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“Vienna, late 18th century...”: Birth and importance of two monuments of Greek cartographic heritage, the Rigas Velesinlis’ *Charta* and the Anthimos Gazis’ *Pinax*, from a digital point of view.

Keywords: Rigas Velesinlis *Charta*; Anthimos Gazis map of Greece, *Pinax*; Greek Enlightenment; rare maps.

Summary

Rigas Velesinlis (1757-1798) is a major representative of the Greek Enlightenment in the late 18th century. Among Rigas’ works, writings and translations, his cartographic production though limited in number of maps, is of particular importance. Especially his masterpiece, the *Charta*, a 12-sheet 2X2 metres map in ca. 1:600.000 scale, printed in Vienna (1796–1797), representing Southeast Europe (the Balkan peninsula), is now considered an officially declared monument of Greek cultural heritage. Three years later (1800), also in Vienna, another great personality of the Greek Enlightenment, Anthimos Gazis (1758-1828), the scholar parish priest of Vienna’s Greek-Orthodox Church of St George, published his own map of Greece, the *Pinax*, a 4-sheet, 1X1 m. map, in ca. 1:1.200.000 scale, representing the same geographic area as in *Charta*. Even though in the relevant bibliography, *Pinax* is considered a “new edition” of Rigas’ *Charta*, it is actually an entirely different map.

Despite its historical cartographic importance, *Charta*, as well as the *Pinax*, are only known (principally from a scholar or literary point of view) among few experts mainly in Greece, practically unknown abroad, even if both maps are extremely rare and highly priced in the international map Collectionism. In this paper, starting from the analysis of the “external cartographic identification” for both maps and using digital processes the two maps, both born in Vienna, are put in comparative evidence giving new insights as important elements of Greek cartographic heritage.

Introduction

At the end of 18th century, Vienna, as the capital city of the Habsburg Empire, reaches its apogee, as one of the most significant political, commercial, financial and cultural centres of its era. Since the 17th century, Greek merchants from the Ottoman Empire migrated to the city, playing an important role in its commercial and financial activities and creating the largest Greek community in the diaspora¹. At this time, while the Greek community reaches its greatest cultural and financial

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¹ At the end of 18th century, Habsburg emperors granted for Vienna’s Greek community’s freedom of worship (Patents of Toleration, 1717-94), becoming thus one of the most wealthy Greek communities of the diaspora, able to maintain two churches (St. George for Austrian subjects and Holy Trinity for Ottoman subjects), a school, printing presses etc., while some of its members, wealthy merchants, founded schools, hospitals and other institutions both abroad and in their homelands. See *Griechische Orthodoxe Kirchliche Gemeinde zum Heiligen Georg*, <http://www.agiosgeorgios.at/startDeutsch.htm>. P. Mackridge, 2009. *Language and national identity in Greece, 1766-1976*, Oxford University Press, p. 38. *Greek Migration to Europe (15th-19th century)*. Foundation for the Hellenic World, <http://www.fhw.gr/projects/migration/15-19/gr/v2/vienna.html>. The wealthy Greek merchants in Vienna, as well as in Trieste, were part of the emerging (all over Europe) class of bourgeoisie.

prosperity, supporting remarkable typographical and publishing activities², two cartographical monuments of modern Greek history are printed in Vienna: The *Charta* (Map) of Greece by Rigas Velestinlis (1757-1798), in 1796 and 1797 and three years later, in 1800 (second edition in 1810), the *Pinax* (Map) of Greece by Anthimos Gazis (1758-1828). Both maps depicting Greece and the surroundings, the first ever printed in Greek language, represent the summit of significant activity in writing and translating geographical works since the beginning of the 18th century³ (Fig. 1 a-b). Both Rigas Velestinlis and Anthimos Gazis are considered to have been leading personalities of the Greek Enlightenment and they have played an important role in the preparation of the Greek struggle for independence against the Ottoman domination (1821-1829)⁴.

Although the aspects of this twelve-sheet map, a monument of the Greek national resurgence, concerning its historic, archaeological, ideological, political, revolutionary, literary, numismatic and full of symbolism content and messages, were more or less widely analyzed⁵ and despite the interest displayed, mainly in Greek but also in foreign (mostly French) bibliography, about Rigas' revolutionary activism and publications, very little has been done up to now, for the investigation of the purely cartographic content of this great map, from the viewpoint of science and technology of Cartography. Gazis' *Pinax* of Greece, even less known among the researchers, is also neglected in cartobibliography. Both maps have accepted general criticism since the beginning of the 19th century⁶.

² During 1801-20, almost 25% of Greek books were published in Vienna. A. Koumariou, 1995. *O ellēnikos proepanastatikos typos, Viennē-Parisi (1784-1821)*, Athens: Hellenic Foundation for Culture. E. Enepekides, 1967. *A. Gazis, U. Foscolo, A. Dandolo, B. Kopitar griechische zeitung und druckereien Wiens 1790-1821*, Athens: Estia.

³ Since the last quarter of 17th century, many Greek scholars show interest for Geography and Cartography. Among others, Meletios Mitrou (1661-1774), Xrysanthos Notaras (1663-1771), X. Gordatos, G. Fatzeas, I. Moisioudax, N. Theotokis, A. Korais, D. Filippides, G. Konstantas, leading personalities of the Greek Enlightenment, write or translate geographical handbooks and maps in the Greek language. Many of these works were published in Vienna. E. Livieratos, 1998a. *Khartografias kai khartōn periēghēsis: 25 Aiones apo tous Iōnes ston Ptolemaio kai ton Rēga*, Thessaloniki: Ethniko Kentro Khartōn kai Khartografikēs Klēronomias. ___ 1998b, "Mia khartografikē anagnōsē tēs Khartas tou Rēga", in: *200 Khronia tēs Khartas tou Rēga 1797-1997*, Symposium Proceedings, Kozani 18 October 1997, Thessaloniki: Khartografikē Epistēmōnikē Etaireia Elladas – Paratērētēs. 2009. *Hagion Oros kai Kypros ston khartē tēs Elladas tou Anthimou Gazē*, Agioreitiki Vivliothēkē. ___ 2008d. *Ē Kozanē ston kosmo tōn khartōn*, map exhibition http://cartography.web.auth.gr/Kozani/KOZ_Vivlia.pdf, http://cartography.web.auth.gr/Kozani/KOZ_in_EN.htm.

