

This item is the archived peer-reviewed author-version of:

On the passage of a man of the theatre through a rather brief moment in time: Henri Robin, performing astronomy in nineteenth century Paris

Reference:

Vanhoutte Kurt, Wynants Nele.- On the passage of a man of the theatre through a rather brief moment in time: Henri Robin, performing astronomy in nineteenth century Paris
Early popular visual culture - ISSN 1746-0654 - 15:2(2017), p. 152-174
Full text (Publisher's DOI): <https://doi.org/10.1080/17460654.2017.1318520>
To cite this reference: <https://hdl.handle.net/10067/1436030151162165141>

This is an Accepted Manuscript of an article published by Taylor & Francis in Early Popular Visual Culture on 05 June 2017, available online:

<http://dx.doi.org/10.1080/17460654.2017.1318520>

On the Passage of a Man of the Theatre through a Rather Brief Moment in Time

Henri Robin, Performing Astronomy in Nineteenth Century Paris

Kurt Vanhoutte & Nele Wynants

Research Centre for Visual Poetics, University of Antwerp, Antwerp, Belgium;

Arts du spectacle vivant, Université libre de Bruxelles, Brussels, Belgium

After an extensive tour throughout Europe, including venues such as Amsterdam, London and Brussels, the French entrepreneur and magician Henri Robin arrived in Paris in 1862, where he opened a new theatre on the legendary Boulevard du Temple. His arrival remarkably coincided with the destruction of this renowned hub of popular visual culture as it was cleared to make way for Hausmann's far-reaching program of urban modernisation. Nonetheless, Robin started providing scientific entertainment for audiences to be both beguiled and informed, and managed to do so very successfully throughout the following five years. His evening shows consisted of a mix of astronomical sciences, magic and the evocation of ghosts. This article addresses Robin's career in relation to the changing ideas of theatricality and his remarkable persistence in commingling astronomy and magic within a theatrical context. It will show that Robin's initial concept of theatricality is concretized in his explicit demonstration to the spectator that they were at the theatre, and that this was indeed the place where the wonders of the heavens could pry open the matter of their own understanding. Correspondingly, Robin's career fizzled out during the Second Empire, when scientific activities were dispersing rapidly across different public sites, altering and re-shaping the appeal of the *physiques amusantes*. The rise of professional *conférences* alongside the waning appeal of what the critic Théophile Gautier termed 'ocular spectacle,' eventually forced theatre and astronomy into fixed and discreet domains. As such, the story of Henri Robin and his science-based spectacles articulates major shifts in the various relationships between art and science, and theatre and astronomy.

Introduction

‘One of the distinctive characteristics of our time is an explicit taste for matters of science,’ Henri Robin noted in a compendium of his work for the stage, since ‘(w)ithout science, people are no longer amused.’¹ Two years earlier, this firm conviction led the magician to open a theatre on the famous Boulevard du Temple. There he introduced a program devoted to ‘*physiques amusantes*.’ Throughout the five years his theatre existed in Paris, Robin’s program was extremely popular. An important aspect of this success was a spectacular show on astronomy. It hovered on the intersection between serious science teaching and popular visual culture, that precarious oscillation between the enactment and replication of scientific wonders aimed at mediating a sense of the universe beyond the familiar boundaries of the earth. In spite of the impact Robin undoubtedly must have had on his time, the literature dealing with this peculiar protagonist of spectacular astronomy is scarce. Robin has alternately been portrayed as the inventor of new techniques and machines, as a predecessor of cinema, and as an illusionist. Attention has more specifically been drawn to his use of the magic lantern (Mannoni 1994), his practice, during his time in England, as a magician (Dawes 1990), and, especially, his rivalry with his competitor and fellow-magician Robert-Houdin (Lachapelle 2015), whose far-reaching reputation often outshone Robin’s particular identity as an artist and a craftsman in his own right.² This contribution, however, insists on the theatricality at the heart of Robin’s shows: the performative vitality and poignancy that apparently constituted their success and which corresponded to Robin’s aptness to combine the arts and sciences. Henri Robin was a king of entertainment and his achievements in popularizing astronomy in his case first and foremost consisted of theatralising the night sky.

Robin showed himself to be well aware of the fact that, throughout his time as a showman, theatre emerged as one of the most exciting spaces to playfully test the new sciences and bring them to life. As we will show, his taste for the theatrical distinguishes Robin from other popularisers of science who taught themselves theatrical effects in order to put astronomy centre stage, such as Louis Figuier (1819–1894) or Abbé Moigno (1804–1884). Robin did indeed succeed in integrating science into the realm of the spectacular,

¹ All translations are ours, unless marked otherwise. ‘Un des signes distinctifs de notre époque est un goût prononcé pour les choses de la science (...) la science, conviée à toutes les soirées du monde, en deviendra nécessairement le complément obligé. Sans elle on ne pourra plus s’amuser’ in ‘Comment la science est arrivée au théâtre’ (Robin 1865, 22–23).

² See also Tabet & Taillefert (2015) who discuss Robin as magician who rejected the occult and deliberately deconstructed and discredited spiritualist phenomena by reproducing phantasmagorical effects... without disclosing how this was done.

without really devaluing its scientific essence. Acquiring knowledge was not the primary goal, but it was the central means for engendering a transitional space in which science could truly astound the imagination. The theatrical representation of science admittedly remained inscribed in language, its gesture shaped by instances of discursive practice. The extensive syllabus of Robin and the script for his shows covered popular astronomy by indicating the ‘marvels of the sky,’ describing in great detail the stars, the comets, the planets and their interrelationships, the sun and the solar eclipse, a favourite topic of popularization in the nineteenth century that always made for impressive theatre (1865, 12–18). And yet, the stage-related theatricality of a distinct and even fictional space – transcending scientific facts – turned out to be equally important and often more rewarding in terms of the performance. ‘That is why the public is anxious to see these shows where science joins hands with the art of theatre,’ Robin contended, even deriving a malicious pleasure from this liaison between the art and sciences when adding, ‘this explains perhaps the lesser success of other purely scientific conferences which are on show at the same time at the Sorbonne’ (1865, 25).³ Indeed, Robin’s representations managed to aptly mediate aesthetic conditions and didactic concerns.

The theatre of Henri Robin: of magic and science

Henri Robin was the stage name of Henri Donckele (1811–1874), born in Hazebrouck, a small town in northern France (French Flanders). **(Figure 1)** After an extensive tour throughout Europe, via Amsterdam, London and Brussels, the French entrepreneur and showman arrived in Paris in 1862, where he opened a new theatre on the famous Boulevard du Temple. Comments tend to mainly focus on his passage in London (1851–52 and 1861–62) and Paris (1862–1867),⁴ although his shows were apparently extremely popular and well-frequented all over Europe.⁵ The earliest known playbills for Robin attest to his passage in Lyon and Saint-Etienne (1844); Milan, Florence and Rome (1844–1845); Stuttgart and Munich (1847); Amsterdam, Utrecht and Rotterdam (1849–1850); Antwerp and Brussels (1857–1859). Together with his wife Robin gave so-called *Soirées Parisiennes* on

³ ‘C’est pourquoi le public se presse au spectacles ou la science donne la main à l’art théâtral (...) c’est peut-être aussi ce qui explique le succès bien moindre des autres conférences purement scientifiques qui se sont ouvertes en même temps que la Sorbonne’

⁴ See on Robin: Mannoni (1994), Dawes (1990), Lachapelle (2015), and Tabet & Taillefert (2015).

