

Article

Beyond Cultural History? The Material Turn, Praxiography, and Body History

Iris Clever and Willemijn Ruberg

Department of History and Art History, Utrecht University, Drift 6, 3512 BS Utrecht, The Netherlands; E-Mails: irisclever@ucla.edu (I.C.); W.G.Ruberg@uu.nl (W.R.)

External Editor: Victoria Thompson

Received: 24 March 2014; in revised form: 27 August 2014 / Accepted: 16 September 2014 /

Published: 9 October 2014

Abstract: The body came to be taken seriously as a topic of cultural history during the “corporeal” or “bodily” turn in the 1980s and 1990s. Soon, however, critique was raised against these studies’ conceptualization of the body as discursively shaped and socially disciplined: individual bodily agency and feeling were felt to be absent in the idea of the material body. This article critically analyzes new approaches in the field of body history, particularly the so-called “material turn”. It argues that the material turn, especially in the guise of praxiography, has a lot to offer historians of the body, such as more attention to material practices, to different kinds of actors and a more open eye to encounters. Potential problems of praxiographical analyses of the body in history include the complicated relationship between discourses and practices and the neglect of the political and feminist potential of deconstructive discourse analyses. However, a focus on the relationship between practices of knowledge production and the representation of the body may also provide new ways of opening up historical power relations.

Keywords: body; gender; race; material turn; praxiography

1. Introduction

In the 1980s and 1990s a “corporeal” or “bodily” turn took place in sociology and feminist philosophy. The body came to be taken seriously as object of study, resulting in studies on the history of obesity, anorexia, disability, menstruation, genitalia, beauty, sports, hygiene, the senses, the regulation of racial bodies and many more body-related topics [1–7]. In recent years, several multi-volume

overviews of body history have been published [8–11]. The field of body history grew out of the history of medicine, gender and sexuality and was strongly influenced by the cultural turn. No longer considered a timeless biological entity, the body came to be seen as historically variable and shaped by culture, language and ideology. Especially, Michel Foucault's and Judith Butler's methodology of discursive constructionism found its way into historical studies of the body. Soon, however, critique was raised against these studies' conceptualization of the body as discursively shaped and socially disciplined. This critique focused on the absence of individual bodily agency and of feeling in the notion of the material body and aimed to look beyond discursive constructionism, without reverting to older biologist concepts. The proposed answers differed widely: psychoanalysis, praxiography, neo-essentialism and other approaches were put forward [12]. In this article, we aim to critically analyze one of these new approaches in the field of body history, *i.e.*, praxiography, which can be regarded as part of the so-called "material turn", also named neo or new materialism. We explore what praxiography has to offer to historians of the body: It seems to pay more attention to material practices, to different kinds of actors and purports to have a more open eye to encounters (between bodies, objects, experts, and techniques). However, these new approaches also potentially contain a number of problems. Political critique, for instance, a feature that was strongly present in the cultural-historical approach of the body popular in the 1990s, at first sight seems to be absent. We hope to stimulate discussion on the advantages and disadvantages of the material turn's key features amongst historians of the body.

2. The Bodily Turn in Cultural History

Before sketching neo-materialist approaches to body history, we will first outline the rise of body history, with a particular emphasis on methodology and its accompanying problems. Although the body had not been completely absent in historical writing before the cultural turn, it was only on the wings of the latter that the corporeal came to be taken seriously as a field of study in the humanities, partly because the cultural turn diverged from a more traditional intellectual history, which privileged the mind over the body [13]. Before the cultural turn, in the first half of the twentieth century, historical sociologist Norbert Elias had devoted much attention to the disciplining of the body in early modern court cultures [14,15]. The Russian philosopher and literary critic Mikhail Bakhtin put the material meanings of the body center stage in his analysis of the work of the French Renaissance writer François Rabelais [16,17]. In cultural anthropology, the body had always been a serious topic of interest, and especially the symbolical anthropology of Mary Douglas, which regarded bodily boundaries as representative of ideas concerning purity, would be very influential in the new histories of the body produced as part of the cultural and performative turn [18]. The work of Michel Foucault, particularly his book on modern punishment, in which he saw the modern body as an object of new forms of disciplinary power, yet also as productive of those new forms, has been seen as foundational to the bodily turn [19,20].