⁴ Rigas' activism attended to a general political project concerning the Balkans. During the last decade of his life, he spent time in Vienna, where he developed his publishing agenda related to his political, literature, scientific and cartographic projects. On the other hand, Anthimos Gazis lived in Vienna as a scholar parish priest in the church of St. George, preparing with his educational works, the cultural resurrection before the military action. He was a leading personality during the Greek Revolution, who later retired in the school he founded in the island of Andros.

⁵ See e.g. Laios G. 1960, "Oi khartes tou Rēga. Erevna epi neōn pēgōn", *Deltion Istorikēs kai Ethnologikēs Etaireias Ellados*, v. 14. J. Y. Guiomar, M.-T. Lorain, 'La carte de Grèce de Rigas et le nom de la Grèce', *Annales historiques de la Révolution française*, Numéro 319, [En ligne], mis en ligne le : 11 mai 2006. <http://ahrf.revues.org/document106.html>. G. Toliás 1998, "Oi khartes tou Rēga. Ta Valkania, ē 'eurykhōrē Ellada tōn Phanariōtōn'", *Kathēmerinē / Epta Ēmeres*, special issue dedicated to Rigas Velestinlis, 22 March, pp. 20-23. ___ 2008a. *Istoria tis khartografias tou ellēnikou xōrou 1420-1800*. Athēna: NRF. ___ 2009. *Apokhairētismos sto Genos*. Athēna: Menandros

⁶ Ch. Reichard, 1808. *Allgemeine Geographische Ephemeriden*, Weimar, v. 25, pp. 323-331, in Laios G. 1960, "Oi khartes tou Rēga. Erevna epi neōn pēgōn", *Deltion Istorikēs kai Ethnologikēs Etaireias Ellados*, v. 14, pp. 231-312. The first extended criticism published in European press about both Rigas' and Gazis' maps of Greece. Although its value for the spread of geographical knowledge between Greeks is not questioned, the author underlines as a major handicap, the reference of toponyms and comments derived from several periods of history without alterations, disregarding thus the multiplicity of its thematic content.

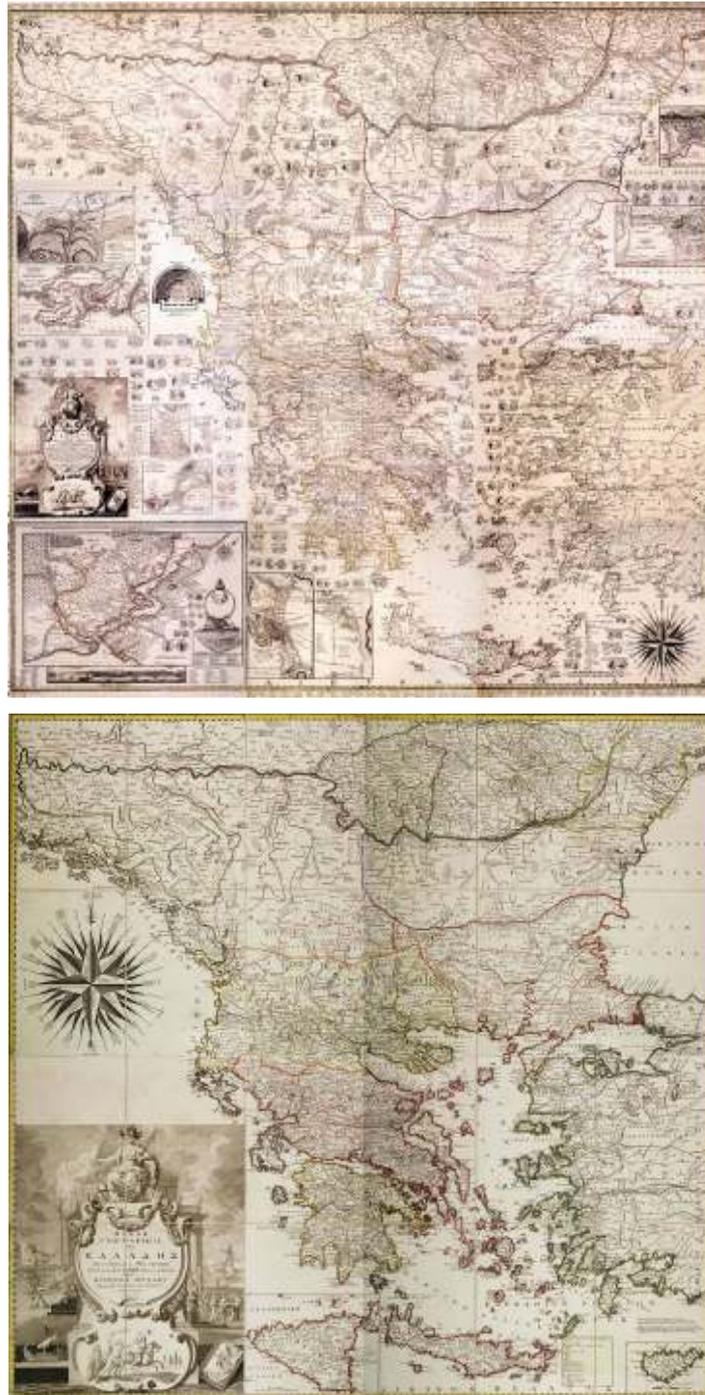


Figure 1. Up: Rigas Velestinlis' *Charta*, 1797 in ca 1:600.000 scale.
Down: Anthimos Gazis' *Pinax* 1800, in half scale than *Charta*, ca 1:1.200.000.
Only the cartouche and the windrose are in the same scale in both maps.

In any case, the developments of digital technologies in the last years, as applied in Cartography's mainstream, allow a broader and deeper approach to a great number of topics related to the old (historical) maps. Thus, both Rigas *Charta* and Gazis *Pinax* gain a new and attractive research interest which is coming to refresh and enrich the up to now historic and literary production about these top cartographic works of the Greek Enlightenment⁷.

