Rocznik Filozoficzny Ignatianum
The Ignatianum Philosophical Yearbook
Vol. 27, No. 2 (2021), s. 179–198
PL ISSN 2300–1402
DOI: 10.35765/rfi.2021.2702.9

Damien Mallet
ORCID: 0000-0001-8895-9408
Bordeaux

Pierre des Noyers, a Scholar and Scientific Intermediary at the Court of Louise-Marie Gonzaga

Pierre des Noyers – uczony i pośrednik naukowy na dworze Ludwiki Marii Gonzagi

Abstract

Pierre des Noyers, a secretary of Queen of Poland Louise-Marie Gonzaga, is known for his role as a messenger, envoy, court journalist and sometimes propagandist. His work as an unofficial diplomat for the Queen and ambassador for France is less famous though no less interesting. Even though he was already quite involved in these time-consuming tasks, Pierre des Noyers also acted as a scientific intermediary for the quite curious Queen Louise-Marie of Poland. He maintained contacts with many scholars from France and Italy. He could nurture this network thanks to his position as an informal diplomat at the court of the Queen and his dedication to science in general. Even by discarding his most official and political letters, his known correspondence amounts to several hundred letters written in a period of around 50 years to various friends and scholars. Roberval, Gassendi, Boulliau, Hevelius or Pascal are among these contacts and he plays for most of them the role of a scientific intermediary sharing with them observations, books and anecdotes. His letters are filled with astronomical observations, prodigies and prophecies. Des Noyers was also

a practitioner of science. Having possessed a rather large collection of scientific instruments he always sought the improved ones and his daily life was marked by scientific studies. He wrote meteorological bulletins for *Academia del Cimento* in Florence, studied the measurement of time, observed the sun and showed interest in the inner workings of the human body. This article will delve further into more scientific aspects of Pierre des Noyers's life, both at the court of Louise-Marie and outside. The first part presents a rough overview of the secretary's contacts in the scientific environment of 17th Century France and how they were used to connect scholars from Poland with this environment. The second part of this work presents Pierre des Noyers's practice of science as a tool to understand the world and for which utmost diligence in measurement and practice is required. The last part focuses on des Noyers's application of this scientific method in two, now pseudo-scientific fields: astrology and divination.

Keywords: Pierre des Noyers, Louise-Marie Gonzaga, Queen of Poland, astrology, science

Abstrakt

Pierre des Noyers, sekretarz Ludwiki Marii Gonzagi – królowej Polski, znany jest jako poseł, ambasador, nadworny dziennikarz oraz propagandysta. Jego praca jako nieoficjalnego dyplomaty królowej i ambasadora Francji jest natomiast mniej znana, chociaż nie mniej interesująca. Pomimo tego czasochłonnego zaangażowania, Pierre des Noyers działał również jako pośrednik naukowy dla zaciekawionej królowej. Utrzymywał on kontakty z wieloma uczonymi z Francji i Włoch, a do rozwoju tej sieci powiązań przyczyniała się zarówno pozycja nieformalnego dyplomaty na dworze królowej, jak i oddanie nauce. Nie wliczając listów oficjalnych i politycznych, jego korespondencja prywatna, prowadzona z przyjaciółmi i uczonymi na przestrzeni 50 lat, liczy kilkaset listów. Wśród tych kontaktów są Roberval, Gassendi, Boulliau, Heweliusz oraz Pascal, a dla większości z nich odgrywa on rolę naukowego pośrednika, dzieląc się z nimi obserwacjami, książkami i anegdotami. Jego korespondencja obfituje w obserwacje astronomiczne, przepowiednie i opisy zjawisk nadzwyczajnych. Pierre des Noyers prowadził również własne badania. Posiadając stosunkowo liczną kolekcję instrumentów naukowych, zawsze poszukiwał ulepszonych narzędzi, a jego codzienne życie znaczone było pracą badawczą. Pisał biuletyny meteorologiczne dla florenckiej *Academia del Cimento*, prowadził badania nad pomiarem czasu, obserwał słońce oraz interesował się wewnętrznym funkcjonowaniem ludzkiego ciała. W niniejszym artykule zagłębimy się w bardziej naukowe aspekty życia Pierre'a des Noyers, zarówno na dworze Ludwiki Marii, jak i poza nim. W pierwszej części przedstawiony został zarys jego kontaktów w środowisku naukowym siedemnastowiecznej Francji oraz to, w jaki sposób były one wykorzystywane do łączenia z tym środowiskiem uczonych

z Polski. Druga część pracy przedstawia jego badania naukowe, które traktował jako narzędzie do zrozumienia świata, do czego potrzebna jest najwyższa staranność w pomiarze i praktyce. Ostatnia część skupia się na zastosowaniu przez des Noyersa tej naukowej metody w dwóch, obecnie pseudonaukowych dziedzinach: astrologii i wróżbiarstwie.