The first overview of this new branch of cultural history was presented by historian Roy Porter, who warned from the start that too much theorizing over the body would lead to anachronism. Advocating attention to empirical research, Porter also feared that too much attention was being paid to the disciplining of past bodies, and thus to Foucauldian approaches. In his 2001 revision of his 1991

chapter, Porter noted “the domain in which writing about the history of the body has skyrocketed most stupendously: the *theoretical* dimension. Drawing on critical theory, postmodernism, post-Foucauldianism, and other ‘-isms’ embodying the linguistic turn, and also on feminist, gender, gay and lesbian philosophy, and much else besides, a challenging corpus of body theory now exists; yet it is one which is all too often historically dogmatic or deficient. The squaring of the empirical and the theoretical remains to be done.” ([21], p. 253).

Porter exemplifies the aversion of historians to the use of theory and their need for empirical evidence. One historical sub-field less averse to theory is gender history. It is from this field that most of the histories of the body have grown. The most influential work on the gendered body in the past has been the book by Thomas Laqueur *Making Sex: Body and Gender from the Greeks to Freud* [1]. Using mostly images in medical textbooks as sources, Laqueur argued that bodily sex differences, which he termed the “two-sex model”, in which men and women had completely different genitalia and other body parts, were only perceived in the eighteenth century, when Enlightenment ideas on the equality of the sexes threatened male privilege. Laqueur’s book is generally regarded as an important application of social constructionism to the body (in distinction to the concept of gender, which was approached from this angle from the start). Laqueur underlined how making, but also simply *seeing* bodily gender differences depended on political and social aims. It is important to keep in mind how social constructionism of the body has always been particularly fertile in regard to gender.

The influence of gender history on body history also received some critique from feminist historians. In an article first published in 1999, Kathleen Canning argued that “‘body’ remains a largely unexplicated and undertheorised *historical* concept” ([22], p. 499). Canning noted that the turn from women’s to gender history left the body tainted with essentialism, a blank slate upon which gender ideologies were written. Feminist historians were interested in deconstructing those ideologies, but not particularly in the body that was targeted by these ([22], p. 501). Canning saw the prominence of the discursive body in gender history, at the cost of the “body as experience”, yet also signaled studies in which bodies were excessively material and undertheorized. She also pointed out, however, that these symbolic bodies remained “immaterial/dematerialised” and indicated two explanations for the embrace of the discursive body: the work of Michel Foucault and a more practical reason, that is the availability of sources that chart the discursive construction of gendered bodies, and the lack of sources dealing with the body “as a site of experience, memory, or subjectivity”. Canning called for “locating bodies spatially, nationally, and as inscribed by ethnicity and race”, underlining the importance of empirical evidence and historical specificity ([22], pp. 501–04).

The work of Michel Foucault and of gender theorist Judith Butler has indeed been very influential. Butler’s emphasis on cultural norms like the “heterosexual matrix”, which constitute (gendered) bodies discursively, has mostly been applied to the deconstruction of these norms, and the extent of agency this leaves us with has been heavily debated [23,24]. Although this notion of the discursive construction of the body has been used by many historians, it has to be kept in mind that several historians did attempt to reconstruct corporeal experiences in the past. Best known among these is the German historian Barbara Duden, whose *The Woman beneath the Skin. A Doctor’s Patients in Eighteenth-Century Germany* (originally published as *Geschichte unter der Haut: Ein Eisenacher Arzt und seine Patientinnen um 1730* in 1987) placed eighteenth-century female patients’ experience of their own bodies centre stage [25]. Duden described a world in which the body, which was thought to

contain continuous motions or a “flux”, was not considered as an object clearly separated from its environment. These eighteenth-century German women and their doctor used a language completely different from the discourse framing the modern body as an isolated object of medical examination. Conspicuously, rare studies into historical corporeal understanding, like Duden’s, were nearly always medical histories, based on egodocuments like letters, from which some personal experience, however entwined in cultural discourses, could be retrieved [26]. Nevertheless, these studies remained exceptions, the majority of body historiography being devoted to deconstructing medical discourse.

