

An Astronomical Card Game: Contents, Circulation and Public

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Abstract: The present contribution will investigate a card game titled *The Elements of Astronomy and Geography*, invented in 1795 by the abbot Paris and published in London by John Wallis. In 1807, the game was translated into French language and circulated in a new, reworked edition. On the basis of meaningful, yet little, evidence, some hypotheses on the circulation and the audiences of the game will be outlined. The analysis is part of a wider research project, aimed at analysing a series of science-themed board games and card games, published between the 18th and the 19th century by the Wallises.

Keywords: Card games, Scientific knowledge, Science popularization, Astronomy, Audiences, Translation, Circulation.

1. Scientific knowledge and games

1.1. A history to be written

For a long time, many outstanding scholars have been discussing the meanings, the history and the evolution of play and games within human culture (for instance, the groundbreaking works by Huizinga 1938; Caillois 1958). Within such a rich and long-standing theoretical framework, in the following decades an increasing number of studies has investigated the history of the games (e.g., Hargrave 1966; Goodfellow 2008; Levy 2017; Parlett 2018; Seville 2019) by focusing on their contents, their physical characteristics, their uses and circulation, thus connecting such research to the fields of cultural studies, material history and the history of education.

These studies have brought to light a stunning richness of topics, contexts and social practices (for instance, Smoller 1986; Goodfellow 1998; Dove 2016; Norcia 2019). Nevertheless, to date no author has specifically investigated science-themed games, except for some papers analyzing a few, paradigmatic examples (Keene 2011; Seville 2016), and no attempt has been made to offer a systematic and exhaustive overview of these games.

The present contribution is part of a wider research project aiming at studying the science-themed board games and card games conceived and published by the Wallises, a family of publishers active in London between the 18th and the 19th century.

1.2. Science-themed games by the Wallis family

It was John Wallis who opened the first shop¹ around 1775;² later on, his son Edward took over the family business.³ Between the second half of the Eighteenth century and the first half of the Nineteenth, they sold to Londoners books and toys for children: it was a new, flourishing market (Plumb 1975; Denisoff 2008). Their shelves also offered board games and card games, mostly addressed to a juvenile audience. Many of these games had history or geography as their main theme, such as the card decks devoted to the history of France or England, and the board games centred on geographical tours (e.g., Wallis; Cooke 1796). Some others, however, dealt with scientific topics, which went from arithmetic to astronomy, from natural philosophy to zoology.

One of the earliest examples is that of the board game *Arithmetical Pastime* (1798), intended to teach the “rudiments of arithmetic, under the idea of amusement”, translated from German. In 1804, it was the turn of *Science in Sport, or the Pleasures of Astronomy* (see Keene 2011), which interestingly saw the collaboration with Margaret Bryan, one of the most famous female authors of science popularization (Tailerach-Vielmas 2011, p. 4; Brück 2009, p. 15-19). One year later, *Science in sport, or, the pleasures of natural philosophy* (1805) was on the Wallis’s shelves and in 1813 *The naturalist: a new game, moral and instructive* finally came out. Edward proposed some re-editions of his father’s publications, likely the most successful ones, but he also introduced innovative subjects. His catalogue included, for instance, the *Wallis's elegant and instructive game exhibiting the wonders of nature in each quarter of the world* (1818), where nature is romantically described as marvellous and frightening at the same time, and the *Wallis's new game of genius* (1830 ca), which was, as specified by the subtitle, a “Compendium of inventions connected with the arts, sciences, and manufactures”.

Consistently with the changes typical of the epoch with regard to children’s education (Shefrin 1999; Talairach-Vielmas 2011), the Wallis’s games were intended to be educational games, so that the scientific knowledge was taught together with moral advice. Interestingly, the only game where this does not happen is the card game *The elements of astronomy and geography*, which also was the first science-themed game published by the Wallises.

¹ There were probably two shops, one in Ludgate Hill Street and one in Cornhill (“WALLIS, John”, British Book Trade Index, URL: <<http://bbti.bodleian.ox.ac.uk/details/?traderid=72631>> [access date: 13/10/2021]).

² He soon became well-known for his dissected maps. Dissected maps were early examples of jig-saw puzzles, invented around the 1760s (Norgate 2007).

³ “WALLIS, Edward”, British Book Trade Index. URL: <<http://bbti.bodleian.ox.ac.uk/details/?traderid=72611>> [access date: 13/10/2021]. The other son, John jr., became the librarian of Royal Marine Library (“WALLIS, John [jr]”, British Book Trade Index, URL <<http://bbti.bodleian.ox.ac.uk/details/?traderid=72634>> [access date: 13/10/2021]).