⁵ *The Illustrated London News* on August 9, 1851 announced Robin’s 275th to 281st appearances - ‘unprecedented and triumphant success nightly before delighted and overflowing audiences’ (cited in Dawes 1990, 21). Robin’s London program as well as his self-written ‘Cagliostros’ carry a listing of prominent people before whom he had performed, such as the Prince of Orange and Prince Maurice.

fairgrounds and in theatres. Initially, Robin's program consisted mainly of magic and second sight and bore a close resemblance to that of Robert-Houdin. The press enthusiastically described his Delicacy Box containing all kinds of sweets and chocolates for the ladies, and the Inexhaustible Wonder Bottle from which he poured countless glasses of liqueur for the gentlemen (**Figure 2**).⁶ Meanwhile, 'Madame Robin' impressed the audience with an experiment in second sight (*double vue*). Blindfolded and facing the audience she could name hundreds of objects that were entirely invisible to her. 'In a word, one can only believe in the possibility of this art by seeing it' wrote the *Bredasche courant* (07 April 1850) (**Figure 3**).⁷

The announcements of his shows introduced Robin as 'Professeur de Physique,' and he initially presented himself as a student of Louis Comte (1783–1859), the *physicien du roi de la France*. After he had performed in 1851 for the British royal family, Robin promptly upgraded himself to '*physicien de Sa Majesté la Reine d'Angleterre*'. Historical sources indeed mention experiments with 'electricity and optics' (Keyser 1976, 39–40) and a 'scientific cabinet' that could be visited during the day (*Nieuwe Rotterdamsche courant*, 15 June 1850). Nevertheless, contemporary eyewitnesses report in particular the marvels of his magical tricks. At the time, science was mere a sensational framework for his stage magic. This is not surprising, since *Physiques amusantes* or amusing physics was the term used by entertainers and magicians who used popular science to create spectacular effects and generate wonder.⁸ At the time, science first and foremost provided a sensational context for stage magic.

When Robin finally arrived in London in 1852, probably attracted by the Great Exhibition, he opened his first 'salle Robin' where he performed a full evening show of magic.⁹ Shortly before his departure for Paris (after spending time in Liverpool, in the interim) the London reviews for the first time mention scientific demonstrations as part of his program. Apparently, for didactic purposes, Robin employed a native actor to present the scientific novelties that were shaped by and incorporated into the world of conjuring, thereby

⁶ Described in *De Noord-Brabanter / staat- en letterkundig dagblad* (April 6, 1850); *Bredasche courant* (07 April 1850); *Leeuwarder courant* (October 4, 1853). Later Robin had a dispute with Robert-Houdin over the invention of the Inexhaustible Bottle, which Robin claimed to have introduced in Milan on July 6, 1844 (thereby antedating his rival by three years); this cannot be corroborated by contemporary records (Dawes 1990, 5).

⁷ 'In één woord alleen door het zien van deze kunstverrigtingen, kan men er de mogelijkheid van gelooven.'

⁸ A definition in the *Dictionnaire historique et pittoresque du théâtre et des arts qui s'y rattache* from 1883, significantly defines a 'physicien' as 'the name we give to the conjurers, the prestidigitators..., to all those who perform shows of white magic or amusing physics' (cited in Lachapelle 2015, 35).

⁹ Later, in 1861, Robin had a full evening show of magic at the famous London Egyptian Hall, which, from 1873 until its demolition in 1905, became 'England's Home of Mystery' (Dawes 1990, 37).

overcoming the language difficulties that had been highlighted in earlier reviews. This added to his credibility, as we can deduce from an account in the *Illustrated London News* from January 1852:

The lecturer, in describing (the mechanical inventions and optical contrivances) attributed the novelties and delicate manipulations altogether to the inventive genius of M. Robin, who, in these exhibitions, rises much in our estimation as a scientific and mechanical originator in the department of optical mechanism and light.

At that point in time, popular science was finding its way into the magic shows.¹⁰ When Robin opened his so-called *théâtre scientifique* in Paris, the press enthusiastically received it as the first equivalent to the London Royal Polytechnic, without doubt his main source of inspiration (*Feuilleton de Constitutionnel*, July 29, 1863).

From the start, the famous London Polytechnic intended to educate by means of spectacle. Courses in mechanics were set up to further the understanding of discoveries in electricity, engineering, photographic techniques, etc. Laboratories were available to students. Inventors could take in their so-called ‘working models’ for examination and display. Beyond the Great Hall there were rooms for the delivery of lectures and the performance of magic lantern shows. Scientific wonders were shown and demonstrated daily in the afternoons and evenings, seven days a week, for over 40 years.¹¹ Coming from this rich and exciting context, Robin, as a magician, straightforwardly imported science as spectacle from London to the continent. He brought the London formula in a miniature version first to Brussels. More specifically, in 1859, before arriving in Paris, Robin opened a similar theatre in Brussels, aptly named *Gymnase Polytechnique*, which lent an aura of scientific reliability and relevance to his shows. The *Journal de Bruxelles* proudly announced that ‘the skilled physicist’ had chosen the Belgian capital ‘to set up his tent to recover, in the shelter of our proverbial hospitality, from his numerous travels in Europe’ (April 4, 1859).¹² On a daily basis, *Le Moniteur Belge* announced Robin’s shows, also mentioning that Robin occasionally gave school performances and charity shows for ‘Christian schools.’ Children under the age of ten could enter for half the price. Robin also set up ‘salons d'expositions,’ exhibiting machines and a gallery of cosmoramas, which could be visited during the day and at night,

¹⁰ See on this subject Sofie Lachapelle’s recent book *Conjuring Science* (2015).

¹¹ On the Royal Polytechnic, see Pepper (1869), During (2002) and Brooker (2013).

¹² ‘l’habile physicien a choisi notre capitale pour y planter sa tente et s’y reposer, à l’abri de notre hospitalité proverbiale, de ses nombreux voyages en Europe.’

after the evening shows.¹³ There are no historical sources indicating that astronomy already contributed to the appeal of the theatrical experience. Soon thereafter, however, Robin's devotion to science and to spectacular astronomy in particular, would reach its zenith in Paris, where he finally arrived in 1862.

