

PASTE – PAPER – SCISSORS GEOGRAPHICAL ASPIRATION MEETS HOBBYIST’S AMUSEMENT IN PHILIPPE VANDERMAELEN’S *ATLAS UNIVERSEL* (1825–1827)

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Between 1825 and 1827, the Belgian amateur cartographer Philippe Vandermaelen (1795–1869) published the *Atlas universel de géographie physique, politique, statistique et minéralogique*, a project that was as fascinating as it was megalomaniacal (Fig. 1).¹ The six volumes containing a total of 379 maps showed the entire surface of the earth at a scale of 1:1 641 836, which was unusually large at the time.² Moreover, the maps could be detached from the volumes, their margins cut away and the maps pasted together in such a way that the result was a huge model of the earth – a globe with a diameter of about 7 755m.³

The volumes of the *Atlas universel* cover, in the order in which they are numbered, Europe, Asia, Africa, North America, South America and Oceania, and include different numbers of individual maps, depending on the size of the continent. Vandermaelen also supplemented the first

1 Philippe Vandermaelen, *Atlas universel de géographie physique, politique, statistique et minéralogique*, 6 vols., Brussels 1825–1827. As closed books, the volumes have dimensions of approx. 56 × 41 cm each, which means that the lower edge of the sheets, when unfolded, measures around 80 cm in length.

2 This scale is comparable to that of today’s common road maps of larger regions, such as in maps of England.

3 Examples of Vandermaelen’s giant globe have not survived. However, the Princeton University Library has created a virtual 3D version, which can be accessed via the library’s website: URL: https://lib-dbserver.princeton.edu/visual_materials/maps/websites/vandermaelen/video.mov?Submit=Video (accessed 30.05.2022).

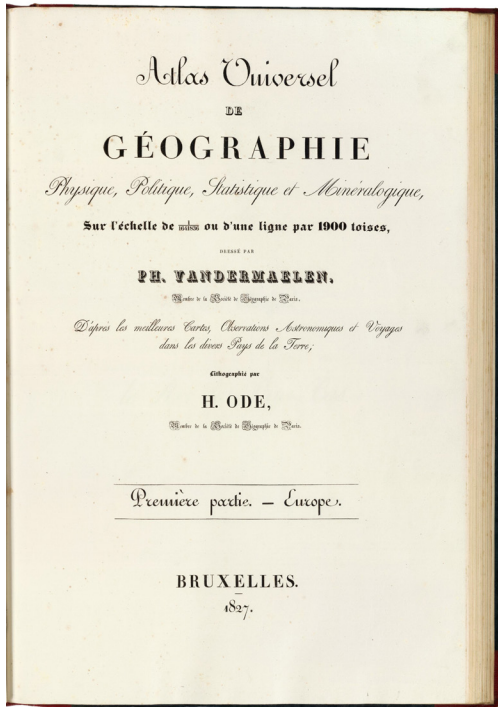


Fig. 1
Philippe Vandermalen, title page from the *Atlas universel de géographie physique, politique, statistique et minéralogique*, vol. 1: *Europe*, Bruxelles 1827, lithography, 54 × 36 cm, David Rumsey Map Collection

volume with statistical tables featuring data on the areas, population sizes and troop strengths of various central European countries.⁴ Each volume opens with a special map, a *Carte d'assemblage*, which assembles on one sheet all the maps contained in the volume in a single map (Fig. 2). The maps are referenced with differently coloured and consecutively numbered contiguous rectangles, their numbering corresponding to that of the subsequent individual maps (Fig. 3, Fig. 5). The interconnectedness of the *Cartes d'assemblage* suggests that they can be understood as instructions on

⁴ The first volume of the *Atlas universel* additionally contains a dedication leaf for King William I of the Netherlands and a *Tableau comparatif* (comparative table) of mountain attitudes.

how to use the *Atlas universel*. They show how its maps can be assembled, first into images of the continents and finally into a coherent geographic model of the earth.

If all the maps of the six volumes are joined together, the result is a huge overall view of the earth's surface, comprising 30 maps from one pole to the other and 60 maps in the equatorial zone. Sea areas and poles remain blank in this overall view, since none of the atlas' volumes contains maps of these areas. However, as Vandermaelen explains in an accompanying sales brochure, these supplements could be acquired upon request: "Those of the gentlemen subscribers who wish to build a globe [...] are requested to let us know, and we will deliver to them all the sheets necessary to cover the surface of the globe [...]. These sheets, provided with the degree grid lines and meridians, will be provided for only 35 cents."⁵

In order to provide the final product, i.e. the globe composed of individual maps pasted together, the necessary stability, Vandermaelen advised users in the same brochure on the construction of a substructure on which the maps were to be fixed. The most suitable would be a wooden sphere that would protrude five centimetres at the equator to make it easier to distinguish the hemispheres. In order to protect the sensitive paper surface from the weather, it was further explained, the sphere should be placed indoors, in a room with a minimum size of 12 × 12 metres. Ideally, this room would be equipped with a gallery that could be accessed on both sides and that would also run around the centre of the globe to allow not only detailed observation from below, but also a close study of the northern hemisphere.⁶

5 Philippe Vandermaelen, *Atlas universel de géographie physique, politique, statistique et minéralogique. Prospectus*, Brussels 1827, pp. 6–7: "Ceux de MM. les Souscripteurs qui désireraient former un globe au moyen de la réunion des cartes, sont priés de nous en prévenir, et nous leur livrerons toutes les feuilles nécessaires pour couvrir la surface d'un globe du diamètre annoncé ci-dessus. Ces feuilles qui présenteront les parallèles et les méridiens, ne couteront que 35 cents". Cited from: Liliane Wellens-De Donder, "Le globe géant de Philippe Vandermaelen a l'Établissement géographique

de Bruxelles", *Der Globusfreund*, 18, 20 (1970), pp. 130–133, here p. 130.

The prospectus of the *Atlas universel* appeared in 1827 together with one part of the maps of the atlas in French and two years later also in English.