⁷ Still, many issues associated to the cartographic analysis of *Charta* remain still open as it is e.g. the geographic placement of the map-framing (the geographic window of the map), the proper georeferencing of the

Rigas' Charta and Anthimos Gazis' Pinax of Greece: external identification and comparisons through digital processes

Rigas *Charta*⁸ is a map in twelve sheets with dimensions of ~70 cm in longitude and ~50 cm in latitude, with a total extend of ~210X200 cm. covering four square metres. Each sheet is numbered eastwards from south to north, three in the longitudinal and four in the latitudinal sense (Fig. 2a). The first sheet (No. 1) at the southwest of the Charta's twelve-sheet setting (known as the Constantinople sheet) was published first, independently, in Vienna in 1796, whilst the other eleven sheets, engraved by Franz Müller (1755-1816)⁹, were published in 1797 in the Nitsch printing house. The average scale is ~1:600.000, varying from 1:650.000 at the east and west edges of the map to 1:600.000 and 1:550.000 at the south and north edges respectively¹⁰ (Fig. 2b). The representation is accomplished with a 32-directions windrose, nine city plans, a catalogue of names derived from the ancient Greek, Roman, medieval and modern history and a legend with the explanation of 19 thematic symbols.

The geographical area depicted in Rigas *Charta*, which is Southeast Europe, is a region of high interest, concerning the historical context, and has attracted the interest of cartographers since the 16th century (Fig. 2c).

Concerning *Charta's* projection and framing of meridians and parallels, it has been indicated that the map "suffers" at the representation of the system of meridians and parallels, which are proved to be conflicting with the projection system of its geographical content¹¹.

Almost the 2% of the 1220 original full 12-sheet maps published in Vienna are known today, in libraries and private collections in Greece and around the world¹². A recent research unveiled the up today unknown existence of two versions of the *Charta*, Version-A and Version-B, with striking differences in terms of existing and missing or corrected toponyms in the two map versions¹³.

map, the proper union of the map-sheets in a unique two by two metres map, the compatibility of the coastline and of the geometric content with other maps taken as standards, the study of scale variation, the analysis of its projective properties, its deformation analysis, the geometric placement and reference of Charta's thematic elements (toponyms, verbal elements, symbols, images etc.) as well as a number of other issues related to the theory and practice of scientific and technological cartography. E. Liveratos, 2008a. "On the Cartography of Rigas' Charta", *e-Perimtron*, Vol.3, No3, pp. 120-145.

⁸ Full title: *Χάρτα της Ελλάδος εν η περιέχονται αι νήσοι αυτής και μέρος των εις την Ευρώπην και Μικράν Ασίαν πολυαριθμωων αποικιών αυτής [...], νυν το πρώτον εκδοθείσα παρά του Ρήγα Βελεστινλή Θετταλού χάριν των Ελλήνων και φιλελλήνων. 1797. Εχαράχθη παρά του Φρανσουά Μήλλερ εν Βιέν.*

⁹ Written as "François" (*Φρανσουά Μήλλερ*) in Greek (see fig. 3a). Franz Müller is also the engraver of Rigas' two previous maps of Moldowallachia (Moldavia and Wallachia).

¹⁰ E. Livieratos, 2008a.

¹¹ Ch. Boutoura, 2008. "On the map projection of Rigas Velestinlis Charta", *e-Perimtron*, Vol. 3, No 3, pp.146-160. Departing from the dominant at that time Delisle cartographic representation models, the Delisle map projection was implemented in the study of Rigas map proving that despite the fact that his Charta follows the geographic content according to Delisle mapping parametrization, its graticule framing is erroneously traced deviating the Delisle's relevant standard. As an example, the case of the meridian of 46° is used here, passing through Constantinople (see below, Fig. 8), to which is given the value of 46 degrees for the longitude from Ferro, instead of the correct value 46.5 degrees. An interpretation for this error is attributed either to the misapprehension of the right edge line of the map framing passing through that city in a number of Delisle standard maps which were apparently used as originals, or to ideological motivation or even to the technique of magnifying the original maps by a pantograph. See also E. Livieratos, 2008a.

¹² In Greece (Athens, Thessaloniki, Kozani, Ampelakia, Kapesovo, Tinos isl., Andros isl., Velestino), Vienna (Austrian National Library at Vienna – ÖNB), Paris (National Library of France - BNF), London (British Library), Kensington (Library of the Royal Geographical Society), Cambridge Massachusetts (Library of Harvard University) and in Stockholm (Royal Library - KB). See also G. Schinas, 2002, "Ē Kharta tou Rēga: Sōzomena antitypa kai katagrafē tous", *Ypereia*, t. 3, Proceedings III International Conference Ferai-Velestino-Rēga, Athens: Epistēmōnikē Etaireia Meletēs Ferōn-Velestinou-Rēga.

¹³ E. Livieratos, 2008a.