To theorize the body as site of experience, some historians resorted to psychoanalytical approaches. Lyndal Roper described an “economy of bodily fluids” in early modern witchcraft beliefs, which regarded old women as sucking on the bodily fluids of others. Roper, using psychoanalytic categories, argued that young mothers projected their own confusing emotions onto older lying-in maids, whom they accused of witchcraft. These emotions were highly sensitive to the manipulation of the body [27]. Other historians were influenced by feminist philosophers who tried to find new ways of perceiving the body, like Moira Gatens’ notion of the “imaginary body”, which stressed the psychical significance of various zones of the body, while trying to bridge the gulf between discursive and material bodies [28]. Elizabeth Grosz, as well, started from psychoanalytical notions while formulating her notion of “corporeal feminism”. Grosz claimed that the body can never be fully disciplined or described by discourse and underlined the agency of the body in her notion of “counter-strategic reinscription” ([29], p. 64).

Grosz, like feminist Iris Marion-Young, built upon phenomenology in accounting for women’s experiences. From this perspective, body, self and world become entangled in situated, corporeal experiences. Phenomenological approaches thus already highlighted the material aspect of bodily experience and the difficulty of separating notions of “the natural” and “the social” [22,30–32]. Similarly, the experiential and social aspects of the body were emphasized by Leslie Adelson’s notion of embodiment, who defined it as a process “of making and doing the work of bodies—of becoming a body in social space.” ([22], p. 504). In short, the body as a site of experience was emphasized by psychoanalytic and phenomenological approaches, including attention to the material and social aspects of the body, as well as agency and resistance. These approaches, however, were not applied very often by historians.

Although body history has become an accepted part of the field of social and cultural history, historians still seem to be struggling with some of the methodological and theoretical problems that surfaced in the 1990s. For example, Ivan Crozier, in his 2010 introduction to the sixth volume of *A Cultural History of the Human Body*, on the body in the modern age, leans on the theoretical approaches of Foucault and Butler uncritically. He also makes use of Julia Kristeva’s term “abjection” and Mary Douglas’ “matter out of place”. For Crozier, the discursive constructionist approach is less of a problem than for other historians and he combines it with insights from anthropology and psychoanalysis. In addition, he couples a general plea for a socio-historical embeddedness to a seemingly self-evident, yet often neglected, attention to an always changeable body. Defining bodies as “performed social institutions”, whose agency is constrained by “various techniques of training, practice, and sanctioning”, Crozier proposes to study bodies in action and in a socio-cultural and historical context, while at the same time mediated through a variety of discourses and arrangements of power [33]. Crozier also points to the “underdetermined character of the corporeal”, the idea that the

same body changes according to locale: “the body is not used the same way when it is sick, during sex, as it ages, for pleasure, for work, for sport, or when it is represented.” ([33], pp. 21–22). Thus, the problem of a one-sided emphasis on discursive construction and discipline, neglecting individual experience and agency, does not surface in Crozier’s account. However, a call for a more open-ended view of the changeable body, including more attention to historically changing places, echoes Canning’s plea for more historical specificity ([22], p. 504).

In a second recent overview of “the somatic turn”, Roger Cooter is more critical of the “the representational approach”, locating the problem in several scholars’ acceptance of the body “only *as a representation*”. One important new direction in the history of the body Cooter signals is a return to biological essentialism, influenced by neuroscience and the cognitive turn [34]. Importantly, Cooter notes the relevance of what he terms the “new breed of essentialisms” to the history of the body. However, he seems to regard these only as a threat to a balanced history of the body, not as productive methodologies. Moreover, as we will show below, some important new approaches, like the practice turn and praxiography, cannot be grouped so easily under the heading of “essentialism”.

To conclude, in the past 20 years, social and discursive constructionist approaches to the body have been very influential, but have also come under attack, due to their presumed lack of attention to individual corporeal experience, which is often taken to mean a neglect of agency. For historians, this critique is paired to a call for using more empirical sources. Psychoanalytical and phenomenological approaches that do underline bodily experience have had little impact on history writing. On the one hand, a historical picture of the material body is called for (including historical locality and changeability), on the other hand “essentialism”, implying a return to a biological, non-historically specific body, is feared. In the remainder of this article, we explore what the application of praxiography to body history implies for these questions in regard to the material, experiencing body as stated in historical sources.

3. The Material Turn

3.1. Neo-Essentialism and New Materialism

Some of the approaches that look beyond the discursively constituted body can be grouped under the header “material turn” as they centre on giving more prominence to matter or materiality in research. Both neo-essentialism and new materialism, which we will discuss in this paragraph, focus on rethinking the relationship between nature and culture as a means to overcome the binary opposition between social constructivism and essentialism or realism.

