular, where this symbol does not have any name, and in monochrome prints has the same (usually black) colour as the sea zones. This interesting error generates further errors in interpretation. Thus, Pegg mistakenly identifies the raindrop element with the Caspian Sea, using it as one argument in favour of his hypothesis that the central zone of the circular world maps is a simplified derivation from Western maps. This hypothesis is an alternative to the suggestion of Ledyard, who also derives the map through the same principle of simplification, but from the Korean cartographical tradition. Both overlook the structural dominance of the Chinese cartographical elements, such as the lists of the countries of the “Western Region” and the Shamo symbol.

The Shamo symbol in this case may be used as a criterion for comparison between the circular world maps. But its main interest is that it is a clear indication that the composition of the circular world maps was produced after the Song dynasty (960–1279). Indeed, Shamo is one of the main innovations of the Guangyu tu. In the general map of this atlas, Shamo is a wide ribbon crossing the northwestern part of the imperial territory, in many woodblock–prints tinted in black. Since the earliest surviving Guangyu tu maps date from the mid–16th century, but originate from the lost 14th–century Yudi tu map, it confirms Nakamura Hiroshi’s dating of the shape of the circular world maps to the 16th century, and their origins in the 14th–15th centuries by Kim Yangsŏn.

China is placed at the centre of the map, and its name—the “Central State” (中國 Zhōngguó), and in some maps the “Central Plain” (中原 Zhōngyuán)—is accentuated by being circled and tinted in red, thus clearly standing out as the centre. At the same time, China is located at the eastern edge of the central zone, and in order to match the central position of China in the map, this zone is slightly shifted to the left (= west). An eye-catching mountain located to the west of China, but roughly in the centre of the irregularly shaped central zone is Kunlun 崑崙山. It is depicted here as the largest mountain of the world, and again, in order to better understand the abridged version of the map, it is helpful to take a look at detailed copies. In some of them the function of Kunlun is glossed as the “Core of Heaven and Earth” (Tian Di xīn 天地心), allowing one to qualify it as the axis mundi. This gloss is found, for instance, in the British Library and the Collège de France copies. In the latter the gloss is shifted to the left of the central zone and tinted in the same bright orange as the “Central State”, making both stand out as the “centres.” Therefore, if China occupies a position of the political centre, literally of the “Central State,” among all the countries (guo 國) listed in the map, Kunlun is the cosmic axis of this picture of the world.

45 Pegg, Cartographic Traditions in East Asian Maps, pp. 80–82.
The central zone is divided by five rivers, two of which forming a confluence. The rivers are as follows—the Yellow River (He 河 or Huanghe 黃河), the Yangzi (jiangshui 江水), the Red River (Chishui 赤水), the Yang River (Yangshui 洋水) and the Black River (Heishui 黑水). In the copy of the circular map provided in the paper only three rivers are named—the Yellow River, the Black River and the Red River, which are tinted in corresponding colours.

If the configuration of the river flows in the circular world maps is basically the same and does not seem to provide much options for diversity in identification, yet the identifications of the Black and the Red rivers are amazingly different between the map copies: The Black and the Red rivers may be interchanged, if compared with the discussed copy, or both be identified with the river flow in the southeast of the central zone. In this case one side of its flow is tinted in red and the other half in black. The displacement of rivers in the circular world maps provides a criterion for their comparison and, in the same time, illustrates how mistakes were introduced by manual copying, as pointed out by Nakamura.

The name of the Yellow River is given in this map with the adjective “yellow”. and not just as He 河, the River. This adjective first appears in Ming dynasty (1368-1644) maps, sometimes accompanied by yellow colouring of the river course, as, for instance, in the “Map of [Terrestrial] Shapes and Advantages of the Past and Present” (古今形勝之圖 Gujin xingsheng zhi tu, 1555, based on the original [1552-1555] by Yu Shi 喻時 [1506-1570]). It is an additional indication of the relatively late origin of the circular world maps, in some of which the Yellow River is also tinted in yellow, even though in some copies one finds just He.

