

# 1 Epistemic Functions of Images in Charcot's Neurophysiological Research on Hysteria

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Since the 1980s, a continually growing humanities scholarship has addressed the image-based hysteria research that the French neurologist Jean-Martin Charcot and his team conducted in the last third of the nineteenth century at the Salpêtrière hospital.<sup>1</sup> Apart from a few notable exceptions, the general tone of this scholarship, which the historian Mark S. Micale summarily termed “the new Charcot studies,” has been highly critical, even dismissive.<sup>2</sup> As the historian of science Andreas Mayer has aptly phrased it, the majority of studies so far have portrayed Charcot as “a kind of evil clinical genius, a ‘seer,’ an arranger of scenes.”<sup>3</sup> Overall, Charcot is represented as a man “led astray by ambition,” who had callously misused “the women under his care.”<sup>4</sup>

There is a large discrepancy between such derogatory present-day attitudes towards Charcot and the high status he had enjoyed among his peers. During his lifetime, Charcot was regarded as “a brilliant physician, a famous anatomist, and one of the founders of the science of nervous system diseases [i.e., neurology].”<sup>5</sup> In 1862, following his studies in general medicine and the doctoral thesis on rheumatoid arthritis, Charcot was appointed senior physician at the Salpêtrière. At the time, the Salpêtrière housed

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- 1 For an overview of the first decade and a half of the contemporary humanities-based scholarship on Charcot's hysteria research, see Micale, *Approaching Hysteria*, 6, 89–107. See also Micale, “Hysteria and Its Historiography.” For more recent studies, see, e.g., Baer, *Spectral Evidence*; Brauer, “Capturing Unconsciousness”; du Preez, “Putting on Appearances”; Gotman, *Choreomania: Dance and Disorder*; Hunter, *Face of Medicine*; and Marshall, *Performing Neurology*.
  - 2 Micale, *Approaching Hysteria*, 92. For a particularly scathing and highly influential criticism of Charcot, see Didi-Huberman, *Invention of Hysteria*. A similar tone dominates more recent studies, such as Holl, *Cinema, Trance, Cybernetics*; Holl, “Neuropathologie”; Hunter, *Face of Medicine*; Marshall, *Performing Neurology*; Schade, “Charcot and the Spectacle”; Scull, *Hysteria*. For more nuanced analyses that lack an overtly dismissive attitude towards Charcot's hysteria research, see, e.g., Gasser, *Cerveau moderne*; Gauchet and Swain, *Le vrai Charcot*; Goetz, Bonduelle, and Gelfand, *Charcot*; and Micale, *Hysterical Men*.
  - 3 Mayer, *Sites of the Unconsciousness*, 3. Mayer disagrees with such outright dismissals of Charcot's work, which he characterises as distortive. See *ibid.*, 3n7, 13n6.
  - 4 Harris, “Introduction,” ix.
  - 5 Janet, “Charcot,” 569 (my translation).

several thousand chronically ill, exclusively female patients and was considered a relatively undesirable post within the Paris hospital hierarchy.<sup>6</sup> Over the following three decades, Charcot succeeded in transforming the Salpêtrière into a “neurological school of international renown” by launching “parallel strategies in teaching, publishing, research, and patient care.”<sup>7</sup> Moreover, as of 1879, Charcot also started to treat male patients at the Salpêtrière, many of whom had hysteria.<sup>8</sup>

In the early years of working at the Salpêtrière with a large population of patients afflicted with chronic illnesses of the nervous system, Charcot’s interests gradually shifted away from general medicine. Instead, at this point, Charcot began to increasingly focus on the emerging discipline of neurology, whose initial development he decisively helped shape.<sup>9</sup> Innovatively, Charcot devised a new approach to studying diseases of the nervous system, which he termed the anatomo-clinical method. This method entailed two consecutive stages. The first, so-called nosographic stage, consisted in observing, systematically describing, and documenting the development of the patients’ symptoms during their lifetime.<sup>10</sup> Such meticulous and sustained focus on the outward manifestations of a particular disorder generated rich clinical findings. In the second stage, the clinical findings were correlated with the results obtained after the patients’ death through macroscopic and microscopic analyses of their brain and spinal cord pathologies.<sup>11</sup>