One important new direction in the history of the body is a return to biological essentialism, influenced by neuroscience. One of the “new breed of essentialisms” is “neo-essentialism” or the “corporeal critique”, a term coined by historian Dror Wahrman. In discussing narratives of change *versus* continuity in the cultural history of gender, sex, and sexuality, Wahrman brings up the issue of corporeality in cultural histories of the body. Because cultural history is built on the assumption that everything, including the body, is shaped by culture, the idea that the body might be outside the influence of culture makes cultural historians nervous. These historians argue that explorations into the materiality of the body in history might end up essentializing the body, making it impervious to

historical change, which is politically and intellectually undesirable for a field that deconstructs seemingly natural concepts. However, Wahrman suggests historians should be more open to the idea that historical phenomena have some biological basis. As Wahrman explains: “this critique would push the historian to explore where the culturally constructed ends and the ahistorical and extra-cultural begins; and thus, more importantly, how they relate to each other. Unlike unreflective essentialism that presupposes that certain aspects of the human condition necessarily lie outside history and culture, and unlike unreflective constructivism that presupposes that no aspect of the human condition lies outside history and culture, the self-reflexive preoccupation of the ‘corporeal’ (or the ‘neo-essentialist’) is the un-predetermined boundary between the two.” ([35], p. 599).

Importantly, Wahrman claims that an essentialist or corporeal perspective on the body in history is not necessarily ahistorical. Indeed, it can even be used to explain historical change. Here, Wahrman mentions Daniel Lord Smail’s *On Deep History and the Brain* [36], which experiments with using the brain as an historical source to analyze how culture and biology interacted over long periods of time. Through a neurohistorical analysis, Smail argues that, over time, humans became more sensitive to mood-altering cultural practices, ranging from gossip to shopping and coffee and tea. Most importantly, he signals an explosion in mood-altering substances in the eighteenth century, which created a distinctly new regime of brain–body chemistry. As such, “an awareness of neurochemistry can help us look at the past three hundred years in a wholly different light” ([36], p. 185). According to Smail, these substances have played a crucial role in the Western history of modernity, and thus Smail’s neurohistory provides a new narrative of modernity and historical change in the eighteenth century.

Smail analyzes the interaction between biology and culture by showing how cultural and biological changes are related and thus successfully incorporates the material body in a historical study. Yet there are reasons to be critical of neo-essentialism. Smail demonstrates how the body alters through new cultural practices and describes change as being undirected and unintentional—thus placing agency in the encounter between cultural traits and bodies—but concludes that his neurohistory provides a new explanation of modernity. Combined with his generalizing account of human bodies—apart from class there is little room for difference based on gender, ethnicity, age *etc.* or the individual experience of the body in Smail’s grand narrative, which ends up stressing “the universality of basic human physiology” ([36], p. 188)—Smail’s conclusion about a singular body and change hints at biological determinism and essentialism which might make this approach unattractive to body historians critical of just these things.

However, analyzing the relationship between nature and culture as a way of addressing the materiality of the body might be more fruitful for historians in light of a different trend in the humanities, called new or neo-materialism. Several scholars from different backgrounds have sought to think through the problems of the linguistic turn by questioning modern dualistic thinking. Arguing that postmodernism has continued to prefer “mind over matter, soul over body, and culture over nature” ([37], p. 119) scholars such as Rosi Braidotti, Karen Barad, Bruno Latour, and Donna Haraway have sought ways of overcoming Cartesian dualism all together. Although we should not consider it one stream of thought, new materialism questions the distinction between entities and It is argued that body and mind can only be understood in relation to each other, during events in which realities are temporarily produced or enacted. Instead of assuming (hierarchical) differences between entities

beforehand, new materialists study the performance of differences in these ever-changing, shifting realities. This directs the focus to encounters, practices, and moments where matter and culture are *acting* together, producing meaning or a reality in that moment. In this way, matter becomes an important actor in the analysis of practices [37,38].

