The Many Faces of Hendrik Antoon Lorentz: How persona is manifested in media during life and in the memory of Hendrik Antoon Lorentz (1853-1928).

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How persona is manifested in media during life and in the memory of Hendrik Antoon Lorentz (1853-1928).

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Introduction

In October of 2023, the Leiden Museum of the History of Science, Rijksmuseum Boerhaave, organised a two-day symposium to present the question of 'Does Science Need Heroes?', seeking to investigate how prize cultures have changed over time and what role prizes have (or should have) in current scientific practices.[1] This discussion was partly initiated to gain insights into ways to present scientists in a contemporary manner. The Nobel Prize, in particular, played an essential part in this discussion as Rijksmuseum Boerhaave is currently looking for a solution to the problem of the disappearance of Nobel Prize winners in the permanent collection. Because of remodelling, the Nobel Prize cabinet, displaying artefacts pertaining to Dutch Nobel Prize winners, was temporarily removed. Now that the museum is trying to find a new place for the laureates, it is also reconsidering how these scientific greats should best be presented. Should a modern society still focus on the genius of singular men, or would it instead be better to put more emphasis on a broader historical narrative? Issues inescapable in an ever-changing society, like the need for more diversity and inclusivity and the general adaption to fit a more contemporary framework, all contribute to how a museum handles its content.

One of these scientists who once graced the halls of Rijksmuseum Boerhaave was Dutch physicist Hendrik Antoon Lorentz (1853-1928). A scientist of an excellent calibre, once so widely revered that his funeral in 1928 was nothing short of a national event. During his life, Lorentz established himself as a crucial part of the rapid developments in theoretical physics during the first decades of the twentieth century. He was promoted to professor at 25 and has since dedicated his life to physics. For his efforts, Lorentz even won a Nobel Prize in 1902 with his colleague Pieter Zeeman (1865-1843), the second year the prize was awarded. This placed Lorentz squarely in the hall of fame of Dutch Nobel Prize winners.[2]

The winning of the Nobel Prize was one of the many events that contributed to the rising popularity of Lorentz in the national media. Lorentz was, like scientists from the time who suddenly received Dutch fame, like Heike Kamerlingh Onnes and Willem Einthoven, or a lot of fame like Albert Einstein, unprepared for a spotlight. Lorentz was, first and foremost, a physicist and professor. Therefore, when it came to media, it was not Lorentz himself who would try his best to present himself purposefully in a certain way. He was even known for not particularly liking media attention all that much. Therefore, the media was able to create their image of Lorentz. This image was subject to change and development based on new accomplishments and changes in cultural context. This thesis will examine

[1] Rijksmuseum Boerhaave - Symposium: Does Science Need Heroes?, https://rijksmuseumboerhaave.nl/symposium-does-science-need-heroes/ (accessed 08-12-12023).

[2] For a deeper insight into the life and theories of Hendrik Antoon Lorentz, I would recommend reading either one or both of the biographies written about Lorentz. For a well-written and concise biography (in English), one can consult A. J., Kox and H. F. Schatz, *A Living Work of Art: The Life and Science of Hendrik Antoon Lorentz* (Oxford 2021). For a longer, more in-depth biography in Dutch, one can turn to Frits Berends and Dirk van Delft, *Lorentz: gevierd fysicus, geboren verzoener* (Amsterdam 2019).

how the media emphasised specific characteristics of Lorentz and how this would shape his public image and *persona.*

The French anthropologist Marcel Mauss first introduced the term ‘persona’ in the context in which it is still used today, in an essay entitled ‘Une catégorie de l'esprit humain: La notion de personne, celle de 'moi'. Un plan de travail' was first published in 1938. Mauss examined how people have dealt with identity, the self and roles over time and across cultures. He defined a persona as a conglomerate of mask and face, existing between the person (the individual stripped of all masks) and the personage (an assigned role). As the historians of science Lorraine Daston and Heinz Otto Sibum described in their seminal essay about the conception of scientific persona: "Between the individual biography and the social institution lies the persona: a cultural identity that simultaneously shapes the individual in body and mind and creates a collective with a shared and recognisable physiognomy"[3]. It is important to remember that a persona is not simply put on and taken off. A persona is something achieved, not something that replaces one's identity.

Not every persona is tied to an occupation, nor does every profession have an accompanying persona. Personas result from historical developments, and their appearance and disappearance do not necessarily require specific circumstances. Daston and Sibum applied this idea of persona in a scientific context. Plenty of scientific personas came to exist, like the ‘instrument maker’, ‘the biologist’, etc. Yet, umbrella terms like ‘*Naturwissenschaftler’* and *‘le scientifique’* were introduced and widely used as a persona of the scientist in the broadest sense. Daston and Sibum argued that for a new persona to emerge, they first must meet with some resistance. A new persona signals a change in cultural, social or political circumstances, breaking the traditional set of already present personas. New personas will always accompany recent advancements, for example, all the new scientific personas that emerged in the nineteenth century.[4] A persona can furthermore act as a unifying measure. Daston and Sibum show that a group of scientists would command respect far outside the reach of science by speaking “as scientists”. Furthermore, this same term created a camaraderie that would transcend national borders. Researchers would talk to each other as fellow scientists, not as a German to a Frenchman, made possible by the uniting force of a shared persona.[5]

A persona can be assigned to a person by others or by the person as a form of self-fashioning. A persona can sharpen the senses, change the personality, perhaps create an ethos, and affect all aspects of a person. Identifying with a persona creates expectations that may cause one to act differently or may give a person the motivation they previously lacked out of a need to live up to those expectations. A persona can influence a person, but a person can never fully fit into a persona. It is a mould into which no single person can fit.

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[3] Lorraine Daston and Heinz Otto Sibum, ‘Introduction: Scientific Personas and Their Histories’, *Science in Context* 16:1-2 (01-08-2003) 1-8, see 2-3.
[4] Ibidem, 3.
[5] Ibidem, 6.

Historian of humanities Herman Paul took this idea of persona refined by Daston and Sibum. He expanded on it by looking specifically at the virtues and skills that, in his opinion, make up a persona. Virtues, as personal attributes, are essential for pursuing scholarly work. Still, Paul proposes to supplement this with skills: a more practical umbrella term that includes literary skills (knowing how to write a compelling narrative), organisational skills (learning to manage notes) and the sort. In his article 'What is a Scholarly Persona? Ten Theses on Virtues, Skills, and Desires', he applied this theory to scholars, specifically those active in humanities, introducing the 'scholarly persona'. Paul argues that the critical characteristics of scholarly personas are virtues, epistemic or otherwise. These virtues are the basis on which one could be considered a 'good researcher' and heavily depend on the period, country, field of interest, and other external factors. Yet, a persona is not made up of concretely identifiable virtues and skills. A persona consists of "constellations of commitments to specific goods."[6]

Personas have become an increasingly popular topic among historians of humanities and science. Paul, who has become an authority in this field, proved the value of research with an eye on a persona for five main reasons. All of these were with a historical scholar in mind, but they are nonetheless relevant to scholars of any discipline. Firstly, knowing the dominant persona of the scholar at the time allows a researcher to look beyond the established virtues, assuming the subject is at least somewhat engaged in self-fashioning, and instead allows a researcher to see the social aspects of the scholar's life. Secondly, a persona-focused approach can help bridge the pieces of an otherwise fragmented story, as personas connect individuals to a much broader social and cultural context. Thirdly, personas lend themselves very well to comparison. Finally, and more ambitiously, as Paul noted, scholarly personas can serve as a "connecting thread" between biographies, institutions, methodologies, and political-religious conflicts, offering a new way of interpreting history. Finally, as Paul often points out, studying scholarly personas is an opportunity for self-reflection. It allows the researcher to reflect on what kind of scholar they want to be.[7]

Furthermore, self-fashioning can play a large part in one's persona. Yet, the amount of self-fashioning is also the hardest to determine with a certain degree of objectivity, as a person's private life is difficult to understand. Instead, this thesis will look at Lorentz's public persona. Furthermore, this thesis does not try to be a thorough biography of Lorentz. Instead, it tries to analyse Lorentz through

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[6] Herman Paul, 'What Is a Scholarly Persona? Ten theses on virtues, skills, and desires', *History and Theory* 53:3 (2014) 348-371. More by Paul that expand on this topic include Herman Paul, 'What Is a Scholarly Persona? Ten theses on virtues, skills, and desires', *History and Theory* 53:3 (2014) 348-371, Herman Paul, 'Performing History: How Historical Scholarship Is Shaped By Epistemic Virtues', *History and Theory* 50:1 (2011) 1-19 and Herman Paul, 'The Scholarly Self: Ideals of Intellectual Virtue in Nineteenth-Century Leiden' in R. Bod, J. Maat and T. Weststeijn eds., *The Making of the Humanities Volume II: From Early Modern to Modern Disciplines* (2012) 397-412.

[7] Herman Paul, 'Introduction: Scholarly Personas: What They Are and Why They Matter', H. Paul (Ed.) *How to Be a Historian: Scholarly Personas in Historical Studies 1800-2000* (Manchester 2018) 1-18, see 13-15.

media-ascribed personas and their shift over time by looking for virtues and characteristics used to frame Lorentz in a certain way. As with the memory of a person, a persona does not disappear upon death and will keep evolving as the world changes with it. Therefore, this thesis will not end with the end of Lorentz's life but will dedicate a good portion to the media representation of Lorentz's legacy. Media is the means of communication that reaches or influences people widely. This thesis will primarily use national newspapers that relay a national representation of Lorentz instead of a local one and slightly limit the scope of the source material. However, some local newspapers were still mentioned as they often contained more details that were relevant to the topic. From newspapers, it is known that radio stations had talked about Lorentz. However, these are complex sources to recover and are suited for another, even more in-depth analysis. Other objects discussed are not necessarily media but are objects that exist in the public eye and were, more importantly, meant to be perceived by a broader public. This includes statues and portraits and how Lorentz has been represented in museums in the Netherlands.

Hence, the question this thesis will attempt to answer is: how did the public persona of Hendrik Antoon Lorentz change in Dutch media throughout his life, after his death and in his legacy?

By doing this, this thesis will first contribute to the existing literature about Lorentz with a new lens through which he is regarded. Until relatively recently, Lorentz did not have a proper, extensive biography written about his life and work. This was partly because historian of physics Anne Kox worked on this biography for forty years after compiling an extensive collection of correspondence to and from Lorentz. However, the longer it took for Kox to release his book, the more impatient theoretical physicist Frits Berends and historian of science Dirk van Delft got. They banded together and released *Lorentz, gevierd fysicus, geboren verzoener* ('Lorentz, celebrated physician, born conciliator') in 2019. This spurred Kox to release his book *Hendrik Antoon Lorentz: 'Een levend kunstwerk'* (which was translated into English two years later under the title *A Living Work of Art: The Life and Science of Hendrik Antoon Lorentz*) in the same year. These biographies were very suited to be compared because the circumstances and the animosity between the three authors made sure the books, and therefore Lorentz, saw a lot of attention. These biographies give extensive insight into Lorentz's private life, academic career, and scientific theories. This thesis will add to the existing, accurate depiction of Lorentz's life with a persona-centric approach. Instead of trying to understand the scientist as he was as a person, it will look at the subjective way public media, which is deliberately separate from Lorentz, perceives him by ascribing particular virtues and skills to him. Furthermore, these two recent biographies and smaller biographical accounts published over the past hundred years justifiably focussed on the years Lorentz was alive. Therefore, the part of this thesis about Lorentz's legacy will be a fitting supplement.[8]

[8] Kox, *A Living Work of Art* and Berends, *Lorentz.*

This thesis will be using a body of primarily Dutch sources. Lorentz was an internationally revered person, and many foreign articles and correspondence are available on top of the already quite gigantic pile of Dutch sources. These will, however, be primarily omitted to limit the scope and give the thesis a clear focus on Dutch national identity.[9] This thesis will apply Paul's interpretation of personas to the public representation of Hendrik Antoon Lorentz. Paul, in particular, highlights virtues and skills as what determines a persona. By analysing what words are chosen to describe Lorentz the most, a set of virtues most often associated with him can be constructed. This is also possible with sources that do not use any text, like statues or portraits, by trying to establish what choices were made during the creation process: what elements of Lorentz's appearance were essential to highlight and what elements did not need as much emphasis? Plenty of conclusions can be made by looking at his expression, choice of clothing, the position of his hands and his background. Objects from museums in themselves do not tell much. Why particular objects are exhibited and in what context can, however, still give insight into what aspects of Lorentz are deemed most significant.

This thesis will be separated into three chapters. The first chapter will describe Lorentz's life through news articles. The newspapers used as sources are almost exclusively national newspapers, with more minor, local newspapers being excluded for scale. The second chapter will primarily focus on the week before Lorentz's death, his funeral and the immediate aftermath. Once again, articles will be analysed and supplemented with eulogies and memorial statues. The final chapter will look at Lorentz's legacy starting in 1953 when the first exhibition was organised, with Lorentz as one of the main actors. The rest of this chapter will explore how Lorentz is represented in Dutch museums over time and its societal context. One of the museums that will be put in the spotlight is the museum Lorentz had always had the most substantial personal ties with, the Teylers Museum in Haarlem. The other museum that saw the most developments was the Rijksmuseum Boerhaave, which has digitalised a significant part of its collection and has easily accessible archives.[10]

[9] For a good overview of the evolution of Dutch national identity, one can consider Rogier van Reekum, *Out of Character. Debating Dutchness, Narrating Citizenship* (PhD-thesis Erasmus University Rotterdam 2014).

[10] Rijksmuseum Boerhaave – collection, https://rijksmuseumboerhaave.nl/collectie/ (accessed 09-12-2023).

Chapter 1: How newspapers and portraits represented the persona of Dutch scientist Hendrik Antoon Lorentz (1853-1928).

In this first part of the dive into the representation of Lorentz's person and work during his life, and after his death, the sources published to a broad audience are the main focus. These sources are examined to reconstruct Lorentz's persona that was being shaped by the media.

Lorentz's debut in the national media came in 1877. His thesis supervisor, Professor Pieter Rijke (1812-1899), suggested Lorentz as a new professor at the University of Leiden. Until then, Lorentz worked as a mathematics teacher in his hometown of Arnhem. Rijke persuaded Lorentz to apply for a mathematics and physics teacher position at the Gymnasium in Leiden. At the same time, Lorentz became a private lecturer (*privaatdocent*) at the university. A privaatdocent was a newly introduced position at the university that allowed someone to lecture in classes, while not officially employed by the university and instead paid by the students. At the same time, however, the University of Utrecht suddenly needed to fill a second chair in mathematics. They intended to offer it to Lorentz. This spurred the University of Leiden to appoint Lorentz as a professor in the faculty of mathematics and physics rather than as a privaatdocent. [11] Or, to put it more precisely, the University created a new post to be filled by a theoretical physicist, specifically to make room for Lorentz to join. This race between universities to get to Lorentz was featured in several newspapers, first recorded by the local Arnhem newspaper, the Arnhem Courant, and then picked up by *Vaderland* (Fatherland), a prominent national newspaper. The story, however, remained very short: Lorentz is not introduced other than to say he's named.[12]

This appointment as professor created the basis for the persona that Lorentz would most often be associated with: that of a professor. A professor's chair is an example of a persona-shaping scientific position. A professorship demands specific practical skills in the first place, but a professorship also comes with the expectation of particular characteristics.[13] A professorship was not merely a job but required the person to adhere to a specific set of virtues. A professorship expects the adherence to scholarly virtues and those of a teacher.[14]

In January 1878, Lorentz was officially appointed as a professor at Leiden University and held his inaugural speech.[15] Lorentz had not yet achieved widespread fame; the news paid little attention to either his person or his work, apart from the obligatory information that a new professor had been appointed to the University of Leiden. The first few years of his professorship seemed relatively

[11] Kox, A Living Work of Art, 18-20.
[12] See: 'Onderwijs: Hooger Onderwijs', *Het Vaderland* (08-11-1877) and 'De Staats-Courant', *De Standaard* (20-11-1877).
[13] Kirsti Niskanen e.a., 'Scientific personas in theory and practice – ways of creating scientific, scholarly, and artistic identities' in *Persona Studies* 4:1 (2018) 1-5, see 2.
[14] See: Lorraine Daston and Peter Galison, *Objectivity* (2007).
[15] 'Onderwijs', *Algemeen Handelsblad* (24-01-1878).

uneventful in the public eye. Lorentz had close links with the Royal Dutch Academy of Sciences (*Koninklijke Nederlandse Akademie van Wetenschappen*, also known as the KNAW), of which he became a member in 1881, along with two other physicists. Lorentz's admission was documented in a national newspaper, but not in a grander way other than "[a letter] is read […] of the minister of internal affairs (13 May 1881), regarding notice of the appointments of the gentlemen […] dr. H. A. Lorentz, […] as normal […] members of the academy, ratified by the king.[16]

The KNAW was established in 1808 under the new rule of Louis Bonaparte. At the outset, the academy struggled to amass a substantial membership or wield significant influence. Still, in the following century, it achieved greater autonomy and positioned itself as a mediator between the government, institutions, and individual scientists. The KNAW emerged as the invisible centre of Dutch science.[17] Therefore, joining the KNAW benefited Lorentz's status and connections within the national scientific scene.[18]

Lorentz's presence in the KNAW was reflected in his presence in the media, where his name often appeared in articles about the KNAW as a spokesman or lecturer. However, Lorentz was consistently featured alongside other significant words in articles of great importance to the KNAW. These updates were always concise and focused on summarising events rather than elaborating on Lorentz's character or actions. This presentation format mirrors the style used in the initial announcement of his membership.[19]

So, while Lorentz had become a common name in the scientific world, this was hardly reflected in the national press, as he had not yet made his 'debut' outside his field. This was a trend that continued throughout the 1880s and 1890s. During this period, Lorentz continued to teach at the university and gave frequent public lectures. A remarkable series of lectures took place in The Hague in 1889, in which he recounted the growth of new ideas in the field of electricity that had seen the light within the previous few decades, mostly coming from Michael Faraday (1791-1867) and James Clerk Maxwell (1831-1879), two scientists who were fundamental to Lorentz's research. Some experiments and schematic sketches accompanied the lecture. Journalist Pieter Haaxman was present and recorded the speech. He noted that Lorentz was a very clear speaker and that he had put a lot of time and effort into

[16] Original text: "[Een brief] wordt gelezen […] van den heer Minister van Binnenlandsche Zaken (13 mei 1881), houdende kennisgeving dat de benoemingen van den heren […] dr. H. A. Lorentz […] tot gewone […] leden der akademie, door den koning werden bekrachtigd." In: 'Koninklijke Akademie van Wetenschappen', *Nederlandsche Staatscourant* (04-06-1881).