Słowa klucze: Pierre des Noyers, Maria Ludwika Gonzaga, królowa Polski, astrologia, badania naukowe

Introduction

Pierre des Noyers (1607–1693), secretary of que Queen of Poland Louise-Marie Gonzaga, was born in Festigny, Champagne. Almost nothing is known about his family. Two easy to miss mentions in his correspondence tell us of a sister and a brother, Elisabeth and Claude, and there are some documents in Châlons-en-Champagne regarding his father's affairs, mostly real estate transactions. He entered very early in the service of the Gonzaga-Nevers family. He served Ferdinand of Mayenne until his early death in 1632 and then his sister Marie, future queen Louise-Marie. He kept his post as secretary when she became queen of Poland. In previous articles I presented the dense network of correspondence Pierre des Noyers established in the name of Queen Louise-Marie Gonzaga to gather information about European politics and to act as an alternative covert way of communication with the court of France[1]. In these articles I entirely omitted its scientific component for the sake of brevity but it happens that many of Pierre des Noyers' contacts are in fact from the "scientific community" of the time. He could exchange, directly or indirectly, with many members of many academies and managed to get a hand on their research, but he never was a member himself.

I'll present a quick overview of Pierre des Noyers' network and, as an example, how Johannes Hevelius profited from the secretary's contacts. I'll then delve further into des Noyers' scientific method by looking at his attempts to get the most precise instruments and measures in order to have the most robust observations and conclusion. The last part will focus on the application of his method to Astrology and Divination, two

1 Damien Mallet, "Pierre des Noyers, a scholar and courtier," *Kwartalnik Historii Nauki i Techniki* 64 (2019), 139–146 and *idem*, "The Queen's long reach: Louise-Marie and France, 1661–1668," in *Queens within Networks of Family and Court Connections*, ed. Aleksandra Skrzypietz (Wien–Köln: Böhlau/ Brill Deutschland, 2021), 68–92.

of the most present domains in his correspondence. It must be noted that some of the events and letters mentioned in this presentation take place after the death of Louise-Marie Gonzaga. This does not diminish their value as Pierre des Noyers was also a man of science while being secretary of the queen.

Pierre des Noyers and his scientific network

At Louise-Marie's *salon* in her *Hôtel de Nevers*, but also at the *hotel de Condé*, des Noyers had the occasion to meet many scholars such as Le Pailleur, Blaise and Etienne Pascal, Mersenne or Roberval. Des Noyers was especially close to Mersenne and greatly esteemed Roberval and made sure to keep contact with them when he left for Poland in 1646 and quickly used them when Gassendi and Pascal quarrelled about the void in 1647. On that occasion, des Noyers presented Valeriano Magni to Roberval and Hevelius and sent them his publications. Another Italian, Tito Livio Burattini, "half adventurer, half scholar" according to Antonio Favaro,[2] gained the nickname of the flying Pole" after des Noyers sent words and drawings of his project of a "Flying Dragon" to France.[3] The calculating machine attributed to Burattini[4] is said to be derived from Blaise Pascal's Pascaline, which came into the scholar's hands thanks to Pierre des Noyers. The secretary also benefited greatly from this friendship and made good use of Burattini's extensive contacts and family in Italy.[5]

Ismaël Boulliau[6] is by far the most regular contact of Pierre des Noyers. I can reliably affirm they maintained a weekly correspondence from

2 Antonio Favaro, *Intorno alla vitae ed ai lavori di Tito Livio Burattini fisico agordino del secolo XVII*, Memorie del Reale Istituto di Scienze, Lettre ed Arti, Vol. 25 (Venezia: Tip. C. Ferrari, 1896). See also Ilario Tancon, *Lo Scienzato Tito Livio Burattini (1617–1681), al servizio dei Re di Polonia*, PhD thesis (Trento University, 2006) and, for a summarized biography, *Correspondance de Johannes Hevelius*, Vol. 3: *Correspondance avec Pierre des Noyers, secrétaire de la Reine de Pologne* (hereafter CJH-III), eds. Chantal Grell, Damien Mallet, collection De Diversis Artibus, Vol. 106 (Turnhout: Brepols, 2020), 24–28.

3 CJH-III, 24–25.

4 "Tito Livio Burattini [attr.], Calculating machine." Institute and Museum of the History of Science – The Medici and Science. Retrieved from: https://brunelleschi.imss.fi.it/mediciscienze/emed.asp?c=35423 (access: 10.27.2021).

5 CJH-III, 32.

6 See Henk Nellen, *Ismaël Boulliau (1605–1694) astronome, épistolier, nouvelliste et intermédiaire scientifique* (Amsterdam–Maarsen: APA Holland University Press, 1994). For a short biography, see CJH-III, 20–23.

before June 1655 to 1692, the only caveat is that sources at our disposal are incomplete, with letters from 1670 to 1680 all missing.[7] Boulliau is a good friend of the secretary but also a fellow amateur of astrology and astronomy and both are well introduced to the academic world of the time. Protected by the Thou and Dupuy families, member of the Bourdelot academy, friend of Gassendi, Descartes and Saumaise among many others, he sadly followed the downfall of his protectors, implicated in the Cinq-Mars Conspiracy and, on numerous occasions, refused to take opportunities given to him in the hope of a better opportunity later, in vain. For instance, Louise-Marie proposed a post as an ambassador in the United Provinces[8] then a place at her court, both of which he declined. Despite his works, he received no pension from a monarch nor did he join any academy, though he entered the Royal Society of London in 1667.[9] As both his most regular and long standing contact, it is through letters sent to him that we learn the most about des Noyers' scientific and non-scientific network. Boulliau was eager to share observations made by French scholars, though he was always bitter about the *Académie des Sciences*, certainly because he was not a member. He also sent and dispatched documents and letters and, on several occasions, procured equipment or books. For example, on behalf of the queen, and following the rather disastrous siege of Torun which Pierre des Noyers relates in this letters to Boulliau, Queen Louise-Marie asked her secretary to look for books about siege warfare. Des Noyers wrote:

> the Queen, while listening to your letter from November the 8th desired that I write you to buy on her behalf three or four of the best books on military architecture who teach, as you say, attack and defence of places; you can add some more books on artillery […].
>
> The books about military architecture, please buy them in French if possible. It is said one of the best is from a so called father Fournier.[10]

7 Bibliothèque nationale de France, Département des manuscrits, Français, ms 13019–13059: *Correspondance et papiers politiques et astronomiques d'Ismaël BOULLIAU (1605–1694)*.

8 Des Noyers to Boulliau, February 24th 1656, from Głogów, in *Lettres de Pierre des Noyers, secrétaire de la reine de Pologne Marie-Louise de Gonzague, princesse de Mantoue et de Nevers, pour servir à l'histoire de la Pologne et de la Suède de 1655 à 1659* (Berlin: Librairie de B. Behr, 1859), 86–87.

9 CJH-III, 105. The Royal Society gave no pensions, on the contrary, its members had to pay a fee for their membership, which only accentuated Boulliau's financial woes.

10 Des Noyers to Boulliau, from the camp facing Thorn, December 3rd 1658 – *Lettres de Pierre des Noyers*, n°183.

There are no further mention of these books in his correspondence but funds were sent to France for this matter.

For Johannes Hevelius, des Noyers was most useful. The most telling example is that, while having very few contacts in Italy, Hevelius still managed to be published and to receive scientific information thanks to Pierre des Noyers' and Burattini's relays. Despite being a jansenist, or at the very least pro-jansenist, des Noyers nevertheless had contacts with Jesuit networks because of his role as secretary and diplomat and, as such, could also inform Hevelius on their research and publications.[11] In the same manner, Noyers introduced Boulliau, Roberval, Morin and Gassendi to Hevelius who was informed of their publications, research and controversies. Hevelius' *Selenographia* (1647) reached France thanks to des Noyers and, the other way around, many books reached Hevelius' personal library thanks to the queen's secretary.[12] In 1680 and 1681, while a comet crossed the sky, des Noyers even asked the postmaster of Dantzig, another friend of him, to allow Hevelius to read letters sent by Boulliau before sending them to Warsaw in order to give him as early as possible all observations gathered by the Frenchman.[13] It transpires though that Hevelius saw des Noyers not as a fellow scientist, and certainly not as a peer, but as a useful middleman, a scientific intermediary. There are no technical discussions in their correspondence and Hevelius do not share his observations with Des Noyers as he does with other correspondents such as Boulliau or Oldenburg.[14]

Des Noyers seemed indeed first and foremost a scientific intermediary but this fact did not prevent him from being a scholar. Indeed, he measured, observed, discussed and compared and had a scientific mind. In his research, he sought precision in his measurements and conclusions.

The most precise measurement for the most rigorous conclusions

In order to properly rationalize and offer interpretations as correct as possible, Pierre des Noyers sought the most precise measurement

11 CJH-III, 32–33.

12 *Ibidem*, 79.

13 Des Noyers to Boulliau, February 24th 1681, from Warsaw, *Archives du Ministère des Affaires* Étrangères (hereafter AMAE), ms. 13021, fol. 97v. Hevelius' relations with Jean Fromont who relays these letters are so cold and strained that Fromont refuses to comply on several occasions in 1686.

14 CJH-III, 33–34.

in all things. There is no trace of an inventory of all of his instruments but by piecing together several of his letters, I concluded that Pierre des Noyers was well equipped. He could "only" recover a "quart de cercle" from Warsaw's pillage by the Swedes in 1655,[15] which saddens him greatly since he lost between eight and ten telescope and a "demi-cercle," some finely manufactured by Blondeau. He later bought a dutch telescope to observe Saturn.[16] He could afford to send a lens to Johannes Hevelius after his observatory went down in flames in 1680.[17] He also received a "planisphère ou planisglobe" from Boulliau in 1681.[18] Pierre des Noyers also owned an exemplary of Pascal's marvellous calculating machine, the Pascaline. Des Noyers managed to have three machines delivered to Poland: one for him, one for the Queen herself and one for Tito Livio Burattini who wished to miniaturize it.[19] Anthony Turner's typology of scientific instruments class them in five different categories: instruments for measuring, observing, helping with calculations, pedagogy and experimentation.[20] The aforementioned instruments fit in four of these categories, Pierre des Noyers does not seem to have possessed instruments for pedagogy or teaching. While not an instrument manufacturer, he also showed a creative mind when it came to instruments' usage or upgrades. In an answer to Hevelius, he commented about an instrument:

> I do not doubt one could add many things to the instrument you honoured me with. Indeed, if it was graded, one could do many operations with it. Similarly, if we superimposed a very small magnetic needle, we could take angular measurements, one could make it an angular ruler for levelling in many places where there is use for such instrument.[21]

Whether his suggestions reached any professional manufacturer remains a mystery.

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15 Des Noyers to Boulliau, July 20th 1656 from Warsaw – *Lettres de Pierre des Noyers*, 201–203 and AMAE, ms 13019, fol. 155–156v.