Such combined deployment of long-term clinical observations and a subsequent post-mortem examination aimed to link neurological diseases thus studied to anatomically localisable lesions of the central nervous system. In effect, the anatomo-clinical method enabled Charcot to define and classify neurological disorders in “more fixed, more material” terms than based on their symptoms alone.<sup>12</sup> But Charcot emphasised that, at a more general level, his method also provided a basis for a much broader “physiological interpretation of normal and of morbid phenomena.”<sup>13</sup> That is, it allowed him to link the loss of a specific motor or sensory function (e.g., voluntary movement), as manifested by the symptomatology of a particular neurological disorder he was studying (e.g., hemiplegia), to organic damage of a circumscribed brain area that he discovered in his patients through post-mortem analysis.<sup>14</sup> Thus, from its

6 Goetz, Bonduelle, and Gelfand, *Charcot*, 63.

7 Goetz, Bonduelle, and Gelfand, 62. For a detailed analysis of the institutional transformation that the Salpêtrière underwent under Charcot’s guidance, see Micale, “Institutional Perspective.”

8 In 1879, Charcot established an outpatient clinic at the Salpêtrière, which was also open to male patients. Three years later, he founded a special wing of the infirmary that housed exclusively male patients. See Micale, *Hysterical Men*, 123–24. For an incisive analysis of Charcot’s research into male hysteria, see also Micale, “Hysteria in the Male.”

9 See Janet, “Charcot,” 569.

10 Charcot, “Lecture 1: Introductory,” 8–9.

11 Charcot, 9–12. See also Charcot, “Lecture 10: Hysterical Hemianaesthesia,” 254–55. For the indebtedness of Charcot’s anatomo-clinical method to the French physician Laennec’s more general anatomo-pathological method, as well as the difference between these two methods, see Goetz, Bonduelle, and Gelfand, *Charcot*, 65–72.

12 Charcot, “Lecture 1: Introductory,” 10.

13 Charcot, 10.

14 Charcot, 11–12.

outset, Charcot's neurological research was both informed by and fed into the paradigm of cerebral localisation, which was gradually taking shape in the second half of the nineteenth century.<sup>15</sup>

As pertinently formulated by Charcot, "the principle of cerebral localisation depends on the following proposition: The encephalon [i.e., the brain] does not represent a single, homogeneous organ, but rather an association, or, if you like, a confederation, made up of a certain number of different organs. To each of these there are attached physiologically distinct properties, functions, and faculties. Further, the physiological functions of each of these parts being known, it is possible to deduce the pathological conditions, which are but more or less pronounced modifications of the normal state."<sup>16</sup> As this last sentence indicates, Charcot's interest in the cerebral localisation was primarily driven by his clinical concerns. He thus argued that the "doctrine concerning the physiological functions of diverse cerebral regions" was of particular value to a physician, as it provided him with guidance in obtaining a diagnosis with "more penetration and exactitude."<sup>17</sup> Drawing on the insights gained through cerebral localisation, the physician could analyse the clinical features of a symptom of interest and make conjectures about the kind of brain lesion that could have given rise to that particular symptom. This approach underpinned Charcot's neurological research on the whole. More specifically, as the examples I will analyse in this chapter demonstrate, the same approach also informed Charcot's research on hysteria.

In the early 1870s, Charcot's neurological research started to focus increasingly on hysteria. From this point onwards until his sudden death in 1893, hysteria occupied "much of his attention."<sup>18</sup> Yet, it is important to emphasise that both before and parallel with his investigation of hysteria, Charcot and his team also systematically studied and

15 For a succinct analysis of human and animal studies that provided the basis for the development of the nineteenth-century cerebral localisation paradigm, see Finger, *Minds Behind the Brain*, 137–75. Finger particularly foregrounds the contributions made by the French surgeon Paul Broca, the German physiologists Gustav Fritsch and Eduard Hitzig, as well as neurologists David Ferrier and Hughlings Jackson, all of whom influenced Charcot. See *ibid.*, 189–90 and Goetz, Bonduelle, and Gelfand, *Charcot*, 120–34. For an in-depth monographic study of the nineteenth-century cerebral localisation, which also discusses significant contributions made by the English philosopher and biologist Herbert Spencer and the English physiologist William Carpenter, see Young, *Mind, Brain, and Adaptation*. In chapter 2, I will discuss Broca's lesion studies as an important historical precursor to the current functional neuroimaging research.