Boulevard du Temple

1862 is in many respects a remarkable year. It is the year Jules Verne submits *Five Weeks in a Balloon* to his publisher, the adventure novel that would mark the start of an international career that thrived on the culture of public scientific instruction. In 1862, Bismarck becomes Minister-President in Germany and he immediately starts preparing for a war against France that he would win in 1871, bringing the Second French Empire to an end. The same year sees the publication of a luxury edition of *Les Fleurs du Mal*, and Baudelaire declares his candidacy for the Académie Française (he unfortunately does not receive a single vote). Meanwhile, Nadar is shooting his famous photographs of the catacombs of Paris, employing his new method of photography by electric light. Victor Hugo publishes *Les Misérables*, introducing his heroes from among the crowd and immediately earning international acclaim. The forthcoming legend Sarah Bernhardt performs her first leading role in *Iphigénie* at the Comédie Française. In 1862 London, the 'Ghost Club' is established, a society that studies ghosts and other spiritual phenomena, which counts Charles Dickens among its original members. In the same city, John Henry Pepper conducts an experiment for a small group of literary and scientific friends, which turns out to be more successful than he could have anticipated. He decides not to explain how it works, and the next day applies for a patent for what would later be called 'Pepper's Ghost'. It becomes a success story at the Royal Polytechnic and is also demonstrated in the theatre. The second World Exhibition is also held in London; a delegation of French and English labourers visits the exhibition for the first time. The meeting is not an immediate success, but it does give rise to the first international association of labourers. In Paris, Baron Hausmann receives the 'Iron Cross' for his radical project of urban design, destroying the old neighbourhoods to rebuild Paris as a modern city. The list is endless, of course. All accounts testify to a tumultuous year.

Part of Hausmann's modernisation program was the destruction in 1862 of the Boulevard du Temple, the most important hub of popular culture in the Paris of former times.

¹³ 'la galerie du cosmorama s'est également enrichie de plusieurs tableaux dioramiques très remarquables, avec effets de jour et de nuit qui s'alternent sous les yeux-mêmes du spectateur' (*Journal De Bruxelles*, April 4, 1859, 2).

Countless cafés, hotels, fairs and no less than seven theatres were wiped off the map. **(Figure 4)** A couple of theatres moved to other locations, where they would constitute nodal points in the rigid framework of the new city. Theatres now functioned as temples of culture designed to cater to the tastes of the new bourgeois élite. The project of modernization nipped popular theatre culture in the bud and with it disappeared a festive culture that had once managed to bring together ‘le tout Paris’ (Goudot 2005). Yet it was on the very Boulevard and in the exact same year that Henri Robin opened his theatre. His theatre and Théâtre Déjazet are the only ones that subsisted, because both buildings were situated on the unevenly numbered side of the street. As the rubble was being cleared, Robin started providing scientific entertainment for an eager audience and managed to do so for the following five years. It is difficult to overestimate this strange convergence when we wish to understand Robin’s performances as part of a transformative process belonging to both the actor and the spectator.

The Boulevard undoubtedly finds a central place in the history of theatre, somewhere between myth and reality. The importance of the street has to do with the extremely high concentration of commercial theatres, which aligned the fairs with theatrical spectacle. Large crowds gathered to enjoy the spectacular culture taking place both in public space, on the thoroughfares and promenades, as well as in many small playhouses: pantomime, circus shows, parades, *féeries*, burlesque comedies, magic shows, in brief: essentially spectacles that were visually stimulating. However, already early in the history of the Boulevard, the tension between these overwhelming, visually stunning spectacles and the Bourgeois text-centred theatre which involves written drama scripts and the declamation thereof as central element of a production was a key aspect and a matter of controversy defining the status of the street. During the Restoration (1815–1830) the promenades began to change, and the ‘foire perpétuelle’ was gradually giving way to evening programs. Parades in the street and entertainment in public space faded away, and the main performances were now melodramas and mime shows played inside the theatres. In 1841, the influential critic Théophile Gautier would comment on what he termed ocular spectacles (‘les spectacles oculaires’) at the Boulevard, contrasting the dazzling spectacular shows with the growing importance of institutional theatres where repertoire and, correspondingly, text declamation started ruling the stage (Gautier quoted in Bara 2005, 9). So, already early on in the history of the Boulevard, there seemed to have been a certain tension between visual spectacle and spoken word, or on a political level, between popular culture and the rise of Bourgeois entertainment.

Nevertheless, the myth of the Boulevard as the cultural hotspot of ‘ocular spectacle’ lived on well into the nineteenth century.¹⁴

Should we conclude from this that Henri Robin installed his theatre as one of the last strongholds of ‘les spectacles oculaires’? Was he a survivor of early popular visual culture? It is difficult to give a categorical answer. Certainly, there was a remarkable continuity with the experiential world of the audience in the Boulevard du Temple of yesteryear. When the magician arrived in Paris, the fairground was Robin’s field of expertise, and his shows smoothly matched the expectations of the visitors of the Boulevard. But the destruction of the Boulevard in 1862 particular marked the moment at which institutional theatre replaced the popular theatre and the bourgeois were developing a distinct appetite for the spoken word. Furthermore, and more importantly, the bourgeois citizens of the Second Empire distinguished themselves from the people by their level of education. Public instruction became a major concern. And an important gesture was the explicit display of scientific awareness. In other words, Henri Robin could not have come at a better time. The magician built his stage upon the ruins of ocular spectacle, with the promise of scientific instruction as its prospect, staging magical science. He was appropriately praised for a new type of performance that excelled in creating intellectual awareness by appealing to the senses. According to a contemporary witness:

One admires the wonders of the sky, represented in a series of astronomical tableaux (the subject of our engraving) that Robin has composed so they can be understood by all, even those who do not have the slightest notion of astronomy. He created a new genre, a curious and interesting show that educates during entertainment. (*Le Journal illustré*, Sept 25, 1864)¹⁵

Theatricality and astronomy

As a written testimony to his work, Robin published two richly illustrated books, the so-

¹⁴ It lives on to this day, as testified by the perpetual success of the movie *Les Enfants du Paradis* by director Marcel Carné and scriptwriter Jacques Prévert. The movie was released in 1945 and is in itself already a romantic compression of the different lives of the street and of French popular culture in general.

¹⁵ ‘(V)ous admirerez les merveilles du ciel, représentées dans une série de tableaux astronomiques, (le sujet de notre gravure) que M. Robin a composé de manière à se faire comprendre de tous, même de ceux qui n'ont pas la moindre notion de l'astronomie. Il a créé dans un genre nouveau, un spectacle curieux et intéressant qui instruit en amusant.’

called *L'Almanach Illustré De Cagliostro* (1864/1865) in Paris.¹⁶ Cagliostro was a legendary and controversial adventurer, a student of the occult, mysticism and alchemy, and in the 18th century was considered as one of the most famous figures in Free-Masonry. Robin thus inscribed himself in a long-standing tradition of spectacular and controversial magic, as many illusionists did, who cultivated a star status for their own person. *L'Almanach* contains carefully selected fragments from reviews, architectural plans of his theatre and descriptions of his acts and spectacular physical tricks. The books are mainly comprised of random scientific snippets of information and didactic articles on astronomy, geology and the origins of the earth. Interestingly, a large part of the 1865 edition is taken up by a detailed and lengthy description of a lecture on astronomy, which Robin must have given with the aid of an agioscope, a particular kind of magic lantern (**Figure 5**).¹⁷

Robin's approach develops a mechanical reasoning that is reminiscent of the orrery, the scale model of the solar system from the early 18th century that illustrates the relative positions and motion of the moons and planets. Planets were correspondingly characterized through movement and their distance from the sun. Standing on stage against the backdrop of an illuminated and mobile depiction of the solar system, Robin apparently pointed at the sun, the stars and the milky ways that, according to *L'Almanach*, 'splits the heavens into two parts' (1865, 12). He then proceeded to enlist the planets and their characteristics, mainly through citing their movements and their distance from the earth. Thereafter, he briefly touched on Orion, the only constellation in his narrative, and suggested that there are probably as many universes as there are suns out there. Some of them, Robin contended, referencing his own 45 minute show on creation and the earth's origins, might be inhabited by other species. With the aid of dissolving views, he eventually devoted a larger section to the eclipse of the sun. In his writings, Robin remarkably stressed the need for instruments to shape the heaven ('le ciel') into the universe ('l'univers') and to thus move from mere looking to scientific observation. All the while, one has the impression that the shows themselves put more effort into the pictorial than into the analytical or explanatory.