[17] Klaas van Berkel, *De stem van de wetenschap, Geschiedenis van de Koninklijke Nederlandse Akademie van Wetenschappen. Deel 1: 1808-1914* (Amsterdam 2008) 11.

[18] Some other works detailing the history of the academy are: G. Alberts and H.J. Zuidervaart eds., *De KNAW en de Nederlandse wetenschap tussen 1930-1960* (Amsterdam 2009) and E.W. Otterspeer and J. Schuller tot Peursum-Meijer, *Wetenschap en wereldvrede. De Koninklijke Akademie van Wetenschappen en het herstel van de internationale wetenschap tijdens het Interbellum* (Amsterdam 1997).

[19] The following articles are all examples of the way Lorentz and the KNAW were featured in newspapers: 'Laatste berichten, en vervolg der Nieuwstijdingen', *Algemeen Handelsblad* (27-03-1980). 'Mededeelingen van verschillende aard, Koninklijke Academie van Wetenschappen, *Nederlandsche staatscourant* (04-05-1893).

his lectures, but that his time and effort had been rewarded as he had attracted a large audience who had followed the "comprehensible lecture" and the "exquisite experiments" with great attention.[20]

These formative years set the stage for Lorentz's introduction to the public. Although Lorentz did not yet have much of a public presence compared to what was to come, it could almost be said that Lorentz had the time to adopt and adapt to the scientific persona of both a physicist and a professor. Lorentz's media presence remained minimal until the end of the nineteenth century, but this changed rapidly at the turn of the century when he won the Nobel Prize in Physics in 1902.

The Nobel Prize

The scientific world was to change dramatically with the introduction of the Nobel Prize in 1901 by the Swedish chemist and inventor of dynamite, Alfred Nobel. It is not the oldest scientific prize, that honour goes to the Copley Medal, which has been awarded since 1731, nor is it the most lucrative, that would be the Breakthrough Prize, which awards three million euros to its winner - but the Nobel Prize is by far the most famous of them all. The title 'Nobel Laureate' after one's name is enough to confer instant recognition, celebrity and authority internationally.[21] The reputation of the Nobel Prize has grown so far outside its field that no one could have predicted it when it was first awarded. The Nobel Prize has undoubtedly gained some prestige since it was first awarded in 1901. This was due to Nobel's illustrious reputation, who had died five years earlier, and the vast sums of money involved, but it was only later that the prize reached the heights of prestige associated with it today. The compensation received its first boost in popularity in 1903 when the Nobel Prize for Physics was awarded to Henri Becquerel and Marie and Pierre Curie. The French press, in particular, began to pay more attention to the prize, but the Curies' rags-to-riches story captivated an international audience.[22] Similarly, one of the first Nobel Prize winners was the Dutchman Jacobus Henricus van 't Hoff (1852-1911), who won the Nobel Prize in Chemistry in 1901. So, the Netherlands already had reason to pay attention to the prize in the press.[23]

The unprecedented success of the Nobel Prize was also due to its fantastic timing. The prize was born when science and literature were experiencing a significant boom: science was developing rapidly, and it was almost impossible to keep up with all the new scientific advances. At the same time, the media were also expanding rapidly. In the last quarter of the nineteenth century, newspapers began to include pictures in the text, newspapers became cheaper, and there were fewer restrictions on what could be printed. In the Netherlands, for example, the tax on newspapers was so high that they were only

[20] Pieter Anne Haaxman, 'De electrische stroom als een bewegingsverschijnsel deel I' and 'De electrische stroom als een bewegingsverschijnsel deel II' in Voordrachten Diligentia (Den Haag, 1890). Recorded on https://voordrachtendiligentia.wordpress.com/2015/04/15/hallo-wereld/ (accessed 06-11-2023).
[21] Burton Feldman, *The Nobel Prize: A History of Genius, Controversy, and Prestige* (2000) 6.
[22] Ibidem, 5.
[23] 'De Nederlandsche winners van de Nobelprijs', *Het Nieuws van den Dag* (10 December 1902).

available to the elite. In 1869, this tax was lifted, allowing a wider variety of subjects to be covered in different newspapers, open to everyone.[24] This meant that scientific news was no longer limited to fellow scientists or scholars but had to be understandable to a much wider audience and, more importantly, attractive to a broader audience. As newspapers became less and less objective messengers of news and more forced to adapt to growing competition, sensationalism began to play a more significant role.[25] As a result, to make science compelling, journalists began to report on the personalities behind the science, a habit that continues to this day. Scientists' lives, charms, working habits and opinions suddenly became as important as their findings.[26]

In 1902, when Lorentz won the Nobel Prize for physics, the prize was only one year old and did not have the long tradition of greatness associated with it. Nevertheless, it did not go unnoticed. Lorentz shared the Nobel Prize in Physics that year with his friend and colleague Pieter Zeeman, a professor of physics in Amsterdam. In 1896, Zeeman discovered what is known as the 'Zeeman effect': the influence of magnetic forces on the colour of light emitted in different ways, or more precisely, the splitting of the spectral lines of atoms when exposed to a magnetic field.[27] Zeeman proved this by experiment and was subsequently nominated for the Nobel Prize. When Lorentz got wind of Zeeman's discovery, he invited Zeeman to present him with a complete theoretical explanation. A central part of the theory was the existence of the oscillating ion, which lent credibility to the idea. However, light ions turned out to be much smaller than chemical ions. This led to the theory that light ions might be a new particle altogether. This was confirmed when, less than a year later, this ion was also found outside atoms by Emil Wiechert and Joseph Sohn Thomson and coined the name 'electron'.[28] Zeeman's experiments and Lorentz's theoretical explanation were essential parts of the beginnings of quantum mechanics and were why both men were awarded the Nobel Prize in 1902.

On 10 December, the anniversary of Nobel's death, the two men were awarded the Nobel Prize in Physics at the Royal Swedish Academy of Music.[29] However, Lorentz was the only winner to receive the prize in person, as Zeeman was ill and unable to travel to Sweden to receive it. They each received a sum of almost 50,000 Dutch guilders, about ten times their annual salaries.[30]

Although the Nobel Prize was not as renowned as it is nowadays, two Dutch scientists winning the prize – and all that money – would not go unnoticed in the national news. The day before the ceremony, the national newspaper, the *Algemeen Handelsblad*, published an article formally introducing Lorentz to those who might not be familiar with him. The article was not about his Nobel

[24] J.M.H.J. Hemels, *De Nederlandse pers voor en na de afschaffing van het dagbladzegel in 1869* (promoted by prof. dr. P. H. Winkelman katholieke universiteit te Nijmegen 1969) 358.
[25] Ibidem, 359-360.
[26] Feldman, *The Nobel Prize*, 8.
[27] Kox, *A Living Work of Art*, 62-63.
[28] Ibidem, 64.
[29] 'De Nobel-prijzen', *Algemeen Handelsblad* (11 December 1902).
[30] Ibidem.

Prize – which was not mentioned at all - but rather to "give an idea of Lorentz's research, which is revered by physicists worldwide".[31] The article is exclusively about Lorentz, leaving fellow Nobel Prize winner Zeeman out of the picture, but this is also because the content of the article was taken from a piece that appeared in the monthly magazine *Woord en Beeld*, written by Zeeman himself about his friend and colleague.[32] Most of the original article published in *Woord en Beeld* dealt with the technical aspects of Lorentz's theories, but some parts of his character shone through. The article was opened by Zeeman, who lamented that the most incredible men who engage in deep, necessary research often go unnoticed. Furthermore, Lorentz differed from other mathematicians who were abstract and unconcerned with practical applications, "indifferent", as Zeeman put it.[33] On the other hand, Lorentz was one of those rare souls who used his knowledge to gain new insights into nature in a practical sense and was one of the first to do so. He became a guiding light for scientists through his theories, which laid the foundations for countless scientific advances, and his support of his students, friends, and colleagues.[34] The article mentioned above, published by the *Algemeen Handelsblad*, directly quoted about half a page from Zeeman's portrait. The small excerpt chosen to be featured included an overview of Lorentz's theories and where his scientific inspirations came from. It emphasised the novelty of Lorentz's work and the experimental verification of Lorentz's ideas but excluded the original article's more introductory and laudatory parts.[35] In this case, the image of Lorentz in the eyes of his fellow scientists is still different than in the eyes of the national media, which was not yet as interested in Lorentz as the scientific community.

Furthermore, most newspapers seemed to be more interested in the ceremony surrounding the Nobel Prizes, as the entire event was complete with large festivities and the inclusion of King Oscar II.[36] This spoke to the imagination much more than two scientists who were not yet well-known. This was not to say that the two laureates were ignored; Lorentz and Zeeman were, more often than not, the leading players, but all the attention would go to the scientific theories that led to them receiving the prize. For example, Maxwell was often cited as an essential figure in the prelude to the award-winning theory, placing the scientists in a longer-running scientific tradition.[37]

There was one article that appeared several times in several different newspapers, probably also first published by the *Algemeen Handelsblad*: a short article announcing the winners of the Nobel Prizes and briefly introducing Lorentz and Zeeman: where they were born, where they grew up and what

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[31] Original text: "*Om een denkbeeld te geven van de onderzoekingen van prof. Lorentz, welke overal de bewondering der natuurkundigen hebben opgewekt, (…).",* 'Prof. Lorentz', *Algemeen Handelsblad* (9-12-1902).
[32] Pieter Zeeman, 'Prof. H. A. Lorentz', *Woord en beeld; geïllustreerd maandschrift* 7:2 (estimated: 1-1-1902) 183-186.
[33] Ibidem, 183.
[34] Ibidem, 186.
[35] 'Prof. Lorentz', *Algemeen Handelsblad* (9-12-1902).
[36] See: 'Nobel-Prijs', *Het Vaderland* (12-12-1902) and 'Zweden', De Telegraaf (15-12-1902).
[37] Kox, *A Living Work of Art,* 56.

their academic careers were like. However, the article was relatively short and did not give much insight into personality or other persona-defining characteristics such as virtues.[38] While the Nobel Prize boosted the two men's mainstream popularity, media reporting the event in 1902 were not yet familiar enough to put the two men on pedestals.

One exception to this was a large spread published by the *Telegraaf* ten days after the Nobel Prize ceremony. The article was an in-depth introduction to both Lorentz and Zeeman, with portraits of both men (see Figure 1). Both men get their information box, including facts like their hometowns, academic careers, and most significant scientific inventions. Lorentz was given the spotlight first and had the most extended article, while Zeeman was described as playing more of a supporting role to the other scientist. Lorentz's part begins with words that are not often seen before this moment but will be repeated many times afterwards: "This hero of science, who upholds the honour of our fatherland and whose great achievements in the peaceful battle for the well-being of mankind, was recently acknowledged and recognised in the land of the midnight sun […]."[39]

Furthermore, Lorentz was described in this article as having shown "great aptitude and lust for knowledge since a young age" and a "diligent worker" who still made time for personal projects besides his professional work. [40] After recounting Lorentz's theories for which he won the Nobel Prize, Lorentz's part of the article ended with the author praising Lorentz for making their "heart swell with pride for the fatherland". Zeeman is introduced as the man who is Lorentz's "loyal fellow combatant in the long war of science". The focus lies primarily on his collaboration with Lorentz, without personal qualities being attributed to him beyond his loyalty and support of his colleague.

The article included two sketched portraits of both Lorentz and Zeeman. The physical appearances of these men also seemed to be of importance as the last sentence reads: "[…] in which meetings, [Zeeman] because of his youthful appearance and [Lorentz] because of his powerful bearded face, have attracted the attention of the public multiple times."[41] The focus on Lorentz's beard and the description of his face as 'powerful', particularly when compared to the younger Zeeman, suggests masculinity that was perceived to be a defining feature of the scientific persona at the time.[42]

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[38] First article: 'De Nobelprijs', *Algemeen Handelsblad* (08-12-1902). See also:, 'De Nederlandsche winners van den Nobelprijs', *Het Niews van den Dag* (10-12-1902), and 'de Nobelprijzen', *Geïllustreerd zondagsblad voor katholieken* (21-12-1902).

[39] Original text: "*Deze held der wetenschap, die de eer van ons vaderland hoog houdt en wiens groote verdiensten in den vreedzamen strijd voor 't welzijn der menschheid onlangs in het land der middernachtszon werden erkend en gehuldigd, […]."* In: 'Prof. HENDRIK ANTON LORENTZ', *De Telegraaf* (20-12-1902).

[40] Ibidem.

[41] Original text: *"[…] in wier vergaderingen [Zeeman] door zijn jeugdig uiterlijk, [Lorentz] door zijn krachtigen gebaarden kop, meermalen de aandacht trokken van 't publiek.",* Ibidem.

[42] For an in-depth analysis on how masculine self-fashioning within the scientific community in Britain developed itself, once can read Heather Ellis, *Masculinity and Science in Britain, 1831–1918* (London 2017).

This, combined with the framing of Zeeman as second fiddle to Lorentz's greatness, resulted in the portrayal of Lorentz as an authority of great significance. Lorentz was already older and established in the scientific community, with his professorship and his membership of the KNAW, and therefore took on the role of a mentor, something that would become more common in the later years of his life and after his death.