16 Charcot, *Lectures on Localisation*, 4–5. Charcot held an entire series of lectures on cerebral localisation at the Paris Faculty of Medicine in 1875. See *ibid.* Moreover, in the late 1870s and early 1880s, together with his former student Albert Pitres, Charcot co-authored several groundbreaking studies on the localisation of various motor centres of the brain. See Charcot and Pitres, *Les centres moteurs*; Charcot and Pitres, "Localisations dans l'écorce"; and Charcot and Pitres, *Localisations motrices*.

17 Charcot, "Lecture 1: Introductory," 10–11. Charcot, however, also emphasised in his lectures that the ascription of physiological functions to particular brain regions was still highly tentative at the time. *Ibid.*

18 Goetz, Bonduelle, and Gelfand, *Charcot*, 99. For an insightful analysis of multiple factors that jointly gave rise to Charcot's interest in hysteria, which at the time was not a popular topic of medical research, see *ibid.*, 177–79.

provided groundbreaking clinical insights into a wide array of neurological disorders.<sup>19</sup> For example, using his anatomo-clinical method, Charcot defined multiple sclerosis as a disorder characterised by distinct clinical features and then linked these features to localised anatomical lesions in the spinal cord and brain.<sup>20</sup> Similarly, Charcot established “the first major neurological correlation between lesions and clinical signs” in amyotrophic lateral sclerosis, which today is called Charcot’s disease.<sup>21</sup> Moreover, he renamed what, at the time, was known as ‘paralysis agitans’ (i.e., shaking palsy) into Parkinson’s disease and delineated the disorder’s cardinal clinical features (such as the slowness of movement and rigidity).<sup>22</sup> Owing to these achievements, Charcot was named professor of pathological anatomy at the Paris Faculty of Medicine in 1872 and started to gain an increasing scientific reputation as a medical researcher.<sup>23</sup> However, Charcot’s subsequent international fame rested first and foremost on the highly publicised image-based hysteria research, which by the late 1870s also became inextricably linked to his experimental use of hypnosis. By the mid-1880s, with his fame having spread well beyond the medical circles, Charcot became a veritable “public celebrity.”<sup>24</sup>

Significantly, both hysteria and hypnosis were considered highly controversial topics at the time. Hypnosis was regarded as a dubious practice verging on charlatantry.<sup>25</sup> Just as problematically, hysteria was the most prominent representative of the group of disorders jointly called *névroses* (i.e., neuroses). Various disorders designated as neuroses had in common that despite “evidently having their seat in the nervous system,” they nevertheless left “in the dead body no material trace” discoverable through anatomical investigations.<sup>26</sup> Hence, all neuroses, including hysteria, lacked an apparent organic basis. Moreover, hysteria was characterised by confusingly diverse and continually changing symptoms that could mimic any other illness. As a result, many

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19 Much of Charcot’s prolific research output was gathered and published in the nine-volume set of his collected works. See Charcot, *Oeuvres complètes*, 9 vols. See also Charcot, *Leçons du mardi*, 2 vols.

20 Goetz, Bonduelle, and Gelfand, *Charcot*, 115–19.

21 For details, see Goetz, Bonduelle, and Gelfand, 100–8. This disorder is also known as Lou Gehrig’s disease.

22 Charcot also provided clinical descriptions and visual inscriptions of the Parkinsonian tremor, which to this day “remain standards in modern neurology.” Goetz, Bonduelle, and Gelfand, 119. For a succinct overview of Charcot’s crucial new insights into many other neurological disorders, such as locomotor ataxia, Huntington’s chorea, Tourette’s syndrome, and aphasia, see *ibid.*, 99–134. See also Janet, “Charcot,” 571.

23 Goetz, Bonduelle, and Gelfand, *Charcot*, 51, 64–65.

24 Goetz, Bonduelle, and Gelfand, 235. See also *ibid.*, 246.

25 “Charcot und Hypnotism,” 480.