¹⁶ According to Larousse, an almanac is a popular book published annually that comprises a calendar, and scientific information or practices ('Livre populaire publié chaque année et comportant, avec un calendrier, des renseignements scientifiques ou pratiques.'). Robin's so-called *L'Almanach Illustré De Cagliostro* (1864/1865) might have been inspired by *L'Almanach de la physique instructive et amusante* from 1861, containing a set of eclectic and random scientific tidbits of information, descriptions of spectacular physical tricks, and a series of potentially useful pieces of advice, based on scientific reasoning or manipulations (Lachapelle 2015, 44).

¹⁷ The term agioscope is commonly used in Germany in the nineteenth century for triunial lanterns (Deac Rossell in Robinson et al. 2001, 11).

Robin was not the only one to use the magic lantern for its capacity to project astronomical diagrams. Especially in England, popularisers made good use of the lantern. Astronomy was the subject of a famous series of magic lantern lectures that took place throughout the duration of the Polytechnic's existence and was continually updated and added to (Hankins and Silverman 1995, 65). Robin probably witnessed these shows while in London or on one of his journeys, as astronomical lantern slides and syllabuses were largely distributed on an international level. Compared with a typical magic lantern show at the Royal Polytechnic, following the sequence and typical slides of Carpenter and Westley's *Compendium of Astronomy* from 1849 (Butterworth 2007), Robin's version, as described in his *Almanach*, does show a lot of similarities. **(Figure 6)** However, upon closer inspection, it would seem that the lecture at the Polytechnic was more complex. Robin did not elaborate on the history and theory of astronomy, whereas its conceptualization formed the backbone of the Polytechnic compendium. Central to the Polytechnic show is the demonstration and explanation of the differences between the principal astronomical models, namely the earth-centred Ptolemaic variety versus the sun-centred model of Copernicus. Robin, for his part, found a brief summary of these models towards the end of his show to suffice, thereby omitting complex mathematical slides found in the Polytechnic compendium that discussed the causes of twilight, stellar parallax and the earth's elliptical orbit around the sun.

To what extent does *L'Almanach Illustré De Cagliostro* give us an idea of what happened on stage? Robin, for one, explicitly warned his readers that print differs from performance, stressing the genuine impact of theatrical experience on the audience:

We regret not to be able to bring before the eyes of our lecturer the animated tableaux of the Salle Robin, in order to render, in these all too short descriptions, the wonders of the Infinite as tangible as they were for those who admired them in the theatre of the Boulevard du Temple. (1865, 16)¹⁸

The stage allowed for a stronger effect than the writer was able to evoke through written words. Of course, Robin's caveat first and foremost made for good advertisement, paving the way into what journalist Charles Monselet positively called 'one of the hottest shows in Paris (in) undoubtedly one of our most interesting theatres' (*Le Monde illustré*, May

¹⁸ 'Nous regrettons de ne pouvoir mettre sous les yeux de nos lecteurs les tableaux animés de la salle Robin, pour leur rendre, dans ces notions trop courtes, les merveilles de l'Infini aussi palpables qu'elles l'ont été pour ceux qui les ont admirées au théâtre du Boulevard du Temple.'

28, 1864).¹⁹ However, there is more to this proposition than meets the eye. When reading the Cagliostro as a dramaturgy related to setting and staging, we have to take its double status into account. While Robin's extensive descriptions of the performances most probably (or at least partially) are transcripts of the words verbally uttered on stage, these descriptions were always also written down after the event. The argument is valid both ways, and the question whether the staging was faithful to the Cagliostro text is as relevant as its opposite, namely whether the text is faithful to its staging and whether it corresponds to what was actually seen on stage at number 49, Boulevard du Temple (**Figure 7**).

A live performance or stage show is by definition an ephemeral experience. The first requirement of theatrical gesture is an act of recognition on the part of the spectator. Accordingly, reviews in the press time and again identified the performative as Robin's main quality, acknowledging that 'nothing is better suited to imprinting on the mind the first notions of astronomy than exposing the movements of the celestial bodies before the eyes of the spectator.'²⁰ The emphasis shifts from science literacy to the performative event, 'the ocular spectacle' there and then, brought to the eyes and the senses:

M. Robin has made a real tableau of astronomy. (...) None of this is immobile; therein lies this spectacle's charm, and also its merit. The celestial bodies silently follow their paths; meanwhile, their satellites evolve around them. (...) It's a lesson learned while laughing; it's education without effort, solely through the eyes (...), it's the indispensable complement to all lessons. (*Le Journal illustré*, Sept 25, 1864)²¹

In the same vein, it is worth pointing out that Robin did not merely represent scientific knowledge, but that he also conducted experiments right in front of the audience. He deliberately created a performative event, and apparently not without risk. Journalist Parville described sensational experiments with the Ruhmkorff machine, a machine 'that would kill a man without mercy!' 'One could almost say that it is lightning that flashes in that magical scene,' he exclaimed, adding the clever and thoughtful question: 'Is the phenomenon that

¹⁹ 'un des spectacles les plus courus de Paris (à) incontestablement un de nos plus intéressants théâtres.'

²⁰ '(r)ien n'est plus propre à fixer dans l'esprit les premières notions de l'astronomie que d'exposer aux yeux les mouvements des corps célestes.'

²¹ 'M. Robin a fait un véritable tableau d'astronomie. (...) Tout cela n'est pas immobile; c'est là le charme de ce spectacle, et c'en est aussi le profit. Les corps célestes suivent silencieusement leurs routes; leurs satellites, pendant ce temps, font leurs évolutions autour d'eux. (...) C'est une leçon apprise en riant, c'est l'enseignement sans effort, par les yeux seuls, (...), c'est le complément indispensable de toutes les leçons.'

gives birth to that experience also the experience itself?’ (*Revue des Sciences*, July 29 1863).²² **(Figure 8)** In point of fact, the phenomenology of the performance seems to be characterized by the reversibility of the machine and the event in the eye of the beholder as the event occurs. From Parville’s observation we can indeed infer that theatricality in Robin clearly and overtly emerged as a play of ambivalence. It opened up the possibility of theatre as event, an indeterminable shifting of figure and ground.