2. The Elements of astronomy and geography: a card game

2.1. The two editions

In 1795, John Wallis published the card game titled *The elements of astronomy and geography: explained on 40 cards*. The author was the abbot Louis Michel Paris, a French teacher of geography and astronomy. We do not have any precise information to help us trace back the genealogy of their collaboration. However, we know that Paris, who was born in Argentan (Normandy) in 1740 and had been working there for a while, in 1792 left his hometown, forced by the tragic events of the French Revolution, and moved to London, where he remained until 1801 (Rabbe et al. 1834, p. 537). We may then hypothesize that, while in England, the abbot met Wallis and so the project of the card deck took shape. We cannot say whose, between the two, the original idea was. At the time, as we have seen above, Wallis had already published some board games and at least one card deck. Nevertheless, the *Elements of astronomy and geography* was the first science-themed game sold by Wallis, so that the topic may have been proposed by Paris, who then designed the contents.

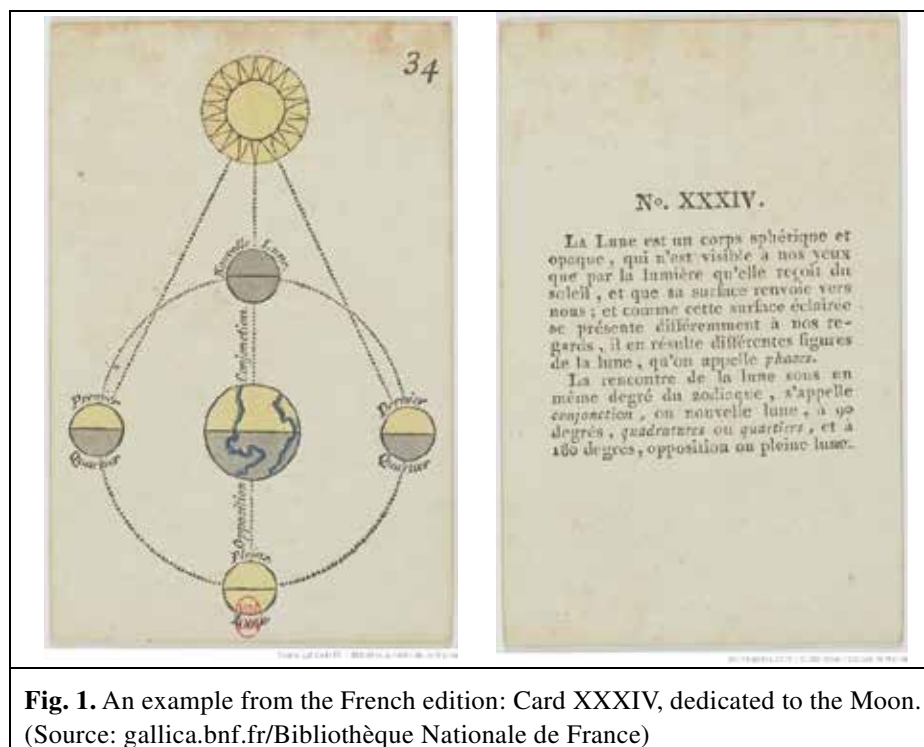


Fig. 1. An example from the French edition: Card XXXIV, dedicated to the Moon. (Source: gallica.bnf.fr/Bibliothèque Nationale de France)

The game consisted of 40 cards, “beautifully engraved and coloured”, as the title printed on the box ran: each card was illustrated on the front,⁴ while the correspondent caption was displayed on the back. As indicated by the rules, in order to get the point players had to properly describe the figures without looking at the written explanations.

⁴ The name of the illustrator is unknown. We do not know if it was the abbot Paris himself.

The deck starts with the picture of an armillary sphere, simply defined as “a round body, encompassed by circles, lines, and points” (card I), while the second card shows the two hemispheres, with the Equator, the Tropics and the Arctic and Antarctic Circles depicted. The caption says that “the Map of the World is a representation of the Earth on a plain surface” (card II). The following cards go back to the basic concepts of geometry, from straight and curved lines (card III) to circles (card IV), from circumference (card V) to its elements, such as the diameter (card VI), axis (card VII) and angles (card VIII). From card IX, notions about the Earth are given. First, our planet is described as “convex, or round like a ball”, then definitions of the Equator, Meridians, Longitude and Latitude, Horizon and further astronomical fundamental terms are given. Finally, the last cards are devoted to the Moon, the Eclipses, the winds and the atmosphere. The illustrations are simple and essential, easy to understand.

In 1807, a French edition appeared: titled *Jeu élémentaire d'astronomie et géographie*, the card deck was illustrated by the famous engraver Godard, in Alençon, and the text was printed by the Frères Brée in Falaise.⁵ According to the few biographical notes available (see Lange 1833, p. 402), the contents were signed by Paris himself: since they are different from the English original edition, we may assume that the abbot had been modifying the game just before he died.⁶ The changes between the two versions are worth outlining quickly. First, two cards were added, with volvelles depicted on them. Secondly, the descriptions provided in the French version are sometimes simply reformulated and made clearer (this is the case with the cards on the eclipses (Moon and Sun); some other times, the text turns out to be more complex and articulated than that offered by Wallis's publication. The first card, for instance, gives now a longer explanation of the armillary sphere, which is defined as a “machine” capable of representing the movements of celestial bodies. Similarly, on card XII several details about the Equator are added and the concept of Latitude is introduced, whilst previously the card just said that “THE Equator divides the Globe into two equal parts; one north, and the other south; it is the measure of time”. Again, on card XXV a historical account is added: speaking of the climatic zones, Paris recalls that Polibius had tried to introduce two torrid zones (instead of one), divided by the Equator, but “personne ne l'a suivi”. A last example is given by card XXXIX, which in the English edition told players that “the wind is an agitation of the air, by which a particle is transported from one place to another”; the second edition, instead, gives a digression about the air. “L'air”, it is specified, “est un fluide [...] qui s'efforce toujours de garder ou de rétablir l'équilibre de toute ses parties”: the wind occurs, writes Paris, when the balance is broken and needs to be restored.