6 Wellens-De Donder 1970 (note 5), p. 131. The cost of building the globe was 2 947 guilders and 50 cents, plus the price for cardboard and copper circles; these were of a special kind which meant that their price could not be estimated in advance. The cost of building a gallery was estimated at 2 080 Dutch guilders.

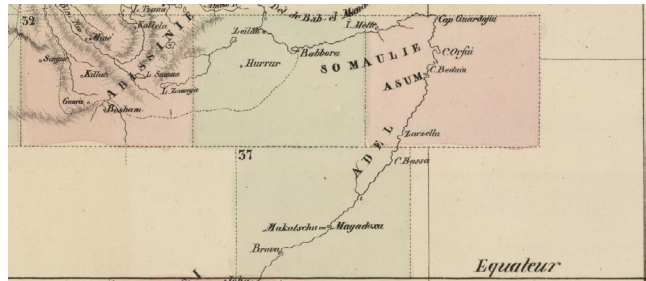
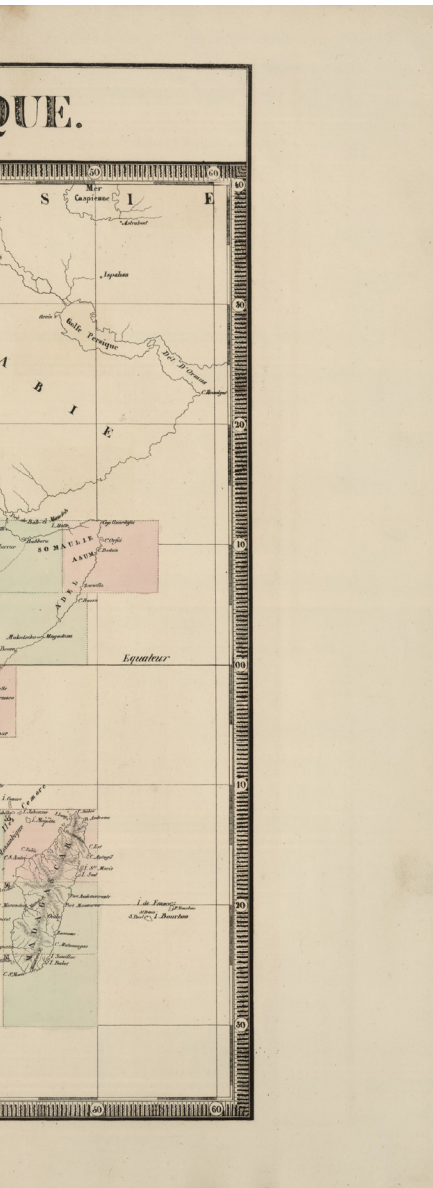


Fig. 3
Detail from Fig. 2

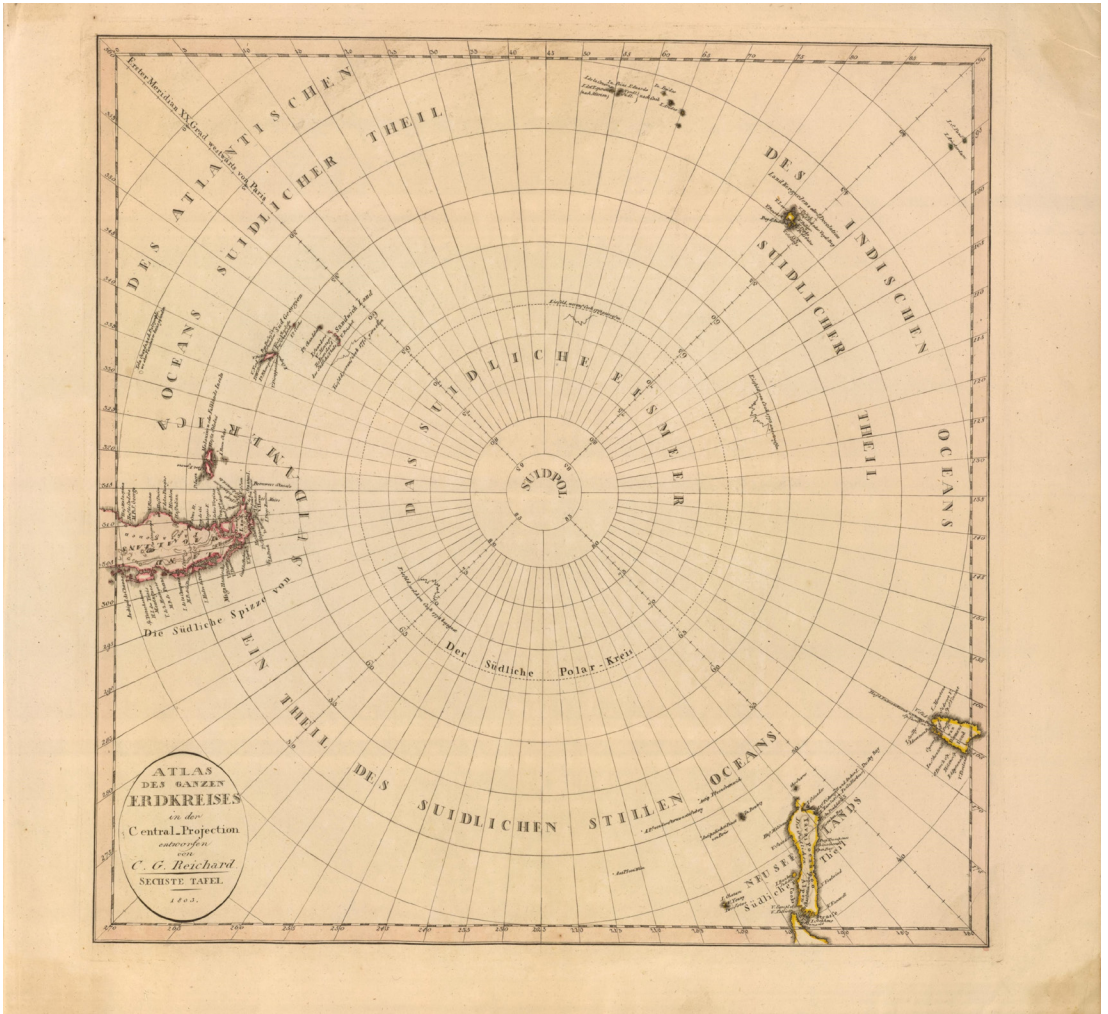


Fig. 4
Christian Gottlieb Reichard, Tafel 4 (map 4)
from his *Atlas des ganzen Erdkreises, nach
den besten astronomischen Bestimmungen,
neuesten Entdeckungen und eigenen Unter-
suchungen in der Central-Projection auf
VI Tafeln*, Weimar 1803, 43 × 43 cm,
David Rumsey Map Collection