16 CJH-III, 54.

17 Des Noyers to Boulliau, January 6th 1680 from Dantzig, AMAE, ms. 13021, fol. 1.

18 Same to same, 21 February 1681, from Warsaw, AMAE, ms. 13021, fol. 106.

19 Karolina Targosz, *La cour savante de Louise-Marie de Gonzague et ses liens scientifiques avec la France*, transl. Violetta Dimov (Wrocław: Ossolineum, 1977), 30.

20 Chantal Grell, *Sciences, techniques, pouvoir et société en Europe* (Paris: Armand Colin, 2016), 121–122.

21 CJH-III, n°2, 12/08/1646, 145.

Des Noyers and the measure of time

When it comes to measuring time, Pierre des Noyers heavily relies on sun's position in the sky and, in general, do not trust clocks unless he knows who built, maintained or calibrated it. One telling example is his attempt to calculate the exact time of birth of Maria Anna Vasa, the first daughter of Queen Ludwika Maria and Ladislas IV, born in the morning of July 21th 1650.[22] Early morning, the sky was overcast and des Noyers refused to take the time given by the clock for granted. He quickly fabricated a pendulum whose undulations were used to calculate how much time passed between Maria Anna's birth and the moment he could get the Sun's position in the sky:

> we hung a ball of lead to a thread of brass and, when the child came out of her mother's womb, we gave this ball a great stroke and its back-and-forth motions were counted until, the sky being clear, I measured height on the side of Perseus with a copper "quart de cercle" which gives minutes and, by observing refractions, I calculated the time of the day. Then, by measuring twice the Sun's height and counted the ball's motion (between these two measures), I calculated that if 1300 of these motions gave me between two heights 1 hours, 5 minutes and 8 seconds, or 3 908 seconds, then 6 300 [gave me] 5h15'39". My observation on Perseus was made at 13h34'34" which, by removing 5h15'39" aforementioned, give the real time of birth at 8h 18'55".[23]

By doing so, des Noyers applied principles discovered by Galileo[24] and further refined by his successors,[25] namely the isochrony of a pendulum's motion and its limits.

Galileo proved that the frequency of a pendulum is in proportion to the square root of the length of its thread, with the ball's weight having no effect. Mersenne and Descartes then proved that the amplitude given to the pendulum has an effect on its frequency, thus breaking isochrony,

22 Archives du musée Condé au château de Chantilly (hereafter AMCCh), ms. 424: P. des Noyers, *Nativité d'Amarille*, 254 (erroneously marked 154).

23 *Ibidem*, 254–255 (erroneously marked 154 and 155).

24 See for instance Ludovico Geymonat, *Galilée* (Paris: Seuil, 2009) and Georges Minois, *Galilée* (Paris: PUF, 2000).

25 See Michel Blay, *Science du mouvement: de Galilée à Lagrange* (Paris: Belin, 2002); Pierre Spagnou, *Les mystères du temps: de Galilée à Einstein* (Paris: CNRS édition, 2017) and Robert Signore, *Histoire du pendule* (Paris: Vuibert, 2011), especially chapter 5: *Le pendule et la mesure du temps*.

but that this influence is negligible if amplitude is small. Despite that, by using a long pendulum and Huygen's law, time calculation can be reasonably simple.[26] As des Noyers could not give a precise amplitude to its pendulum ("a great stroke"), he has first to evaluate its motion with two measurements of the Sun's position.[27] It is likely this pendulum had to be set up in a hurry when the sky happened overcast in the morning and neither the thread length nor the pendulum's initial angle could be properly defined. This clever use of a pendulum shows anyway that des Noyers is up to date with the latest developments in physics. When designing his first clock six years laters, Huygens thinks no different and uses the same principles. It is the reason why des Noyers is interested in Huygen's clocks: he wishes to acquire one for him and, once again, one for the Queen[28] and in 1657, an order is made in Holland.[29] Still in 1680, he "adjusts" clock's given time when calculating Konstanty Władysław Sobieski's time of birth[30] because he doesn't trust the clock in the room. Of course, clocks are a more complex system which require more than a simple pendulum, which proves once again that Des Noyers has a creative and practical mind when it comes to instruments but is by no mean an engineer or manufacturer.

Meteorology and Medicine, two of des Noyers' interests

Des Noyers also showed interest in meteorology and went as far as participating in the experimentations of the *Academia del Cimiento* of Firenze. Scholars from this academia measured temperature using the same instruments, thermometers (called "cinquantigrades" by des Noyers) made and calibrated in Firenze by Paolo del Buono under the patronage of Ferdinand II Medici, Grand Duke of Tuscany. Thanks to Burattini,

26 For shallow angles smaller than 0,1 radian, $T0 = 2$ where T0 is the pendulum frequency in seconds, l the pendulum's lenght in meters and g gravitation. The ball runs for a distance equivalent to an arc of circle whose length is where is the angle given to the pendulum, in radian.

27 With a one meter thread, frequency equals 2 s, which corresponds to a distance of 40 cm per period with an angle of 0,1 radian. With a two meters thread the frequency is 2,82 s which complicates time measuring but distance reaches 80 cm which facilitates period counting.