This oscillation between enactment and representation of scientific experiments, of reality and imitation implied a multiplicity of roles. Robin very competently and eloquently combined the skills of a director, a scenographer, a composer and an actor. ‘A magician is an actor playing the part of a magician.’ This is a well-known quote from the magician Robert-Houdin. The definition also applies to Henri Robin and, moreover, it is consistent with contemporary notions of theatricality. Theatre scholar Marvin Carlson has notably expressed that in ‘a play frame,’ the performer ‘is not herself (because of the operations of illusion), but she is also not NOT herself (because of the operations of reality)’ (1996, 49). Performer and audience alike operate in a world of double consciousness. This conceptual blending or conceptual integration of different frames is characteristic of theatre. As one of the founders of Performance Studies Richard Schechner reminds us, all effective performance shares this focus ‘not on making one person into another but on permitting the performer to act in between identities; in this sense performing is a paradigm of liminality’ (1985, 123). It can be said that the same liminal theatricality probably underlies the other double role, namely that of the magician-scientist. Henri Robin is not a scientist in the strict sense, nor does he impersonate a scientist. He is rather a strange, ghostly figure who intervenes between being and representation. The duality is embedded within his presence on stage. And, of course, if the performance is successful, it offers the spectator the possibility to also enter this liminal space in between, where transformation happens.²³

Not coincidentally, every evening in the Boulevard du Temple culminated with what turned out to be Robin’s most notorious act: the phantasmagoria. The conjuration of ghosts in other words sealed the display of science. Robin made good use of magic lanterns and mirrors to raise spectres. He was not the only one by far, for part of 1863 the appearance of ghosts was all the rage in Parisian theatres. ‘The spectres have invaded the capital’, Louis

²² ‘une machine qui tuerait un homme sans pitié. On peut presque dire que c’est la foudre qui brille dans ce tableau magique. (...) Le phénomène qui donne naissance à cette expérience est aussi curieux que l’expérience elle-même? (...)’

²³ On this effect of liminal performance on the audience, see Erika Fischer-Lichte. 2008. *The Transformative Power of Performance: a New Aesthetic*. London: Routledge.

Figuier, an ardent populariser of science, lamented, ‘spectres on the huge stage of Chatelet, at the ‘salle Robin,’ spectres at the théâtre Déjazet; it was all one saw on the stages of Paris, and the province also had its share of this exhibition of ghosts’ (1864, 53).²⁴ The obsession even crystallized into a genre, spirit photography, and Robin seemed to have been one of its eager practitioners, often portraying himself in the company of real ghosts. **(Figures 9 & 10)** We learn from a print in *L’Almanach* that depicts Robin on stage commanding a ghost to play the drums, that what Robin showed in the theatre must have looked similar to the Pepper Ghost effect. Robin, on another occasion, had argued openly against Pepper, by stating that he was the first to have invented the procedure (Robin 1864, 20).

The spectre is an apparition in Robin’s theatre. But it can also function as a concept, a mental representation of theatrical effect. The status of the ghost is nothing if not strangely in-between, its substance not being present or fixed, yet manifesting itself there before our eyes, moving insistently between being and non-being, and existence and disappearance. This unstable or indefinable ontology also belongs to Robin’s theatre. The substance of the spectre embodies, as it were, the ability to simultaneously move before an audience as a conjurer, a showman and a scientist. The spectacle mediates all of this, clearing a passage from ‘here’ to ‘elsewhere’, and it is from this liminal condition that the spectator’s most profound pleasures seem to arise.

Theatricality might also be a pertinent concept for understanding how the matter of ghosts was intricately bound up in scientific explanation. Robin more specifically employed science to conjure ghosts – and they were present before the eyes of the audience – whilst at the same time dismantling the illusion by means of the very same science. Figuier expressed it as follows in 1864:

M. Robin invokes ghosts in the Boulevard du Temple that stand before him, intangible shadows that he can pierce with a sword without consequence, and that immediately disappear at the command of the magician whose command they acknowledge (...) At the same time, M. Robin is quick to dismantle the evocations of charlatans who act like ‘mediums’ (1864, 54).²⁵

²⁴ ‘Les spectres avaient envahi la capitale. Spectres sur la vaste scène du Chatelet, à la salle Robin, spectres au théâtre Déjazet, on ne voyait que cela sur les scènes parisiennes, et la province a eu son tour dans cette exhibition de fantômes.’

²⁵ ‘M. Robin, au boulevard du Temple, évoque des fantômes qui viennent se dresser devant lui, ombres impalpables qu’il peut impunément transpercer de coups d’épée, et qui s’évanouissent

Figurier's characterization is significant for understanding the specific theatricality of Robin's shows. Theatricality emerges from a play set in motion by the observer and the observed. It is based on the shared supposition that the performative event is the result of a discrepancy between everyday space and representational space, between reality and fiction. In her foreword to a special issue on theatricality, Josette Féral accordingly noted that the spectator 'does not limit his gaze to one space or the other; he sees them both at once, playing with this duality, navigating from one to the other in a back-and-forth game that gives one of the first constituting conditions of theatricality' (2002, 1).

In the second half of the nineteenth century, several commentators praised Henri Robin for his ability to simultaneously immerse and unveil. One of those, a fellow Freemason in his lengthy book *Secrets et Mystères de la sorcellerie: ou, la magie mise a portée de tout le monde*, in 1865, at the peak of Robin's theatrical career, described 'M. Robin in person, dressed in black, white tie, struggling against a large skeleton that wraps him in the folds of its shroud,' readily admitting that 'nothing is strange compared to the contrast of this bourgeois alongside this apocalyptic ghost.' Nevertheless, the author continues dramatically, 'the tomb of today's superstitious beliefs is the theatre Robin' (1865, 318).²⁶ His choice of metaphor matters, as the writer clearly delights in lyrically describing ghosts that rise from the grave and create a frightful situation with Robin on stage as he enjoys describing how Robin at the same time aptly deconstructed superstition by stripping the ghost of its credentials. Nevertheless, the book eventually leaves no doubt that deconstruction is worthy of distinction, not enrapturing illusion. 'An idea sees the light of day,' the conclusion triumphantly declares, 'always the same and always new like truth itself: there is only the one *magic*. SCIENCE, and only one *sorcerer*: WORK!' (369).²⁷ Magic became a science, an applied science, but in any case of the order of knowledge, and above all, it became natural magic.

instantanément, sur un ordre du magicien dont ils reconnaissent l'empire. (...) réduisant, du même coup, à leur juste valeur les prétendues invocations de ces charlatans maladroits qui s'affublent du nom *médiums*.'

²⁶ 'M. Robin en personne, habillé de noir, cravaté de blanc, se débattant contre un grand squelette qui l'enveloppe des plis de son suaire (...) (r)ien n'est bizarre comme le contraste de ce bourgeois bien mis avec ce fantôme apocalyptique (...) Le tombeau des croyances superstitieuses de nos jours est le théâtre Robin.'

²⁷ 'Une idée se fait jour, toujours la même et toujours nouvelle, comme la vérité même: c'est qu'il n'existe q'une *magie*: LA SCIENCE, et q'un *sorcier*: LE TRAVAIL!'