26 Charcot, “Lecture 1: Introductory,” 12. According to Charcot’s classification, this heterogeneous group of neurological disorders also included epilepsy, Huntington’s chorea, and Parkinson’s disease. Goetz, Bonduelle, and Gelfand, *Charcot*, 77. Importantly, in Charcot’s use, the term neurosis was entirely devoid of any psychological connotations. As pointed out by Micale, it was between 1895 and 1910 that “the idea of neurosis as we understand it today” emerged—i.e., “a purely psychological disorder of moderate severity located between the conditions of health and psychosis.” Micale, “Disappearance,” 515–16.

of Charcot's colleagues either routinely equated hysteria with simulation or viewed it as a disorder "inaccessible to analysis."<sup>27</sup>

This all changed with Charcot. As stated by Freud, Charcot succeeded in instituting both hysteria and hypnosis into topics worthy of medical research by throwing "the whole weight of his authority on the side of the genuineness and objectivity" of these two contested phenomena.<sup>28</sup> That Charcot accorded central importance to establishing hysteria as a genuine neurological disorder is perhaps best illustrated by the following fact. While arguing for the necessity of establishing a new chair in diseases of the nervous system at the Paris Faculty of Medicine, Charcot foregrounded the innovativeness of his hysteria research.<sup>29</sup> Unsurprisingly, hysteria featured prominently in the lecture he held at the inauguration of this worldwide first clinical professorship dedicated to neurology, which the French Parliament created in 1882 specifically for him.<sup>30</sup>

However, apart from bringing him professional recognition, Charcot's research into hysteria and hypnosis was also criticised by his peers.<sup>31</sup> On the one hand, such influential scientific figures as the Italian physiologist Angelo Mosso, the British neurologist Charlton Bastian, and the French physiologist Charles Richet favourably quoted Charcot's findings and experiments.<sup>32</sup> On the other hand, some of Charcot's colleagues pointed out the potential limitations of his research. For example, in his influential *Manual of Diseases of the Nervous System*, the British neurologist William Gowers challenged Charcot's claim that hysteria followed the same universal rules "in all countries, all times, and all races."<sup>33</sup> Unlike Charcot, Gowers argued that clinical manifestations of hysteria were influenced by "the underlying differences in nervous constitution that are recognised in the expression 'national temperament.'"<sup>34</sup> He also suggested that the convulsive hysterical attacks 'of the French' did not appear in the same form among the English. Despite such criticism, Gowers nevertheless chose to include a detailed summary of Charcot's description of the hysterical attack in his *Manual*.<sup>35</sup> Perhaps even more surprisingly, Gowers also re-printed in the *Manual* several famous drawings by Charcot's collaborator Paul Richer. These drawings visualised the typical phases of the hysterical attack according to the Salpêtrien model.<sup>36</sup>

27 Charcot, "Lecture 1: Introductory," 12.

28 Freud, "Charcot," 19. See also Freud, "Preface to Bernheim's Suggestion," 76.

29 See Goetz, Bonduelle, and Gelfand, *Charcot*, 222–31.

30 See Charcot, "Lecture 1: Introductory," 1–19.

31 My analysis addresses only those reactions to Charcot's hysteria and hypnosis research that stemmed from his medical colleagues. The most severe criticism of Charcot's hypnotic experiments that came from the rival school of Nancy and its leading figure Hippolyte Bernheim is omitted here, as it will be discussed in detail in section 2.1.1. For an overview of attacks on Charcot in the general press of his time, as well as the criticism of his work by influential literary and cultural figures, such as Guy de Maupassant, Leo Tolstoy, and Léon Daudet, see, e.g., Goetz, Bonduelle, and Gelfand, *Charcot*, 234–39, 248–52, 256–58; and Marshall, *Performing Neurology*, 187–212.