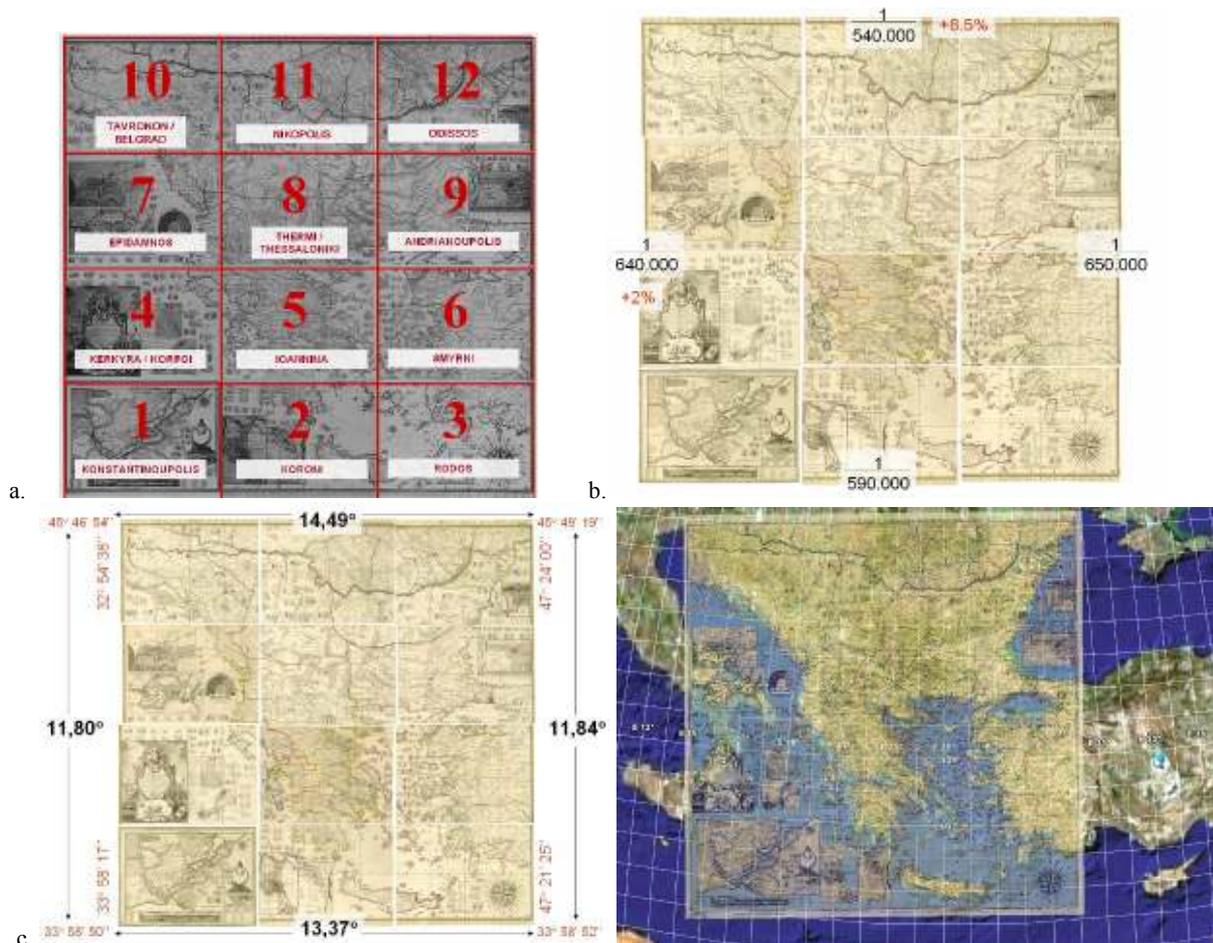


Figure 2: a. The numbering (the sheet titles are arbitrary, following the name of the major town depicted), b. The scale and c.

The geographical window of Rigas' *Charta*. According to the *Charta*'s own geographic coordinate system, with the zero reference meridian at Ferro, the four edge-frame coordinates assigned to the *Charta*'s window are: $\lambda = 33^{\circ} 58' 17''$, $\varphi = 33^{\circ} 58' 50''$ at SW, $\lambda = 47^{\circ} 21' 25''$, $\varphi = 33^{\circ} 58' 52''$ at SE, $\lambda = 32^{\circ} 54' 38''$, $\varphi = 45^{\circ} 46' 54''$ at NW and $\lambda = 47^{\circ} 24' 00''$, $\varphi = 45^{\circ} 49' 19''$ at NE.

From a pure cartographic point of view the *Charta* belongs to the so-called scholar "post-ptolemaic" cartography, which is characterized, among other things, mainly by the addition in the maps of place-names that were not mentioned in Ptolemy's record. The ancient ones of these place-names were obviously derived from other ancient sources, but without ever being reported by which one. Rigas follows mainly the maps of the so called "Delisle typology" (or "Delisle standard") published in the course of 18th century, until at least 1795, not only by Delisle but also by other cartographers and mapmakers. The emphasis on Greek antiquity, as well as on Byzantium, is shown by the emblematic cartouche, the nine inset plans, important events of antiquity or other information in the form of messages near the places with which were connected, names of Greek history's important persons on the margin of the map, as well as by the depiction of 162 ancient Greek, Roman and Byzantine coins in several places of the *Charta*¹⁴ and finally, by Rigas' technique of marking, where it is possible, the ancient name of a place together with its modern one.

¹⁴ V. Penna, 1998. "Ta nomismata tēs Khartas tou Rēga", in: *200 Khronia tēs Khartas tou Rēga 1797-1997*, Symposium Proceedings, Kozani 18 October, Thessaloniki: Khartografikē Epistēmōnikē Etairia Elladas – Paratērētēs, pp. 67-83. M. Pazarli, 2008. "The coins represented in Righas *Charta* as a major thematic cartographic element", *e-Perimtron*, Vol. 3, No 3, 173-182.

Anthimos Gazis' *Pinax*¹⁵ of Greece is a map in four¹⁶ sheets of total dimensions ~1X1m¹⁷, printed in Vienna in 1800 (second edition 1810). There is no evidence on how many copies were printed; today only 8 or 9 copies are known, in libraries and private collections all over the world¹⁸. Franz Müller¹⁹ was again the engraver and is referred also as editor in the title of the map (Fig. 3).



Figure 3. a. *Charta*: edited by Rigas Velesinlis, Wien 1797, engraved by Franz Müller. The map is dedicated to the Greeks and Philhellens. b. *Pinax*: correct. by Anthimos Gazis, engraved and edited by Franz Müller (different spelling than in *Charta*), Wien 1800, dedicated to Greeks.