In sum, from the point of view of the number of landmarks, two major types of circular world maps may be distinguished—detailed and abridged. The abridged, such as the copy under discussion, allows one to immediately grasp the general structure of the map. The detailed versions allow one to better understand this structure. The abridged versions seem to be simplified, and therefore later versions of the maps, but this suggestion needs to be verified by a formal analysis of a larger sample size. The maps have interesting differences in details such as the choice of colours and forms of cartographic symbols (squares or circles), the nomenclature of peripheral countries, etc. But their structural framework and the set of basic landmarks are strikingly stable.

Their structural framework is the main cause of confusion, as is strangely archaic for the period of their circulation. They have a typical structure of what in the history of cartography

48 For the latest study of this map, see Fabio Yu-chung Lee and José Luis Caño Ortigosa, Studies on the Map Ku Chin Hsing Sheng Chih Tu, Hsinchu (Taiwan): Research Center for Humanities and Social Sciences, National Tsing Hua University, 2017.
is referred to as *mappaemundi*—schematic maps of the world aimed to convey a certain idea of space, and not preoccupied with topographical accuracy. This is the name that Nakamura uses when referring to the circular world maps in order to facilitate comprehension of the nature of these maps for Western scholars. Indeed, they have obvious typological similarity with such classical examples of *mappaemundi* as the Babylonian Disc (ca. 7th century BC) chosen as the logo of the *Imago Mundi* journal, and the medieval T-Ø *mappaemundi* centred on Jerusalem and oriented to the East, the location of Paradise. These maps, however, had long been out of circulation when the circular world maps became so popular in Korea.

This is not the case in China and in Korea, however, where a particular type of *mappaemundi* were widely used at around the period to which the origins of the circular world maps can be traced (after the mid-16th century). These maps, usually entitled “Maps of Established Positions of Heavens and Earth” (*Tiandi dingwei zhi tu* 天地定位之圖), are found in popular Chinese almanacs on divination dating from the early 17th century onwards.

Such maps have received little attention from historians of cartography, apart from one item—the “Map of Established Positions of Heavens and Earth,” found in the “Amplified Almanac of Auspicious Images” *Xinzeng xiangji beiyao tongshu* 新增象儀備要通訖 (1721 ed.), briefly mentioned in the survey of the history of the Chinese cartography in the Chicago History of Cartography by Cordell Yee, and in a short, but ground-breaking essay by Richard Smith, who proposed to regard such maps as “cosmographs.” Indeed, these maps have evident, structural parallels with the early Chinese divination devices usually referred to as divination boards or “cosmographs” (*shipan* 式盤) and diviners’ bronze mirrors, which convey the symbolism of the square Earth and round Heavens.

The square “cosmographs” build on the idea of the Heavenly circle inscribed into the square Earth, and the round bronze mirrors vice...

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49 The earliest of these maps found in the “Almanac of Auspicious Images” dating from 1612 (*Wenlin miaojin wanbao quanshu* 文林妙錦萬寶全書) has a different title, but the sense is the same: “兩儀之圖” Map of Two Basic Principles.”


versa. The maps are structured like the bronze mirrors or inversed “cosmographs”—the
square Earth is inscribed into the round Heavens. The reason for this inversion is purely
technical—it is the only way to focus on the representation of the Earth, in contrast to the
“cosmographs,” which are focussed on the Heavens. The square of the Earth in these maps is
filled out by a rough image of the Chinese Empire “deficient” (buman 不滿) in its southeast
corner, which is occupied by the sea. The “deficiency” in the south–east is outweighed by a
“tilt” (qing 傾) in the northwest. Both are the recognized characteristics of the shape of the
Earth in early Chinese cosmography, which are presented in the map (in its lower left and
lower rights corners, respectively).\(^{53}\) The square Earth is inscribed into the Heavenly circle
with the symbols of 28 lodges (constellations) at the rim, and also the images of the sun and the
moon\(^{54}\).