In this respect, neo-essentialism becomes problematic for another reason: it continues to reimpose the nature-culture divide on historical narratives by seeing the body, nature, or culture as separate, singular entities. Smail argues that nature and culture change in relation to each other, but in their relation one is consecutive of the other, which keeps the binary opposition in place. By focusing on action in practices between different actors, new materialism on the other hand pays more attention to the heterogeneity of practices and actors. Furthermore, it tries to think through realism and social constructivism: “both scientific realists and social constructivists believe that scientific knowledge (in its multiple representational forms such as theoretical concepts, graphs, particle tracks, photographic images) mediates our access to the material world; where they differ is on the question of referent, whether scientific knowledge represents things in the world as they really are (*i.e.*, “Nature”) or “objects” that are the product of social activities (*i.e.*, “Culture”), but both groups subscribe to representationalism” ([38], pp. 805–06). Critical of this divide, new materialists have a more monist approach: “It is precisely the commonalities of realism and social constructivism that are being recognized, though shifted” ([37], p. 98). Thus, new materialism presents a different philosophy for the humanities, one that pays attention to matter, movement, and difference.

New materialism’s focus on the performance of differences in practice seems more attractive to the project of body history than demonstrating human commonality in larger trends of nature-culture interactions. Can body historians use these insights for writing novel histories of the body in which its materiality is taken more seriously by analyzing practices instead of representations? Is the philosophical discussion on overcoming the opposition between nature and culture useful for rethinking body history’s issue of essentialism *versus* social constructionism?

We recognize that the term “new materialism” might mask the heterogeneity of the scholars grouped under that heading and we do not wish to offer an exhaustive account of the different approaches here. Instead, in the remainder of this article, we have chosen to elaborate on one method that we consider to be part of the material turn in the humanities: Annemarie Mol’s praxiography. Mol also questions the distinction between nature and culture by claiming that “we practice reality” ([39], p. 52) and applies this perspective onto the body in medical practice. To what extent is praxiography useful for historians to get around the opposition between social constructionism and essentialism in body history? Below, we will discuss praxiography and offer two examples of its application to body history.

3.2. Praxiography

Since the 1970s, historians and sociologists of science have developed new ways to study the production of knowledge in practice. Arguing that scientific knowledge is not independent from the practices in which it is produced, scholars have investigated how knowledge is embedded in local settings of time and place and have stressed the influence of different actors, techniques, and materials on knowledge production [40–42]. Recently, a more radical approach to knowledge in practice has

been developed by sociologist John Law and anthropologists Marianne de Laet and Annemarie Mol, building on “actor-network theory” approaches (ANT) developed by sociologists such as Bruno Latour [43,44]. They point out the limitations of representationalism and analyze knowledge production by studying the practices of its production. Law, de Laet, and Mol have demonstrated the instability of knowledge-objects by arguing that there is not a single object in practice, but that every practice produces its own variant of the object. Annemarie Mol has provided a methodology to analyze this instability of knowledge in relation to the body. Her approach has gained attention in disciplines such as sociology, political science, gender studies, and anthropology [45–48] but has rarely been applied to history, except by historian Geertje Mak, whose work we will discuss below.

In *The Body Multiple: Ontology in Medical Practice* [49], Annemarie Mol presents her method “praxiography” in a study on atherosclerosis. Two aspects of praxiography seem especially interesting for body historians. First, rather than studying “knowledge articulated in words and images and printed on paper” ([49], p. 31), Mol examines body practices in which knowledge of the body is “incorporated”. Second, instead of assuming the singularity and force of medical discourse, she stresses the instability of the body in practice through a focus on associations and networks that “hang together”. The praxiographic perspective shifts our attention to material practices, different kinds of actors, and encounters, thus potentially being an effective methodology for the cultural history of the body.

In her 2002 study, Mol argues that “the body” becomes multiple in medical practice. Through participant observation, she analyzes the different contextual manifestations of the disease atherosclerosis in hospital environments. She posits two important claims in this study. First, the disease is *enacted* differently in every practice due to different techniques, materials, actors, and sites. For instance, atherosclerosis under the microscope, studied by a pathology resident, is different from atherosclerosis in the outpatient clinic, discussed between a surgeon and a patient. Thus, each practice generates its own version or material reality of the disease. These different enactments do not necessarily align: they can be contradictory. The multiplicity and complexity of the disease in practice raises the question how there can be a single understanding of atherosclerosis in the hospital, and consequently how knowledge of the body can still be successful in science. Here, Mol presents her second claim: the multiplicity of the enactments is *managed in practice*. The contradictions between enactments are often ignored or organized in a way that creates a “virtual common object”: the enactments form no natural unity, but are related to each other and “hang together” ([49], p. 5). Through management practices and the commitment to what Mol calls “ontological singularity,” there can exist a single, shared understanding of the disease, although several manifestations of the disease exist in practice.