Pinax' scale is ca. the half of Rigas *Charta*'s, ~1:1.200.000, similar to the scale of Delisle maps, which were most probably used as Rigas' models²⁰ Fig. 4). Gazis' map is often considered in the carto-bibliography as a *Charta*'s second edition in smaller dimensions, actually reduced in its half^{21,22}

¹⁵ Full title: *Πίναξ Γεωγραφικός της Ελλάδος με τα παλαιά και νέα ονόματα. Επιδ. υπό Α. Γαζή Μηλιώτου και εκδοθείς παρά Φρανσουά Μύλλερ. Αφιερωθείς τω Γένει των Ελλήνων. α.ω. 1800. Εν Βιέννη.*

¹⁶ The reference is made to the copy derived from The National Central Library of Florence (<http://www.bncf.firenze.sbn.it/>). In the cartobibliography there are references to copies in 11/12 map sheets, without clarifying if this is the original status of the map or the original 4 map sheets were cut in more pieces later. Βλ. π.χ. Ch. Reichard, 1808, N. Vamvounakis, 2009.

¹⁷ E. Livieratos, 2008c. "O Pinax tou Anthimou Gazē". In: *Ē Kozanē ston kosmo tōn khartōn*, map exhibition, http://cartography.web.auth.gr/KOZ_Gaz_Ell.pdf. ____ 2008e. The Anthimos Gazis' World map in Kozani. E-Perimtron, Vol. 4, No 2, pp. 95-100.

¹⁸ Vienna (Austrian National Library at Vienna –ÖNB), Paris (National Library of France - BNF), Florence (National Central Library - BNCf), Berlin (Staatsbibliothek), Cambridge Massachusetts (Library of Harvard University). See also N. Vamvounakis, 2009. *Anthimos Gazis: 'Pinax Geographikos tēs Hellados', Vienna, 1800*, <http://gazismapgreece.blogspot.com/2009/07/pinax-geographikos-tes-hellados-map-of.html>. Online 15 July 2009.

¹⁹ "François" in Greek, but in different spelling: *Φρανσουά Μύλλερ*.

²⁰ G. Delisle, *Graeciae antiquae tabula nova septentrionalis / meridionalis*. See E. Livieratos, 2008a.

²¹ See e.g. G. Tolia, "Antiquarianism, Patriotism and Empire. Transfer of the cartography of the Travels of Anacharsis the Younger, 1788-1811", *e-Perimtron*, Vol. 3, No. 3, 2008, 101-119. Guiomar J.-Y., 2006. In stereotypic early 19th c. cartographic catalogs, like the catalog of the Library of prince Labanov Rostovski, both *Charta* and *Pinax* are included under the maps of Ottoman Empire: first the *Charta*, No 1350, as "GRÈCE (carte de la); d'après les observations les plus récentes, avec les médailles les plus remarquables et les plans des villes principales. 1797, Vienne. 12 feuilles en grec [...] très rare or extrêmement rare" and *Pinax*, No 1351, as a reduction in 12 map-sheets. *Catalogue des Cartes géographiques, topographiques et marines de la bibliothèque du Prince Alexandre Labanoff de Rostoff à Saint Petersburg*, Paris: Didot, 1823. Επίσης, στον κατάλογο Charles de Martens, 1832, *Guide diplomatique*, t. I. Leipzig : F. A. Brockhaus, 440-444.

²² There is a misunderstanding going back to the very early bibliography about *Charta* and *Pinax*: sometimes the two maps are considered to have the same dimensions, and the bigger size of *Charta* is ascribed to the addition

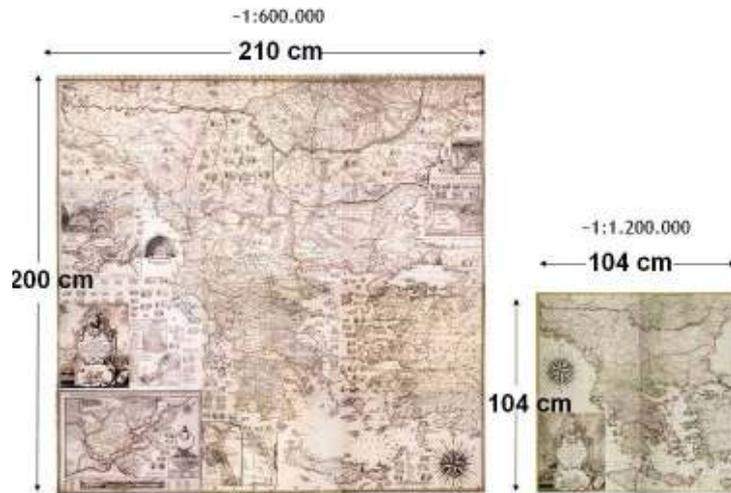


Figure 4. The dimensions of Rigas *Charta* (left) and Gazis' *Pinax* (right).

Despite the different scale and the smaller size, the windrose and the emblematic cartouche (Fig. 5) are in the same scale in both maps. The legend of the map, in smaller dimensions than in *Charta*, explains 18 symbols (the same as *Charta*, except for one missing: the symbol and explanation for "Ottoman forces"). The representations of 162 coins and its explanations, the catalogue with the historical personalities, the plans in *Charta* are missing from *Pinax*, while most of the comments inside the map are transferred identically. The overall geographical frame is almost identical, although the islands of Sicily and Cyprus are represented in insets²³ (Fig. 7), adding this way a reference to historically important places of ancient and Medieval Greek history, expanding thus *Charta's* geographical window with references to two areas of great interest for the Greek historical presence²⁴.



Figure 5. The emblematic cartouche and the windrose in the same scale (but in different placement) in both Rigas' *Charta* (left) and Gazis' *Pinax* (right).

of city plans and other thematic content. In the first criticism published for *Charta* and *Pinax*, Reichard pointed out that Rigas *Charta* could be at the same size as Gazis' map, if Rigas had passed over the irrelevant additions (*die allotrien*) in the geographical map. See Ch. Reichard, 1808.

²³ E. Livieratos, 2009.

²⁴ Beyond the standard image of Greece, as it was common in historical cartography between 14th-17th c. See E. Livieratos, 2005. *Khartinoi kathreftes tēs Hellados apo tēn Anaghennēsē stēn Paligennesia, 1406-1821*, Thessaloniki: Aristotle University.



Figure 6. From the legend of Gazis *Pinax* (right), the symbol and explanation for *ottoman forces* are missing. All the other symbols and explanations are almost identical.