The “inversed cosmograph”–maps seem to provide the missing key to the circular world
maps\(^{55}\). To begin with, “inversed cosmograph”–maps are found in sources of comparable level
with the popular atlases—popular almanacs, and are maps of comparable size—book-page, in
contrast with maps of incomparable level of cartographical detailisation and size, which are
considered to be of the cartographical sources of the Ch’ŏnhado by Ledyard and Pegg.
Furthermore, in the almanacs the “inversed cosmograph”–maps are included into a sequence
of the diagrams, which begin from the Taiji. This explains the existence of different versions of
the circular world maps inscribed into the Taiji design, bearing its name\(^{56}\). The “inversed
 cosmography” maps became widely diffused in Korea, as one can see from its coloured
manuscript versions that bear the title “Map of Heaven and Earth” Tiandi tu 天地圖. one is
now in the Seoul History Museum (formerly Prof. Li Chan’s collection)\(^{57}\). Finally, the direct link
between the “inversed cosmograph”–maps and the circular world maps is established through

\(^{53}\) I discuss this configuration of the Earth in Vera Dorofeeva–Lichtmann, “Conception of Terrestrial
//www. persee. fr/web/revues/home/prescript/article/befeo_0336-1519_1995_num_82_1_2297. The central
 terrestrial zone in the circular world maps has a very similar configuration, being also “deficient” in the
southeast.

\(^{54}\) For the term ershiba xiu 二十八宿 and its translation as “28 lodges,” see Christopher Cullen, “Research

\(^{55}\) Vera Dorofeeva–Lichtmann, “From Divination to Cartography: ‘Cosmograph’ (shi 式) Boards in Early
China and ‘Cosmograph’–Tailored Maps in Late East Asia: Tracing the Origins of the ‘Wheel’ World Maps and
the Maps of China in the popular Korean atlases (18th–19th centuries)”. International Consortium for Research

\(^{56}\) Especially beautiful copy of such map with domination of dark blue colour is found in a manuscript atlas
owned by the Yeongnam University Museum, see Kochizu de nagameru chōsen hantō, p. 12; Oh Sang–Hak,
Chosŏn shidae segye chido wa segye inshik, plate 16 [Taeguhaldo Taijiitu 太極圖].

\(^{57}\) See its black & white reproduction in Oh Sang–Hak, Chosŏn shidae segye chido wa segye inshik, p. 64, and
similar map under the same title on p. 20, also reproduced in idem, Ch’ŏnhado: Chosŏn u’i k’oseumoguraep’i, p.
81.
a few “stray” versions of the circular maps with the 28 lodges depicted inside or outside the map’s rim. One copy of such map—with the 28 lodges depicted around the map’s body, is found in a nonstandard popular atlas in the map collection of the Library of Congress (see Map 4)\(^{58}\), another copy—with the lodges integrated into the circular shape of the map is owned by the National Museum of Korea\(^ {59}\). This version is especially important, as here the outside zone of the map usually depicted as the external sea is filled out by the 28 lodges. Despite the rarity of such versions, they are sufficient proof of the “heavenly” meaning of the round shape of the circular world maps.

At closer inspection, the Earth in the circular world map tends to have a square–like shape with the corners rounded off, rather than being simply round, as I have tried to show in the schematic representation of the nest of concentric zones in the lower left corner of Map 2. In some copies, the square shape of the concentric zones is more pronounced, e.g. a circular world map in the atlas found in the Collège de France. There are also some versions in which all the

\(^{58}\) The atlas is available the web-site of the Library of Congress: http://hdl.loc.gov/loc.gmd/g7900m.gct00119 https://lccn.loc.gov/83675024

\(^{59}\) Oh Sang–hak, Chosŏn shidae segye chido wa segye inshik, colour plate 15.

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Map 3. “Map of Established Positions of Heavens and Earth” (Tiandi dingwei zhi tu 天地定位之圖)
terrestrial zones having a clearly square shape. In addition, few of the circular world maps contain notes on heavenly matters written at their rims. This is the case in an exquisite circular world map found in a popular atlas in the collection of the National Library of Korea.

This copy of the circular world map is distinguished by landmarks related to the four cardinal directions tinted in the corresponding colours—red for the south, black (with the exception of one lake coloured in Yellow) for the north, blue for the east, white for the west, and yellow for China in the middle. The notes on heavenly matters are found in the group of four notes at the lower right side of the map's rim.

At the same time, one should also take into consideration the general preference for round

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61 For high quality coloured reproductions of this map, see Kochizu de nagameru chōsen hantō, p. 12. Land in Old Maps, p. 217. Old Map quarterly, No. 4 (Winter 2014), p. 6.
maps in Korean cartography, as evidenced by the round maps of the capital city (Seoul) and of Jeju island.