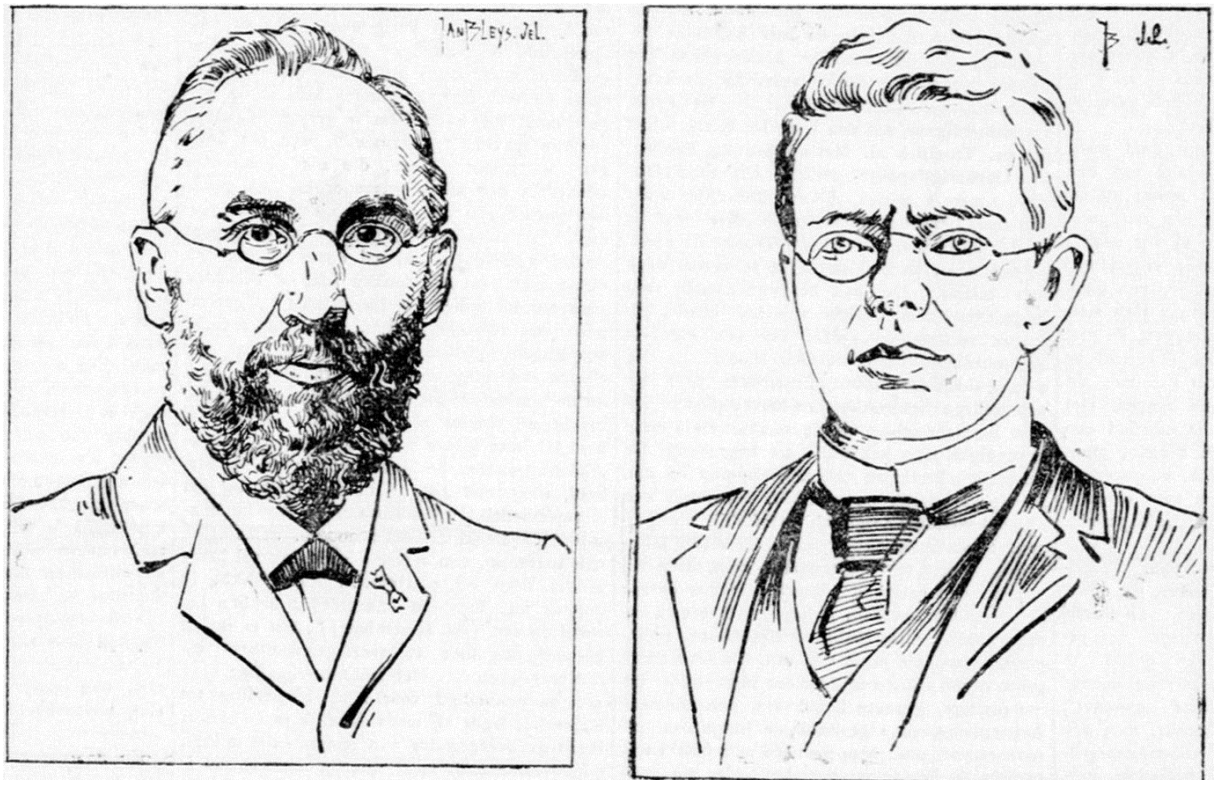

FIGURE 1: JAN BLEYS, PORTRAITS OF HENDRIK ANTOON LORENTZ AND PIETER ZEEMAN, PUBLISHED IN 'PROF. HENDRIK ANTON LORENTZ', DE TELEGRAAF (20-12-1902).

This first big media storm surrounding Lorentz at the end of 1902 can be summarised as largely stand-offish, the double portrait in *De Telegraaf* being a notable exception. The main focus was on the event and the then-new Nobel Prize ceremony spectacle. Nevertheless, Lorentz saw his first ample news coverage and was featured in many articles. He was defined as a calm presence guiding younger scientists, including Zeeman, to new discoveries.

Post Nobel Prize

Lorentz seemed to be put at the forefront of the Dutch scientific scene in the media more and more during the first two decades of the twentieth century. His academic and scientific career did not halt

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Science is still often associated with masculinity as argued in Alison Kelly, 'The construction of masculine science', *British journal of sociology of education* 6:2 (1985) 133-154.

either. Lorentz remained an essential figure in the scientific world for the rest of his life and amassed more and more prominence over time.

This newfound popularity outside the physics bubble also became evident in the media. Most of Lorentz's noticeable exploits were now reported on. This mainly included prominent lectures, both in Leiden and the United States.[43] Lorentz was made president of the KNAW in 1910, a testament to his central role in the Dutch physics scene.[44]

After receiving the Nobel Prize, Lorentz received a lot of offers from other universities, like the University of Munich, which he seriously considered, and some from the United States. However, Lorentz remained in Leiden only after his workload was considerably lightened. Lorentz became overwhelmed by the number of lectures, examinations and other responsibilities. However, when the Teylers Institute offered Lorentz the position of curator of their physics laboratory, it was reorganised to fit Lorentz's wants and with quite the budget. Lorentz accepted and, at last, left Leiden for Haarlem instead.[45] The newspapers noted this, and this move was pretty present in the media. One prevalent aspect was the emphasis papers put on the didactic value of the new laboratory. Articles would stress that Lorentz's wish was to open the laboratory primarily as a learning space for those who wish to "keep up with the world of physics" by organising lectures and courses. [46]

Lorentz stayed at the University of Leiden while working in Haarlem, something the university was thankful for. Yet, he left his position at the University of Leiden in 1913 at sixty and was appointed extraordinary professor instead. His position as a theoretical physicist was to be filled by his friend and colleague Paul Ehrenfest. Although Lorentz was due to retire after his last collection of lectures, his students urged him to give one final lesson. Afterwards, all the students stood up for him, and one of them made a speech, as reported by the *Nieuwe Courant*. Lorentz thanked the students and praised the desire and dedication that filled them. From the address, what was most important to Lorentz was clear: giving his students space to work on personal projects, working together and ensuring they did not experience too much stress. The reporter described the meeting as "unadorned, unofficial, intimate and heartfelt".[47]

A similar article in *De Standaard* added the student's speech. She told Lorentz how good Lorentz was to his students: how he helped them and how much admiration and love he created in their hearts. Lorentz hoped to stay in contact with his students and even invited them to talk to him after the event.[48] During the ceremony that accompanied the installation of the new chancellor (*rector magnificus*) of the university, the resigning chancellor, prof. Eerdmans recounted several significant

[43] Kox, *A Living Work of Art,* 112.
[44] 'Kon. Academie van Wetenschappen', *De Telegraaf* (30-04-1910).
[45] G. L. De Haas – Lorentz, 'reminisces, continued' in G. L De Haas ed., *H. A. Lorentz, Impressions of his Life and Work* (North-Holland Publishing Company, Amsterdam 1957) 82-120, see 100.
[46] 'Teylers stichting', *De Telegraaf* (23-01-1910).
[47] 'Prof. Lorentz', *De Nieuwe Courant* (10-06-1912).
[48] 'Afscheidscollege van Prof. Lorentz', *De Standaard* (11-06-1912).

changes the university saw the past year, including Lorentz's move to Haarlem: "Speaker knows that Prof. Lorentz, of whom the Leiden University is proud, although living in Haarlem now, will stay our *Leidsche* Lorentz."[49]

Articles like this were published to ensure the broader public knew of Lorentz's reputation as a beloved and revered teacher who thought about being calm and helpful and had an almost familial relationship with his students.

A world-famous scientist

In the 20th century, they witnessed the emergence of internationalism, primarily due to the rise of new nationalism in the Netherlands. Having lost significant international influence in the preceding century, the nation sought to reestablish itself by revisiting its history. Subsequently, around the turn of the century, the country experienced a flurry of scientific breakthroughs, a successful colonisation campaign, and unprecedented economic growth. The Dutch had current reasons to be proud of their country, as demonstrated by their international standing.[50]

Internationalism greatly impacted the scientific world in the latter half of the 19th century with the emergence of many international associations and initiatives, including the Nobel Prize. Thus, simultaneously, there was a more significant global collaboration network and a need to differentiate oneself from surrounding countries. The Netherlands identified itself in the first place as a neutral country, mediating between the big three language areas surrounding it.[51]

Lorentz's fame, both national and international, took off after 1902. In particular, he travelled to the United States to give a series of lectures. In the years following his Nobel Prize, Lorentz also received several other scientific honours from around the world, such as the Rumford Medal from the Royal Society in London and a knighthood in the French order *pour le mérite*, an order for sciences and arts.[52]

Furthermore, Lorentz was often invited to speak on special occasions and was sometimes approached by journalists to give his opinion on new scientific advances. In 1908, for example, the Dutch scientific scene was once again shaken by the achievements of the physicist Heike Kamerlingh Onnes, who had succeeded in making helium gas liquid through experiments in his laboratory in Leiden. Lorentz, who worked in the same building then, was asked for an interview by reporters who wanted to write about this new scientific breakthrough. The reporters saw that Lorentz was ecstatic, as if "this

[49] Original text: "Van prof. Lorentz, waarop de Leidsche Hoogeschool trotsch is, weet spr. Dat deze, hij moge nu in Haarlem wonen, onze Leidsche Lorentz zal blijven." in 'Onderwijs. Overdracht van het Rectoraat, Leiden', *Algemeen Handelsblad* (15-09-1913).
[50] Berkel, *De stem van de wetenschap*, 548-549.
[51] Ibidem, 559.
[52] 'Prof. Lorentz', *Het Vaderland* (01-12-1908).

scientific success was his own". A victory for science is a victory for Lorentz. He did not work for social recognition but to serve the cause of science. Lorentz gave the impression of being friendly but reserved and undoubtedly modest. As the reporters wrote:

> "What touched us the most in conversation with both professors was the striking simplicity and sobriety with which these things were told. Involuntarily, we thought of the publicity that could accompany such an invention and how that could be trumpeted when made in another corner of the scientific world, for example, in America."[53]

According to these journalists, a scientist ought to be humble and selfless. Whereas other celebrities look for fame for personal gain, scientists should never strive for fame; only then do they deserve it. The work of scientists is in servitude to the greater good, to better the entire world.[54] Furthermore, the article placed Lorentz and Dutch science in an international framework, boasting about Lorentz's virtues. These virtues were depicted as inherently Dutch and characterised Lorentz as an example of what made the Dutch stand out, using Lorentz to consolidate a Dutch identity. This was also argued by Dutch historian Johan Huizinga, who stated in 1935 that the most valuable virtues of the Dutch were their humility and soberness, as a "mindful society should be critical of its shortcomings."[55]

In the following years, Lorentz devoted most of his attention to lecturing, especially at the Teylers Institute. One article reviews the lecture. In brief, the reporter says that several people in the room expressed their admiration for the lecture's contents and the incredible humility with which he spoke. Those present left the room with pride in their hearts that their country had such a pioneer.[56] Lorentz also gave a similar lecture (in French) in Brussels. The correspondent found the course "masterly in its clarity: even the least initiated could understand the value and scope of [scientific predictions]". He added that he regretted that the Flemish part of the audience could not hear the "great Dutch physicist" in their native language, Dutch: "They would have flocked here from all corners of Flanders to hear that soft, clear voice proclaim these beautiful thoughts in Dutch.".[57]

Lorentz was already well established by this time and did not need such a label to have any authority. Instead, Lorentz was now more of a translator or interpreter: a mediator between theoretical physics and the lay audiences. Lorentz became the authority representing the scientific community as a whole.

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[53] Original text: "*Wat ons wel het meest trof bij het onderhoud met beide hoogleeraren, was de groote eenvoud en soberheid waarmede deze dingen verteld werden. Onwillekeurig dachten wij aan de reclame waarmede zulk een ontdekking wereldkundig wordt gemaakt en uitgebazuid, als zij in een ander hoekje van de wetenschappelijke wereld, in Amerika b.v., gedaan wordt."* In, 'Helium in vaste toestand!', *De Nieuwe Courant* (4-3-1908).

[54] Ibidem.

[55] Johan Huizinga, *Verzamelde werken VII, geschiedwetenschap, hedendaagse cultuur* (Haarlem 1950) 291. First published in *Gedenkboek van de Maatschappij tot Nut van 't Algemeen, ter gelegenheid van haar 150-jarig bestaan (1784-1934)*.

[56] 'Voordrachten van prof. dr. H. A. Lorentz in Teylers stichting', *Algemeen Handelsblad* (18-03-1913).

[57] Original text: "*Wat zouden zij uit alle hoeken van Vlaanderen toestroomen, om die zachte, heldere stem in 't Nederlandsch te hooren verkondigen deze mooie gedachten*." In 'Professor Lorentz te Brussel', *Het Vaderland* (30-03-1914).

Furthermore, although Lorentz won the Nobel Prize in 1902, this was rarely mentioned in newspapers. The prize was apparently not all that important for Lorentz's fame and position, not as it is often used as a label today. When Kamerlingh Onnes won his Nobel Prize, a newspaper, the *Nieuwe Courant*, published a short article that Lorentz had written a few years earlier because, as the paper put it, "no one could do justice to the achievements of Professor Kamerlingh Onnes, who has been awarded the Nobel Prize, better than Prof. H. A. Lorentz, who until recently was his colleague in Leiden."[58] Lorentz's position as a Nobel laureate was unimportant; it was not mentioned at all. That does not mean it was never acknowledged– it most certainly was – but not in a way that is even remotely comparable to what the Nobel Prize would become.

The primary personas that seemed to surface in Dutch newspaper representations of Lorentz between 1877 and 1927 are that of a scholar in the first place, a teacher in the second and a conciliator in the third. That first persona, that of a professor, could be regarded as his most defining. However, when newspapers mean to use Lorentz in an international context or as a tool to enforce a nationalist narrative, there is a much heavier focus on his status as a bridge and conciliator, be that of his influence in the Solvay conference, an international science conference Lorentz was chairman of for the first five meetings or his relationship with internationally renowned scientists like Einstein.

Painting a portrait

The above has explored the formation of Lorentz's public persona mainly through textual representation in newspaper articles. Another way of exploring persona formation is to look at the visual representation of the person in question. Lorentz was the subject of many sketches, paintings and photographs. Portraits offer a literal image of a person through the idea of another. No matter how true to nature an artist will be, choices of what to include and focus on must be made when creating an image. Furthermore, Lorentz is often remembered through these images, and they, therefore, are crucial for his public impression.

One such painting was a portrait painted by Menso Kamerlingh Onnes (1860-1925) (brother of colleague physicist Heike Kamerlingh Onnes) in 1916 (see Figure 2). The portrait was thoroughly examined in an article in *Nieuwe Rotterdamsche Courant*. First, the report stressed that the painting was made out of love and admiration and was not a request to the painter but rather a lifelong wish of the painter himself. Following this, the article discussed the essential elements that made up Lorentz: the simplicity with which he carried and dressed, the way his chest protruded, showing all the space he had to display all his medals but did not, the way he held his hands, similar to the way he taught. But the hands should not distract from the eyes, Lorentz's most important feature, according to this article:

[58] 'Kamerlingh Onnes', *De Nieuwe Courant* (13-11-1913).

"We are standing in front of a gaze from the eyes of a man in which an idealised lust lives. Here, one can see one of the greatest physicists in the world, yet this is not something one would think of first. The layman will undergo the feeling of goodness, as much as exceptional intelligence and spirit."[59]

The reporter stated that the portrait was meant to be recognisable to Lorentz's contemporaries, an image that showed Lorentz as the man the people around him would know. In a way, Lorentz's personality, as perceived by others, merged with his person, at least according to the painter. In practice, it would be impossible to accurately portray another person without including some part of the persona.[60] Another detail in the portrait is the blackboard in the background, faded with use and filled with the equations that define Lorentz's scientific work, resembling a classroom.

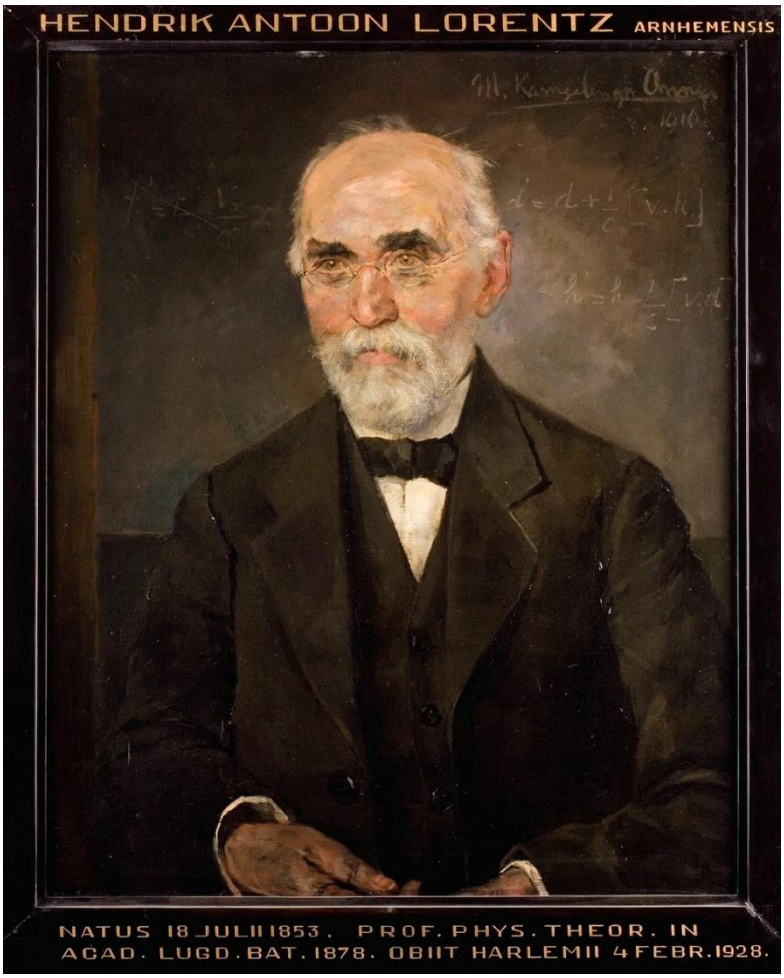

FIGURE 2: MENSO KAMERLINGH ONNES, *HENDRIK ANTOON LORENTZ*, 1916.