The challenge, then, is to empirically trace the different enactments and management practices, in order to analyze how knowledge of the body is produced in practice and becomes successful scientific knowledge. This approach aligns with newer developments in the history of science, which center on synthesizing local studies to show how fragmented knowledge becomes powerful [50–53].

So what does this approach offer historians of the body? Most importantly, it might help us rethink the binary opposition between essentialism and social constructionism. First, praxiography moves beyond interpretations *of* the body to the actions of physical bodies in practice. Mol explains the issue of addressing the body as a representation: “by entering the realm of meaning, the body’s physical

reality is still left out” ([49], p. 11). Thus, a historical study of the enactments of the body in practice can bring into focus a *physical* body that responded to techniques, materials, actors, and sites. Moreover, praxiography demands attention for the agency of all actors involved in body (knowledge) practices, and requires scholars to seriously analyze the actions of the “objects of knowledge”—in Mol’s study the patients. Thus, bodies, objects, and techniques are no longer treated as silent objects but as important actors during encounters. In this way, praxiography might offer historians of the body an interesting method to study the physical body as an actor in history, by analyzing the “actions” of bodies, techniques, materials, and sites in practice instead of historical representations.

However, cultural historians have feared the move away from representations because of the potential essentialization of the historical body. Yet Mol’s multiple enactments highlight the instability and changeability of the biological body in practice, which she calls “ontological multiplicity” ([49], p. 164). This implies we do not need to assume the body to be a stable entity, but instead Mol invites us to analyze its presence and enactments in different historical encounters, and how those enactments have been brought together to give the illusion of a stable body. This might be thought of as a move to rethink the relationship between social constructionism and essentialism: we can historicize the body through the enactments of its physicality and stability in social encounters. This moves beyond the notion of the body as either a stable entity that exists outside of encounters or merely as the discursive product of those encounters.

In *The Body Multiple*, Mol states that she does not “go with the textbook versions of medical knowledge, but analyze[s], instead, what happens in medical practice.” ([49], p. 47). As we will further discuss below, body historians cannot as easily perform participant observation and use written or printed textbook knowledge to access historical knowledge, both for theories of the body and practices of its production. However, praxiography brings the complicated relationship between theories of the body and practices of knowledge production to the fore. Mol’s approach to multiplicity in practice and the management of a “virtual common object” provides historians tools for understanding the relationship between theory and practice, of which our knowledge remains very limited ([54], p. 56).

4. The Application of Praxiography to Body History: Geertje Mak’s *Doubting Sex*

In the remainder of this article, we will discuss two examples of the application of praxiography to body history. The first is a recent book by Dutch historian Geertje Mak, *Doubting Sex: Inscriptions, Bodies and Selves in Nineteenth-Century Hermaphrodite Case Histories* [55], based on sources like the description of over 1200 mostly German and French hermaphrodite case studies collected by the Polish doctor Franz Ludwig von Neugebauer in *Hermaphroditismus beim Menschen* (1908) and also autobiographies like that of the famous hermaphrodite Herculine Barbin. Mak applies Annemarie Mol’s praxiographic approach to demonstrate that hermaphroditism was enacted multiply in the nineteenth century. She therefore uses a verb: doubting sex. Sex could be doubted in many circumstances and places, by many different kinds of actors and could be about numerous objects and body parts. By looking at doubting sex in practice, Mak tries to avoid classifying cases according to current medical classifications and to follow contemporaries’ practices, thereby historicizing notions of physical sex, the sex of the self, and the social and legal order of sex. So, for Mak, the praxiographic approach has helped her historicize the different ways in which sex and doubting sex were enacted in

medical practices. Because many new medical techniques and routines had been introduced in the twentieth century, the ways in which sex could be doubted medically had multiplied dramatically. With the help of new techniques, medical experts were now able to discern hermaphroditism whereas before, lay people had been the only ones to experience this bodily condition ([55], pp. 6–7).