4. Circular world maps as the key maps of atlases

The discussion of the circular world maps seems to have completely overshadowed other maps in popular Korean atlases, which, apart from their enumeration in the list of atlases examined by Nakamura and his summary of an abstract length\(^{62}\), have not received much attention from researchers. However, if the maps were united into an atlas under the cover of a circular world map, there should have been a special reason.

Although in some atlases a few maps are missing or some are deliberately not provided, and in some atlases one finds the maps of the capital city (Seoul)\(^{63}\), the usual set comprises thirteen maps, which are as follows:

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- circular world map;
  - map of China,
  - map of Japan,
  - map of Ryûkyû,
  - map of Korea,
  - eight maps of Korea, one for each of its eight provinces.

The order of maps, with the exception of the circular world map always being first and the map of China following it, may vary. For instance, Japan and Ryûkyû may be placed at the end of the atlas, after the general map of Korea and maps of its provinces. This is a strong statement establishing a hierarchy of the mapped countries, giving Korea priority Japan and Ryûkyû. Such a sequence of maps is found, for instance, in two manuscript atlases from the Musée Guimet. The stable second place of China after the circular world map provides an argument in favour of referring to the atlases as Sino-Korean. Whatever the sequence of maps, however, their selection is conceived of as a world atlas focused on East Asia. Such atlases include maps of three levels:

I. General key map—map of the world,
   II. Four general maps of the second level—of four countries (China, Japan, Ryûkyû and Korea),
   III. Eight regional (provincial) maps of Korea.

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\(^{63}\) Two maps of Seoul are found, for instance, in the British Library copy of the atlas.
The set of maps in the atlases is as stable as the basic structure and nomenclature of the circular world maps, and for this reason should be regarded as an entity. While doing so we should try to determine the nature and origins of the maps appended to the circular world maps, and in the first place, of maps of China, which firmly hold the second position.

5. Maps of China

At the first sight, the maps of China, as one expects from an atlas map focused on a particular country, provide a close-up view of a territory roughly outlined in the world map. Indeed, in the circular world maps, Chinese territory is reduced to the main mountains (among them the Five Peaks, the markers of the five cardinal directions and the centre, plus two additional mountains and Kunlun), and the Yellow and Yangzi rivers. All these landmarks reappear in the maps of China, but depicted in more detail and surrounded by many other landmarks. One would expect that these maps copy Chinese maps of the Ming dynasty, contemporary with the supposed period of time when the shape of the circular world maps was established. However, the maps of China are based on Song dynasty maps that represent the topography of the Yugong, which greatly inspired Song cartographical activity. Apart from the Nine Provinces (jiuzhou 九州) of the Yugong and specific set of mountains and rivers listed in this text, a distinctive characteristic of the majority of these maps is the delineation of the Yellow River source from Kunlun Mountain, although it does not correspond to the description of the Yellow River in the Yugong. In the map of China from the Munich coloured atlas (see Map 5) Kunlun Mountain is depicted as the largest of all mountains located in the west of the core Chinese territories, and is the source of the Yellow River. The Yellow River is crossed by the Great Wall, prominently delineated in the north. Its river system and mountains apparently belong to the Yugong set of landmarks. The Nine Provinces of the Yugong are depicted as small blue circles, and the fifteen Ming provinces (sheng 省) as big red circles, with borders imitating the city walls.

A similar map of China follows the circular world map in the Musée Guimet atlas referred to above, the circular world map of which is very similar to the one from the Bayerische Staatsbibliothek.

Configuration of these maps of China is amazingly faithful to the numerous prototypes that date from the Southern Song dynasty (1127–1279). A very clear early example of a Song map of this type dating from the beginning of the 13th century is the “Map of moving along mountains and deepening rivers, as registered in the Yugong” (禹貢所載隨山濬川之圖 Yugong suo zai suishan junchuan zhi tu), in “Collected Commentaries on the Book of Documents”.

64 I discuss this issue in Vera Dorofeeva-Lichtmann, “Where is the River Source?”, “A History of a Spatial Relationship.”
傳《Shujizhuan》 by Cai Shen 蔡沈/Cai Jiufeng 蔡九峰 [1167–1230], completed in 1209). Kunlun Mountain is the largest of all the mountains, located in the West and the source of the Yellow River. No Great Wall is depicted in this particular map, but this was a facultative feature in the Song maps of the Yugong. Examples of the Yugong maps with the Great Wall are found, for instance, in the Liujing tu 六經圖 (Maps related to the Six Classics, engraved on stone in 1229, it total four maps): two of its three maps related to the Yugong include depictions of the Great Wall.