The sheer dimensions of this globe, and the enormous effort required for its construction, make Vandermaelen's project seem extraordinary, if not absurd. However, as a geographical product, it can be linked to a tradition of geographical representational practices in which maps could be assembled by consumers to construct a model of the earth. This tradition can be traced back about 500 years in Europe; the first samples date back to the early 16th century. Thus, they appeared only slightly later than the first known models of the *globus terrestris*, that is, three-dimensional models of the earth's sphere.⁷ One of the best known early examples of a model of the earth that had to be assembled via gluing is Martin Waldseemüller's segment map of the globe of 1507, which, when glued on to a wooden sphere, results in a globe of almost 30 cm in diameter (Introduction of this volume, **Fig. 3**). Today, it is still possible to buy kits containing printed sheets of paper that can be used to construct a geographic model of the earth; these are introduced in more detail at the end of this article (**Fig. 6**).

A particular eagerness to experiment with the development of topographical paper models that were to be glued together by the consumer can be observed in the first half of the 19th century and thus during Vandermaelen's lifetime. In 1803 for example, only a few years before the publication of the *Atlas universel*, Christian Gottlieb Reichard (1758–1837) published his *Atlas des ganzen Erdkreises, nach den besten astronomischen Bestimmungen, neuesten Entdeckungen und eigenen Untersuchungen in der Central-Projection auf VI Tafeln* (Atlas of the Entire Circle of the Earth, According to the Best Astronomical Determinations, Latest Discoveries and his Own Investigations in the Central Projection on VI plates), whose six sheets could be glued together to form a cubic model of the earth (**Fig. 4**). The reasons behind the large number of such experimental self-assembly earth models at this time lie in a number of social and technical developments which began with the Age of Enlightenment and continued

7 Examples of celestial globes nevertheless date back much earlier, namely to the 2nd century, which is when our calculation of time originated. Although descriptions and calculations of the globe are also known from antiquity, there is no evidence of any terrestrial globes from this time. One of the earliest, if not the earliest example is a model made by Martin Behaim (c. 1459–1507)

in Nuremberg in 1492 after Christopher Columbus reached the American coast. See Sylvia Sumira, *Globes: 400 years of exploration, navigation, and power*, Chicago 2014; *Die Welt in Händen: Globus und Karte als Modell von Erde und Raum*, ed. Lothar Zöger, Berlin 1989.

in the following decades. They affected geography, primarily, on account of the significant increase in the recording of geodata. Furthermore, new printing techniques made it possible to produce geographic products much more cheaply, and printed products could be distributed more easily and widely due to faster means of transportation. The target audience of the products also became more diverse: geographic products of various kinds were now no longer developed only for experts and specialized enthusiasts, but also for hobbyists and children.⁸

The *Atlas universel*, too, is an object that was evidently intended to appeal not only to a niche group, but to as broad an audience as possible. For whilst Vandermaelen clearly asserted its scientific value, as is expressed in particular by its dedication to the specialist world of geography, the demands it makes on consumers' own initiative as a self-assembly model points to its ludic, handcrafted quality. However, the purpose of either of these qualities was never truly achieved: while the time-consuming assembly of the giant globe was basically an impossibility, at least for private users, the atlas also missed the mark in terms of its scientific, geographical interest, for the geographic information contained in the maps was in large parts inaccurate.

This aside, what role is played by the practice of gluing in Vandermaelen's atlas and its classification? The assumption of this essay is that gluing is the key to approaching this contradictory project analytically, to locating its emergence in a particular time period, and thus to making it tangible as a historical phenomenon. The process of gluing is central here in that it can be linked to various developments at the time of the atlas' creation, both in terms of distribution and the incentive to buy. A wider audience wanted access to geographic products, which provided incentives for higher print

8 Maps were now in much greater demand for private use, for example, for travel undertaken for private purposes that was now taking place more frequently. Maps also fulfilled a new function in education, for example, where they were used as illustrations in books for children and young people. One example of this is Joachim Heinrich Campe, *Robinson der Jüngere*. On Enlightenment pedagogy see Jürgen Overhoff,

Die Frühgeschichte des Philanthropismus (1715–1771). Konstitutionsbedingungen, Praxisfelder und Wirkung eines pädagogischen Reformprogramms im Zeitalter der Aufklärung, Tübingen 2013 [2004]. An unsurpassed overview of the development of cartography in the Enlightenment is provided by *The History of Cartography*, vol. 4: *Cartography in the European Enlightenment*, ed. by Matthew H. Edney and Mary Sponberg Pedley, Chicago 2020.

runs, increased the radius of distribution, and also led to creative and innovative product developments. Three aspects – the economic, the ludic and the scientifically educational – intertwine here and find a common denominator in the gluing process. This will be examined in more detail below in connection with the *Atlas universel*.