Mak's archeology of "sex" leads her to identify three implicit rationales. First, until circa 1870 sex was considered to be a moral and social position, not an inner identity. Clothing, profession and looks determined the way sex was interpreted in public. In villages, people with an ambivalent bodily sex were often accepted, since they were a familiar part of the community. Only in problematic cases, a physical examination of the genitals was performed. In this second rationale, sex was derived from the body. In the first half of the nineteenth century, physicians examined the appearance and the genitalia of the hermaphrodite and listened to their description of the functioning of these organs. Physical lust and the ability to procreate were important criteria to determine bodily sex. In the second half of the nineteenth century, doctors' diagnoses started to take place in clinics. From the end of the nineteenth century, operations became easier to perform, mostly because of the invention of anesthesia. Gonadal tissue could now be examined under the microscope. During operations, doctors increasingly discovered cases of hermaphroditism by accident. The person of the hermaphrodite was thus disconnected from his/her body. These developments in technology led to a third rationale, according to Mak: the idea that "true" sex was a mirror of an inner self. Determining sex became more complicated, leading to the question: Who had the power to decide: doctor or patient?

In order to evaluate Mak's application of Mol's praxiographic method to body history, we focus on three elements: the relationship between discourse and practice; the deconstructive and political role of discourse analysis in body history; and the role of the individual, feeling body. To start with the first, it is clear that historians will experience a difficulty when executing a praxiographic analysis like Annemarie Mol's or an ANT approach like Latour's, simply because both Mol and Latour perform participant observation and are able to analyze practices in action. Obviously, historians have to resort to written sources describing techniques, historical discourse therefore mediating between the observer and the techniques handled in practice. Mak herself raises the question whether nineteenth-century case histories are not primarily texts and thus deserve a discourse analysis. Her answer is that she has deliberately decided to read certain parts of her sources referentially, not focusing on the use of metaphors, style or narrative structures, but on the reported practicalities and techniques of physical examinations and the type of sex resulting from them. At the same time, however, "labelling, naming, verbalizing bodily features and functions, structuring case histories, and narrating life stories are *part* of the practices involved [...] And when it comes to the way physicians explained or justified their course of action or built up their case history, discursive or narratological-analytic tools were certainly employed." ([55], pp. 9–10). The latter is the case, for instance, in Mak's analysis of autobiographical writing by hermaphrodites.

Clearly, then, Mak does not completely distance herself from discourse analysis. Importantly, Mak underlines the discursive approach followed by Laqueur and Butler: "Bodies indeed cannot gain significance outside discourse. That does not mean that bodies can be reduced to discourse. [...] bodies may gain meaning through existing discourse, but they cannot be 'read' just like that. There are a lot of materialities, technicalities and practicalities involved in 'reading' bodies, or in making words, numbers, measures and meanings out of bodies." ([55], p. 8). Mak therefore argues that bodies can

only be read through discourses and material practices like “[r]outines, rules, money, institutions, instruments, skills, techniques, knowledge, disciplines, habits—these are all involved in enacting a body before it even can be read, and all have their own history.” ([55], p. 92).

Mak thus combines discourse analysis with praxiography. This raises the question, however, of the relationship *between* discourses and practices. Although the distinction between discourses and practices might be somewhat artificial, many historians still refer to these concepts as separate [56]. Mak seems to suggest that practices come before discourses, which would contradict Butler’s idea of performativity, which presumes discourses exist as scripts before enactment, yet at the same time come into being during enactment. Also note that Mak here, contrary to what she is claiming, seems to take a slightly different approach than Mol, who avoids the word “discourse” and the relationship between discourse and practice altogether. An example of the unclear relationship between discourse and practice is Mak’s claim that contrary to physicians treating homosexuals, doctors examining hermaphrodites did not have the techniques to study the sex of the self. Mak traces this to the influential gay subcultures, propagating an inner, individual identity, and thus stimulating medical research into sexual identity, whereas these powerful subcultures were missing in the case of hermaphrodites ([55], p. 204). Here, Mak assumes a causal relationship between powerful discourses (subcultures) and (medical) practices. To summarize, Mak does not follow a radical praxiographic analysis, but combines it with a discourse analysis. The exact relationship between practices and discourses, however, remains somewhat unclear.