The maps of China in Korean atlases bear, of course, the stamps of late provenance, such as the depiction of Ming dynasty provinces, but they are inserted into a typical Song

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cartographical framework, which differs from that of the Ming maps at least in terms of two important cartographic elements. The first is the desert area, *Shamo*, mentioned above, which is never evident in Song maps. The second is the innovative location of the Yellow River source, Star Lodge Lake (*Xingxiuhai* 星宿海), and no longer at Kunlun Mountain, the role of which is diminished in the Ming maps. Some maps, such as the key map of the *Guanyu tu*, do not show the Kunlun Mountain at all. The special place of Kunlun in the majority of Song maps related to the *Yugong* is the reason why compilers of the atlases took time to update the Song map models with Ming administrative divisions, and did not just reproduce the Ming maps of China. They badly needed a prominently depicted Kunlun Mountain to match its place as the “Core of Heavens and Earth” in the circular world maps. In the map of China from the second—still unpublished—atlas from the Musée Guimet, an attempt is made to overcome the obviously outdated depiction of the Yellow River source. This is not done in a seemingly easier way by just using a Ming–type map of China, however, through a compromise with a *Yugong*–type map. Star Lodge Lake is inserted here just below Kunlun, so that the Yellow River emanates from the lake, but then goes through Kunlun Mountain. In sum, the maps of China provided in the popular Korean atlases superimpose administrative divisions of the Ming Empire on a historical map of China representing remote antiquity. The historical aspect is reinforced by some Warring States (475–222 BC) kingdoms, added also to these maps as small circles.

6. Maps of Japan

Maps of Japan are done in a more schematic style, offering just a rough outline and overemphasising its significant landmarks, in particular Biwa Lake 滋殖, which is depicted as a reservoir with a broad access to the sea in the south (top) and a protruding mountain to the east of it. Another interesting feature is that, in contrast to the circular maps, in which the maps of China and the maps of Korea are oriented to the north, the tops of the maps of Japan are oriented to the south, as one can see from prominently placed landmarks, comprising in their names cardinal directions. Such orientation of maps is characteristic for some traditional maps of Japan, which have, however a slight shift with respect to the true cardinal directions, not evident in the rough outlines of Japan in the atlases. In some atlases, however, attempts are made to use more detailed and updated maps of Japan, as, for instance, in the second atlas from the Musée Guimet.

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66 See Dorofeeva–Lichtmann, “A History of a Spatial Relationship.”
7. Maps of Ryûkyû

These maps are rough schematized version of the Chinese maps of Ryûkyû known from the 16th century onwards. The Chinese prototype maps are shaped like a house with a sloping roof which top point to the north. The maps of Ryûkyû in the popular atlases reproduce this configuration, but with a shift of 45 degrees: its top points to the upper left corner of the map. It is possible that this shift is an attempt at a more realistic orientation of Ryûkyû with respect to

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67 The maps of Japan have been studied by Ekaterina Simonova-Gudzenko, with whom we also cooperate in the investigation of the atlases. She has delivered several papers on the maps of Japan in popular Korean Atlases at international conferences (e.g., at the 25th International Conference on the History of Cartography, 30.06-5.07.2013, Helsinki, Finland), and is currently working on an article summarizing her research.
the cardinal directions. The maps of Japan and of Ryūkyū in the atlases constitute a stable pair—maps of Ryūkyū always follow Japan and in some atlases, as for instance, in the British Library copy, are drawn on a single sheet68.

8. Korea as the focus

The general map of Korea is lost in the Munich manuscript atlas, which comprise 12 maps in the following order: a circular world map, a map of China, a map of Japan, a map of Ryūkyū and eight maps of Korean provinces. However, similar atlases, such as the first atlas from the