28 Des Noyers to Boulliau, November 17th 1657, from Posnania – *Lettres de Pierre des Noyers,* 353 and AMAE, ms. 13019, fol. 305v.

29 Same to same, December 1st 1657, from Posnania – *Lettres de Pierre des Noyers,* 360 and AMAE, ms. 13019, fol. 312v et 313.

30 Same to same, May 3rd 1680, from Warsaw, AMAE, ms. 13021, fol. 24v–25.

Pierre des Noyers owned two of these as of November 17th 1657. Since he could not send a thermometer to Boulliau, for fear it would break down in transit, des Noyers gave him a precise description and a drawing to help Boulliau have one fabricated. Most of the measures were made in Italy, four were made abroad: in Paris, Osnabrück, Innsbruck and Warsaw[31] probably with des Noyers as the sole participant in the latter. Such network won't appear again before 1723 and the works of the Royal Society of London.[32] While the Academia's experimentations went between 1657 and 1667, with a net decrease of activity as early as 1660, Pierre des Noyers sent his readings to Boulliau until the end of his life in 1693, a testament to his dedication. Indeed, when possible, des Noyers sent a weekly meteorological report including temperature read from the thermometers, state of the sky and precipitation, rough appreciation of wind speed and direction for each day in the morning (around 7 am), early afternoon and the evening (around 11 pm). The amount of data he gathered in doing so is astonishing. Considering the Academia's short lifespan, des Noyers' dedication is mostly born out of an insatiable scientific curiosity.

Medicine and the treatment of disease is another of des Noyers' interests. I found traces of some light experimentations on the human body late in his correspondence in 1683, where he compares temperature of the body, blood and urine, before and after effort, after sweating and urinating in order to discover whether blood or urine played a role in the body's temperature regulation.[33] Occasionally, his letters advised or asked for advice regarding a specific disease, for instance gout, for which he heard of a treatment based on milk consumption.[34] In 1666, he recommended to his friend Madame des Essarts to take a chocolate brewage to ease throat pain.[35] He also wrote, sometimes with an impressive lot of details, summaries of autopsies and treatments taken by the victim. As

31 Same to same, November 17th 1657, from Posnania – *Lettres de Pierre des Noyers*, 354 and AMAE, ms. 13019, fol. 305v–306. Drawing is absent from *Lettres de Pierre des Noyers,* but present in ms. 13019, fol. 308.

32 Muriel Collart, "Prendre la mesure du temps : le réseau météorologique international de James Jurin (1723–1735)," in *La communication en Europe de l'âge classique au siècle des Lumières*, ed. Pierre-Yves Beaurepaire (Paris: Belin, 2014), 76–77.

33 Des Noyers to Boulliau, May 5th 1683, AMAE, ms. 13020, fol. 269.

34 Same to same, March 15th 1680, AMAE, ms. 13021, fol. 9v–10.

35 Madame des Essarts to Pierre des Noyers, November 3rd 1666, AMCCh, série R, tome XI, fol. 72.

it is still common at the time,[36] his descriptions included both medical and astrological elements as in his relation of the death of Ferdinand III: according to des Noyers, his astronomical portrait showed a weakness in the stomach, but doctors treated him for a pulmonary disease and prevented him from vomiting which, in the end, supposedly killed him.[37] When des Noyers didn't know about the person's date and place of birth, astronomical analysis was of course absent, as it was the case with Jerzy Lubomirski's death, described by the secretary as an apoplexy caused by an excess of papaver brewage which was supposed to ease his pain and bring him to sleep but instead caused lethargy.[38] He received a full summary of the death of Madame des Essarts, complete with the full list of symptoms she suffered from and the complete chronology of her death.[39] While visibly interested in this topic, Pierre des Noyers is no doctor, never pretends to be so and never studies in order to become so. When Queen Louise-Marie falls sick one last time in 1667, he lamented that her doctors were not capable of understanding her disease[40] or curing her.[41] His words are harsh against them but in the end, he was powerless and by no mean able to do any better. Medecine was, for him, another science to master to understand the world around him and rationalize it: he kept notes of which treatment worked and which one didn't and gather as much details as possible so that mistakes made would not be repeated.

This research of precision even extended to a field which is today no longer considered as science but was cherished by Pierre des Noyers: Astrology.

Des Noyers' scientific method applied to Astrology and Divination

At the core of Pierre des Noyers' scientific thinking lied the will to rationalize the world around him, including its most esoteric, un-scientific and superstitious aspects. In fact, the very notions of what is scientific

36 Hervé Drévillon, *Lire et écrire l'avenir : l'astrologie dans la France du Grand Siècle (1610–1715)* (Paris: Champ Vallon, 1996), 41.

37 Des Noyers to Boulliau, April 12th 1657 – *Lettres de Pierre des Noyers*, 317 et AMAE, ms. 13019, fol. 264v.

38 Same to Condé, February 5th 1667, from Warsaw, AMCCh, série R, tome XI, fol. 206.

39 M. Dupuy to des Noyers, Mars 18th 1667, from Paris, AMCCh, série R, tome XI, fol. 280.

40 Des Noyers à Condé, March 11th 1667, from Warsaw, AMCCh, série R, tome XI, fol. 259.

41 Same to same, April 1st 1667, from Warsaw, AMCCh, série R, tome XI, fol. 320v.

and what is superstition is in its infancy in the 17th century. In the 16th century, Pic de la Mirandole distinguished two "astrologies," the first one is a sure art which studies the motions of stars while the second is a speculation on human lives read in the sky. In 1640, Charles Condren, though anti-astrology, still believed it to be a useful science if treated with necessary precaution and utmost diligence.[42] Hervé Drévillon shows that, in what appears as a paradox, the progress of modern science does not disqualify astrology but, on the contrary, forces its transformation and adaptation. Neither heliocentrism nor the birth of experimentation as a scientifically accurate demonstration bested astrology.[43] Pierre des Noyers, as an astrologer, applies a rigorous scientific approach to his favourite art.