Production and distribution of the *Atlas universel*

Vandermaelen was not a professional cartographer, but from his youth he had taught himself cartographic drawing.⁹ He came from a wealthy merchant family and was himself successfully involved in trade throughout his life. This enabled him to pursue his passion for geography, build up a large collection of geographic books and maps, and issue his own cartographic publications. In 1830, Vandermaelen also established his own geographic institution, the *Établissement géographique de Bruxelles*, which included a library, a map printing press, a museum and a planetarium.¹⁰

The *Atlas universel* was Vandermaelen's cartographic debut – and an extraordinary economic success. By 1829, 810 buyers had bought a copy, despite the steep price of 600 gold francs.¹¹ To attract buyers, Vandermaelen promoted his atlas widely, in Belgium and abroad, even before it was published. The first so-called delivery of the *Atlas universel* was

9 On the biography of Philippe Vandermaelen see Marguerite Silvestre, *Philippe Vandermaelen, Mercator de la jeune Belgique. Histoire de l'Établissement géographique de Bruxelles et de son fondateur*, Brüssel 2016. According to an anecdote, Vandermaelen initially developed his enthusiasm for maps by tracing Napoleon Bonaparte's campaigns on maps and manually tracing the troop movements. Charles Sury, "Philippe Vander Maelen et l'établissement géographique de Bruxelles", *Ciel et Terre (Bulletin of the Société Belge d'Astronomie)* 40 (1924), pp. 173–195, here p. 173.

10 Vandermaelen was honoured many times during his life for his geographic works, and he was also a member of

numerous scholarly societies in Belgium and abroad. Despite these achievements, the *Établissement géographique* was closed and its collection distributed only a few years after Vandermaelen's death, in 1878. In 1880, large parts of the collection were transferred to the Royal Library of Belgium and to the Belgian *Institut géographique*. See Omer Tulippe, "Philippe Vandermaelen, cartographe et géographe 1795–1869", in *Florilège des sciences en Belgique*, ed. Académie royale de Belgique, Bruxelles 1968, pp. 531–549.

11 E. Gilbert de Cauwer, "Philippe Vandermaelen (1795–1869). Belgian map-maker", *Imago Mundi*, 24 (1970), pp. 11–20, here pp. 11–12.

finally launched in 1825, followed by 39 more until 1827.¹² In publishing it, Vandermaelen followed the then-common distribution method for expensive publications: several maps of the atlas were combined into bundles of maps that were delivered at the same time. It was only after a certain period of time, when all maps had been delivered, that the buyer had access to the publication in its entirety. Mostly, each of the deliveries was invoiced individually. In this way, Vandermaelen only had to pre-finance the production in stages, and the buyers could convince themselves of the quality of the maps before they accepted the next delivery. In addition, other factors supported the distribution of the atlas. Vandermaelen, for instance, benefited from the technical innovation of lithography: his maps were produced using this comparatively low-cost and fast printing technique, which he was apparently one of the first to use for cartography.¹³

A project of such magnitude as the *Atlas universel* was only made feasible by these production and distribution methods. To date, little research has been done on the implications of targeting consumers to actually assemble the giant globe themselves. It is also unclear whether Vandermaelen's intention was to generate consumer curiosity by selling the globe in this format, or whether he hoped it would generate an additional source of income – the construction of the globe required supplementary material, which Vandermaelen also wanted to supply. What is certain is that whilst the atlas became a great commercial success, the same cannot be said for the globe. Only the Royal Bourbon Library in Naples ordered the complete set of atlas sheets, including the oceanic survey maps. However, it is not known whether the globe was actually constructed there.¹⁴

Following the lack of response to his suggestion of gluing a globe together, Vandermaelen took the initiative himself. Initially, he tried to win over the city of Brussels for his project and have the globe erected for the industrial exhibition of 1830. After initial approval, however, the city administration put Vandermaelen on hold until a later date. Disappointed by this development, he completed his project himself. The plans drawn

12 Precise details of the size of the print runs are not known. Vandermaelen himself mentioned 40 copies in the prospectus of the *Atlas universel* (note 5).

13 De Cauwer 1970 (note 11) , pp. 11–12.

14 Wellens-De Donder 1970 (note 5), p. 131.

in 1831 from his Brussels-based *Établissement géographique* show a huge globe on the second floor. The globe was located in the library, which was housed in a high, domed room. It was mounted on a square map cabinet, three and a half square metres wide and one metre high. This allowed the southern hemisphere to be explored comfortably from a standing position, while a raised gallery that half encircled the globe enabled a closer look at the northern hemisphere.¹⁵

A pasted globe – crafting with the *Atlas universel*

The development of the *Atlas universel* coincides with the “invention” of leisure time, i.e. the assertion of a concept that distinguishes individual recreational time from working time. Along with the establishment of leisure time, activities to fill non-working time, e.g. tinkering in the field of handiwork, were also differentiated as such. The English term “handicraft” as well as the French term “bricoler” and the German term “basteln” describe these activities. As terms, they can be traced back to at least the 15th century. However, the English term “handicraft” even then included non-professional results of the handiwork produced, and it has not changed its meaning significantly over the centuries. The German and French terms, on the other hand, rooted in other meanings and changed their connotation in the 19th century in order to describe a leisure activity of simple manual work. Through the activity of “handicraft”, “bricoler” or “basteln” leisure time was passed through engaging in a haptic, playful activity using various materials. Etymologically, the German term “basteln” contains the image that something is put together in the process: the verb “basteln”, deriving from the noun “Bast”, goes back to the activities of

15 The globe no longer exists; its fate is unknown. The last known mention of the object dates back to around 1890. The Belgian history professor Charles Terlinden reports that in his childhood he visited a room in the abandoned rooms of the *Établissement géographique* that “was almost filled with a huge globe whose pole almost touched the ceiling. It [...] could be moved by a simple pressure

of the hand, despite its enormous mass.” The globe thus seems to have lasted for some time after the dissolution of the *Établissement géographique*, perhaps until the death of Joseph Vandermaelen, Philippe’s son, in 1894. See Charles Terlinden, “Vieux souvenirs bruxellois. L’Institut géographique van der Maelen et ses collections vers 1888–1890,” in *Cahiers bruxellois*, 10 (1965), pp. 284–287.