[59] Original text: *"Wij staan tegenover een blik uit menschenoogen, waarin een idealiseerend verlangen als een heimwee onweersprekelijk leeft. Hier is een der grootste physici der wereld, doch niet hieraan in eerste plaats denkt men: immers de leek ondergaat vóór dit doek de gemeenschap van goedheid, evenzeer als van uitnemende geestelijkheid."* In 'Een portret van Professor Lorentz', *Nieuwe Rotterdamsche Courant* (07-04-1916).

[60] Ibidem.

The painting and the accompanying article clearly show humility, intelligence and soberness. Lorentz was fully imagined as a professor, posing in his classroom, similarly holding his hands to how he would have them while he taught, wearing the suit that would become synonymous with his person.

This image painted in his portrait was also reflected in photographs of Lorentz. The photographs that have survived the longest and are still the most commonly used hold similar likeness. Often, Lorentz is shown wearing the same three-piece suit as the portrait above, perhaps smiling slightly or looking away in the distance with a severe expression. The photograph below (see Figure 3) was taken in 1925 in Ithaca, New York, where he gave guest lectures. The photograph showed Lorentz once again in front of formulas in a classroom. He is also holding a book to further that image of an academic. He is looking at the viewer with not an unkind expression on his face. The image is representative of this genre of Lorentz photography and is a continuation of art conventions as seen in the painting.

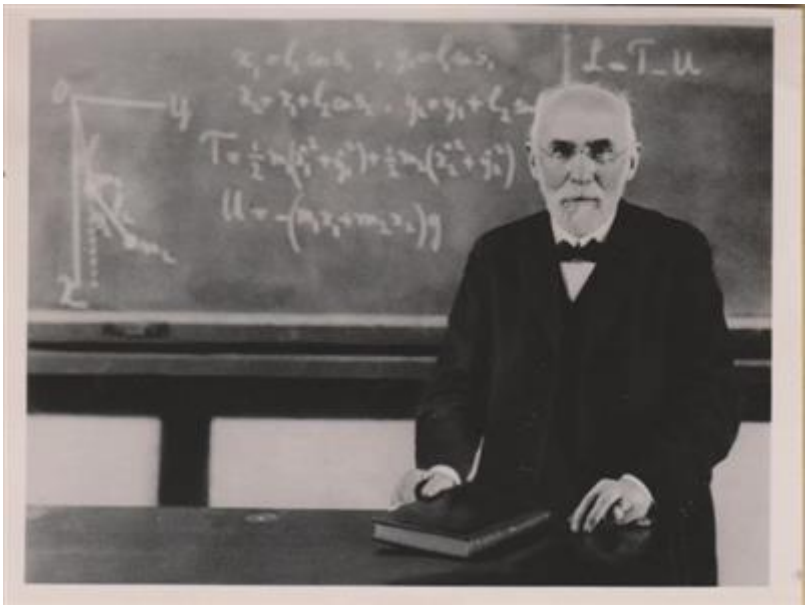

FIGURE 3: UNKNOWN PHOTOGRAPHER, HENDRIK ANTOON LORENTZ, IN A CLASSROOM IN ITHACA, 1925.

Conclusion

Lorentz's first taste of the spotlight was not all that noteworthy. While the Nobel Prize boosted Lorentz's mainstream popularity, media reporting the event in 1902 was not yet familiar to the scientist, and news coverage remained straightforward and objective. This changed in the first decade of the twentieth century when a rise of sensationalism became noticeable in newspapers. This resulted in more attention being given to private lives and the personalities of noteworthy people.

Lorentz slowly became a household name in first the scientific community and then in the Netherlands in its entirety. Lorentz was first and foremost depicted as a professor and a scholar. Virtues that could

be found in newspapers that pointed this out were, for example, the clarity with which he speaks. Skills that were more accentuated are his impressive oration skills, his mastery of multiple languages and, of course, a great insight into physics. Another virtue used to reinforce this persona of a physics professor was emphasising his masculinity by, for example, calling attention to Lorentz's beard.

Other than a professor, Lorentz was also often painted as a *teacher*, which, in this case, differs from a professor because of its lack of academic context. Lorentz was, for example, sometimes put into a mentor role, like with Zeeman. Furthermore, Lorentz was often depicted as a teacher with a close bond with his students.

A third important role put on Lorentz's shoulder by newspapers was that of a representative for Dutch science on an international stage. This meant that virtues considered typically Dutch, like simplicity and modesty, as Huizinga established, were often called upon.

These virtues that were visible in newspapers were also visible in portraits. The painting by Menso Kamerlingh Onnes included details important for Lorentz's scholarly persona, like his masculinity, pose and choice of clothing.

Chapter 2: Lorentz's Passing and *In Memorium* (1928-1933)

This chapter will take a closer look at the year of Lorentz's passing and funeral through Dutch news coverage, including newspapers and video material. Furthermore, this chapter will discuss the three memorial statues erected in the years following his death. The committee in charge of the monuments and the initial plans was founded in 1928 and is, therefore, still representative of the sentiments as they were during Lorentz's death.

In January 1928, Lorentz fell ill. He was feverish and had to remain in bed, which happened just a few days shy of the fiftieth anniversary of his becoming a professor.[61] He turned out to have facial erysipelas, an acute skin infection, as understood from letters to colleagues and accounts from family.[62] From 23 January onward, daily updates on Lorentz's health were published in most major newspapers of the time, requested as such by his family. While Lorentz's condition fluctuated for over a week, his illness took a turn for the worse, and Lorentz passed away on 4 February 1928. He was 75 years old.[63]

Lorentz's Golden Anniversary

Despite Lorentz's illness in the weeks before his passing, his golden anniversary on 25 January was not ignored. This date marked the fiftieth anniversary of his becoming a professor. After all, it was an excellent moment to reflect on what Lorentz had meant for the nation. However, Lorentz had said he did not want any articles or other tributes published. This did not entirely deter the press, as some newspapers still wrote articles to celebrate the occasion because "nobody, not even Lorentz, could stop us from mentioning that our nation should have thoughts of respect, friendship and gratitude about the scientist and the man Lorentz."[64]

When articles recapped the life of Lorentz, elements highlighted from his life usually contained the following: a mention of his birth city, Arnhem, his academic career with an emphasis on his dissertation and the influence of Faraday and Maxwell on his work. Then, his Nobel Prize, which had become more renowned since 1902, and his career as a professor. Lastly, Lorentz's international undertakings were touched upon.

An example of this format can be found in *Vaderland,* which took these highlights of Lorentz's life and added onto it with the account of the reader, who attended one of his lectures. After all, "one of the strongest characteristics of this amiable man was his ability to discuss even the most difficult questions for an audience of laymen, be it cultured laymen, with a clarity and comprehensibility as if it

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[61] 'Prof. Lorentz ongesteld', *De Telegraaf* (23-02-1928).
[62] Kox, *A Living Work of Art,* 235.
[63] Ibidem.
[64] 'Prof. Lorentz', *Nieuwe Rotterdamsche Courant* (24-01-1928).

were an informal get-together."[65] The writer calls Lorentz a *pedagoog*: an educator who teaches while considering theories of learning and understanding students and their needs. The article ended on somewhat of a bitter note as the writer hopes that Lorentz will continue furthering his work and helping humanity for a long time. The *pedagoog* is a persona that closely resembles yet more accurately describes that of the teacher that was mentioned in the previous chapter.

The *Telegraaf* deliberately made sure not to make the event a jubilant occasion, titling their article 'Commemoration without celebration'. Of course, this was also because of Lorentz's condition, but also because Lorentz, "with all of his humility", forbade the celebration. The article was still published but was meant as a moment of introspection for the readers to become conscious of "such a great and beautiful possession of the nation." The article kept a respectful tone throughout:

> "He still does everything a professor does and even more. Unyielding health, unyielding spirit, unyielding mind, flexible yet steadfast, powerful but not rigid, delicate but not weak, simple yet extraordinary. Scholar, scientist and teacher without equal. Builder of systems who values others. A man of such grand simplicity that one can feel his greatness within that simplicity. International, in the highest sense of the word: a cement between nations. Yet still a Dutchman with his whole heart: in his language, in his pure democratic sense, in his interest in the country's wellbeing, in his inclination to use his work for the country."[66]

This passage and the previous one presented Lorentz again in a few different ways, as seen in articles before. He is a teacher, a *pedagoog* even, and a typical Dutchman. Yet this extract emphasised Lorentz's international role as well as his national one. As Lorentz's international accomplishments were only achieved in the last years of his life, Lorentz was still a hot topic when it became clear that the unassuming illness Lorentz had contracted was much more severe than anyone had thought.

4 February 1928

After a week of daily updates on health, Lorentz passed away on 4 February 1928, and his death was announced on 5 February 1928. It was indeed the death of a great scientist. Headlines like "Prof.

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[65] Original text: "Want dit is een der sterkste, persoonlijke eigenschappen van dezen beminnelijken man, dat hij de moeilijkste vraagstukken, ook voor een publiek van leeken, zij het dan ontwikkelde leeken, met een klaarheid en duidelijkheid voordraagt als ware er sprake van een gewoon dagelljksch onderons discours." In: 'Prof. Dr. H. A. Lorentz', *Het Vaderland* (24-01-1928).

[66] Original text: "Hij doet nog altijd wat des professors is, en veel meer dan dat. Stalen gezondheid stalen geest, stalen gemoed, bewegelijk maar vast, krachtig maar niet star, fijn maar niet week, eenvoudig en toch bijzonder. Geleerde, onderzoeker en docent zonder weergade. stelselbouwer, die graag anderen waardeert, mensch van zoo grooten eenvoud, dat men daarin reeds zijn grootheid gevoelt. Internationaal, in den hoogen zin van het woord: een cement tusschen de volken. Toch een Nederlander met heel zijn hart: in zijn taal, in zijn zuiver democratisch gevoel, in zijn belangstelling in 's lande welvaren, in zijn geneigdheid om zijn werkkracht In dienst van het land te stellen." In, 'Herdenking zonder feest', *Telegraaf* (25-01-1928).

Lorentz passed away: scientist of great fame" graced the newspapers in the days following his death.[67] Newspapers could not get away with just making a brief mention: all major national newspapers published an extensive article, usually original, instead of reusing the exact text, as was not unusual. Although Lorentz was just recently celebrated, not in the least in an earnest manner, the tone became even more passionate. *Algemeen Handelsblad* opened their article by exclaiming that Lorentz had become one of those names that do not need initials, titles, or otherwise indicating names. Furthermore, it would not do to say that Lorentz has passed, as his name will forever live on.[68] Similarly, *Nieuwe Rotterdamsche Courant* opened their article by stating: "There are years and dates that will keep a lasting meaning for a country, no matter how many years in the future: that is how it will be with the fourth of February of this year."[69]

The following is a relatively small selection of newspaper clippings published the days after his death until his funeral. There were countless articles in both large and smaller newspapers, but the contents of the reports were not too different. During his anniversary the week before, articles were usually relatively concise; his death seemed to spur the papers to write long, detailed accounts of his life. *Vaderland,* for example, generally tended to remain largely factual and took a relatively straightforward approach. Firstly, the article they published the day after Lorentz's death starts with a sombre tone by exclaiming that the entire country, not just the scientific and academic part, can be proud of Lorentz and is deeply affected by his death. The biographical elements that follow are all directly taken from an article they had published previously to celebrate his anniversary but were extended by an epilogue in which the writer recounts Lorentz's illness and eventual passing that will, again, be a source of sadness for the country as a whole.[70]

On the other hand, *Telegraaf* was more extensive in its report by highlighting the key moments in Lorentz's life. It started with a short introduction to Lorentz's life. Here, it was emphasised that Lorentz grew up in a wealthy yet still very simple family. His aptitude for physics manifested at a young age and was quickly picked up by his teachers. The emphasis on Lorentz's preference for and competence in science was somewhat unique.[71] While Lorentz's young age when he started teaching was sometimes underlined, his childhood was usually skimmed over.[72] Yet, in his death, this started becoming more and more common. For example, in the earlier mentioned article by *Algemeen Handelsblad,* a similar structure of moments in the life of Lorentz summarised was followed. Lorentz's childhood was characterised by his performance at the HBS, where he reportedly would be called in front of the class to explain "in the clear and understandable matter he could do" some theory or another to his fellow pupils. His inclination towards helping and teaching others seemed to be

[67] 'Prof. Lorentz overleden', *Telegraaf* (05-02-1928).
[68] 'Lorentz †', *Algemeen Handelsblad* (05-02-1928).
[69] 'Lorentz †', *Nieuwe Rotterdamsche Courant* (05-02-1928).
[70] 'Prof. Dr. H. A. Lorentz', *Het Vaderland* (05-02-1928).
[71] 'Prof. Lorentz overleden', *Telegraaf* (05-02-1928).
[72] See for example: 'Prof. Dr. H. A. Lorentz', *Het Vaderland (*24-01-1928).

discernible even then.[73] The article in the *Telegraaf* follows up by writing about the theory of electrons Lorentz suggested in his dissertation. Next, a selection of awards and titles was summarised. Interestingly, the Nobel Prize was entirely omitted. The *Volkskrant*, on the other hand, exclusively mentioned the Nobel Prize in the terse announcement of his death.[74] Thirdly, it was once again emphasised that Lorentz was somewhat opposed to public accolades, as proved by the centennial earlier that year. Lastly, both his national and international prestige was underscored.[75] One way of expressing this was by including statements from Lorentz's colleagues. For example, Kamerlingh Onnes and Professor de Haas declared their appreciation for Lorentz, who had a significant influence on their work and impact on a worldwide scale.[76] The *Telegraaf* even published another article by Zeeman a day later, remembering him similarly.[77]

Other articles did not take this as an opportunity to look back at Lorentz's entire life and instead took a different approach. Catholic newspaper *De Tijd* was much less objective than the earlier papers mentioned and was more emotional and personal in tone. For example, the writer opens the article published on the front page of the newspaper with a quote from Professor Kuenen: "If somebody could describe the Netherlands of the previous years (…), one would call it not the country of Rembrandt, but the country of Lorentz."[78] And that country of Lorentz is mourning. The article presented different aspects of Lorentz, starting with Lorentz as a Dutchman, as illustrated by the previous quote, immediately followed by Lorentz as an international scientist. As simple as his person is, his name is Lorentz, and he belongs to the world. His scholarly persona was again emphasised: the newspaper exclaims that Lorentz has exceeded all the professor's duties and did all he could to elevate science to a higher level. Furthermore, Lorentz was a hard worker, even in his old age, very modest and highly dedicated. The article writes, "As a person, great was he. This rare harmonious spirit, as much a linguistic virtuoso as a mathematical genius, cannot make a wrong move."[79] He was also shown as a man of peace and love, as demonstrated by his work in international communities, in which he was a unifying force.

The *Nederlander*, a relatively more minor newspaper, adopted the same tone as seen in the *Tijd*: slightly theatrical but emphasising Lorentz's person. The same characteristics often highlighted in other articles are again being pushed: his status as 'scientist of the earth that created inseparable bonds between international scientists', his humility and simplicity, shown in his aversion towards public

[73] 'Lorentz †', Algemeen Handelsblad (05-02-1928).
[74] 'Professor Dr. Lorentz †', *De Volkskrant* (06-02-1928).
[75] 'Prof. Lorentz overleden', Telegraaf (05-02-1928).
[76] 'Lorentz †', Algemeen Handelsblad (05-02-1928).
[77] Pieter Zeeman, 'H. A. Lorentz † door Prof. Dr. P. Zeeman', *Telegraaf* (06-02-1928) 5.
[78] Original text: "Als iemand het Nederland der laatste jaren zou beschrijven, (…), hij zou het noemen niet het land van Rembrandt, maar het land van Lorentz." In Jos ter Heerdt, 'In Memoriam Professor Lorentz', *De Tijd* (06-02-1928).
[79] Original text: "Groot was hij als mensch. Deze zeldzaam harmonieuze geest, evenzeer een taaivirtuoos als een wiskundig genie, was niet in staat een wanklank te uiten." In ibidem.

accolades and his great talent as a physicist who is unafraid even to tackle the greatest questions. He is presented as the 'most harmonious' human whose head and heart constantly vied to be in the foreground.[80]

In his death, Lorentz was presented as one of the greatest Dutchmen in modern times. He was sketched as a hallmark of these progressive years in which science was at the forefront in both academic and public spheres. This was sometimes very explicitly expressed, like Kuenen's comparison of Lorentz with Rembrandt van Rijn in the *Tijd,* yet sometimes more implicitly expressed by highlighting essential virtues the man possessed, like his working ethos, deep understanding of the subject and his early aptitude for science.[81] At the same time, his personality was highly admired and seen as a standard scientist could only wish to match. This was firstly the personality of a teacher, with his calm and friendly demeanour and commitment to his students, and secondly the nature of a Dutchman. Lorentz's death did not influence the way he was presented that much since a distance between the media and Lorentz seemed to have existed for years before. Lorentz had already reached the paragon status, and his death did not seem to be an occasion to flip the script.