La Nativité d'Amarille, an astrological portrait of Louise-Marie Gonzaga

In La Nativité d'Amarille, he proposed an astrological portrait of then-future Queen Louise-Marie Gonzaga. The book is organized in chapters, each about an aspect of her life, and each further divided in an introduction accessible to the layman, then the mandatory citation of authorities and their discussion should they contradict each other, and at last Pierre des Noyers' interpretation mingled with very technical details, bordering on astrological treaty. According to Pierre des Noyers, the mystical and superstitious character of astrology only comes from a lack of precision and rigour in its practice. Leading by example, in his manuscripts, he wrote he revised astrological tables from Kepler and Tycho Brahe because he found them "not exactly right" and as such could not provide the precision he sought in his work.[44] Another example is the time of birth of Louise-Marie, which was too imprecise for the scholar:

> I was only told she was born 19th of August between 8 and 9 hours in the morning, neither told if it was closer to 8 than 9 or the contrary, nor if the clock which we used was working, it is then impossible to conclude anything certain from such an uncertain time.[45]

42 Drévillon, *Lire et écrire l'avenir*, 22.

43 *Ibidem*, 23–28.

44 P. des Noyers, *Nativité d'Amarille*, AMCCh, ms. 424, 4–5.

45 *Ibidem*, 9.

An important element of this portrait is, as des Noyers reminds the reader, that it was made *a posteriori*. While Louise-Marie's exact time of birth is unknown, her secretary can deduce it from "accidents," six major events in her life between 1618 and 1637 which he linked to stars' positions and motions in the sky.[46] By analysing a multitude of events, he then deduced the time of birth where the dispositions of the sky aligned the best with these events, in an operation called "rectification." More than forty pages in his books are dedicated to this rectification, they include a wealth of biographical elements.[47] Pierre des Noyers seeks minute precision, sometimes quite literally: according to him, Louise-Marie is born at 8h03 (not 8h02 or 8h04) and planets are measured at the second of angle-precision.[48]

Even more interesting and telling of Pierre des Noyers' methods was his passion for "revolutions" which are yearly predictions based on the sky's disposition each year at her birthday. There lies a question: should these revolutions be calculated from the place of birth of the person or from her place of residence at that time? He actually explored this question and proposed a new method to calculate these revolutions following several experimentations. He produced several paired revolutions, one from Nevers, the other from Paris or, after 1646, from Warsaw which must have been a good site because of its distance from Nevers. He then compared these revolutions with what happened during that year to find which one was the most precise, thus realizing John Gadbury's experimentation by the future before it was even theorized.[49] These revolutions are not a matter of superstition but one of experimentation, measurements, comparison and conclusion. In the field of medicine, André Vésale started with the knowledge of the ancients, among them Gallien, and surpassed them by experimenting,[50] so does Pierre des Noyers with astrology. This method is deeply scientific and typical of a mid-17th century scholar. But, also typical of the 17th century, this rationality coexisted with a great interest in local mysteries and prodigies. Des Noyers attempted to replace these phenomenon in the natural order of things.

46 *Ibidem*.

47 *Ibidem*, 9–51.

48 *Ibidem*, 10.

49 Gadbury's theories are written in 1662 only. See Drévillon, *Lire et écrire l'avenir*, 26.

50 Simone Mazauric, *Histoire des Sciences à l'époque moderne* (Paris: Colin, 2007), 43–48.

Prodigies and Prophecies in Pierre des Noyers' correspondence

According to Pietro Pomparazzi, a prodigy is a natural phenomenon which is as exceptional as it is rare.[51] The basis of his "curious science" established in 1556 is to seek and understand these phenomenon. Among Ancient authorities, Quintus Cicero, Saint Augustine and Pline all share the same opinion about what is called prodigies in the 16th century: an exceptional phenomenon which, because of its exceptionality, has a specific meaning which must be deciphered and understood. It could be a divine message, an augury, a warning or a simple manifestation of God's interests in human lives, but it must be studied.[52] As such, Pierre des Noyers studied and wrote about many prodigies in his correspondence and tried to find their significance. One of these occur in December 1655 when servants of the Royal Couple fish a mouthless carp:

> we fished recently […] quite a large carp with no mouth, I think she fed through gills. I told, seeing her, that she wanted to teach Poles to be more secret in their councils, because there is nothing we do here that the King of Sweden doesn't know about.[53]

A mouthless carp, which is rather common among possible mutations,[54] is exceptional enough to warrant a study. Why would such a fish be born in the first place? Why would he be caught by a fisherman from the court? And why at that moment? Full of wits, des Noyers immediately saw this fish as a recommendation for all Poles to keep their mouth shut in times of war.[55] Traces of teratology are also common in des Noyers' letters. He wrote about conjoined twins born in Milano[56] and

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51 Pietro Pomponazzi, *De naturalium effectuum admirandorum causi seu de incantationibus liber*, 1556, cité dans Mazauric, *Histoire des Sciences*, 56.