The great divide

To the extent that performance is interpreted as a subtle back-and-forth, between what was pretended and what was real, between representation and enactment, it can be said that Henri Robin *performed* the scientist. As long as art and science did still participate in the same culture, his success endured. But barriers were being raised, as the conclusion of *Secrets and mysteries of witchcraft* firmly indicated, and it was to be reckoned with that Robin's theatre would only last as long as theatricality proved instrumental in conducting an intellectual campaign for scientific truth and enlightenment. During the second half of the nineteenth century, the conditions changed drastically, and dispersal of scientific activities across different public sites would soon alter and shape the appeal of science theatre, eventually forcing the spectacular into fixed territories. Especially during the Second Empire, public lectures on science became a collective passion, which would lead to mass celebrations that attracting large crowds (Fox 2012, 184). Robin undoubtedly profited from this vogue. At the same time, competition between independent initiatives and 'universitaires' or academics clearly increased.

In this climate the French secular state started favouring clear distinctions. In 1864, when Robin reached the zenith of success, professors were urged by the state to redouble their efforts to address lay audiences through free public lectures. The authority of official science culture clearly had to be consolidated (Fox 1989, 53–54). The response to this call came from professors throughout France. One of the most significant results was the inauguration of scientific and literary evenings for broad audiences in March 1864 at the Sorbonne. It is telling that these events were scheduled in the evenings when theatres were raising the curtains and evening shows opened. The impetus was to a great extent a success, and it was said that the invitation attracted thousands of visitors to the Sorbonne, with many more having to wait outside (Fox 2012, 2011–12). There is little doubt that Robin in his *Almanach* envisioned precisely these initial science lectures when he sneered at the Sorbonne and regretting the waning of theatrical affect.²⁸ Nevertheless, due to official conference culture, differing approaches and opinions would soon be streamlined. The rift already ran through Robin's theatre as well, as his spectacles simultaneously had to respond to two different sets of criteria. On the one hand, commentaries judged his spectacle on account of its sensational effects and entertainment value. On the other hand, and even more so, the scientific discourse of the populariser was held up to the light to check factual accuracy and

²⁸ As quoted earlier in our introduction.

theatrical illusions first and foremost had to be brought to the stage in order to unmask them. Moreover, what was cast as constituting success was gradually changing over time, embracing the goals of cultivated audiences whose intellectual engagement in the public sphere corresponded to bourgeois respectability. And soon enough, voices were calling for a more streamlined approach, limiting the shows' dual and eminently theatrical status.

When the *Revue Spirite* in 1863 published the letter of a young Law student who visited the Théâtre Robin, the latter's unsuspecting question about the status of the ghosts and their relationship to real science is shrewdly turned into an argument against theatricality by the editor of the journal. 'I have never understood, sir, for my part, the analogy between these imitations created by amusing physics and spirit manifestations stemming from the laws of nature', the young visitor of Robin's shows wonders (Kardec 2012 [1863], 205).²⁹ In his long answer, then, Allan Kardec, the initiator and editor of the journal simply cuts through the ontological problem by stating that, from a moral point of view, there ought not be an analogy between theatre and science. Scientific demonstration is not compatible with illusions that play tricks on the minds of the audience. Where 'serious people' might perhaps see through the tricks, theatre will mislead others away from the path of enlightenment. It is not worth the risk of confusion. A ghost revealed on stage is a ghost all the same. Hence, Kardec wrote: 'it must be admitted that it is awkward; it would be more adroit on the part of Mr. Robin and others to deny any parity with Spiritualism or magnetism.'³⁰ The men of the theatre, who according to Kardec are obviously in it for the money, should shy away from performing themes that obscure the veracity of science.

The argumentative move is clearly made in order to install upon the stage dividing fences between art and science, the true and the false. Anti-theatricality is as old as Western philosophy and so enduring that it frames modern debates. Plato famously blamed nothing less than civic disrepair on the 'imitative arts.' Others, Rousseau's *On Theatrical Imitation* (*De l'imitation theatrale*) for example, would take this cue and state that theatricality fashioned realities that were debased; copies that nonetheless seduced audiences away from the truth. Likewise, in 1863, theatre came to be seen as a slippery zone, where the judgment of the spectator was distorted and scientific veracity was jeopardized. Meanwhile, for their

²⁹ 'Je n'ai jamais compris, monsieur, pour mon compte, l'analogie qu'il peut y avoir entre ces imitations créées par la physique amusante et les manifestations spirites qui sont dans les lois de la nature.'

³⁰ 'il faut convenir que c'est maladroit; il y aurait plus d'adresse de la part de M. Robin et consorts à dénier toute parité avec le Spiritisme ou le magnétisme.'

part, men of science were increasingly working in a formally constituted showcase, fashioning their style accordingly, bereft of a certain theatrical flavour and a sense for ‘ocular spectacle.’ At the end of the day, the accelerating professionalization of science, the alliance with the academic profession, and the expulsion of colourful theatre entertainment conspired to marginalize independent showmen with their theatrical use of science. At this point, it had become hard to fuse magic and science and keep a balance, albeit potentially ambiguous, between the sensational and the instructive. The Théâtre Robin at Boulevard du Temple persisted a few years longer before eventually closing down in 1869.

Science at the theatre

What was cast as constituting success had gradually changed over time, embracing the goals of cultivated audiences whose intellectual engagement in the public sphere corresponded to bourgeois respectability. Concomitantly, a decade into the Republic, the memory of colourful forms of entertainment had equally faded, until Boulevard culture came to be a polished version far removed from the popular and diverse roots of the Boulevard du Temple. Both shifts, the move away from popular theatricality and towards careful instruction, seem to converge in the work of famous popularisers of science and astronomy such as François Arago (1786–1853), Louis Figuier (1819–1894) or abbé Moigno (1804–1884). One would suspect that Robin must have been familiar with the work of the latter, who attempted in large scale projects ‘to entertain while instructing, and simultaneously, to instruct while entertaining’ Moigno 1872, 3).³¹ Moigno was in London during the same period, around 1854, and he visited the shows at the Polytechnic, eventually also exporting them to Paris, where he became known as ‘the apostle of projection’ (Mannoni 2000, 268). It is known that Moigno also played up the traditional ambiguity between education and entertainment, science and spectacle, as he started to present his scientific lectures in *Les salles du Cosmos* (opened in 1852) at the Boulevard des Italiens (where Robert-Houdin and later Méliès had their theatres). Moigno’s book *L’Art des Projections* from 1872 briefly discusses astronomy, but as far as one can judge, his approach remained very close to the English lantern lectures. Moreover, Moigno’s theatre was compelled to close down after one year already.³²

³¹ ‘s’amuser en instruisant, et en même temps, instruire en amusant’ (Moigno 1872, 3).

³² Twenty years later, at the age of 69, Moigno finally opened another theatre, with the assistance of his pupil Emile Reynaud, who later became known for his *théâtre optique* in the Paris musée Grévin. It is known that Reynaud in 1874 also delivered public scientific lectures on astronomy with a lantern for a broad audience in his home town Puy-en-Velay (Noverre 1926, 35–36).