Figure 7. The representation of Sicily and Cyprus in Gazis' *Pinax*.

Concerning its framing system, the *Pinax*' graticule framing system seems to be compatible with Delisle cartographic representation models without alterations (like in the case of *Charta*) (Fig. 8)²⁵.

²⁵ E. Livieratos, 2009.

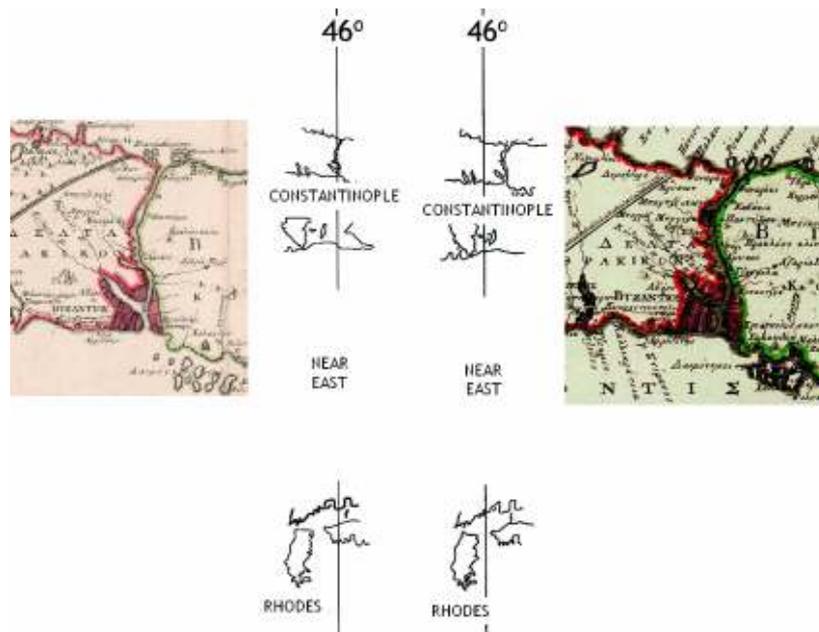


Figure 8. While *Charta's* geographical content follows the standards of the Delisle cartographic representation models, its graticule framing is not compatible and the meridians are spatially misplaced towards the east and west edges. Thus, the distance between the meridians is increasing towards the east and west edges. The 46° meridian is moved by Rigas 0.5° eastwards to pass through Constantinople (left). On the contrary Gazis' *Pinax* is given the correct value of 46.5° for the longitude from Ferro, according to the standards of the Delisle models. (Boutoura 2008)

In the emblematic cartouche in both maps, the dominant representation is the Goddess (Greece or Science²⁶), surrounded by symbols and depictions referred either to Science or to the democratic way of life, derived from the Greek ancient history and mythology²⁷ (Fig. 9). Anthimos Gazis' additions on the representation of the emblematic Goddess are characteristic for the ideological turning towards an armed activism to support the Greek struggle of independence, which until then was only ideological (Fig. 10).



Figure 9. The emblematic cartouche in *Charta* (left) and in *Pinax* (right).

²⁶ Laios 1960. Tolia 2008a.

²⁷ Scenes representing the Greek agora, athletic games, the struggle of Hercules with Amazons, the Colossus of Rhodes etc. G. Laios 1960.

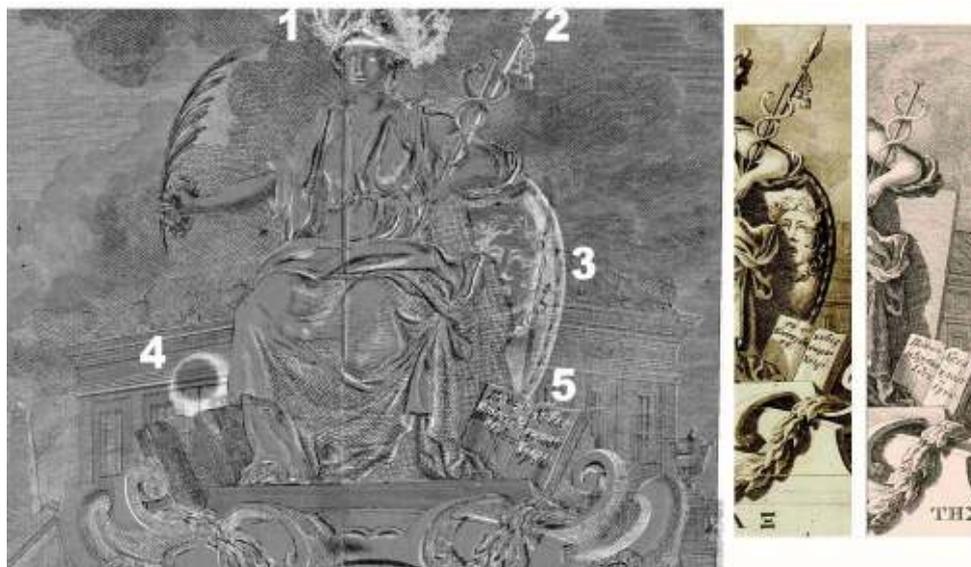


Figure 10. Gazis' additions in the representation of Science/Greece: the Goddess wears a helmet (1), she holds a spear together with its kerykeion (caduceus, a symbol of fertility and wisdom as well as diplomacy, neutrality and non-combatant status) (2) and she is resting on her shield (3). There is a sphere next to the book of geometry (4) and the text in the second book is different (Livieratos 2009)

Differences between the Rigas' *Charta* and Gazis' *Pinax* are noticed on the representation of major and key geographical areas coastline, like the Chalkidiki peninsula, the south and south-western coasts of the Black Sea, the islands of Sporades and Euboea, the north-western and south-western coasts of Peloponnesus (Fig. 11).

Moreover, Gazis transcribes the toponyms identically, in many cases at the same position as well. It seems though that in other cases Gazis corrected and added the toponyms or their symbols given by Rigas (Figs. 12, 13, 14).