52 Jean Céard, *La nature et les prodiges, l'insolite au XVIe siècle en France* (Genève: Droz, 1677), X–XI.

53 Des Noyers à Boulliau, December 4th 1655, from Głogów – *Lettres de Pierre des Noyers*, 23.

54 Patrick S. Hambrick and Richard E. Spieler, "Mouthless Cypriniform Fishes from Louisiana and Arkansas," *The Southwestern Naturalist* 22 (1977), 143–146.

55 At that moment, Poland is almost entirely occupied by Swedish troops and there are already many known instances where Swedish generals got word of Polish movements.

56 "There was born in Milan a child who has two bodies and three ears and only one head" in Des Noyers to Boulliau, February 7th 1681, from Warsaw, AMAE, ms. 13021, fol. 101.

about a white pigeon supposedly born with only one leg and described in great details.[57]

Pierre des Noyers did not take every testimonies of prodigies at face value. While he saw for himself the mouthless carp and confidently report the story to his friend Boulliau, he seemed more sceptical in situations where he could not confirm the stories he heard about. Here is, for instance, what could be called a "magical pasture field":

> I must tell you of a wonder which is a *lieue* from here where I lived when I was sick. There is a pasture field where, every time one cuts grass from it, it rains. The lord of this field tried as best as he could to have it mowed a clear day when no rain was in sight, but instantly clouds gathered in the sky and rain would infallibly come this day. Peasants say that when they need water, they go and cut some of this grass, and our own coachmen went and cut some too, and the ordinary effect then followed. I wait for a clear day to have a proof.[58]

Here, Pierre des Noyers gladly told the story, but did not believed it nor did he discard the story just yet: he has first to experiment the phenomenon by himself before interpreting anything. He never had the occasion to cut some of this field's grass because the court moves to Czestochowa a couple of days later and so, this prodigy remained a mystery. As far as I can tell, there is no further mention of this field in any of his letters.

On other occasions, Pierre des Noyers rationally explains or discards prodigies. In 1656 in Rawa, the church housed a meeting of the nobility when people felt the ground shaking under the floor. As soon as everybody was out of the church, its floor indeed collapsed. As des Noyers tells it, "The superstitious makes a great miracle out of it, others says the floor was too old."[59] In 1680, he tells of a meteorological phenomenon in Southern Poland which makes the month of May colder than April. Local beliefs explains this phenomenon by the grow of the "espine blanche," apparently a species of thistle, which would cool the air around it. Des Noyers opposed them the idea that melting snow from the Carpathian Mountains cools the air by flowing down valleys, even telling people to

57 Same to same, October 25th 1680, from Warsaw, AMAE, ms. 13021, fol. 73.

58 Same to same, June 18th 1657, from Dankow – *Lettres de Pierre des Noyers*, 330.

59 Same to same, January 3rd 1656, from Głogów – *Lettres de Pierre des Noyers*, 48 "Les superstitieux en font un grand miracle, les autres disent que le plancher était trop vieux."

"root up all these flowers if they are so annoying to them."[60] While this last sentence shows a touch of contempt, it also a call to experiment instead of relying on stories and unproved beliefs.

There are then prophecies which are, according to Jean Céard, nothing more but predictions based on study and interpretation of exceptional natural signs.[61] As a practitioner of astrology, seeker of prodigies and quite the amateur of local stories, it only makes sense to see Pierre des Noyers telling about prophecies and, more interestingly, criticizing them. In 1655 during the Swedish invasion, the horse of John Casimir refused to leave Warsaw and a swallow flew around it. When the king came back to Poland, the horse was on the contrary unstoppable. "May god wish it is a good omen," wrote des Noyers.[62] These two signs must mean John Casimir rightful place is in Warsaw as a king and that God is on his side, which comes quite handy for propaganda purposes, another of the secretary's talents. He often quoted and discussed predictions, almanacs and other prophecies in his letters, sometimes from very obscure or unknown authors (« *Il frugnalo de gli Influssi del gran Cacciatore di lagoscuro* ») or from allegedly more famous writers: "Borri," who predicted Michał Kazimierz Radziwiłł's death in Bologna in 1680,[63] Comes de Flisco or Jean Bélat, whose *Centuries* "tell of all of the Revolution in Portugal."[64] He sometimes gave public lectures of such prophecies to see people's reaction, at first for its amusement,[65] then to its own shock given the strong reactions of the local population.[66] On at least one occasion, he exposed a hoax. The 1681 comet supposedly triggered this spectacular event in Italy: "a hen laid an egg in the house of *il signore Massini* on which one can see the picture of the comet as it was the last days of November."[67] His intuition tells him these eggs are waxed and then carved, which is a common practice in Poland. One month later, he is happy to write Boulliau he was right all along.[68]