Moigno's moderate success in the field of performance testifies to the fact that things were changing. The accelerating professionalization of science and the alliance with the academic profession, as in the expulsion of popular culture from bourgeois society, were conspiring to marginalize independent showmen and their specific elaboration of spectacular astronomy. At this point, it had apparently become hard to fuse astronomy and theatre whilst keeping a balance, albeit potentially ambiguous, between the sensational and the scientific. The aspirations of Louis Figuier, who would mount his first theatre play, *Les six parties du monde*, at the Théâtre du Cluny in 1877, is also a case in point. 'I have the ambition at the end of my career, to attempt the popularization of science through theatre,'³³ the great populariser of science would declare in a text entitled, without much ado, *Le théâtre scientifique* (1881, 18). Figuier had every reason to be self-conscious, since he could look back on a glorious and multi-faceted career in the field of the vulgarization of science. His activities had brought him fame in France and Europe during the Second Empire and for years to come. At the end of his career his aim remained essentially educational and didactic, and he used theatre and drama in teaching techniques towards these ends. Figuier was first and foremost a writer and, unfortunately, only a few of the dozen plays he wrote reached the stage. His dramas mediate the significance of the great men of science and their discoveries without invention, imagination or poetics.³⁴ Figuier's astronomical play on Kepler integrated biographical material and a projection of astronomical slides to tell the story of the hero of science fighting the superstitions of the age (1889, XIX). The tone was uncompromisingly moralizing and instructive, and many of the plays that were staged were scoffed at by critics. They were thesis plays, and the importance of the ideas lead the playwright to neglect dramatic structure and overtly direct and systematic discourse, which in consequence became almost tedious.

The partitioning of art and science worked both ways. As men of science were working with increasing frequency in formally composed showcase, fashioning their style accordingly, theatre makers did the same. And so spectacular astronomy survived, as it were, in a context in which it had always been readily used: the stage of illusions. Ever since the

³³ 'J'aurai l'ambition, à la fin de ma carrière, de tenter la vulgarisation de la science par le théâtre.'

³⁴ In *Kepler*, published in his collection of plays entitled *La Science au théâtre* (1889) Figuier gives the following description of a set that reminds Robin's astronomy show: 'des décors de pure astronomie, à savoir au troisième acte, la vue de l'univers en mouvement, c'est-à-dire les planètes circulant autour du soleil, et au cinquième acte, des projections télescopiques de l'aspect des principales planètes, comètes et nébuleuses. [...] C'est le théâtre scientifique dans toute sa grandeur et son éclat.' But Figuier did not show himself able to turn these intentions on paper into a performative event, since his play on Kepler was, so far as we know, never performed onstage.

mid-nineteenth century, institutional theatre had made good use of the spectacular possibilities of electricity, magic lanterns and diverse optical instruments enabling stunning visual effects in the theatre. *La science au théâtre*, an instruction book from 1908, resumes and explains the history of science and technology in the theatre, how visual effects were fabricated and what their appeal was (De Vulabelle and Hémardinquer).³⁵ Of course, here, the aim was not so much to produce scientific insights than to create wonder and amusement. Significantly, one of the first chapters of the book is dedicated to astronomy (“L’Astronomie et la Météorologie au théâtre”). The reader learns how theatrical culture managed to realistically stage a setting that showed the moon moving through a starry night. The rising and setting of the sun could be simulated. And also, inside the theatre, a rainbow could be produced, or the effects of rain, of storms and of rumbling thunder. Even active volcanoes were not beyond the reach of the stage in conventional theatres, in a bid to increase dramatic tension.

What the book does not mention is that Henri Robin had already in 1860 fashioned himself as an expert in stage set design and production, by working for one of the most important playhouses in Brussels.³⁶ These skills would later resurface in Paris when the astronomy programme of Théâtre Robin was to include ‘Creation,’ a popular 45 minute scene using the agioscope to project onto a transparent screen; it depicted the earth’s evolution, from a boiling ball of gas to a planet covered with vegetation and populated by algae, birds, dinosaurs and, finally, Adam and Eve. Coming back from the Boulevard du Temple, the poet Paul de Saint-Victor, truly moved by the experience, reported primordial lightning storms, ‘electric detonations that reduce the thunder of our days to merely a feeble murmur,’ ‘frightening claps of thunder accompanying these secular twists and turns,’ until ‘the beams of the celestial body finally pierce through this sepulchral lid put on the earth: life awakes in the face of the first sun.’³⁷

³⁵ The introduction of mechanics in theatre dates back to 1530 when large sets were used. Only in the 19th century, particularly the 1850s, also physics, chemistry and electricity became popular as a means to create visual effects. A point of reference is the premiere of Meyerbeer's *Le Prophète* (1849) in the opera to create the effect of a dazzling sunrise which suddenly dispels the mists over the frozen lake in Act III. The light was refracted through a prism. For other effects such as the simulation of a rainbow, of moonlight, a starry night or the light of dawn, set designers used instruments developed by amongst others Jules Duboscq and Pierre-Luc-Charles Ciceri (de Vulabelle and Hémardinquer 1908, 103–120).

³⁶ ‘En 1860, à Bruxelles, au grand théâtre de la Monnaie, nous avons reproduit dans un ballet à l'aide d'une combinaison de prismes, un arc-en-ciel occupant toute la largeur de la scène.’ (Robin 1865, 25).

³⁷ ‘des détonations électriques auprès desquelles le tonnerre d’aujourd’hui ne serait qu’une faible rumeur (...) D’effroyables éclats de foudre accompagnaient ces péripéties séculaires’, until ‘les

This account makes it clear that Henri Robin used science for both explanatory and illusionistic purposes, or a balanced combination thereof. Consistency had always been a distinct feature of his prolific career. We may therefore imagine that there is also melancholy that stems from Robin's final remarks in 'Comment la science est arrivé au theatre' in 1865, when he confronts the increasing and unstoppable success of the lectures at the Sorbonne with the objection 'do we not even find there that Science is borrowing a theatrical apparatus?'³⁸ At any rate, in the perpetual back-and-forth between theatre and science, magic eventually asserts its rights, returning the legacy of Robin to the ground from whence it came. Shortly before his death, the old Henri Robin sold his stage materials and inventions, the cornerstones of his professional life, to a jeweller and watchmaker whose 'boutique' was on the verge of financial collapse. The latter ventured off into the entertainment business by opening a small theatre at Boulevard du Temple and naming it *Cercle fantastique*. We would not know about this legacy were it not that the anecdote is part of the life of a young man, Emile Courtet, who went by the name Cohl, and who much later was to become famous as the artist who created the first animation film, *Fantasmagorie*, released in 1908 at the Théâtre du Gymnase in Paris, and inspiring artists like Walt Disney. At an earlier stage, Cohl had been the assistant to the re-enactment of Robin's magic shows, setting the stage and preparing the tricks (Vignaux 2007, 21). However, the timely reappearance only lasted eight months as the *Cercle fantastique* quickly ran into financial troubles and ultimately vanished into the ephemeral realm of magic and entertainment.

Acknowledgements

This paper is based on archival research made possible by a prize from Mairie de Paris awarded to Kurt Vanhoutte. This fellowship enabled him to complete a research stay at the Centre Alexandre Koyré in Paris. Nele Wynants received a research grant from F.R.S.-FNRS - Fonds de la Recherche Scientifique for a visiting scholarship at the Université Sorbonne Nouvelle, Paris 3 (LIRA, Laboratoire international de recherche en arts). In this context together with Charlotte Bigg they initiated the research network PARS/Performing Astronomy Research Society (www.parsnetwork.org).

rayons de l'astre percent enfin ce couvercle sépulcral posé sur la terre: la vie s'éveille au premier regard du soleil'. Paul de Saint-Victor, quoted in Lebigre-Dusquesne frères (1865, 310).