Conclusion

In conclusion, from the up-to-day research on the maps of Greece by Rigas Velestinlis and Anthimos Gazis, both born in Vienna in the end of 18th century, it seems that the systematic analysis and their comparative study with the assistance of digital technologies confirms the initial understanding that in the case of Anthimos Gazis' *Pinax* we deal with a self-existent map, more than just a simplified version of Rigas *Charta* in smaller dimensions, with many similarities and enough alterations.

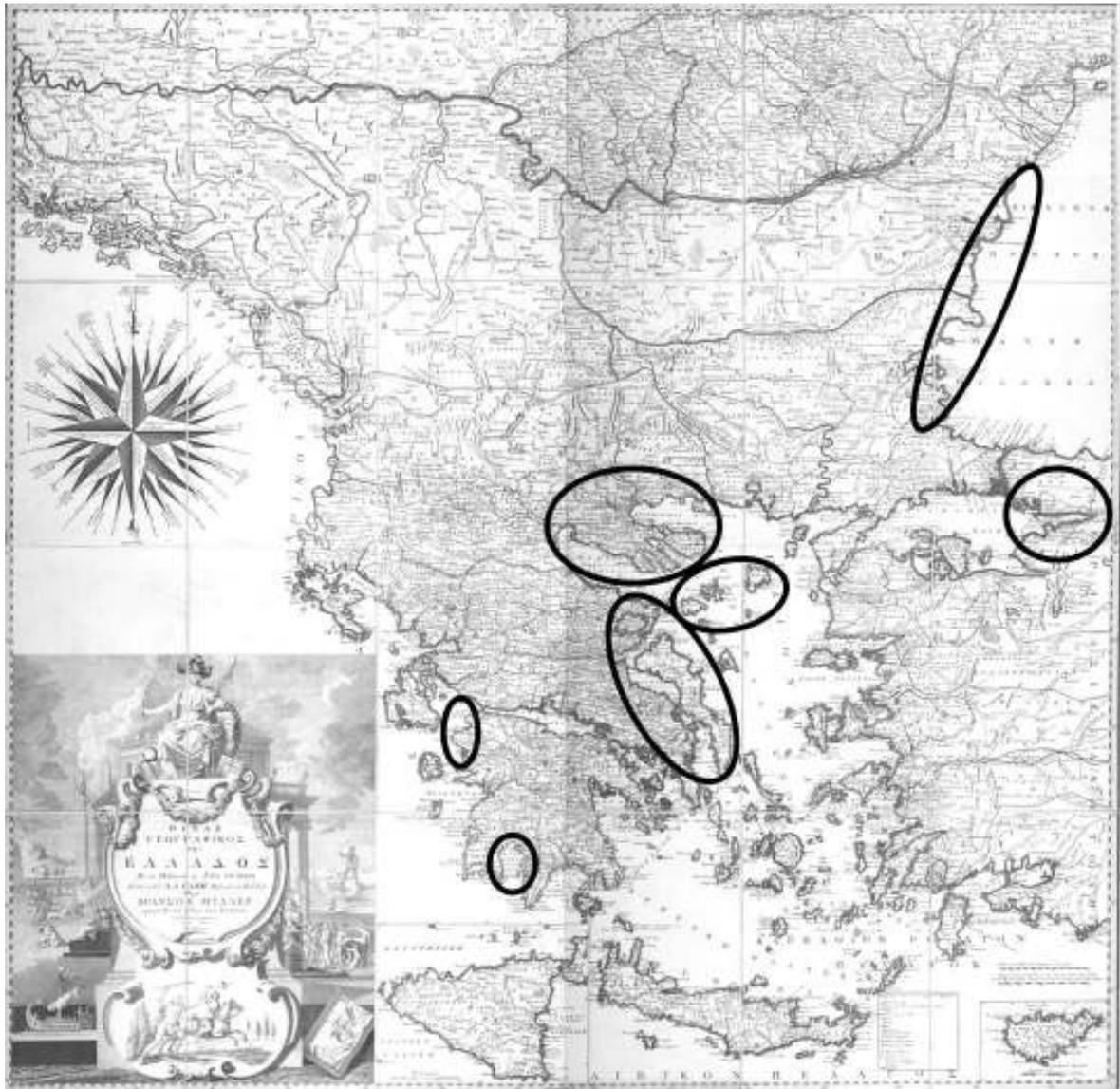


Figure 11. Differences in the representation of coastline in the Chalkidiki peninsula (especially in Mth Athos) the south and south-western coasts of the Black Sea, the islands of Sporades and Euboea, the north-western and south-western coasts of Peloponnesus. The coastline in other major geographical areas, like the Ionian and Cyclades islands, Crete, Adriatic coasts, Bosphorus etc. does not show any alterations (Livieratos 2009).



Figure 12. Comparison with digital transparency of the region of North-eastern Aegean sea (Lesvos isl., coast on Asia Minor) between Rigas' *Charta* (white drawing and lettering) and Gazis *Pinax* (black drawing and lettering). It is obvious that the coastline in Lesvos isl. and Asia Minor are similar. In many cases the spelling and the editing of the toponyms are identical (geographical areas e.g. ΑΔΡΑΜΥΤΙΟΣ ΚΟΛΠΟΣ, ΦΩΚΙΚΗ ΘΑΛΑΣΣΑ, ΑΙΟΛΙΣ, cities e.g. ΠΕΡΓΑΜΟΣ), while in other cases (ΜΥΡΙΝΑ / Σεβαστόπολις / Γιουζέλ χιζάρ) the triple name is the same but the placement on the map is altered (blue dot in *Pinax*, red in *Charta*). The tracing of rivers and provinces boundaries is almost identical. Rigas' coins and the commentary next to them are missing from Gazis' map.