“lacing” or “tying”. Gluing, an elementary component of handicrafts, serves precisely this purpose of joining and fixing something together. The clustered development of self-assembly geographic models in the early 19th century suggests that, in terms of cultural history, it was closely linked to the new developments in connection with leisure time in general and handicrafts in particular.¹⁶

The practice of gluing essentially determines the specific shape of the *Atlas universel* – both the structure of the volumes and the composition of the individual maps. The arrangement of the maps in a bound volume, thus in the form of a book, is always recognisable as only one alternative of two possible ways of presentation. With the visual guidance of the aforementioned *Cartes d’assemblage*, which show how the maps can be transformed into a cohesive unit, i.e. the globe, the conception of the *Atlas universel* is comparable to playful activities such as building paper models or doing a jigsaw puzzle. By means of cutting and gluing, the geographic segments can be transferred into a spatial continuum according to the instructions and assembled to produce such a globe. In this way, the geographic information contained in the map is combined in the *Atlas universel* with geographic pleasure. Due to its enormous dimensions and the effort required to produce the giant globe, it nevertheless pushes the rules for handicrafts that come with explanatory instructions to the limits of what is feasible, if not beyond.

The omnipresence of the practice of “pasting together” in the book form of the atlas is particularly evident in the maps, where the map image that is shown borders on the unintelligible. Thus, some maps mainly show open spaces, such as Map 37 on the Cote d’Ajan from Volume 3 on Africa (Fig. 5). Others feature additional extensive text boxes or illustrations which also or exclusively refer to geographic features that lie outside the geographic section shown on the map.¹⁷ These compositional decisions relating to the individual maps only become apparent when they are understood as parts of the larger order – the globe’s surface.

16 See “basteln”, in *Etymologisches Wörterbuch des Deutschen*, ed. Wolfgang Pfeifer et al., Berlin 1993, URL: <https://www.dwds.de/wb/etymwb/basteln> (accessed 02.03.2022).

17 Map 8 of the volume on North America, for example, shows part of the Canadian coast, and contains a profile section of a map of Mexico, originally drawn by Alexander von Humboldt.

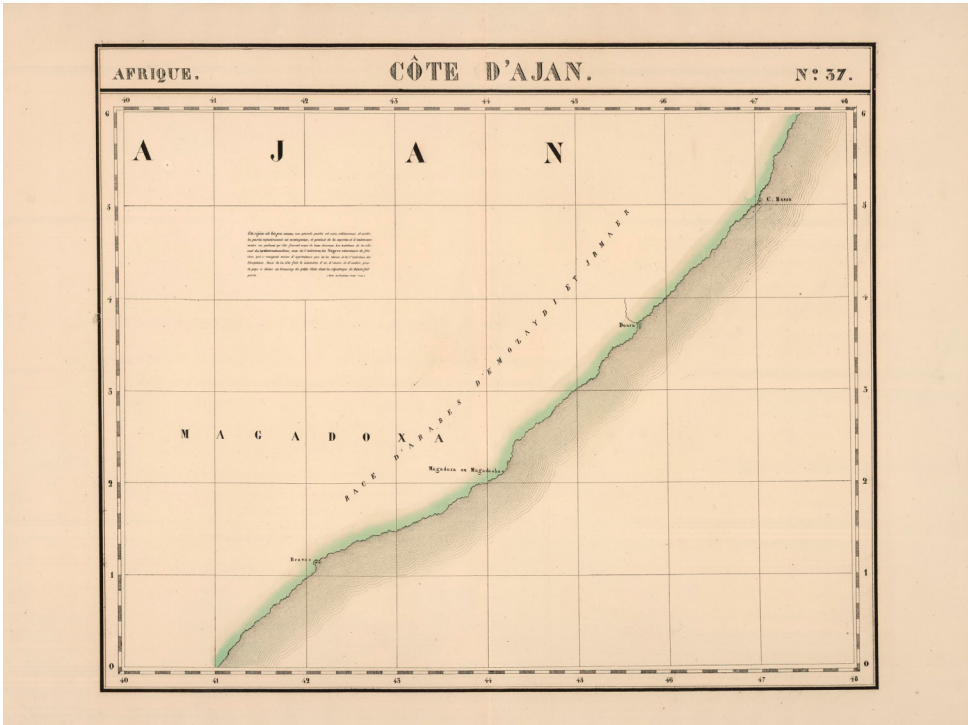


Fig. 5
Philippe Vandermaelen, *Cote d'Ajan* (map 37),
from his *Atlas universel de géographie physique,*
politique, statistique et minéralogique, vol. 3:
Afrique, Bruxelles 1927, lithography, 47 × 57 cm,
David Rumsey Map Collection

In order to actually make the globe realisable, Vandermaelen matched the maps to each other as if they were a kit. As he himself commented: “By underlaying our work with the conical projection method, we wanted to provide our subscribers a globe [...]; by this means, all the maps will be on the same scale”.¹⁸ The chosen scale of the maps also had to ensure their readability in both arrangements – in book form and as a globe – and that they were both visually appealing and rich in detail. This was probably

¹⁸ “En donnant à notre travail la projection par développements coniques, nous avons voulu procurer à nos souscripteurs, par la réunion des cartes, un globe

[...]; et par ce moyen, toutes les cartes seront sur la même échelle.” Vandermaelen 1827 (note 5), pp. 6–7. Cited in: Wellens-De Donder 1970 (note 5), p. 130.

one of the reasons why Vandermaelen decided on a scale that had not yet been used for a topographic representation of the entire surface of the earth of this size. But the large scale also presented Vandermaelen with problems because for some areas there was simply not enough geographic data available.¹⁹ Hence, as contemporary readers noticed, Vandermaelen used geographic information quite freely and distorted it in such a way that it was distributed as evenly as possible on the map surface.²⁰

For the sake of the overall project, Vandermaelen also attached little importance to scientific precision in technical decisions. However, great care was required, for example, in the selection of paper and in the printing process in order to ensure uniformity in the representations and scale of each map. The moisture that was produced by the printing process caused the paper to contract in unpredictable ways and to varying degrees as it dried on each sheet. Vandermaelen apparently did not take the necessary care and failed because of the “hygroscopic nature of the paper” (“hygroskopische Natur des Papiers”).²¹ Thanks to lithography, he was able to achieve rapid printing in large print runs and complete his project quickly at a relatively low cost.²² However, the maps no longer consistently corresponded to the specified, uniform scale. In the end, even the construction of the globe became problematic because the map images no longer fit together seamlessly when glued together. It is possible that Vandermaelen relied here on the leeway created by the fact that the margins of the map first had to be cut away for assembly. This allowed for the sheets of paper, which had contracted to different degrees during the drying process, to be adjusted in size to ensure that they matched one another.