In honour of Lorentz, several buildings of the University of Leiden raised their flags at half-mast. The most prominent student association announced they would enter a week of mourning. The celebrations surrounding the Leiden University of Applied Sciences anniversary were cancelled as a sign of respect.[82]

9 February: funeral

Hendrik Antoon Lorentz was laid to rest on Thursday, 9 February 1928, five days after his passing. Lorentz's funeral was not a quiet affair in the slightest as not only Haarlem, where he would be put to rest but the entirety of the Netherlands would be able to follow the ceremony. Newspapers, radio broadcasts, and television covered the funeral extensively. The funeral attracted thousands of spectators who gathered near Lorentz's home and even more who would watch the funerary procession going through the centre of Haarlem, accompanied by the sound of the church bells of the Church of Saint Bavo. The large funerary procession consisted of fifteen horse-drawn carriages that made their way to the Kleverlaan cemetery through the entire city of Haarlem. The police had made sure to close the roads the procession would pass, so there was no denying that the whole city was entirely focused on Lorentz.[83]

The first two of the fifteen total carriages were occupied by representatives of the royal family, and Lorentz's family occupied the third through seventh. The rest of the carriages following that were

[80] 'H. A. Lorentz. †', *De Nederlander* (06-02-1928).
[81] Zeeman, 'H. A. Lorentz † door Prof. Dr. P. Zeeman', Telegraaf (06-02-1928).
[82] Kox, *A Living Work of Art,* 2.
[83] 'De Uitvaart van Prof. Lorentz', *De Nederlander* (09-02-1928).

occupied by members of both the national and international scientific community, including representatives of the University of Leiden, the Teylers Institute, the KNAW and individuals like Marie Curie, Ernest Rutherford, Paul Ehrenfest, Pieter Zeeman and Albert Einstein, to name a few.[84]

Hundreds of people gathered in the cemetery to pay the great scientist their last respects.' Here, the attendees could listen to several eulogies about Lorentz. Professor Ehrenfest had the honour of speaking first, the only Dutch speaker, as was the wish of Lorentz's family. Ehrenfest, after opening his speech, described Lorentz as "the researcher […], the teacher!", two clear labels that again underlined two personas seen before—those of the 'pedagoog' and the scholar.[85]

Ehrenfest presented Lorentz as the bridge between traditional physics and the newer, twentieth-century approach, as he built on physics theories of the nineteenth century so that these "could get a classic, rounded form." At the same time, these theories became the groundwork for the young scientists who regard him as one of their greatest. This position as effectively the bridge between the old and the new, that of both a pioneer and a founder, the Nestor of modern physics, would be seen more often in primary sources in the last years of his life and after his death. The necessary hindsight needed for making such a statement is, after all, only available at the end of one's life.

This position between the old and the new traditions could be seen as a continuation of the teacher persona. As Ehrenfest put it: "And with love and excitement, it was precisely him who mentored [the young scientists'] work as well as the personal growth of the best among them, here, in the Netherlands, and anywhere else in the world."[86] The mentor qualities and the international recognition shaped him into a teacher of the world.

Ehrenfest highlighted Lorentz's qualities that he believed would describe his character. His critical mind, his strive for honesty and openness, his orderly manner, his impressive work ethic, his humility and his loyalty to science that is as big as his love for it. Ehrenfest furthermore mentioned Lorentz's influence in the international community during WWI, as Lorentz would only lose his temper when "against lust for power, coercion and cunning" in a battle "against the great enemies of human value". Therefore, Lorentz would teach both his home and the nations outside of the Netherlands the importance of tolerance. Ehrenfest ended his speech by expressing his belief that Lorentz lived a well-lived life and that he stood before death with wisdom and calmness.[87]

Ehrenfest also mentioned Lorentz's loyal contribution to the Zuiderzee Works (*Zuiderzeewerken*), a series of projects involving the damming of the Zuiderzee and reclaiming land using polders. It was an enormous venture that spanned most of the twentieth century, and Lorentz dedicated eight years of his

[84] Ibidem.
[85] Original text: "de onderzoeker […], de leermeester!", Paul Ehrenfest, 'Prof. Ehrenfest houdt de lijkrede', *Algemeen Handelsblad* (09-02-1928).
[86] Original text: "En met welke liefde en spanning begeleidt juist hij hun werk en ook den persoonlijken groei van de besten onder hen, hier te lande en overal ter wereld." In ibidem.
[87] Ibidem.

life to it from 1918 until 1926. The primary dam that would act as the project's main component, the Afsluitdijk (literally: the closing-off-dike), was constructed between 1927 and 1932. It served as the dam between the Wadden Sea and the cut-off part of the Zuiderzee, hence known as the Ijssel Lake. It was also meant to connect the village of Den Oever in North Holland and Zurich in Friesland. However, the initial plan was for the dam to connect to Piaam instead of Zurich. However, there was a rising concern that with the damming of the Zuiderzee, other dams and dikes would experience an increasing hazard of storm surges. A committee was established in 1918 to investigate the potential problem, with Lorentz heading it. After eight years of calculations, it became clear that there was indeed an increased risk, and Lorentz and the committee instead suggested constructing the dam further to the north to combat this.[88] This immense job took up much of Lorentz's time and put Lorentz's theoretical physics on hold for the time being. Engineer Jo Thijsse (1893-1984), who worked on the project alongside Lorentz, spoke of a "great sacrifice, but it was worthwhile."[89] During his speech, Ehrenfest described it as a sign of great loyalty and hard work.[90] Yet, this 'sacrifice' or 'sign of loyalty' was otherwise remarkably missing from synopses of Lorentz's life emerging surrounding his death.

After Ehrenfest's eulogy, the opportunity arose for international speakers to speak on Lorentz. All countries with the most significant scientific communities that had ties with Lorentz were represented, once again underlining Lorentz's global status. The first speaker was Professor Rutherford, president of the Royal Society for Sciences of Great Britain. Rutherford spoke of Lorentz as one of the "greatest people of this time". Professor Langevin, who represented French science, recounted Lorentz's lectures in Paris and his speeches at international congresses where his "beautiful recital made an unforgettable impression." Langevin furthermore spoke about the Solvay Institute and the Institute for International Collaboration in Genève, where Lorentz acted as a uniting factor. Moreover, he praised Lorentz for his efforts during the war when he tried to save "the last ties of science". The final speaker at the funeral was Professor Albert Einstein, in the name of German science. Einstein considered Lorentz's work as an "illuminating example" for future generations and further praised his, again, illuminating mind, his sense of justice and his "view on people and things." [91]

The funeral ended after a few words from Lorentz's son, who thanked all attendees. As a sign of respect, during the internment, the national telegram service in The Hague stopped their services for three minutes, including ship radio and the radio-telegram service. Examples of companies showing signs of mourning included the *Diligentia* office and the Arnhem telegram office.[92]

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[88] Kox, *A Living Work of Art,* 182-195.
[89] J. Th. Thijsse, 'Enclosure of the Zuiderzee', G.L. De Haas – Lorentz ed., *H.A. Lorentz, Impressions of His Life and Work* (Amsterdam 1957)129-144, 144.
[90] Paul Ehrenfest, 'Prof. Ehrenfest houdt de lijkrede', *Algemeen Handelsblad* (09-02-1928).
[91] 'De begrafenis van Lorentz, een grootsche plechtigheid', *Algemeen Handelsblad* (09-02-1928).
[92] Ibidem.

In Memorium: statues

Shortly after Lorentz died in 1928, it was decided to erect a monument honouring the scientist. This was a rare occasion, as the Dutch did not quickly keep their great men with statues. For a long time, the only statue in public space was that of Desiderius Erasmus in Rotterdam, who coincidentally was a man of science. When more and more statues were erected in Europe in the eighteenth and nineteenth centuries, the Netherlands was left behind. This could be explained by the influence of Calvinism in the Netherlands - which disapproved of sculpture - and other aspects such as the lack of natural materials and the 'Dutch mentality of not wanting to put people on a pedestal.'[93] However, even the Netherlands could not escape the need to compete with its neighbouring countries. But where attempts to erect a statue of seventeenth-century scientists like Christiaan Huygens never found a foot in the ground, a statue for Nobel Prize winner Jacobus Henricus van 't Hoff was constructed shortly after he died in 1911. From that point on, images from the past were no longer the primary source to look at to shape national confidence; figures from recent memory were used instead.[94]

The statue of Van 't Hoff, the first Dutch Nobel Prize winner, was depicted in a decidedly classical manner. The sculpture was not meant to reflect a realistic image of the scientist but to glorify the man in a romantic way. The bronze statue depicts Van 't Hoff sitting on a chair on a large pedestal, flanked by two women symbolising the virtues of imagination and reason, sitting on pedestals lower than him. On the backside, a relief of his laboratory is shown. The statue is a combination of classical traits and more contemporary traits. Van 't Hoff is wearing a period typical suit, yet with a large piece of fabric draped over his lap, eliciting the impression of a Greek toga, even further strengthening the image of a classical figure that does not belong among the masses.[95]

Almost immediately after Lorentz's death, a committee was set up to create an appropriate memorial in Arnhem. The city was willing to participate in a national committee but declared that the monument in Arnhem, Lorentz's birthplace, should take precedence over other cities.[96] Such a committee was set up, and funds were centralised. The committee planned to erect a large monument in Arnhem but also wanted something in Haarlem and Leiden, as both cities had close links with Lorentz.[97]

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[93] C. J. Kuik, *Helden op sokkels, literaire standbeelden in Nederland.* (Baarn 1980) 9.
[94] Klaas van Berkel, *Citaten uit het boek der natuur, opstellen over Nederlandse wetenschapsgeschiedenis* (Amsterdam 1998) 239.
[95] René en Peter van der Krogt, 'J.H. van 't Hoff', *Mens & Dier in Steen & Brons* https://standbeelden.vanderkrogt.net/object.php?record=ZH58ah (accessed 21-11-2023).
[96] 'een Lorentz monument te Arnhem', *De Gooi- en Eemlander* (21-02-1928).
[97] 'Arnhem: een Lorentz monument', *De Standaard* (04-06-1928).

The statue in Haarlem

Although the statue that was supposed to be placed in Arnhem was the main focus for the committee, the first monument realised was the one in Haarlem. In 1929, a bust of Lorentz was revealed on the newly coined Lorentz Square (*Lorentzplein*), the square where Lorentz resided with his family until his death. Attendees included several government officials, Lorentz's wife and Prince Hendrik, who officially revealed the bust.[98] The service was recorded and broadcast on the radio.[99]

The bust (see figure 4) was made of black bronze and stood on a pedestal of grey granite, manufactured by a professor at the technical university specialising in sculpture, Arend Willem Maurits Odé. The bust is 85 centimetres, and the pedestal is around three meters high. Lorentz is, therefore, always looking down on the people passing his memorial.[100]

Odé imagined Lorentz to be a "serious thinker" and decided that the "kindness and amiability of the great scholar should not be the predominant features."[101] That vision is reflected in the finished sculpture: Lorentz, wearing a suit complete with a bowtie, looks straight ahead, his eyebrows slightly furrowed, casting his eyes in shadows. He looks stern and learned, emphasising the intellectual aspects of Lorentz's character. Simultaneously, as illustrated by Odés's justification, kindness and amiability were significantly associated with Lorentz, yet not incorporated in the finished product. The bust is still present on the Lorentz Square in Haarlem today.

FIGURE 4: AREND ODÉ, BUST OF HENDRIK ANTOON LORENTZ, HAARLEM 1929.[102]

[98] 'Monument Prof. Lorentz' , *Nieuwsblad van het Noorden* (04-12-1929).
[99] 'Onthulling van het Lorentz-monument te Leiden', *De Avondpost* (03-12-1929).
[100] Z. K. H. den Prins, 'Onthulling Lorentz-monument Haarlem', *De Nederlander* (03-12-1929) 2.
[101] Original text: "[…], dat daarbij de vriendelijkheid en beminnelijkheid van den grooten geleerde niet overheerschend tot uitdrukking mochten komen." In ibidem.
[102] Wikimedia Commons, 'Hendrik Lorentz - Lorentzplein, Haarlem.jpg' https://commons.wikimedia.org/wiki/File:Hendrik_Lorentz_-_Lorentzplein,_Haarlem.jpg (accessed 11-10-2023).

The statue in Arnhem

Three years after the formation of the committee to place a statue in Arnhem, a large, full-body sculpture was finally revealed in 1931. Once again, government officials were present during the ceremony, as well as Lorentz's children and grandchildren. The official reveal was performed by crown princess Juliana.[103] The statue was designed by Ludwig Oswald Wenckebach and realised together with the architect Jo Limburg (see Figures 5 and 6).

The statue was placed atop a hill in Sonsbeek Park, a municipal park in Arnhem. When asked, Limburg explained that his decision to place the statue in the park was based on the vastness and tranquillity of the surroundings, which lent themselves better to a large monument than a cityscape. The large and tall monument would act as a climax to the otherwise horizontal backdrop. The statue aimed to be simple and down-to-earth on one hand yet monumental and towering on the other. A grand staircase was built to lead up to the sculpture. The statue itself was placed on a pedestal. Lorentz was cast in bronze, and the sculpture was 2.5 metres high. Lorentz was dressed in what became his trademark coat, as "that was what he always wore", and he was depicted with one hand on the lapel of his jacket and the other hanging down, as "that was how he always stood".[104] This addition of this statue further enhanced the work's significant presence: a giant wall of white limestone served as a backdrop to the bronze statue. On the wall to Lorentz's right were reliefs of the heads of Christan Huygens, Augustin Fresnel and James Clark Maxwell, in profile, looking at Lorentz - three influential physicists on whom Lorentz's work was based. To his left are the faces of Max Planck, Niels Bohr and Einstein, symbolising the work of the physicists who built on Lorentz's work. The monument represents the past and future of physics, with Lorentz at its symbolic and literal centre.[105] This reflects the prevalent narrative at the time of his death of presenting the scientist as not only a bridge between nations but as a bridge between generations.

[103] 'Lorentz-monument te Arnhem onthuld', *Aaltensche Courant* (11-09-1931).
[104] 'Het Lorentz-monument te Arnhem', *Arnhemsche Courant* (10-05-1930).
[105] 'Het nieuwe ontwerp voor het Lorentz-Monument', *Arnhemsche Courant* (06-02-1931).