32 Mosso, *Fatigue*, 133; Bastian, *Functional Paralysis*, 41–48; Richet, "Des mouvements," 611.

33 Charcot, "Lecture 1: Introductory," 13.

34 Gowers, *Manual*, 2:985.

35 See Gowers, 2:1003–10.

36 Gowers, 2:1004–7.

Two other noted British neurologists, Russell Reynolds and Hack Tuke, took issue with Charcot's purely neurophysiological interpretation of hysterical and hypnotic phenomena. They suggested that Charcot had unduly neglected the potential role of what they referred to as "mental influences" and "moral impressions," respectively.<sup>37</sup> Nevertheless, both Tuke and Reynolds firmly emphasised their belief that none of Charcot's hysteria patients "either invented, simulated, or exaggerated a single symptom."<sup>38</sup> Moreover, the American neurologist George Beard declared Charcot "a man of genius and a man of honor, who does not deceive."<sup>39</sup> Beard praised Charcot for obtaining experimental results that stemmed from hypnotic "tests, in which all the sources of error have been eliminated."<sup>40</sup> But similarly to his British colleagues, Beard also argued that Charcot made "mistakes of inference" in interpreting his experimental results.<sup>41</sup> Hence, some of Charcot's medical colleagues disagreed with his exclusively somatic interpretations of hysteria and hypnosis or reproached him for having "generalised too much."<sup>42</sup> However, such differences in views notwithstanding, they regarded Charcot as a methodical researcher who was careful not to allow "himself to be drawn away from the path of inductive science."<sup>43</sup>

In contrast, present-day critics tend to describe Salpêtrian hysteria research as lacking any epistemic value or scientific legitimacy, labelling Charcot a mere "dramatist and stage director."<sup>44</sup> Charcot's clinic is scornfully referred to as an 'Alice-in-Wonderland world,' 'a circus,' 'a spectacle,' or 'a theatre of illusions' in which female patients were coerced into "performing the symptoms the physicians sought to discover."<sup>45</sup> In short, we are told that in the Salpêtrian "medical theatre," hysteria was not a real disorder but "a staged event."<sup>46</sup> Such dismissive analyses have focused primarily on the photographs of female patients in different stages of the hysterical attack, which had been published in the three volumes of the *Iconographie photographique*

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37 Tuke, "Metalloscopy," 5; and Reynolds, "Hemianaesthesia," 788. Tuke also pointed to "the extreme liability of an investigator to unconsciously vitiate the value of any test he employs" by inadvertently inducing in the patient "expectant attention" and thus skewing the results. Tuke, "Metalloscopy," 6.

38 Reynolds, "Hemianaesthesia," 788. See also Tuke, "Metalloscopy," 5.

39 Beard, *Study of Trance*, 36.

40 Beard, 37.

41 Beard, 37.

42 "Charcot and Hypnotism," 480. In sections 2.1.2 and 2.1.3, I will argue that both Pierre Janet and Sigmund Freud, two of Charcot's most famous pupils, held similar views of his former mentor's work.

43 "Charcot and Hypnotism," 480.

44 Wengrat, *Theater of Disorder*, 3. See also du Preez, "Putting on Appearances," 49; Gunning, "In Your Face," 158; and Holl, "Neuropathologie," 218–19, 227.

45 Bronfen, *Knotted Subject*, 191. See also Baer, *Spectral Evidence*, 42, 58; Brauer, "Capturing Unconsciousness," 245; Didi-Huberman, *Invention of Hysteria*, xi; Gordon, "From Charcot to Charlot," 94, 118; Harrington, *Cure Within*, 59; Porter, *Madness*, 187–88; Schmidt, *Anamorphotische Körper*, 216–17; Scull, *Hysteria*, 113, 122; and Shorter, *Paralysis to Fatigue*, 181. See also Schade, "Charcot and the Spectacle."

46 Holl, *Cinema, Trance, Cybernetics*, 140.

*de la Salpêtrière*.<sup>47</sup> Consequently, such analyses have paid little or no attention to other visualisation techniques that the Salpêtrians systematically deployed in their research. Echoing the arguments in Didi-Huberman's influential book *Invention of Hysteria*, multiple authors have claimed that Charcot fabricated a "wholly distorted" image of hysteria, which he modelled on well-established iconographies from art history.<sup>48</sup> According to this view, Charcot directly or indirectly enticed his patients to mimic the thus obtained "figurative fabrication" during their hysterical attacks.<sup>49</sup> Didi-Huberman has contended that, in the process, hysteria patients themselves were first turned into living art objects and then photographed. The resulting photographs had no epistemic values and were "meant merely to illustrate" Charcot's predefined fictional notions about hysteria.<sup>50</sup>