Musée Guimet, contain square-shaped maps of Korea, which, therefore, can be traced to the Korean original of 1530—the "Map of the Eight Provinces" (八道總圖 P’aldo ch’ongdo) in the 新增東國輿地勝覽 Sinjŭng Tongguk yŏji sŭngnam, usually translated as the "Revised Atlas of the Eastern Countries and Regions," which I propose to translate as the "Revised Edition of the Advantageous [in terms of terrestrial configurations] Observations on the Comprehensive Atlas of Korea." The square shape apparently intends to make Korea look like the symbolically square Earth in miniature, and convey a message of its outstanding place in the world. An especially beautiful example of such a square map of Korea is found in the Collège de France atlas. In some later copies of the atlases, the square Korea is replaced by more recent rectangular maps. The general maps of Korea in the atlases are followed by eight provincial maps, which represent the area of highest cartographic detail in the atlases. In many atlases the provincial maps are the most used sheets, and are, therefore, the focus of "consumer" interest, which differs from the scholarly interest in the circular world maps. The maps of Korean provinces are also the most recent maps in the atlases, as one can deduce from the textual notes accompanying some of the provincial maps.

This allows one to make the conclusion that if the centre of the world, according to these atlases, is China (political centre) and Kunlun Mountain (cosmic centre), the focus of their attention is Korea, its regional maps in particular. The general map of Korea is the key map for the eight provincial maps, and China, Japan and Ryūkyū are its closest neighbours, deserving a rather more detailed view than just as positions in the circular world map of the world. The circular world map shows the place of Korea in the world, and for this reason Korea is highlighted by using a special colour or framing in many copies.

9. A composite publishing product

It seems than for this purpose no detailed maps of even the closest neighbours were needed, and that rough outlines with some historical flavour were sufficient. Therefore, the compilers of the atlases were not interested in searching for the most up-to-date maps of neighbouring countries, and did not even care much about achieving a unified style of presenting the maps. An interesting proof of such carelessness is found in woodblock-printed copies of the atlases, which have an important advantage over the manuscript copies. They bear traces of a special layout characteristic of a printed page, such as the page frame. The

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69 This is the case, for instance, with the Munich manuscript atlas. One does not see too much difference between the sheets on their photos, but it is what one immediately notices when inspecting the original. The edges of the pages showing the provinces are much dirtier than the rest of the atlas, indicating repeated handling.

page layouts are completely different between the sheets of the atlases. From this point of view one can distinguish four different page layouts:

- circular world maps;
- maps of China;
- maps of Japan and Ryūkyū;
- maps of Korea.

Therefore, the atlas is a composite product that unites maps from different previously printed sources, with the exception of the circular world map, which seems to have been specially designed as a cover page for this cartographic enterprise.

This enterprise also has another, more interesting than a purely technical aspect, as it is an attempt to assemble maps from different East Asian cartographical traditions. Although the atlas is too naïve and incomplete for a world atlas in its modern sense, and to a Western cartographer may appear as a caricature, it is still the only attempt to compose an atlas in East Asia relying exclusively on its own cartographical traditions. This attempt did not find much response outside Korea. But the importance of this attempt should not be overshadowed by its limited circulation, nor by its puzzling appearance for a Western audience.

10. Atlas production trends since the late 16th century

A hint to a possible inspiration for this attempt may be found in the "degenerated", according to some researchers, versions of the circular world maps with superimposed parallels and meridians. The aim of such a decorative grid was to give the illusion of a Western-looking world map.

Chinese world maps drawn according to Western models, or adapted translations of Western world maps into Chinese, diffused through East Asia thanks to the efforts of Matteo Ricci (1552–1610). Ricci basically relied on the world map by Abraham Ortelius (1527–1598), the *Typus Orbis Terrarum*, the first version of which appeared in 1564, distinguished by straight latitude lines and curved longitude lines. Almost immediately out-dated in Europe, the oval projection became widely used in East Asia. It is noteworthy, that the fake parallels and meridians in the "degenerate" circular world maps still correspond to the principles of oval projection, the parallels drawn as straight lines.

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71 In atlases that contain such maps, the general maps of Korea, Japan and Ryūkyū are usually missing, so the atlases are reduced to a circular world map, China and the Korean provinces.