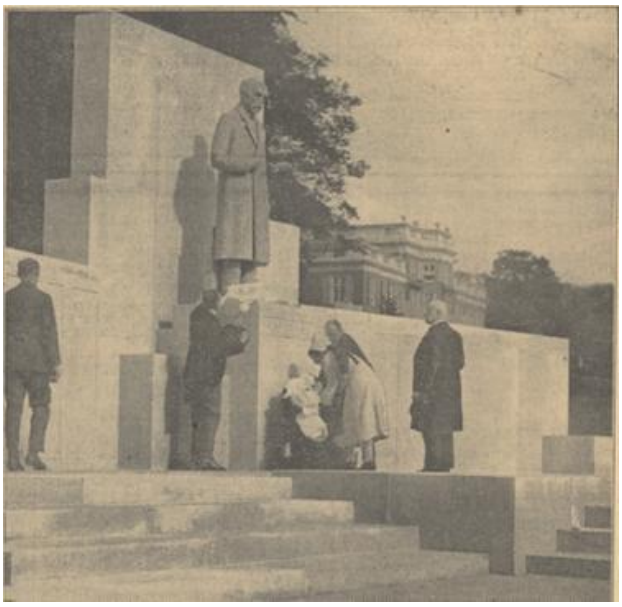

FIGURE 5: UNKNOWN PHOTOGRAPHER, INAUGURATION OF THE STATUE OF HENDRIK ANTOON LORENTZ IN ARNHEM, 1931.[106]

FIGURE 6: LUDWIG WENKEBACH, *HENDRIK ANTOON LORENTZ*, 1931, PICTURE TAKEN IN 2012.[107]

Three people were invited to speak at the first presentation of the statue. Johannes Theodoor de Visser, former Minister of Education, Arts and Science and President of the National Lorentz Committee, opened the ceremony. De Visser expressed his pleasant surprise that this tribute had received so much attention and that such an event would probably not happen again for a long time. De Visser decided to leave the more personal stories about Lorentz for a later speech, but he did not hesitate to praise the

[106] 'Het Lorentz-monument te Arnhem', *De Maasbode* (10-09-1931).
[107] Wikimedia Commons , https://commons.wikimedia.org/wiki/File:Lorentzmonument_te_Arnhem.jpg (26-08-2012)

scientist. He was particularly keen to emphasise Lorentz's influence on the international stage. He was described as a 'hero of science' who would make the Netherlands famous among the giants surrounding the small country, similar to what was being published in the newspapers at the time. De Visser adopted an exuberantly reverential tone, evident in the many religious references he sprinkled throughout his speech. Lorentz, for example, was why the Netherlands had not yet lost its "halo of greatness".[108] Furthermore, Lorentz was not only a great scientist, his personality was so likeable that "our respect almost becomes worship".[109] De Visser ends his speech with a call to the nation, exclaiming that the best way to honour the great Lorentz would be to gain inspiration and for all to contribute to the "temple of our society", no matter if that meant laying the foundation or just a single stone.[110]

The second talk of the day was given by Professor Adriaan Fokker, a former assistant to Lorentz and Ehrenfest and Lorentz's successor as director of research at the Teylers Museum, who would later collect and compile all of Lorentz's papers together with a short biography. In this lecture, Fokker delved into Lorentz's scientific career from a technical point of view. He did not put much emphasis on his person or more political influences. Instead, he drew attention to the monument and the importance of the men around Lorentz and even more to the significance of Lorentz for developing physics.[111]

Finally, Salomon Jean René de Monchy, the mayor of Arnhem, spoke some words. He spoke extensively of Lorentz's report card and great early aptitude for physics. De Monchy aimed to accentuate Lorentz's connection to the city of Arnhem in particular, therefore calling attention to his childhood before he moved to Leiden. De Monchy followed this by thanking Juliana for being present and the committee and other relevant parties for their work. He ended by divulging some personal experiences with Lorentz. For example, Lorentz inherited some houses in Arnhem from his father that were, at one point, bought by the city. Lorentz reportedly did not care about the selling price but was instead worried about the people living in those houses who might lose their homes. De Monchy once again reiterated Lorentz's humility and compassion when recalling his time as a student at the University of Leiden during the one year Lorentz was the chancellor of the University in 1899. Those who were not his students did not initially know of his scientific achievements, but soon enough, Lorentz would gain popularity because of his engaging personality.[112]

De Visser, Fokker and De Monchy all had different backgrounds and connections to Lorentz, which was reflected in their speeches. Overall, similar virtues often ascribed to Lorentz came to the surface once more: his humility, kindness and great intellect in particular. However, De Visser was not

[108] Original text: "[…] aureool zijner grootheid […]." In: 'Het Lorentzmonument door Prinses Juliana onthuld', *Arnhemsche Courant* (09-09-1931).
[109] Original text: "[…] dat onze eerbied bijna tot verering klimt." In ibidem.
[110] Ibidem.
[111] Ibidem.
[112] Ibidem.

personally acquainted with Lorentz and presented the man as a real hero, erasing Lorentz as a mortal human and elevating him to that pedestal on top of a hill.

The event was accompanied by music: a children's choir and a local orchestra. Flowers were laid at the foot of the statue during and after the commemoration. Once again, the entire ceremony was broadcast on the radio for the country to hear.[113]

The statue in Leiden

In 1933, the final monument in Leiden was revealed: a small statue of Lorentz placed on the wall above a gate, designed by architect Kees Royaards and constructed by sculptor Corinne Franzén-Heslenfeld (see figures 7 and 8). The sculpture was placed on top of a gate leading to the Bosscha reading room in the Kamerlingh Onnes laboratory, a popular meeting place for physicists at the time.[114] Lorentz was now looking over the newer generation of scientists who would walk into the building.

The statue shows Lorentz looking ahead and wearing a long coat that has become somewhat synonymous with Lorentz, the same jacket shown in Arnhem. Lorentz holds his left arm in front of him with two fingers outstretched. His left hand is holding a scroll. He is standing on the wings of an owl, a symbol of wisdom.

The statue was moved several times, but - as of writing this - can still be admired inside the Kamerlingh Onnes building, gracing the wall above the entrance to what is now the Lorentz lecture hall.

[113] 'Radio-hoekje', *Volkskrant* (08-09-1931).
[114] 'Het Lorentz-monument te Leiden', *Algemeen Handelsblad* (09-11-1933).

FIGURE 7: CORRINNE FRANZÉN-HESLENFELD AND KEES ROYAARDS, *THE LORENTZ-MONUMENT*, 1933.[115]

FIGURE 8: LEIDEN UNIVERSITY, THE STATUE OF LORENTZ ABOVE THE DOOR TO THE LORENTZ LECTURE HALL. PHOTOGRAPH TAKEN IN UNKNOWN YEAR.[116]

[115] 'Het Lorentz-monument onthuld', *Telegraaf* (03-11-1933).
[116] Leiden University: The Kamerlingh Onnes Laboratory in Leiden after the renovation for the law faculty, https://www.lorentz.leidenuniv.nl/history/explosion/KOL/Pages/IMG_1793.html (accessed 15-10-2023).

Conclusion

There were no discontinuities regarding the personas ascribed to Lorentz at the very end of his life, nor were there virtues that seemed to have disappeared. Lorentz's death was characterised by headlines that emphasised his international status as a scientist of world fame. Most virtues, like Lorentz's modesty, work ethic and simplicity, were reiterated. Virtues that seemed to be most discussed during Lorentz's funeral were his humility, kindness, and great intellect.

However, some virtues that expand on existing personas seemed to pop up. For example, Lorentz's aptitude for science from a young age was previously not much touched upon, yet it became much more relevant.

The persona of a teacher as seen in the previous chapter was expanded upon with the persona of a 'pedagoog', which showed that Lorentz was not only dedicated to teaching but also to bettering education as a whole.

Furthermore, Lorentz's status as a bridge between the older and the newer generation of physics, which was mentioned at his funeral as well as visible in his statue in Arnhem, can be perceived as part of the persona of a teacher, as this position of the Nestor of the new generation, the 'bridge', indicates transmission of information from one side to the other, much like a mentor would.

Furthermore, the statue in Haarlem showed that even though a specific set of virtues, in this case, Lorentz's politeness and kind expression, seemed to be agreed upon, sometimes decisions will be made to fit better with another persona. In this case, depicting Lorentz's facial expression sternly includes the sculptor's image of a scientist better.

Chapter 3: Lorentz's ever-lasting legacy (1931-2023)

Hendrik Antoon Lorentz has a long-lasting legacy, expressed in textbooks, street names, schools, statues, scientific prizes, articles and books. One of the most apparent examples of Lorentz's omnipresence in the public sphere is his presence - or lack of it - in museum exhibitions. This chapter will look at the collections of Dutch museums and how Lorentz was included in both permanent and temporary exhibitions. Two museums in particular stand out in their relationship with the scientist: The Rijksmuseum Boerhaave in Leiden and the Teylers Museum in Haarlem. This chapter will examine how these museums presented Lorentz by looking at the objects chosen for display, the collection, annual reports, newspaper clippings and promotional material.

Rijksmuseum Boerhaave

The Rijksmuseum Boerhaave, formerly known as the Netherlands Historical Museum of Natural History and Science (*Nederlandsch Historisch Natuurwetenschappelijk Museum)*, officially opened its doors in 1931. The museum did not seek to appeal to the general public but instead focused on its relationship with smaller academic communities. The museum's original aim was not to educate and entertain the general public but to preserve scientific instruments and objects. One of the founders and the first director of the museum, August Crommelin (1878-1965), described the primary purpose of the museum as promoting the study of science but added that the museum was also an "act of piety owed to the memory of many great Dutch people, who have contributed so much to the fame of the Netherlands through their researches in the field of natural sciences."[117]

So then, naturally, when the museum opened in 1931, the rooms were organised by themes like physics, astronomy or physiology. In the physics room, a cabinet was cleared to display instruments and other objects that had belonged to "the greatest Dutch scientists of later years: H.A. Lorentz, H. Kamerlingh Onnes, P. Zeeman and others."[118] Crommelin saw the collecting of objects – even 'relics' as he called them – as a part of his duty of honouring The Netherlands' most outstanding scientists, displaying them and making them accessible to "the reverent and admiring gaze of researcher and layperson alike."[119] This was a primarily romantic and reverent depiction. The men were put on

[117] Original text: "Daad van piëteit verschuldigd aan de nagedachtenis van veele groote Nederlanders, die door hunne onderzoekingen op natuurwetenschappelijk gebied zooveel tot Nederland's roem hebben bijgedragen"; C.A Crommelin, *Stichting het Nederlandsch Historisch Natuurwetenschappelijk Museum te Leiden. Gids door de Christiaan Huygens Verzamerling en door de afdeelingen voor Natuurkunde, sterrekunde, aardmeetkunde en microscopie* (Leiden 1931). 152-157.

[118] Original text: "groote Nederlandse natuurkundigen der latere jaren: H.A. Lorentz, H. Kamerlingh Onnes, P. Zeeman e.a." in ibidem.

[119] Original text: "de eerbiedige en bewonderende blikken van natuuronderzoeker en leek." In C.A. Crommelin, 'Toespraak gehouden bij de opening van het Nederlandsch Historisch Natuurwetenschappelijk Museum te Leiden den 5den juni 1931', Physica, *Nederlandsch Tijdschrift voor Natuurkunde* 11 (1931) 152-157, see 157.

proverbial pedestals and regarded as heroes, similar to, for example, the statue of Van 't Hoff in Rotterdam and even Lorentz's statue in Arnhem. Crommelin saw it as his mission to preserve the image of these scientists, and although not a lot of sources are available that detail the exact layout and, more importantly, the possible captions or information presented during a tour of the museum at the time, it would be safe to say that the representation of Lorentz would be consistent with the language used around his death only a few years prior.

Crommelin was very proud of Dutch scientists, which was unsurprising since scientific heroes such as Lorentz and Kamerlingh Onnes were important figures who inspired patriotic pride. Just as the eighteenth and nineteenth-century statues did not find enough support to be created, the twentieth-century scientists had much less resistance to their creation. Science and its exemplars were a prominent part of what the Dutch thought made them great. This was also evident in the newspapers, which would treat Lorentz as an eminently Dutch hero.

After the Second World War, the popularity of museums in the Netherlands increased dramatically in terms of the number of museums and visitors. Whereas in 1945, only twelve out of a hundred people visited a museum each year, by 1975, the figure had risen to 59.[120] Several factors can explain the reason for this: people had more free time, more mobility and more money. In addition, the government began to pay more attention to culture and cultural institutions to promote and preserve Dutch culture.[121]

Furthermore, in 1949, the reigns of the Dutch Historical Natural Science Museum were handed over to new director Maria Rooseboom (1949-1969) as Crommelin more or less retired. Her philosophy regarding the ultimate function of the museum differed from Crommelin's. Her dearest wish was to bring the museum to the general public's attention and make the collection more popular to a larger audience.[122] She argued that the museum's primary purpose should be to function as an educator in the first place and a promoter to interest people more in science in the second.[123] This mimicked the trend of non-academics being more inclined to visit museums in the Netherlands. In practice, the museum would promote group visits, facilitate symposia, initiate prize contests and implement free student admission.[124] As a part of this mission to popularise the museum, Roosenboom started organising temporary exhibitions. The first exhibition started relatively small and showcased instruments,

[120] Leen Dorsman, Ed Jonker and Kees Ribbens, *Het zoet en het zuur, geschiedenis in Nederland* (Amsterdam 2000) 130-131.
[121] C.J.M. Schuyt and Ed Taverne, *1950. Welvaart in zwart-wit* (Den Haag 2000) 409.
[122] "Wij Spraken Met... Mej. Dr. Maria Rooseboom." *Het Vaderland* (24-08-1960).
[123] 'Verslag van de directrice over het jaar 1950', *Rijksmuseum voor de geschiedenis der natuurwetenschappen* (Leiden 1950) 1.
[124] Ad Maas, 'Introduction: History of Science Museums between Academics and Audiences', *Isis, a Journal of the History of Science Society* 108:2 (2017) 360-365, see 362.

personal objects and books written by and about the first Nobel Prize winner, Van 't Hoff. Van 't Hoff was chosen as a subject as it was the centennial anniversary of Van 't Hoff's birth.[125]

However, this exhibition was relatively insignificant compared to the one organised the following year in 1953: a major exhibition celebrating the centenaries of Kamerlingh Onnes and Lorentz, both born in 1953. This exhibition dwarfed the previous one in terms of publicity and sheer size. By examining the museum's annual report for 1953, the exhibition catalogue, newspaper articles and other collected materials such as correspondence, notes and photographs, it is possible to reconstruct the exhibition and its public reception.[126]

The 1953 Lorentz and Kamerlingh Onnes exhibition

The Kamerlingh Onnes and Lorentz exhibition was indeed the first noteworthy exhibition the museum ever held and the first of many to come. Concerning promotion, posters were printed and spread out throughout the Netherlands for the first time. The poster featured two drawn portraits of Kamerlingh Onnes and Lorentz and the title '*1853-1953 Tentoonstelling: H. Kamerlingh Onnes, H.A. Lorentz*' ('1853-1953 Exhibition: H. Kamerlingh Onnes, H.A. Lorentz'). Furthermore, the exhibition was promoted in both national and foreign newspapers.[127]

The exhibition focused on Lorentz and Kamerlingh Onnes but did not attempt to present them in the same room. Instead, the scientists were delegated to separate parts of the building. Kamerlingh Onnes was an experimental physicist, so his section consisted mainly of instruments and machines. On the other hand, Lorentz was a theoretical physicist who lacked the same visual objects. In his case, the exhibition included letters, essays, notes and books.[128] One of the people who gifted some pieces from his collection suggested in a letter to Roosenboom that the exhibition should feature the handwriting of Lorentz because "One does not need to be a writing expert to see the superior characteristics Lorentz reflected therein: the unsurpassable clarity and elegance, the readiness to dedicate himself fully to whatever thing, no matter how simplistic."[129] The characteristics highlighted here are very similar to the virtues ascribed to Lorentz, as seen before WWII. However, while these characteristics were touched upon in correspondence, it is unclear whether these characteristics were highlighted in

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[125] 'Catalogus', *Chemisch Weekblad, orgaan van de Nederlandse chemische vereniging* 48:35 (30 augustus 1952).

[126] These can be found in the physical archives of Museum Boerhaave.

[127] [Tentoonstelling Kamerlingh Onnes-Lorentz] 1953, Museum Boerhaave Library, call number BOERH a 54 (1953).

[128] 'Tentoonstelling Lorentz-Kamerlingh Onnes, twee grote geleerden en ouden vrienden op treffende wijze geëerd', *Algemeen Handelsblad*. (20-06-1953).

[129] Original text: "men behoeft geen schriftkundige te zijn om de superieure eigenschappen van Lorentz daarin weerspiegeld te zien. De onovertrefbare duidelijkheid en netheid, de bereidheid om zich met volle kracht te wijden aan elk ding ook het eenvoudigste." In P. Mulder, 'Aan de Directrice van van het Rijksmuseum voor de geschiedenis der Natuurwetenschappen te Leiden, mej. Dr Roozeboom', [Tentoonstelling Kamerlingh Onnes-Lorentz] 1953, Museum Boerhaave Library, call number BOERH a 54 (1953).

the same way in the exhibition, probably being presented in a much less exuberant manner. A newspaper article from the *Algemeen Handelsblad* gave the exhibition a positive review but admitted that Lorentz's part of the display was less attractive because of the lack of instruments.[130] Instead, the crowning jewel of Lorentz's part of the exhibition was a short characteristic written by Albert Einstein at the request of Roosenboom for the occasion. Considering Einstein's ties to both scientists on display, but Lorentz especially, he was approached to write a small memorial booklet about Lorentz, known as *Lorentz, His Creative Genius and Personality* (*Lorentz als Schöpfer und Persönlichkeit*), being available to the visitor in both German and English.