In this chapter, I will challenge this view. Specifically, I aim to show that far from using images to merely illustrate their preconceived views of hysteria, Charcot and his team deployed photography and a range of other visualisation techniques as productive investigation tools. The targeted use of these visual tools, I will argue, enabled Charcot and his team to generate new medical insights into hysteria. Importantly, I do not claim that the Salpêtrians never used photography to illustrate hysterical symptoms. Instead, the point I want to make is that various types of images played multiple functional roles in Charcot's hysteria research. Therefore, we need to differentiate between cases where images had illustrative functions and those where images produced new epistemic insights. Further, we will see that Charcot's approach to hysteria was rooted in a neurophysiological understanding of this disorder, which he had initially adopted from the French physician of the previous generation, Pierre Briquet.<sup>51</sup> But Charcot did not merely impose this adopted view on his patients, forcing them to emulate it. Rather, I will argue that by systematically using images as epistemic tools, Charcot was able to go beyond Briquet's unspecific account of hysteria as a disease of the nervous system without a known lesion. I will show that what emerged through Charcot's systematic image-based research was both a more complex and a more clearly defined picture of hysteria as a brain-based disorder in its own right.

Unlike Didi-Huberman, who suggested that Charcot's image-based hysteria research should be analysed "as a chapter in the history of art,"<sup>52</sup> I approach it as a chapter in the history of science. My analysis is informed by Latour's dictum that "one should not isolate the scientific imagery and shoehorn it into the types of

47 See, in particular, Didi-Huberman, *Invention of Hysteria*; and Bronfen, *Knotted Subject*.

48 Didi-Huberman, *Invention of Hysteria*, 246.

49 Didi-Huberman, 104. See also Brauer, "Capturing Unconsciousness," 246–48; Bronfen, *Knotted Subject*, 190–203; Gilman, "Image of the Hysteric," 359–79; Scull, *Hysteria*, 122–23; and Showalter, *Female Malady*, 151–54.

50 Didi-Huberman, *Invention of Hysteria*, 85–86. See also, e.g., Bronfen, *Knotted Subject*, 190; and Marshall, *Performing Neurology*, 9–11.

51 Charcot explicitly acknowledged his intellectual debt to Briquet in his lectures. See, e.g., Charcot, "Lecture 1: Introductory," 13; Charcot, Lecture 10: "Hysterical Hemianaesthesia," 247–51; and Charcot, "Lecture 13: 'Hystero-Epilepsy,'" 302–4.

52 Didi-Huberman, *Invention of Hysteria*, 4.

questions raised by iconography.”<sup>53</sup> Instead, as suggested by Latour, I will pay close attention to the details of the scientific practice within which the images were made and used. To show how various images functioned as epistemic tools in Charcot’s hysteria research, I will trace the conditions under which the Salpêtrians produced these images and how they subsequently interpreted them in medical terms. My analysis will rely on Ludwig Jäger’s concept of transcriptivity. Jäger defined transcriptivity as a medium-specific process of meaning ascription within a particular framework of intramedial and intermedial references.<sup>54</sup> For example, in intramedial transcriptions, images are attributed meaning in relation to other images. In contrast, in intermedial transcriptions, images are interpreted in relation to texts. Deploying the concept of transcriptivity, I will argue that to understand how and why the Salpêtrians produced, read, and interpreted images, we must reconstruct the neurophysiological theories, concepts, and experimental findings that jointly constituted their frame of reference.<sup>55</sup>

Furthermore, whereas Didi-Huberman dismissed Charcot’s images due to their constructed nature, I will claim that this particular aspect was the very source of their potential epistemic productivity. Drawing on Latour,<sup>56</sup> I will argue that the emergence of new medical insights into hysteria hinged on how various visual inscriptions were created inside controlled laboratory settings. Latour has emphasised that when examining the production of novel scientific insights, it makes little sense to ask whether such insights are fabricated or real because they are necessarily both at once.<sup>57</sup> Instead, to facilitate a more nuanced analysis of the process of knowledge production in a scientific context, Latour has introduced the notion of articulation. According to Latour, scientists first make what he refers to as ‘propositions’ about their object of research by bringing the phenomenon of interest into novel relations to other phenomena from which it differs.<sup>58</sup> Scientists do so without “knowing *in advance* if