72 I believe that the Buddhist look of some circular world maps, which caught the eye of Nakamura, is of the same order – it a superimposition on the traditional Chinese cosmography of some foreign elements, as a means to adapt the maps for a Buddhist audience.
However, Ortelius was ultimately far more significant in the history of cartography than merely having composed a map of the world. He was the first to introduce into cartographical practice an atlas of the world, a system of maps of different levels of detail and generalisation under the cover of the main key map, the map of the world. The origins of a world atlas may be found in Claudius Ptolemaeus’ (ca AD 90–ca 168) *Geographia* in eight books, which is supposed to have been accompanied by a world map and 26 regional maps, and, therefore had a simple two-level structure. However, since no original maps have survived and due to controversy over *Geographia*’s transmission, we can only speculate about Ptolemaeus’ maps. But Ortelius, who also was known for his vivid interest in Ptolemaeus’ *Geographia*, was certainly inspired by it in his creation of what is referred to in the history of cartography as a modern world atlas. Ortelius published his first world atlas in 1570, which already contained, apart from the map of the world, general maps of some continents and regions, and maps of certain countries. Then he continued to update it with new maps up to his death, the last realised shortly after he passed away. In particular, he added into the edition of 1584 a separate map of China attributed to a Portuguese cartographer who worked for Phillip II of Spain, Luis Jorge de Barbuda.

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73 But here they are just simple parallel lines with no reference to the equator, tropics, etc.
(Ludovicus Georgius in Ortelius, fl. mid 1575–1599), who seems to have been the first Western cartographer to rely on a Chinese original\textsuperscript{74}, and completed the edition of 1595 with a separate map of Japan by another Portuguese cartographer, Luis Teixeira (fl. 1564–1604)\textsuperscript{75}. This shows us the composite principle of the first world atlases that united under their cover maps of different provenance, and that necessarily they had many inconsistencies between them. The term *atlas* was introduced by the elder contemporary and confederate of Ortelius, who about the same time was composing an atlas of his own, Gerhard Mercator (1512–1594), while encouraging Ortelius in his work. Mercator’s *Atlas* was published by his son Rumold one year after his death (1595), and did not include maps of China and Japan. However, these two first world atlases generated about the same time—the second half of the 16\textsuperscript{th} century—reflected the beginning of the world atlas trend in the Western cartography, which thereafter became the necessary facet of the Western cartography. The same process about the same time can be seen in China, where the *Guangyu tu* certainly qualifies as an atlas, but rather in the sense of Ptolemy, as being an atlas with a simple two-levelled structure, one that also reflected the Chinese view of the world—its Empire and its immediate periphery. The origins of the popular Korean atlases can be traced to the same period.

11. Conclusions

1) Although the popular Korean atlases can hardly be compared in comprehensiveness and complexity with those of Ortelius or Mercator, they share the main structural and technical principle, both being compilations from different sources under the cover of a world map, specially designed to crown the selected maps. If we now consider the date of compilation of the popular Korean atlases in relation to the history of the Western cartography, it seems hardly accidental that the shape of the circular world maps was established around the 16\textsuperscript{th} century, and that most of the maps of China that follow them contain units of Ming dynasty administrative division (fifteen provinces). This coincides with the diffusion of Western cartography in East Asia, including the world atlases. Therefore, despite the confusing appearance of the popular Korean atlases and their


limited circulation, they are still an interesting, although regretfully not further
developed attempt to compose a world atlas following a European trend of atlas
production, but on the basis of East Asian cartographical and cosmographical traditions.

2) Popular Korean atlases are an attempt to present the world according to the ideas of
terrestrial space rooted in early Chinese cosmography that will still in use in China and
Korea in the 16th-17th centuries, as shown by the representations of the world in the
Almanacs of Auspicious Images, which served as prototype maps for the circular world
maps. According to this worldview, Kunlun Mountain is the cosmic centre and China is
its political centre, aspects reflected in the atlas of the world maps. Yet, the focus of
cartographical attention here is Korea, its regional maps in particular. The general map
of Korea is the key map for the eight provincial maps. This picture of the world is
supplemented by the maps of Japan and Ryūkyū, two other closest neighbours of Korea.
The main goal of the atlases is, therefore, to show the place of Korea in the traditional
picture of the world.

3) Structural similarity between the circular world maps, as well as the other counterpart
maps through the atlases, combined with an outstandingly high number of these
cartographical sources make it interesting material for working out methods of formal
analysis of ‘cosmographical’ maps, which are not based on projection and scale. In this
paper a difference between the detailed and abridged versions with respect to the
raindrop cartographical symbol in the north-western part of the central zone of the
circular world maps was demonstrated. This allows one to suggest that this depiction of
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