The most essential items on display were Lorentz's and Kamerlingh Onnes' Nobel Prize medals, which the museum could borrow from the KNAW. There was also a wealth of objects with a more personal meaning, like photographs, drawn portraits, diplomas and certificates.[131] Photos would show the two men as children, students, on holiday or in otherwise more 'mundane' situations. Most pictures, however, showed Lorentz with other scientists, showing Lorentz's position in the international science scene as a popular figure. Another of these 'personal' items was a table for practising logarithmic problems, which Lorentz bought when he was only ten years old and used to teach himself mathematics. This, in particular, was an object often picked up by newspapers during the promotional period of the exhibition to express Lorentz's intelligence from a young age. The same went for Lorentz's high school report card, showing outstanding performance.[132] Giftedness, or a certain inevitability of greatness, were characteristics of Lorentz presented more from this point on.

While nowhere explicitly stated, An exhibition composed of scientific and non-scientific objects was presumably decided upon to attract non-scientists, considering the museum's new goals. Roosenboom even expressed her pleasant surprise at the high visitor count considering the 'scientific nature' of the exhibition.[133] Personal objects bridged the gap between the *scientist*, who would be challenging to understand by the broader public Roosenboom was targeting, and the *person*. However, the framing of these scientists was not that of people like any other. The men on display were shown as brilliant geniuses of their time, more meant to inspire and awe visitors than give them a chance to connect to them personally.

Apart from the personal angle, the exhibition also catered to a more nationalist approach. An extensive collection of correspondence between Lorentz and well-known scientists and international scientific institutions was on display, mainly consisting of congratulatory notes, praises for scientific discoveries

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[130] 'Tentoonstelling Lorentz Kamerlingh Onnes. Twee grote geleerden en oude vrienden op treffende wijze geëerd', *Algemeen Handelsblad* (20-06-1953).

[131] Maria Rooseboom, *Tentoonstelling H. A. Lorentz en H. Kamerlingh Onnes, 1853-1953 : catalogus* (Leiden 1953). See also: 'Verslag van de directrice over het jaar 1953', Rijksmuseum voor de geschiedenis der natuurwetenschappen (Leiden 1953).

[132] 'Tentoonstelling Lorentz Kamerlingh Onnes', *Algemeen Handelsblad* (1953).

[133] Thanking notes, [Tentoonstelling Kamerlingh Onnes-Lorentz] 1953, Museum Boerhaave Library (1953).

and personal letters.[134] This stress on the international character of these scientists was also visible in news coverage with headlines like 'Two Scientists of Global Recognition', 'Lorentz and Kamerlingh Onnes in the Centre of International Tribute' and 'Great Speeds and Lowest Temperatures Delivered Dutch Science World Fame'.[135]

This exhibition also included Lorentz's contribution to the Zuiderzee Works he had worked for for eight years. Lorentz's work at the Zuiderzee committee proved to be a literal lifesaver as a few months before the opening of the exhibition; a catastrophic storm hit the Netherlands, overwhelming a lot of sea defences, which led to very severe flooding and the loss of many lives. However, the Afsluitdijk stood firm, considerably limiting the damages around the Ijssel Lake, not the very least because of Lorentz's contribution.[136] Because of this, the museum reached out to the organisation in charge of the still-developing Zuiderzee Works, who contributed to the exhibition by decorating a side chamber to offer insight into Lorentz's work at the committee. Unfortunately, how this took shape exactly is unclear as the catalogue and yearly report do not mention what was on display, and no photographs of the set-up have been discovered.[137]

Lorentz als Schöpfer und Persönlichkeit

In the accompanying booklet, *Lorentz and His Creative Genius and Personality*, Einstein briefly summarised Lorentz's scientific work in the first half and devoted the second half to a more personal approach. The booklet was only about five pages long. While the tone of the scientific part conveyed a great deal of respect - Lorentz was credited as the reason why special relativity would undoubtedly come to be, with or without Einstein - this admiration was even more evident in the second, more personal part of the text. Einstein began by recounting his time attending Lorentz's lectures while visiting Leiden. He admired Lorentz, who was still lecturing in his retirement. He believed that his admiration for Lorentz would have been the same had he known the man personally but that it was infinitely greater now that he did. Einstein exclaimed, "Personally, [Lorentz] meant more to me than all the others I have met in my life's journey."[138] A description of Lorentz's personality followed this: "Everyone felt his superiority; no one felt depressed by it. Although he had a keen insight into human nature and human relationships, he had a charitable kindness towards it all. His influence was never a

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[134] Rooseboom, *Tentoonstelling H. A. Lorentz en H. Kamerlingh Onnes*.

[135] See 'Kamerlingh Onnes en Lorentz: twee natuurkundigen van wereldnaam, tentoonstelling te Leiden', *Trouw* (24-06-1953), 'Lorentz en Kamerlingh Onnes in centrum van internationale hulde', *Leidsch Dagblad* (20-06-1953) and 'Grootste snelheden en laagste temperaturen: brachten de Nederlandse wetenschap wereldfaam', *Het Vrije Volk* (27-06-1953) respectively.

[136] See J. Th. Thijsse, 'Enclosure of the Zuiderzee', G.L. De Haas – Lorentz ed., *H.A. Lorentz, Impressions of His Life and Work* (Amsterdam 1957)129-144, for a personal account of engineer Jo Thijsse who worked very closely with Lorentz during the eight years the committee was active.

[137] [Tentoonstelling Kamerlingh Onnes-Lorentz] 1953.

[138] Albert Einstein, 'H. A. Lorentz, his creative genius and his personality' in Geertruida Luberta de Haas-Lorentz ed., *H. A. Lorentz, Impressions of his Life and Work* (North-Holland Publishing Company, Amsterdam 1957) 5-9, see 8.

dominating, but always a serving, helping one."[139] Adding onto this, Einstein expressed that Lorentz had a "fine sense of humour, which reflected itself in his eyes and his smile."[140] Einstein ended his passage by stating that his words could never be enough to do Lorentz justice.[141]

Einstein highlighted Lorentz's kindness, helpfulness, humour and great intelligence while remaining humble. Einstein spoke here from a place of friendship, as is evident from his emphasis on personal virtues, but these virtues also presented Lorentz as a mentor. Einstein also mentioned Lorentz's eyes and smile, often recurring features of his physical appearance.

Promotion

As mentioned above, this was also the first time that the museum printed promotional posters (see Figure 9). The poster in question showed graphic portraits of both Kamerlingh Onnes and Lorentz. Kamerlingh Onnes was placed in the upper left corner in orange, with Lorentz in front and below in a softer green. Nothing else was pictured on the poster, indicating their professions, accomplishments, or otherwise recognisable additions. Two portraits with their names relatively minor to the side and a three-word description below that were deemed enough for the public to recognise immediately.

There are no records to confirm what the image on the poster is based on, but it contained all the characteristics that could also be seen in the painting by Kamerlingh Onnes, the statues and in many photographs. Lorentz was portrayed at an older age instead of looking younger, as in his portrait by the Nobel Commission in 1902. Lorentz became more present in the public eye later in his life, and therefore, most people would remember him as an older man with a receding hairline and a stark white beard. His older face is also depicted on statues and the portrait painted by Menso Kamerlingh Onnes.

In addition, Lorentz is again depicted wearing his characteristic suit and bowtie. Kamerlingh Onnes and Lorentz look directly at the viewer with an unguarded, almost soft expression, aided by the barely-there lines that indicate Lorentz's glasses. Hence, nothing in the way would hinder the ability to look directly into his eyes. Einstein's description of his "kind eyes" and Menso Kamerlingh Onnes' insistence on Lorentz's eyes being his most significant feature were mirrored in this poster. The two scientists were, first and foremost, meant to be recognisable. But in addition, they were also meant to be inviting, hence the decision for a kinder look.

[139] Ibidem.
[140] Ibidem.
[141] Ibidem.

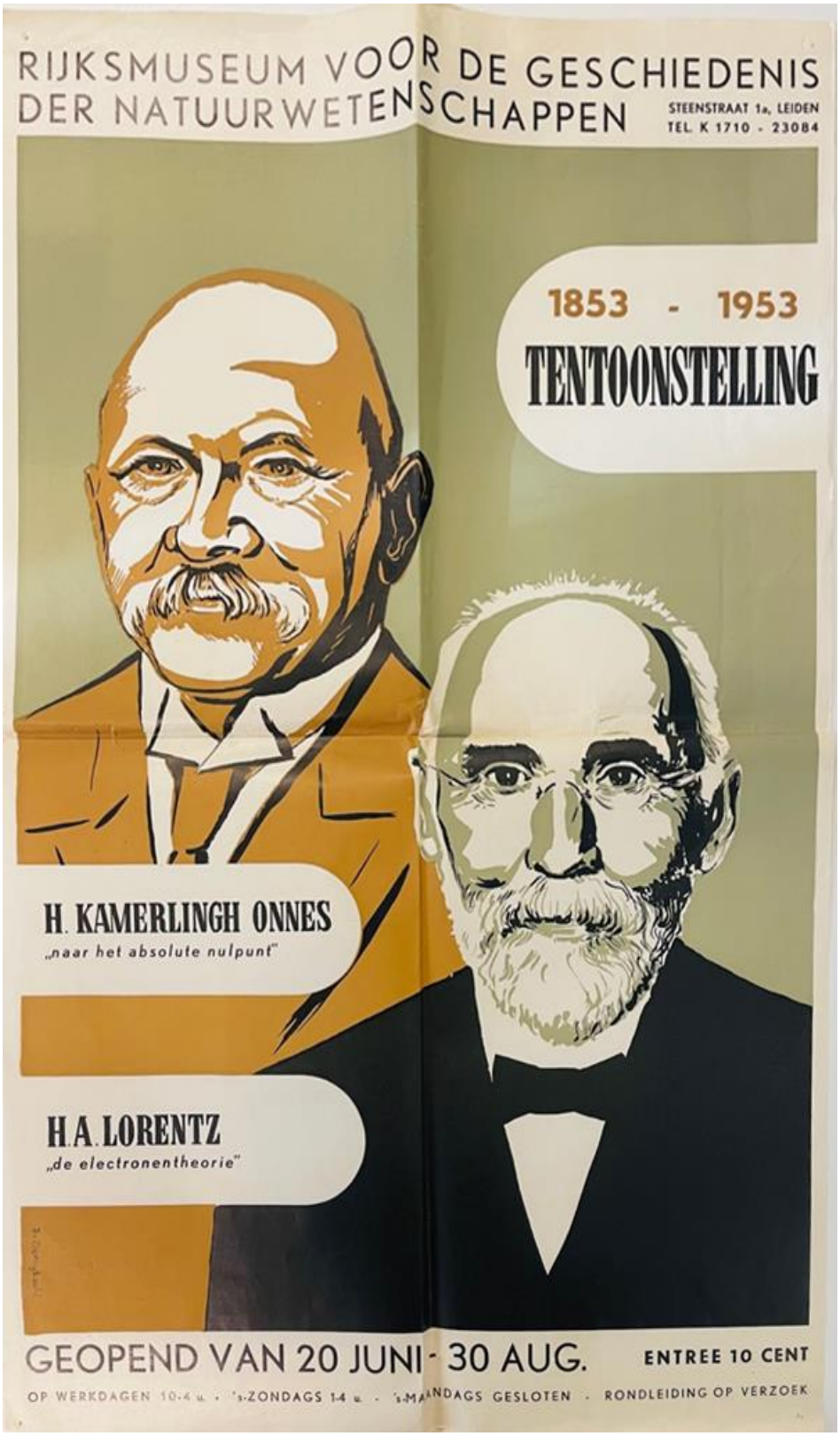

FIGURE 9: PROMOTIONAL POSTER FOR THE EXHIBITION LORENTZ AND KAMERLINGH ONNES, 1953.

The exhibition was designed to highlight Lorentz's (and Kamerlingh Onnes's) scientific career and personal life. Narratives that were very much a sign of continuation after Lorentz's death were his role

as an integral part of the international scientific community and, closely related to this, Lorentz's position as an important national figure. A new feature that was sometimes touched upon during Lorentz's life and around his death, especially with how quickly he became a professor, was his early aptitude for science, including his childhood. This was reinforced by objects like his report card and logarithm practice tool.[142]

Museum Boerhaave's permanent exhibition changes

The Dutch National Museum for the History of Science was renovated in 1959. A new wall was erected to honour the most outstanding Dutch scientists, such as Herman Boerhaave, Carl Linnaeus, Einthoven, Kamerlingh Onnes and Lorentz. These were not all Nobel Prize winners, nor did they have any other characteristic that linked them together, apart from the names that were considered the most important to remember. The exhibits included portraits, instruments, machines and prizes, such as the Nobel Prize medals.[143] Two smaller exhibitions were organised about Einthoven between 1950 and 1960.[144] However, after the second one was finished in 1960, it would be quite some time before 'great scientists' would be the centre of an exhibition in the museum again.

In 1978, the museum changed its name to Museum Boerhaave. In 1991, the museum Boerhaave was relocated. With a relocation, a new layout was waiting to happen. The museum director, Gerrit Veeneman, decided on a more scientific approach to the new permanent exhibition. Logic, precision and neatness were the ideals central to the new design. Instruments were seen as more than instruments, and their inherent beauty was to be displayed without all that added substance.[145] The rooms were furnished chronologically, starting at the Dutch Golden Age and finishing with the Second Golden Age, which had become an important concept to define the first decades of the twentieth century. It was meant to emulate that first golden age, characterised by its art and science. The founder of the term, Bastiaan Willink, argued that science and art was on par in the first twenty years of the twentieth century and used the large amount of Dutch Nobel Prize winners as main proof.[146]

However, because the museum now primarily focused on displaying instruments, many objects lost their place. Books and text were occasionally displayed, but only in the seventeenth-century rooms,

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[142] 1953 saw more commemorative events about Lorentz and Kamerlingh Onnes. Examples of this inlclude a Lorentz memorial in Arnhem in January as described in Jos Diender, 'De Arnhemse jaren van Hendrik Antoon Lorentz.' (Arnhem 2006) and 'Arnhem op 31 Januari in het teken van de Lorentzherdenking', *Arnhemsche Courant* (13-01-1953).

[143] Rijksmuseum voor de geschiedenis der natuurwetenschappen, *Verslag van de directrice over het jaar 1959* (Staatsdrukkerij- en uitgeverijbedrijf; 1959).

[144] 'Verslag van de directrice over het jaar 1953', Rijksmuseum voor de geschiedenis der natuurwetenschappen (Leiden 1953) and 'Verslag van de directrice over het jaar 1960', Rijksmuseum voor de geschiedenis der natuurwetenschappen (Leiden 1960).

[145] Geert Bekaert, 'De glans van het verleden' in *Rijksmuseum Boerhaave, De inrichting van het Caecelia-Gasthuis te Leiden* (Drukkerij Rosbeek bv., Nuth, 1991) 7-10, see 9.

[146] Bastiaan Willink, *De Tweede Gouden Eeuw, Nederland en de Nobelprijzen voor natuurwetenschappen 1870-1940* (Amsterdam 1998).

utterly absent in the others.[147] Lorentz had never really used instruments or machines in his work as a theoretical physicist, so he did not have a reason anymore to be displayed in Museum Boerhaave. He was too hard to exhibit in this new era that primarily focussed on simplicity first and foremost.

2011 Nobel NL

Lorentz returned to Rijksmuseum Boerhaave in 2011. In the meantime, the end of the twentieth century and the beginning of the twenty-first saw increased attention for Nobel Prize winners. The Nobel Prizes became an essential signifier of success for twentieth-century scientists and an easy label for anyone to recognise. It had been almost a century since the era of Lorentz and his peers, and with natural sciences in the Netherlands losing some of their statuses in the course of the twentieth century, many once-great scientists lost some of the recognisability they once enjoyed.

While the Nobel Prize had been established as a brand in the twentieth century, it has only been utilised adequately since relatively recently. In 2011, Rijksmuseum Boerhaave organised *Nobelprijs NL* (Nobel Prize NL), a temporary exhibition presenting Dutch Nobel Prize laureates. The exhibition was somewhat of a last-ditch effort to keep the museum from closing when the conservative administration Rutte-Verhagen deemed the museum's income too insufficient to justify it staying open. Therefore, this exhibition was meant to show the value and relevance of the museum's collection, and it turned out that using the Nobel Prize laureates was an excellent move to accomplish this. The exhibition had some nationalistic undertones, like its title, which contained NL for the Netherlands, and the exhibition guide described the exhibition as a "gallery of honour of Dutch Nobel Prize winners [revealing] the perseverance and creativity of our most famous scientists of the twentieth and twenty-first centuries".[148] Nobel Prize winners were the pretty safe bet to identify with 'Dutchness' and Dutch history as they were largely separate from more controversial fields, as opposed to national 'heroes' that were politicians, writers, explorers or military figures. Professor in Dutch literature- and cultural history, Lotte Jensen, said in an interview that the Dutch, as opposed to the Americans or the French, were less inclined to fall into hero-worship as the Dutch are too no-nonsense. However, when asked what heroes will still be remembered as heroes in two hundred years, she mentioned Dutch astronaut André Kuipers as "science is a neutral and safe terrain where one can accomplish extraordinary things without falling victim to idolatry."[149]

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[147] Ibidem, see photographs on from page 13 onward.