53 Latour, “More Manipulation,” 349; and Latour, *Pandora’s Hope*, 24.

54 See Jäger, “Epistemology of Disruptions,” 72.

55 As Mark Micale has already pointed out, in addition to Briquet, Charcot drew on the work of multiple nineteenth-century British medical authors, who explicitly dealt with the topic of hysteria. In this respect, Charcot frequently quoted Benjamin Brodie, Robert Todd, Russell Reynolds, and James Paget in his lectures. See Micale, “Scientific and Historical Reflections,” 103–5. However, as I will show in this chapter, several noted late-nineteenth-century neurologists, physiologists, and biologists, whose research dealt more broadly with neurophysiological functions of the brain, particularly influenced Charcot. They included David Ferrier, William Carpenter, Alexander Bain, Wilhelm Wundt, Herbert Spencer, and Théodule Ribot. These scientists had in common that they all focused on investigating “mental phenomena from a physiological rather than from a metaphysical point of view.” Maudsley, *Physiology of Mind*, vi. David Ferrier pointedly expressed this view: “That the brain is the organ of the mind, and that mental operations are possible only in and through the brain, is now so thoroughly well established and recognised that we may without further question start from this as an ultimate fact.” Ferrier, *Functions of the Brain*, 255. Charcot, as we will see, also prescribed to this view.

56 I primarily refer here to Latour’s incisive analysis of Louis Pasteur’s experiments with the lactic acid ferment. See Latour, *Pandora’s Hope*, 113–44.

57 Latour, 127.

58 Latour insists that ‘propositions’ should not be understood as mere declarative statements about the phenomenon under the inquiry. As Latour explains, a statement “says in words what a thing is. A proposition designates a certain way of *loading* an entity into another by making the

these differences are big or small, provisional or definitive, reducible or irreducible.”<sup>59</sup> In the next phase, scientists devise experimental setups in which the phenomena thus isolated can interact with one another so that their differences become sufficiently articulated. The more the scientists intervene, so Latour, the more they facilitate “the articulation of differences that make new phenomena visible in the cracks that distinguish them.”<sup>60</sup> In effect, the process of articulation of propositions comprises all experimental interventions that jointly enable the emergence of new scientific insights. I will use Latour's notion of the articulation of propositions as an analytical tool in my discussion of Charcot's image-based hysteria research.

In addition to the *Iconographie photographique*, my analysis will focus on Charcot's published clinical lectures on hysteria, as well as two studies of hypnosis he co-authored with his former pupil and collaborator, Paul Richer.<sup>61</sup> My aim is not to provide an exhaustive analysis of Charcot's entire hysteria research. Rather, my focus will remain limited to analysing those particular instances of Charcot's research in which images enabled the production of new insights into hysteria. The first part of the chapter discusses the early nosographic stages of Charcot's hysteria research and delineates the constitutive role of photography and other visualisation techniques in constructing the Salpêtrian model of the hysterical attack. The second part charts how Charcot used both photography and Étienne-Jules Marey's graphic method to investigate hypnosis, which he regarded as an experimental model of hysteria. Finally, the third part examines how, using diagrams to map his patients' different sensory and motor symptoms, Charcot specified the nature of hysteria's underlying brain lesion and the potential mechanism of its formation. On the whole, this chapter traces the development of Charcot's research from its initial focus on the classification of hysteria's external manifestations to his subsequent attempts to define it as a disorder with a distinct brain-based pathogenesis. Throughout, I will delineate the epistemic functions that different types of images had at each stage.

## 1.1 Nosographic Stage: From Charcot's Early Lectures on Hysteria to Photography-Driven Mapping of the Hysterical Attack

In the winter of 1906, Pierre Janet delivered a series of celebrated lectures on hysteria at the Harvard Medical School. In the first of these lectures, Janet praised his former mentor Charcot for giving “precision to the clinical knowledge of hysteria” through his systematic research.<sup>62</sup> But Janet also stated that Charcot had made “a

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second attentive to first, and by making both of them diverge from their usual path, their usual interpretation.” Latour, “Well-Articulated Primatology,” 372 (emphasis in original).

59 Latour, *Pandora's Hope*, 141 (emphasis in original).

60 Latour, 143. Significantly, in Latour's view, research objects are not passive recipients of scientists' interventions. Instead, as much as the scientists who investigate them, the research objects actively participate in and decisively shape the research process. Ibid., 140, fig. 4.3.

61 See Bourneville and Régnaud, *Iconographie photographique*, 3 vols.; Charcot, *Leçons du mardi*, 2 vols.; Charcot, *Oeuvres complètes*, 9 vols.; and Richer, *Études cliniques*.

62 Janet, *Major Symptoms*, 16.