³⁸ '(n)'y retrouverons-nous pas encore la Science empruntant un appareil théâtral ?'

Notes on contributors

Kurt Vanhoutte is professor of Theatre and Performance Studies at the University of Antwerp (Belgium), where he is also the director of the Research Centre for Visual Poetics (www.visualpoetics.be). He is currently a Principle Investigator in the project 'A Million Pictures: Magic Lantern Slide Heritage as Artefacts in the Common European History of Learning', funded by the Joint Programming Initiative on Cultural Heritage of the European Commission.

Nele Wynants is a postdoctoral researcher at the Université libre de Bruxelles (THEA Joint Research Group) and the University of Antwerp (Research Centre for Visual Poetics). Her current research focuses on the interplay of performance, media history and science. She is editor in chief of FORUM+ for Research and Arts (www.forum-online.be), and is preparing a volume on media archaeology and theatre.

References:

- Bara, Olivier. 2005. "Avant-propos," *Orages. Littérature et culture 1760-1830*, 4 (Boulevard du crime: le temps des spectacles oculaires): 9–20.
- Brooker, Jeremy. 2013. *The Temple of Minerva: Magic and the Magic Lantern at the Royal Polytechnic Institution, London, 1837-1901*. London: Magic Lantern Society.
- Bensaude-Vincent, Bernadette. 1989. "Camille Flammarion: prestige de la science populaire." *Romantisme* 65: 93–104. DOI : 10.3406/roman.1989.5602
- Butterworth, Mark. 2007. "Astronomical Lantern Slides." *The Magic Lantern Gazette*, 19 (2): 3–11.
- Cardot, Fabienne. 1989. "Le théâtre scientifique de Louis Figuier." *Romantisme* 65: 59–68. DOI : 10.3406/roman.1989.5599
- Carlson, Marvin. 1996. *Performance: An Introduction*. London: Routledge.
- Dawes, Edwin A. 1990. *Henri Robin Expositor of Science & Magic*. Balboa Island: Abracadabra Press.
- De Parville, Henri. 1863. "Revue des Sciences." *Feuilleton de Constitutionnel*, July 29.
- During, Simon. 2002. *Modern Enchantments. The Cultural Power of Secular Magic*. Cambridge, Mass.: Harvard University Press.
- Féral, Josette. 2002. "Foreword." *Substance: A Review Of Theory & Literary Criticism* 31 (2/3): 3–13.
- Figuier, Louis. 1864. *L'Année scientifique et industrielle*, Paris.

- Figuiet, Louis. 1881. *Le Théâtre scientifique*. Paris: Paris, Dentu.
- Figuiet, Louis. 1889. *La Science au théâtre*. Paris: Tresse et Stock, 2 vol.
- Fox, Robert. 2012. *The Savant and the State: Science and Cultural Politics in Nineteenth-Century France*. Baltimore: Johns Hopkins University Press.
- Fox Robert. 1989. "Les conférences mondaines sous le Second Empire." *Romantisme* 65 : 49–57. doi: 10.3406/roman.1989.5598
- Gaultier, Théophile. 1859. *Histoire de l'art dramatique en France depuis vingt-cinq ans*, Paris: Hetzel.
- Goudot, Juliette. 2005. "Naissance, vie et mort du Boulevard du Crime." *Orages*, 4 (Boulevard du crime : le temps des spectacles oculaires): 21–39.
- Hankins, L. Thomas and Robert J. Silverman. 1995. *Instruments and the imagination*. Princeton, N.J.: Princeton University Press.
- Kardec, Allan. 2012. *Revue spirite 1858-1873: Les 180 premiers numéros de la Revue Spirite, de 1858 à 1873*, Ink book.
- Keyser, Marja. Komt dat zien! 1976. De Amsterdamse kermis in de negentiende eeuw. Amsterdam: B. M. Israël.
- King, Henry C. (in collaboration with John R. Millburn). 1978. *Geared to the Stars: The Evolution of Planetariums, Orreries and Astronomical Clocks*. Toronto: University of Toronto Press.
- Lachapelle, Sofie. 2015. *Conjuring science: A history of scientific entertainment and stage magic in modern france*. New York, NY: Palgrave Macmillan.
- Lebigre-Duquesne frères. 1865. *Secrets et Mystères de la sorcellerie: ou, la magie mise a portée de tout le monde*.
- Lightman, Bernard. 2009. *Victorian Popularizers of Science: Designing Nature for New Audiences*. Chicago: University of Chicago Press.
- Mannoni, Laurent. 1994. "La Lanterne magique du boulevard du crime. Henri Robin, fantasmagore et magicien." *1895: Bulletin de l'Association française de recherche sur l'histoire du cinéma* (June 1994): 5–26.
- Mannoni, Laurent. 2000. *The Great Art of Light and Shadow: Archaeology of the Cinema*. University of Exeter Press.
- Moigno, François. 1872. *L'Art des projections*, Paris.
- Noverre, Maurice. 1926. *Emile Reynaud : sa vie et ses travaux : la vérité sur l'invention de la projection animée*. [S.l.].

- Pepper, John Henry. 1869. *The Boy's playbook of science*. London: George Routledge and Sons.
- Robin, Henri. 1864. *L'Almanach illustré le Cagliostro. Histoire des spectres vivants et impalpables. Secrets de la physique amusante, dévoilés par M. Robin*, Paris: Pagnerre.
- Robin, Henri. 1865. *L'almanach Illustré Le Cagliostro 1865, Histoire De La Science Au Théâtre - L'astronomie Populaire - Les Spectres Et Les Secrets De La Physique*. Paris: Pagnerre.
- Robinson, David, Stephen Herbert, Richard Crangle, eds. 2001. *Encyclopaedia of the Magic Lantern*. London: Magic Lantern Society.
- Schechner, Richard. 1985. *Between theater and anthropology*. Philadelphia, Pa, University of Pennsylvania Press.
- Tabet Frédéric and Pierre Taillefert. 2015. "Influence de l'occulte sur les formes magiques: l'anti-spiritisme spectaculaire, des Spectres d'Henri Robin au Spiritisme abracadabrant de Georges Méliès." *1895. Mille huit cent quatre-vingt-quinze* 76 : 94–117. DOI : 10.4000/1895.5014
- Talon, Gérard. 1972. "Emile Reynaud." *Anthologie du cinema*, (Octobre 1972): 468–69.
- Vaulabelle, Alfred de and Charles Hémardinquer. 1908. *La Science au théâtre. Étude sur les procédés scientifiques en usage dans le théâtre moderne*. Paris: H. Paulin.
- Vignaux, Valerie. 2007. "Emile Cohl. Le créateur en personne: archives et bibliographie." *1895. Mille huit cent quatre vingt-quinze* 53: 19–37. DOI : 10.4000/1895.2273