[148] Dirk van Delft, Mieneke te Hennepe and Esther van Gelder (eds.). *Nobelprijs NL. Eregalerij van Nederlandse Nobelprijswinnaars* (Leiden 2011)

[149] Original text: "Wetenschap is een neutraal, veilig terrein, waar je uitzonderlijke prestaties kunt bereiken, zonder dat er idolatrie aan kleeft." In Jeroen Schmale, 'Als held kun je maar beter niet uit Nederland komen.', in *Algemeen Dagblad* (07-11-15) https://www.ad.nl/binnenland/als-held-kun-je-maar-beter-niet-uit-nederland-komen~ac650299/?referrer=https%3A%2F%2Fwww.google.com%2F accessed 2-12-2023.

In a Netherlands struggling to reconstruct a national identity prompted by tensions caused by immigration and globalisation, the Nobel Prize winners contributed to this growing need for an inherent Dutch identity.[150] And it worked. Luckily, the museum saw a rise in visitors and was allowed to keep its doors open.

Big Questions

2017 marked the year of the permanent addition of Lorentz to the Museum Boerhaave. After being closed for two years, the museum opened with a new permanent exhibition. This unique presentation was meant to inspire visitors with stories of the most influential scientists in Dutch history and shine a light on the experiences of patients. The experience was meant to become more interactive and playful to attract families and children.[151] Gone was the perfectionistic and clean display of instruments; now, touchscreens, movies and little interactive games filled the museum. The last room of this new permanent collection was called "Big Questions" (*Grote Vragen*), in which questions about our brain, the universe and DNA were highlighted. A large glass case featured the Dutch Nobel Prize winners in this room. Almost all of the laureates were represented, amongst whom was Lorentz. A touch-screen computer provided scientific and personal information about the scientists on display.[152] For Lorentz, a silver tray he received from the Solvay Institute in 1925 celebrating the fiftieth anniversary of his doctorate was exhibited, carrying the autographs of - among others - Einstein, Marie Curie and Kamerling Onnes.[153] Like the other winners placed next to him in the glass cabinet, Lorentz was not necessarily eye-catching as an individual. Still, they were presented as an essential part of Dutch scientific history and deserved a place in the museum again, even if it were a small part under the large umbrella of the Nobel Prize. Once more, objects that engagingly show Lorentz's scientific work are hard to find because of their theoretical nature. Instead, an object like the tray mentioned above was much more imaginative. Lorentz's bond with Einstein was necessary, as Einstein had become a much larger name than Lorentz, even in the Netherlands, but his position in international science was equally so. Bringing Lorentz's global status to attention showed both the might of Dutch science on a world stage at the beginning of the twentieth century and that Lorentz was friends with all these great scientists, presenting Lorentz as *likeable.*[154]

The return of Lorentz in Rijksmuseum Boerhaave (as it was renamed in 2017) was not long-lived. In 2022, the "Big Questions" room was refurbished to make more room for questions about the future,

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[150] Rogier van Reekum, Out of Character, 134-144, and 209-215.
[151] Amito Haarhuis, 'Voorwoord' in Rijksmuseum Boerhaave, *Jaarverslag 2017* [annual report] (Leiden 2017) 3.
[152] Ibidem, 19.
[153] Rijksmuseum Boerhaave collection, https://boerhaave.adlibhosting.com/Details/collect/5502 (accessed 24-10-2023).
[154] Silver tray that belonged to Lorentz with signatures including those of Einstein and Curie, 1925. Collection Rijksmuseum Boerhaave, Leiden, object number V23646.

like environmental issues, health and longevity and our place in the universe.[155] Items from a hundred years ago did not fit in this narrative, and therefore, the Nobel showcase was removed from the room and, because of a lack of space, removed from the museum in its entirety.[156]

Teylers Museum

The Teylers Museum in Haarlem is the oldest museum in the Netherlands, open continuously since 1784 from the extensive collections of Pieter Teyler van der Hulst (1702-1778). The museum was built to unite art and science in a didactic setting. Books were available to study, scientific instruments were used for demonstrations, and art and minerals were shown and analysed during lessons.[157] However, this meant that the permanent collection was primarily made up of eighteenth and nineteenth-century objects. Therefore, even though Lorentz had his laboratory built next to it, the museum did not incorporate Lorentz into its exhibition.

Lorentz Lab

However, this changed in 2017 when Teylers opened the doors to their new exhibition, the 'Lorentz Lab'. The museum spent years renovating Lorentz's laboratory to present it to the public, accompanied by a theatrical tour called the 'Lorentz formula'. The tour was created by theatre maker Rieks Swarte and was designed to teach visitors about the life and scientific work of Lorentz. Only twenty people at the time could join, and the tour was held three times a day. One can buy a ticket at the museum's reception. However, despite the perhaps limited availability for a broader public, the theatre tour enjoyed quite some success. The exhibition was opened by King William Alexander and attracted quite a considerable number of visitors who were enthusiastic about their visit.[158] Furthermore, the museum was nominated in 2020 for European Museum of the Year for their Lorentz Formula, although they did not win.[159]

The Lorentz Formula tour was led by two actors in lab coats who depict two scientists with a deep admiration for Lorentz (See image 10). The visitors took their places in a classroom and naturally became the pupils. The two actor-scientists started the class by explaining who Lorentz was in both scientific regard and how he was inspired by scientists before him, like Maxwell and Fresnel, and in personal regard, especially his relationship with his wife, Aletta Kaiser, putting much more focus on

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[155] Rijksmuseum Boerhaave, 'Grote Vragen', https://rijksmuseumboerhaave.nl/te-zien-te-doen/Grote-vragen/ (accessed 24-10-2023).
[156] Vincent Bongers, 'Hoe de Nobelprijswinnaars verdwenen uit Boerhaave: 'dit is geen wokisme'' in *Mare* (15-06-2023), https://www.mareonline.nl/nieuws/hoe-de-nobelprijswinnaars-verdwenen-uit-boerhaave/ (accessed 24-10-2023).
[157] Teylers Museum - Geschiedenis, https://www.teylersmuseum.nl/nl/collectie/gebouw-en-geschiedenis/gebouw/geschiedenis (accessed 28-11-2023).
[158] Teylers, *Jaarverslag 2017* (Teylers, 2018 Haarlem) 20 and 32.
[159] Teylers, *Jaarverslag 2021* (Teylers, 2022 Haarlem) 58.

his role as a family man than ever really before. After this introduction, the class was led to the next room: the actual office Lorentz would work in during his time in Haarlem. Here, old photographs were shown, especially the ones with Einstein, and the theory of relativity was explained through some examples. The Lorentz Formula ended with a visit to the Van Manum large electrostatic generator, which generated electricity by manually spinning on a wheel. The actors even demonstrated the machine. While having nothing to do with Lorentz at first glance – the electrostatic generator was, after all, built in the eighteenth century – it made for quite a spectacular finale and transformed the tour into an ode to scientific progress that goes further back than Lorentz and, in the end, did not feel that out of place.[160]

FIGURE 10: THEATRICAL TOUR: THE LORENTZ FORMULA, 2021.[161]

A highlight of the theatrical tour was the Nobel Prize medal that could be seen in Lorentz's reconstructed office. Lorentz's original award was lost in the 1980s, but the new exhibition did not feel complete without it. Therefore, the museum reached out to the Royal Swedish Academy of Sciences, who gave their permission to have a copy of the medal made. This official copy is now on

[160] Visit to the 'Lorentz Formule' in *Teylers* (02-04-2023, Haarlem).
[161] Museum NL, 'De Lorentz Formule', https://www.museum.nl/nl/teylers-museum/evenement/de-lorentz-formule (accessed 27-10-2023).

display in the museum.[162] The importance of the Nobel label in the twenty-first century is also visible in media coverage of the exhibition.

While Teylers also often mentioned Lorentz's Nobel Prize on their website or in promotional material, that was not his primary characterisation. Instead, Lorentz's relationship with Einstein was put more in the forefront. The website detailing the Lorentz formula features a picture with both Lorentz and Einstein at the top.[163] Furthermore, accompanying the launch of the Lorentz formula was an educational physics workshop that secondary schools could book for their students called *Einstein was here*. This workshop took place in the Lorentz Lab and aimed to teach students about electromagnetism through a historical lens. Both the introductory lesson and the guide for teachers make it clear that the workshop is about Lorentz first and foremost.[164] Einstein is a very recognisable brand that, much like the 'Nobel label' that might be used similarly elsewhere, makes Lorentz more attractive to a broader public, in this case, teenagers.

A pretty elaborate biography is also included in the document describing the workshop and the historical background of all the experiments and scientists to be featured during the class. The memoir starts with his childhood and the level of intelligence he showed even then, his scholarly career and his Nobel Prize. Then, the main focus was the relationship between Lorentz and Einstein as a teacher with his student who was nearing into the fatherly. This was followed up by more of Lorentz's achievements, like his place in the Solvay Institute and his experiences in World War I, interspersed with more quotes by scientists who surrounded Lorentz. The biography made it clear that Lorentz was a national hero that the entirety of the Netherlands once celebrated as a celebrity, and Einstein was presented as the leading authority to emphasise this.[165]

Conclusion

Specific personas were more challenging to distinguish in museums. Yet, there were still virtues that were emphasised that changed over the twentieth century as museums became more popular for a broader audience on one hand and interest in scientists from the first two decades of the twentieth century faded slightly. In 1953, in the Netherlands Historical Museum of Natural History and Science, characteristics like Lorentz's inherent intelligence, kindness, and sincerity were visible; this changed to a much colder and distant display of science in the 1970s and 80s. The 1990s saw a renewed interest in the Second Golden Age but lacked Lorentz as it was primarily focused on tactile instruments that were easier to display. Lorentz returned to the museum in 2011 under the brand of a Nobel Prize

[162] Teylers, 'Verdwenen Nobelprijs-penning te zien in Teylers.' (15-11-2017), https://www.teylersmuseum.nl/nl/over-het-museum/pers-beeldmateriaal/persberichten/verdwenen-nobelprijs-penning-te-zien-in-teylers (accessed 27-10-2023).
[163] Teylers, 'Het Lorentz Lab' https://www.teylersmuseum.nl/nl/collectie/gebouw-en-geschiedenis/gebouw/lorentz-lab/het-lorentz-lab (accessed 27-10-2023).
[164] Teylers, *Einstein was here: experimenteren in het Lorentz Lab. Docentenhandleiding* (2017).
[165] Teylers, *Achtergrondinformatie bij het Lorentzlab* (Haarlem 2017), 5-16.

winner. Virtues, characteristics and personas seemed to play a much smaller role, as being labelled a Nobel Prize winner spoke loudly enough.

Teylers had not featured Lorentz in their museum until 2021, when they opened the Lorentz Formula. The Lorentz Formula tour presented a more personal side of Lorentz as a family man but was primarily focused on the relationship between Lorentz and Einstein. Within this relationship, Lorentz was described as Einstein's mentor, yet again showing that teacher persona that was visible from the beginning.

Conclusion

Hendrik Antoon Lorentz was a man with many faces. None of which he could don at his will dictated nor discard and interchange whenever nor were these facades he fit perfectly. Reflecting on how the public persona of Hendrik Antoon Lorentz changed in Dutch media throughout his life, several conclusions can be made after his death and in his legacy. It seemed as if during Lorentz's life, the media had constructed three personas that were most often used to represent Lorentz, and while these underwent some changes over the years, the core stayed the same.

The first persona that was quite inescapable for Lorentz was that of a scientific scholar. A persona closely connected to this professorship and position as a member and even chairman of certain scientific institutes like the KNAW and the Solvay convention. Virtues most often associated with Lorentz during his lifetime were those associated with typically Dutch virtues, as described by Huizinga as humility and modesty, two virtues that time and time again were used as descriptive for Lorentz's character. The scholarly persona expressed itself in most visual sources that depict Lorentz, like his portraits and statues. Lorentz was always shown in his formal suit, which made him look like a professor. Furthermore, added elements like a chalkboard with formulas, a book in his hand and even symbols like an owl play even more into this scholarly persona.

A second persona that the media used to shape Lorentz's character was that of a teacher. In this case, this persona is treated differently from that of a professor, as a professor is not necessarily didactically inclined while being in contact with students. In one instance, Lorentz was described as a 'pedagoog', a teacher who concerns himself not only with the matter he taught but also with the quality of education and his students' well-being. Examples of Lorentz as a teacher during his lifetime were plentiful. Virtues like an ever readiness to help his students and a kindness towards his pupils resulted in close bonds. In Lorentz's legacy, this teacher role was extended to include other scientists as well. This became visible in Lorentz's statue in Arnhem, which placed Lorentz's inspiration on his right and his students on his left. The relationship between Lorentz as a mentor and Einstein as his student was often discussed, as illustrated in the Lorentz Lab in Teylers.

The third and final persona was less apparent from the beginning and only gained ground later in Lorentz's life. This is that of a connector between generations, nations or individuals. His work in the Solvay convention and his many personal relationships with international scientists gave him a lot of status in the international scientific community, which was often used by media to reinforce the fact that Lorentz is a Dutchman first and foremost to encourage national pride. Virtues Lorentz was praised for at his funeral by his international colleagues show why Lorentz was suited to fulfil this persona of a conciliator: his openness and honesty, his critical mind and his straightforward way of speaking. Einstein further reiterated this in *Lorentz als Schöpfer und Persönlichkeit,* which he wrote to accompany the 1953 exhibition about Lorentz and Kamerlingh Onnes, where he underscored that while everyone could feel Lorentz's 'superiority', nobody was bothered by it because he was always

open and ready to help others. As much as Lorentz was a builder of bridges between scientists from different nations in this matter, Lorentz was also a builder of bridges between generations, being the critical point between the more traditional physics and a new wave of theoretical physics. This also correlates and intertwines with the persona of a teacher, but in this case, both labels have different virtues. The teacher persona focuses more on Lorentz's kindness and otherwise attractive personality. At the same time, newspapers that present Lorentz as the Nestor of modern science put more emphasis on his superior intellect, about how other scientists look up to him and is less about intimate characteristics and more about status.

In modern media, as visible in the Rijksmuseum Boerhaave, figures like Lorentz have lost their individuality to make place for the recognisable brand of the Nobel Prize. For example, in 2021, some audio tapes that belonged to Dutch Nobel Prize winner Willem Einthoven could finally be heard after not being able to because the technology to play them had not been used for too long. This made national news, yet the headline of the NOS, a significant news broadcaster in the Netherlands, was: 'Voice of Dutch Nobel Prize winner sounds after almost 100 years.'[166] Einthoven's name would, after all, not ring that many bells for most Dutch people, as opposed to the Nobel Prize.

This does beg the question of whether a Nobel Prize winner could be a persona in and of itself. Perhaps there are different personas for different disciplines, as a Nobel Prize for literature is far removed from that of physics. Can the persona of a Nobel Prize winner be that different from that of a scholar, and what are the defining virtues that determine that? This might be an interesting topic to explore for further research.

Perhaps Rijksmuseum Boerhaave will be the leader in a renewed awareness of twentieth-century Dutch scientists. The museum announced that Nobel Prize winners will once more be included in the museum's permanent exhibition, but with added context that places them in a broader historical setting and removes them from that defining yet limiting phrase Nobel Prize winner.

Yet, when I walk past the Lorentz formula painted on a wall in the city of Leiden or place my bike in the basement of the newly erected Lorentz building, I cannot help but think that Lorentz's legacy is far from forgotten, be that of a celebrated physicist, a great teacher, the pinnacle of the Dutch spirit or that of a Nobel Prize winner.

[166] 'Stem van Nederlandse Nobelprijswinnaar klinkt na bijna 100 jaar', *NOS Nieuws* (08-11-2022), https://nos.nl/artikel/2451576-stem-van-nederlandse-nobelprijswinnaar-klinkt-na-bijna-100-jaar, (accessed 4-12-2023).

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