All these modifications are likely attributable to the abbot's desire to improve the game before putting it on the French market; however, the hypothesis of a change of aspired audience cannot be completely discharged, as the following paragraph will clarify.

⁵ Both the cities are placed in Normandy and close to Argentan, the hometown of the abbot Paris, where he had returned in 1801 and where he had died in 1806.

⁶ Similarly, we know that he was reworking his *Introduction à l'étude de la géographie*, when he died (Lange 1833, p. 402).

2.2. Circulation and audiences: some hypotheses

It is evident that it is extremely difficult to assess what circulation Paris's card game has had and what audiences were effectively reached; nevertheless, an attempt can be made.

At first glance, one may be inclined to hypothesize that the card deck was addressed to a juvenile audience, like the vast majority of Wallis's items, or even specifically to students, being the abbot Paris a teacher of astronomy and geography – he worked as a teacher in London too, in a school for French people (Lange 1833, p. 402). Moreover, the card X explicitly says: “The students who begin to study the Globes, cannot imagine how those who are opposite to them can stand on the surface”. Mentioning “students” may suggest that they were the first intended public. However, if we look at the French translation, we notice that the term “students” is translated as “Ceux qui commencent l'étude du globe”, that is “Those who start studying the globe”: these, as it is clear, can be people who want to learn astronomy and geography, and not forcefully only students. So that, at least for the French edition, we can imagine a broader audience, especially since we do have some evidence moving in this direction.

A first clue is offered by the French newspapers that advertised Wallis's game. One comes from the famous and widespread *Le Moniteur*, that in August 1808 presented the card deck to its readers as “equally instructive and fun”.⁷ We find no mention of an intended public made exclusively of students and neither of young people. A second clue comes from the periodical *L'Epicurien Français*,⁸ which lists the card game among the new books. After the same words⁹ we had read on *Le Moniteur*, a further, meaningful paragraph is added here. It is in fact said that the cards designed by the abbot Paris will be “very useful for those who want to learn, with no trouble and at a low-cost, some very extensive notions about the two sciences in question”.¹⁰ The choice of the term “personnes” seems to confirm that the game was described and perceived as a game suitable for a heterogeneous audience.

A last record leads us to hypothesize that not only the expected, but also the effective players were not, or not only, young students. We in fact find the Wallis card game listed among the books of an anonymous French architect (Anonyme 1856), put on sale after his death. The owner being unknown, one may argue that the *Eléments d'astronomie et géographie* were there because of some child from the architect's family. However, it must be noted that the game, in the catalogue of his library, is numbered together with the *Abregé d'Astronomie*, a compendium of astronomical notions, written in 1774 by the astronomer and populariser Jérôme Lalande (see Ampollini 2019). The *Abregé* was a popular treatise, conceived for “the great number of amateurs”:¹¹ we then can prudently hypothesize that the anonymous architect had both the card game and Lalande's work to

⁷ “Les connaisseurs sauront apprécier le mérite de ces cartes, également instructives et amusantes”, *Le Moniteur*, 15 Août 1808, p. 896.

⁸ *L'Epicurien Français*, Tome XI, Août 1808.

⁹ See note 7.

¹⁰ “Elle seront très-utiles aux personnes qui voudront acquérir, sans peine et à peu de frais, des notions assez étendues sur les deux sciences qui en sont l'objet”, *L'Epicurien Français*, Tome XI, Août 1808.

¹¹ “le plus grand nombre des amateurs” (Lalande 1774, p. III).

acquire some notions of astronomy. That is, Paris's game in France did not exclusively circulate among students or young, but also among adults willing to learn.

Similarly, the additions introduced in this second edition can be explained with Paris's desire to enrich the information provided, being that the aspired players were not only children.

3. A brief conclusion

The aspect of the real circulation of this card game – and, more in general, of all the science-themed card and board games – can give us important indications about its uses, cultural meanings or the contexts it has crossed. Not only. The issue also pertains its and their place in historiography: to date, these games have in fact been analysed through the lens of the history of education (as in Keene 2011). However, the possibility that they have been addressed not only to children or young students, but to a more heterogenous public, forces us to consider the necessity of looking at them also in their relationship with the history of science popularization. This is a history, after all, that still needs to be enriched – both of objects and periods.

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