60 Same to same, May 10th 1681, from Varsovie, AMAE, ms. 13021, fol. 26v–27.

61 Céard, *La nature et les prodiges*, 486.

62 Des Noyers to Boulliau, December 19th 1655, from Głogów – *Lettres de Pierre des Noyers*, 37.

63 Same to same, 13 décembre 1680, de Varsovie, AMAE, ms. 13201.

64 Same to same, July 12th 1680, from Warsaw, AMAE, ms. 13021, fol. 42.

65 Same to same, August 30th 1680, from Warsaw, AMAE, ms. 13021, fol. 56.

66 Same to same, November 11th 1680, from Warsaw, AMAE, ms. 13021, fol. 69.

67 Same to same, January 10th 1681, from Warsaw, AMAE, ms. 13021, fol. 94.

68 Same to same, February 7th 1681, from Warsaw, AMAE, ms. 13021, fol. 120v–103.

More surprising, we all owe Pierre des Noyers for the diffusion of the myth of the Vampire in Western Europe.[69] He first mentioned this topic in a letter to Boulliau written as early as 1659.[70] This early occurrence tells more of a disease than of a creature. First, the dead would eat its clothes, then its internal organs. After that, his family would be cursed with a strange disease which would kill in 21 of his kind in quick succession unless the dead body is unburied and beheaded. Des Noyers shows some serious doubts about the whole story. It is then surprising that, in 1693, barely a few months before his death, he published an article in the Mercure Galant[71] on the same topic. This article introduced the myth in France and would still be quoted half a century later. He sparked a discussion where scholars tried to find metaphysical causes to this phenomenon and tried to explained it in the most rationale way.[72] In this latter form, the vampire is much closer to our contemporary description: a vengeful and tormenting spirit or demon feeding on its victim's blood which can be killed by unburying the body, beheading it and ripping its heart. This time, des Noyers pushes the story and guarantees its veracity ... Up to a point. He wrote that there were "Priests worthy of faith, who have seen these kinds of executions carried out, warrant the truth of everything I tell you," but all his article is written in conditional form: he retells of a local myth and only testifies that the beheading ceremony happens and nothing more, even though he seems quite hooked by the story.

Conclusion: a man of his time and a scientific intermediary

At the court of Queen Louise-Marie, des Noyers played a pivotal role as the centre and main actor of a network of relations and information which encompassed scholars and scientific studies. As such, and contrary to many other scholars of his time, he enjoyed a quite comfortable

69 On the topic, see Koen Vermeir, "Vampires as Creatures of the Imagination: Theories of Body, Soul and Imagination in Early Modern Vampire Tracts (1659–1755)," in *Diseases of the Imagination and Imaginary Disease in the Early Modern Period*, ed. Yasmin Haskell (Turnhout: Brepols, 2012), 341–373.

70 Des Noyers to Boulliau, December 13th 1659, from Dantzig – *Lettres de Pierre des Noyers*, 561.

71 Pierre des Noyers, "Prodiges," *Le Mercure Galant*, mai 1693, 62–72.

72 Marigner, "Sur les créatures des Elemens," *Le Mercure Galant,* janvier 1694, 57–161; *idem*, "Sur les Stryges de Russie," *Le Mercure Galant*, février 1694, 11–119; Augustin Calmet, *Traité sur les apparitions des esprits et sur les vampires ou les revenants de Hongrie, de Moravie, etc*, tome 2, Paris 1751.

position, living in the King's Castle in Warsaw and, to the extent of my knowledge, never lived in a situation of financial precariousness despite attempting for several decades to recover money owed to him, among other by Buratini. Scientists in Poland were nevertheless isolated and the birth of academies under royal patronage such as the *Académie des Sciences* or *l'Observatoire de Paris* isolated them even more. Boulliau's taste for astrology made him no favour the more the 17th century passed and his entry in the Royal Society did not end his isolation. At the end of his life, his address was no longer known to his fellow scholars.[73] Johannes Hevelius on the other hand, antagonized many savants and desperately sought a pension from John Sobieski or Louis XIV, in vain.[74] No such academy existed in Poland and, while they did not threaten the dense interpersonal relationship scholars threaded between them and, as des Noyers proves it, did not stop the flow of information between scholars from different academies or outside of them, academies still revolutionized the practice of science by providing material comfort to their members in the form of pensions and instruments.

As a man of science, Pierre des Noyers was, in many ways, a man of his time. In all fields and all situations in life, he showed a strong desire to rationalize everything he saw and heard about. This will extended to arts which are now considered pseudo-science, such as astrology and prodigies, but which at the time were still on the fringe of scientific knowledge. More importantly, he treated all these different discipline with the same method. First, a quest for the best instruments to obtain the most precise measurements and gather data. Then, through experimentation, des Noyers tested his own (or fellow scholar's) hypotheses and drew conclusions. He did not revolutionize any field of study nor did he participate in any ground breaking research, though he sent his own weather measurements to the *Academia Del Cimiento*. He nevertheless attempted his whole life to push science forward through his modest participation and used scientific principles in all things. One has to remember that at least until 1667 and more likely 1669 or 1670, he was first and foremost the Queen's secretary and maintained her diplomatic and personal network of relations to further her political agenda, which was time-devouring. As such, and despite up to date and accurate knowledge, he could never be a scholar such as Mersenne, Cassini or Hevelius. The latter, with a tone of not-so unfounded disdain, did not consider him

73 CJH-III, 104–107.

74 *Ibidem*, 91–100.

an authority in science but rather a useful scientific intermediary. That, indeed, he was.

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