19 In a review of Vandermaelen’s *Atlas universel*, Alexander von Humboldt remarked in this context: “Alone this state of our knowledge is lacking a great deal.” (“Allein an diesem Zustande unserer Kenntnisse fehlt sehr viel.”) Alexander von Humboldt, review of the “Atlas universel de Géographie physique, politique, statistique et minéralogique, [...] par Ph. van der Maelen, [...] Lithographié par H. Ode – Erster Artikel”, *Hertha – Zeitschrift für Erd-, Völker- und Staatenkunde* II (1828), pp. 383–415, here p. 387.

20 Humboldt (note 19), pp. 392–394.

21 Humboldt (note 19), p. 391.

22 Compared to printing with copperplate engraving, lithography did not result in such a clean line pattern, but production was much cheaper and faster. Vandermaelen was thus able to complete the *Atlas universel* in a manageable period of time despite the magnitude of the project.

Geographical ambition of the *Atlas universel*

The fact that Vandermaelen subordinated scientific precision to his gigantic handicraft project did not go down well with contemporary critics.²³ The reviews were largely unanimous in saying that the atlas could only be used by amateurs, not experts. Alexander von Humboldt, in particular, sharply attacked its neglect of geographic accuracy. Vandermaelen had sent Humboldt copies of all volumes, hoping for a favourable review. Humboldt, however, criticised not only the data's lack of accuracy, but also the commercial character of the work, which in his view set it apart from what he considered to be a truly scientific product. Thus, while the speed of execution of the *Atlas universel* was to be admired, it was not a “true advancement of geographical science” (“[keine] wahre Förderung der geographischen Wissenschaft”). If Vandermaelen wanted to be recognised as a scientist, he should deliver “something efficient and good in the next of his works” (“in dem nächsten seiner Werke etwas Tüchtiges, Gutes [liefern]”). Its quality would then require no pompous advertising, i.e., no “sample riders [who] went out from Brussels in every possible direction [...] to offer for sale the atlas discussed here, as if it were like a new calico pattern, a practice in the distribution of literary-artistic products that, to use the general terms that prevail in Germany, would be beneath the dignity of even the most speculative buyer.”²⁴

23 Critics highlighted in particular its topographical inaccuracies, the irritating layout of the maps and the poor print quality. The *Atlas universel* was reviewed, among others, in the *Hertha*, in four separate parts, in the *Europäische Annalen* by Ernst Ludwig Posselt, the *Blätter für literarische Unterhaltung*, and in the *Isis*. The review in the *Hertha* of the first four volumes was written by Alexander von Humboldt, maybe co-authored with the journal's co-editor, Heinrich Berghaus. Vandermaelen himself had sent Humboldt each volume of the *Atlas universel* immediately after its publication.

24 Original German: “Musterreiter, die von Brüssel nach allen Windstrichen [...] ausgingen, um den hier besprochenen

Atlas, gleichsam wie ein neues Kattunmuster, feil zu bieten, ein Verfahren bei dem Vertriebe von literarisch-artistischen Produktionen, das nach den in Deutschland allgemein herrschenden Begriffen unter der Würde selbst des spekulativsten Kaufherrn seyn dürfte.” All quotes: Alexander von Humboldt, review of the “Atlas universel de Géographie physique, politique, statistique et minéralogique, [...] par Ph. van der Maelen, [...] Lithographié par H. Ode – Vierter und letzter Artikel”, in *Hertha – Zeitschrift für Erd-, Völker- und Staatenkunde* 13 (1829), pp. 122–180, here p. 180. “Musterreiter” is probably a neologism of Humboldt's, which may be traced to the idiom “to ride the sample card” (“die Musterkarte reiten”). Merchants pinned samples

Vandermaelen himself obviously regarded his atlas as a scientific project, dedicating it to numerous geographical societies and making long lists of the works from which he had compiled the information for the atlas. Humboldt's assessment was nevertheless harsh and perhaps all the more critical because geography as a professional discipline was just beginning to emerge at this time. The professional community was striving to establish and legitimise it as a specialist area with its own scientific rules. In 1821, only shortly before the *Atlas universel* was published, the *Société de Géographie de Paris* was founded by 217 scientists with the goal of tracking, collecting and advancing developments in geography. Humboldt, who was a leading member of the society, even dismissed the *Atlas universel* as a joke:

Mr. v[an] d[er] M[aelen] [has] made the suggestion [...] to unite the individual parts into a whole, i.e. to construct a globe. However, it seems to us that he was only joking when he asked his buyers to really glue all the sheets together. Are we to think the technical difficulties and the considerable costs, which are connected with the construction of an artificial globe of almost 24 Paris feet in diameter, have escaped him? For the installation of such a machine, a separate building would be necessary, and for its use the construction of galleries and other instruments, in order to be able to accomplish the journey around this world (in the small or in the large sense, as one wants to take it)! But no, Mr. v. d. M. does not mean it jokingly, but quite seriously [...].²⁵

The severity of Humboldt's judgment seems to be based on his conviction in the clear separation between the world of science and that of the ludic.

of cloth, buttons or silk to card for customers to choose from. "Riding the sample card" meant moving across the country and selling textile goods using sample cards.

- 25 Original German: "Hr. v[an] d[er] M[aelen] [hat] den Vorschlag gemacht [...], die einzelnen Theile in ein Ganzes zu vereinigen, d. h. einen Globus zu konstruieren. Indessen will es uns bedünken: er habe nur einen Scherz getrieben, als er an seine Käufer das Ansinnen richtete, die sämmtlichen Blätter wirklich zusammenkleben zu lassen. Sollten ihm die technischen

Schwierigkeiten und die beträchtlichen Kosten entgangen sein, die mit der Konstruierung einer künstlichen Erdkugel von beinahe 24 pariser Fuß Durchmesser verbunden sind? Zur Aufstellung einer solchen Maschine würde ein eigenes Gebäude erforderlich sein, zu ihrer Benutzung die Erbauung von Gallerien und anderen Vorrichtungen, um die Reise um diese Welt (im Kleinen oder im Großen, wie man's nehmen will) vollführen zu können! Doch nein, Hr. v. d. M. meint es nicht scherzhafter-, sondern ganz ernsthafterweise [...]" Humboldt 1828 (note 19), pp. 390–391.