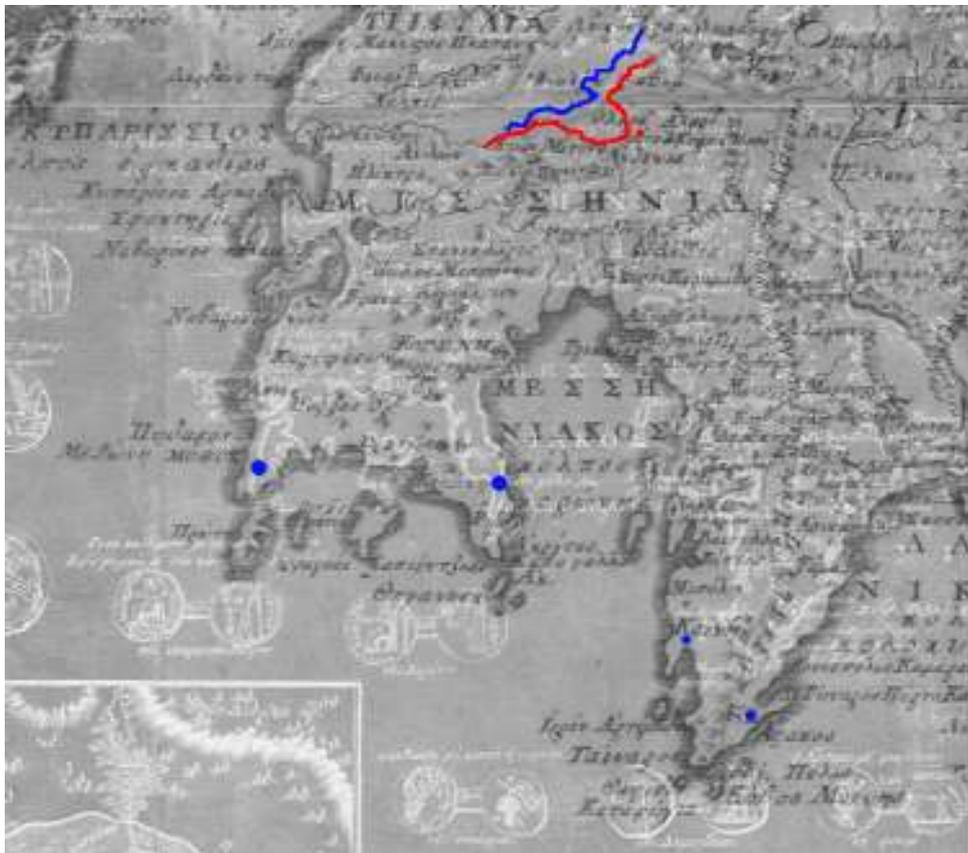
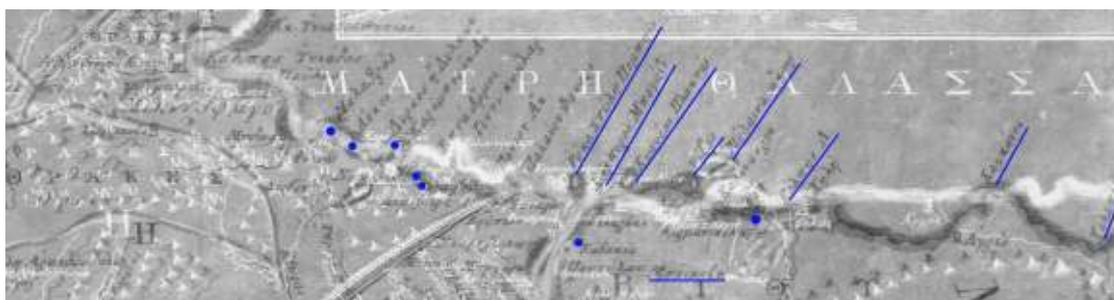


Figure 13. Comparison with digital transparency of the region of Messinia (SW Peloponnesus) between Rigas' *Charta* (grey background and white lettering) and Gazis *Pinax* (white background, black lettering). The coastline varies in the area of Messinis gulf. The editing and the number of toponyms varies: in Gazis' map the coins and the relevant comments are missing, the tracing of Nedas river is different, the toponyms *Νέδας π.* and *ήρα* are missing²⁸ (red dot), while the toponyms *Κολώνη*, *Καινή* and *Αστακος* (blue dots) are additions made by Gazis. Despite the general impression that the *Pinax* was engraved more carefully than the *Charta*, it is obvious that because of the different scale, Gazis' effort to include all Rigas' toponyms and his own additions result in the difficult reading of the map. The editing of toponyms in some cases is similar (*ΜΕΣΗΝΙΑΚΟΣ*, *ΜΕΣΣΗΝΙΑ*, *ΤΡΙΦΥΛΙΑ*, *ΚΥΠΑΡΙΣΣΙΟΣ* / *κόλπος αρκαδιάς*) and in other cases varies (*κόλπος κορόνης*).



a.



b.

²⁸ These toponyms are among those which are missing also from some editions of Rigas *Charta*, which belong to Version-A. See Livieratos 2008b



Figure 14. Comparison with digital transparency of the region of south-western Black Sea and Constantinople, between Rigas' *Charta* (grey background and white lettering) and Gazis' *Pinax* (white background, black lettering). The tracing of coastline varies in the south-eastern coast of Black Sea (b) and in the area of Astakios gulf (c), areas where the editing and the number of toponyms also is different: Gazis has added toponyms: *Κόλπος Υνιάδος, Μαλαθράς / Ασκός, Δέρκος ή Δέλκων* (in *Charta* just *ΔΕΛΚΩΝ*, with a different city symbol), *Επτά Άμμοι / Γεντί Κοιμυλάρ, Ρόκα / Στήλη Πομπηϊου, Βόσπορος Μπογάζι, Κυανέας / Πλακταί, Ρίβας, Μέλαινα άκρη, Ρόη, Κάλπησ Α., Χηλή, Καυκάνοι, Χαλεπλί, Καβάκια, Μπέικοζου, Νεοχωράκι* - blue lines or dots). Despite the general impression that the *Pinax* was engraved more carefully than the *Charta*, it is obvious that because of the different scale, Gazis' effort to include all Rigas' toponyms and his own additions results in the difficult reading of the map. The editing of toponyms in some cases is similar (*ΙΠΡΟΠΟΝΤΙΣ, ΗΡΑΚΛΕΙΟΣ κόλπος*) and in other cases varies (*Αργανθόνιος / Χαμπαντζή όρ.*)

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