The determination of the geographic society around 1800, expressed here, to assert itself in its scientific integrity against the ludic, can also be explained in terms of the history of science. Around 1800, older encyclopaedic knowledge orders were still making an impact, and their methods were now increasingly perceived as imprecise and unscientific. Their method of collecting items relating to nature, the sciences and the arts in so-called *Kunstkammern*, which since the Renaissance had been held predominantly in rulers' houses, had united the pillars of a (European-shaped) knowledge of the world. The idea of a *ludi naturae* had been fundamental to the formation of such collections.²⁶

Geographical representations, especially maps and globes, had already played an important role in the *Kunstkammer*, and the scientific collections contained numerous geographical surveying instruments. By representing the opening up and exploration of the earth's surface, they symbolically gestured to the controllability of the world. The practice of gluing is also to be found in the *Kunstkammer* in this context. Among the experimental geographic representations was a celestial globe made for Kurfürst August von Sachsen (1526–1586) by the scholar Tilemann Stella (1525–1589) in 1553. The sheet, now lost, probably hung in the elector's *Kunstkammer* and apparently consisted of printed planispherical segments that could be mounted on a wooden cube.²⁷ Here, in a playful mode, the act of being able to assemble the globe itself and thus obtain an overview of the arrangement of the heavenly bodies in the sky enabled the ruler to comprehend the mastery and controllability of the cosmos.

26 A recent publication is the comprehensive anthology *Die Berliner Kunstkammer: Sammlungsgeschichte in Objektbiografien vom 16. bis 21. Jahrhundert* ed. Marcus Becker et al., Petersberg 2022; see also: Horst Bredekamp, *Antikensehnsucht und Maschinenglauben. Die Geschichte der Kunstkammer und die Zukunft der Kunstgeschichte*, Berlin 2007; Hartmut Böhme, "Ludi Naturae. Transformationen einer Denkfigur. Vorwort", in *Ludi naturae. Spiele der Natur in Kunst und Wissenschaft*, ed. Natascha Adamowsky et al., Paderborn 2011, pp. 1–15.

27 Barbara Marx, "Ergreifen, Begreifen. Das Reißgemach des Kurfürsten August in der Kurfürstlichen Kunstkammer im Residenzschloss Dresden" in *Fürstliche Koordinaten. Landesvermessung und Herrschaftsvisualisierung um 1600*, ed. Lena Thiel et al., Dresden 2014, pp. 31–68, here p. 60; for further details on Stella see: Ruthard Oehme and Lothar Zögner, *Tilemann Stella (1525–1589). Der Kartograph der Ämter Zweibrücken und Kirkel des Herzogtums Pfalz-Zweibrücken*, Koblenz 1989.

Vandermaelen seems to have pursued this idea, but in his project the idea of mastery and control gave way to a sense of overwhelm in three respects: the globe is neither intellectually nor physically easy to assemble; the end result of its heavy, gigantic round body can only be mastered with effort, and the abundance of data that the maps were supposed to show in order to meet the scientific demands of the time also apparently overwhelmed Vandermaelen in production. Although he never tired of emphasising the geographical merits of his project, he ultimately failed in the task of combining its playful and scientific aspects. Their separation manifests itself, as it were, in the gluing: as a comparatively simple and often imprecise technique that could also be carried out by the (lay) public, it conflicted with the scientific approach and ultimately led Humboldt to his judgment that Vandermaelen's proposal "to let the buyers of his atlas [...] really glue the entire sheets together" was most likely a joke.²⁸

At this point, it is fair to say that a closer look at the practice of gluing in relation to the *Atlas universel* does indeed highlight the three aspects of the economic, the ludic and the educational, mentioned at the beginning of this article. However, upon assessment, it is clear that the three aspects do not stand alongside one other as equal or even complementary. Even in the atlas' contemporary reception, there was widespread unanimity that reaching for the scissors and glue amounted to a handicraft, a ludic product that strayed from scientific aspiration.

Pasted geographies – a geographical gimmick

Geographic and topographical-themed handicrafts are still widespread today in the sphere of leisure, and apparently quite in demand. Products are offered in numerous forms and sold in museum and stationery shops and online, among other places. One product is the "globe based on satellite photos" by the brand Schreiber (**Fig. 6**), which entails the construction of a round body with a diameter of 38 cm and guarantees, according to the manufacturer, "for young and old [...] model building fun on rainy days."

28 Original German: "als er an seine Käufer das Ansinnen richtete, die sämtlichen

Blätter wirklich zusammenkleben zu lassen." Humboldt 1828 (note 19), p. 391.

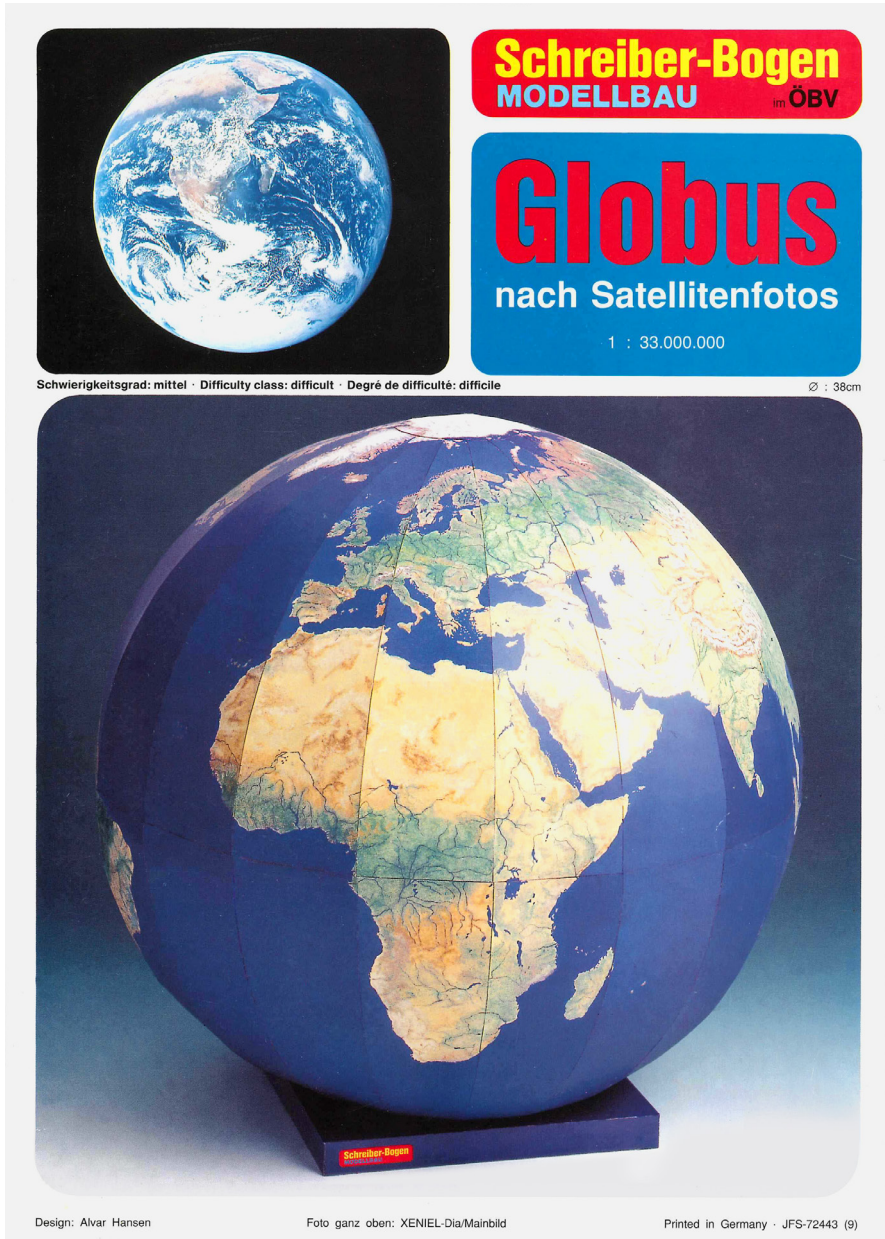


Fig. 6
 Schreiber-Bogen Modellbau: *Globus nach Satellitenfotos*, design: Alvar Hansen,
 ed. Aue Verlag, Möckmühl: no date, paper,
 scale 1:33 000 000, 38 × 38 × 38 cm
 (dimensions of the assembled model)

The note that “patience and precision” are required presupposes a certain ambition on the part of the model-makers. Even reading the assembly instructions, which contain detailed information on how the total of 38 printed cardboard elements must be cut out, folded and glued together to form a model of the earth body, is time-consuming.²⁹

The additional materials supplied with this product also provide access to more in-depth geographical knowledge. For example, a separate cardboard strip can be used to measure lengths and widths on the paper globe. Another strip features images of a ship and an aeroplane and indicates which average distance each means of transport can cover in a day (the ship) or in an hour (the plane). Holding the strip up to the paper globe enables the user to make imaginary journeys through space. The fact that historical geographical changes should also be taken into account on this mental journey is underlined by a note on the back of the cardboard strip: “In your imagination you can travel around the Earth in modern or nostalgic style. [...] If you [...] decide to sail with a historic vessel, please take into consideration the circumstances of the epoch, for example the opening dates of the Suez and the Panama Canals (1869 and 1914 accordingly).”³⁰ With a little effort, the globe can also be contextualized as a planet. The model kit comes with instructions that can be used to get “an exact idea of the size of the celestial bodies and the distance between the moon and the earth”. For this purpose, the user needs to make a moon disk with a diameter of about 10 cm out of aluminium foil or cardboard and place it at a distance of 10 m from the earth model – for example in the garden or in a large hallway.³¹ In this way, Schreiber’s cardboard model provides the basis for an acquaintance with popular scientific geographic knowledge.

Unlike Vandermaelen’s, Schreiber’s globe is conceived from the outset as a purely recreational activity. Thus, it shows – and particularly clearly – the extent to which self-assembly is also bound up with a value judgement: the practice of gluing entails an imprecise process that is located in the

29 *Globus nach Satellitenfotos*, Schreiber-Bogen Modellbau, design: Alvar Hansen, ed. Aue-Verlag, no date, scale 1:33 000 000. The quotations are taken from the assembly instructions.

30 *Globus nach Satellitenfotos* (note 29).

31 Two “drawings” furthermore illustrate the vulnerability of the Earth’s atmosphere, the relatively narrow thickness of the ozone layer compared to the Earth’s diameter, and the altitude of satellite orbits. See *Globus nach Satellitenfotos* (note 29).

realm of leisure. Here is an important reason why the *Atlas universel* was not evaluated positively by the scientific community and failed to fulfil Vandermaelen's scientific claim. The glued-together globe and the materials required to build it meant that the precise representation of geographical data – unavoidable in the scientific field – was no longer possible. The type of presentation also plays a decisive role here. This is noticeable even in modern-day topographic projects like *Eartha*, for example. This huge rotating globe with a diameter of 12 metres, which is located in Yarmouth (Maine) at the headquarters of *DeLorme*, a producer of satellite and navigation technology, is surprisingly reminiscent of the dimensions of the *Atlas universel*. Here, too, it is clear that *Eartha*'s immense globe belongs to the realm of the fascinating, and of the amateur. Scientific data, on the other hand, require a medium that enables their precise inspection and transparency regarding not only how they were collected, but also their further use. Thus, the geographic gluing work required by the *Atlas universel* marks it out as belonging to the realm of the amateur, where geographic data are adapted in such a way that they correspond to an overarching whole that satisfies the hobby geographer, and where material and intellectual gaps – adhesive seams – do not necessarily have to be closed.