The second element of Mak’s application of praxiography to body history we want to highlight is the role of deconstruction, and more particularly the political, often feminist, intention behind much deconstructive discourse analysis in body history. Mak in her book extends the approach of historian Alice Domurat Dreger, who focused solely on disciplinary medical opinion and ideas. Those scientific discourses failed to take hermaphrodites’ own feelings into account, a practice condemned by Dreger ([55], pp. 4–5, 159). Mak stresses that looking at medical techniques reveals that in practice both heterosexuality and sex could have different, sometimes contradictory meanings, thus eroding the idea of one overall normative medical discourse. One might argue that a praxiographic approach in this case thus dovetails with a less critical (*i.e.*, less aimed at deconstruction) approach to disciplining medical discourse in regard to sex and gender. On the other hand, a focus on more complicated practices might not necessarily lead to that conclusion. Rather, Mak states: “A call for the hermaphrodite’s sovereign right to ‘choose’ her or his own sex (like Dreger does, IC and WR) covers up these less obvious disciplinary mechanisms of power by suggesting there is a free, true self ‘out there’ which is the victim of suppression” ([55], p. 160). Still, this shifting of the attention from a critique on medical disciplinary discourse onto the category of agency Dreger uses diverts from the question of critique on the way hermaphrodites in the past may have been discriminated. A better way to underline the political potential of praxiography, which so far has not been fully explored by its proponents in our opinion, is to point to its capacity to show “difference” in all its facets: both hermaphroditism and, more generally, the body can be enacted in many different ways, thus opening up space for differences ([39], pp. 54, 57).

To conclude, Mak’s innovative application of praxiography to body history is fruitful in many respects: she shows how a focus on medical techniques and practices reveals the multiple enactments of hermaphroditism, sex, and gender in the nineteenth century and historicizes these meanings by

following contemporaries' practices, rather than current medical classifications. At the same time, it is clear that Mak cannot do without a discourse analysis and she successfully combines both. However, this particular application of praxiography to body history also raises new problems. It highlights the relationship between practices and discourses and at first sight seems to water down feminist critique that was paramount in deconstructive discourse analysis in relation to gender, sexuality and the body. A closer look, however, might reveal praxiography's new ways to argue for difference. Last, we might ask whether the lived, experienced body of the hermaphrodite comes to the fore in this history. As Mak herself states, she is more interested in problematizing the category of "experience", as proposed by historian Joan Scott ([55], p. 13). In the end, therefore, Mak's book is as much historical epistemology as praxiographic history.

5. The Application of Praxiography to Body History: Producing Racial Knowledge in Physical Anthropology

The second example of the application of praxiography to body history deploys Mol's method to analyze the production of racial knowledge in nineteenth and twentieth-century physical anthropological practices. A small number of scholars in the field of colonial history have recently begun to analyze practices rather than theories of race as a way to criticize the often too simplistic, dichotomous image of colonial life as it has been abundantly portrayed in postcolonial historiography. These studies aim to demonstrate that the European-native relationship and the production of colonial knowledge were far more complex in practice than postcolonial historians have assumed. For instance, colonial historians Ricardo Roque and Kim Wagner have recently drawn attention to the indigenous involvement, multiple encounters, and materiality in the production of colonial knowledge [57].

To what extent is praxiography a promising method of analysis for this novel "practice turn" in the historiography of race and colonial knowledge? Is it possible to direct our attention to the multiple actors, not just the scientists but also the "object of research", to indigenous involvement? Finally, does it pay due attention to the material aspect of racial research?

We can illustrate this by the results of an investigation of Dutch colonial knowledge production that has been carried by one of the authors, Iris Clever. Applying praxiography, it focuses on the work of Dutch physical anthropologist G.A.J. van der Sande [58]. In 1903, a Dutch state-funded expedition set sail for the Dutch colony of New Guinea. The "North New Guinea Expedition" was part of a series of Dutch expeditions to the colony that aimed to map the area and gain knowledge of its inhabitants to establish control over the territory. This particular expedition was sponsored by the Dutch state to explore the partially unknown northern coastline and find exploitable layers of coal. During six months, the group explored the northern coast, and spent time in Humboldt Bay, Lake Sentáni and the Geelvink Bay. After the expedition, most members contributed to a comprehensive study of the expedition and its scientific results. Van der Sande wrote the third part of this collection *Nova Guinea* [59], which he elaborately discussed the ethnographical and anthropological characteristics of the inhabitants of New Guinea, classified as being of Papuan stock.

Following the recent practice turn in colonial history and the history of science practice approach, colonial texts like *Nova Guinea III* can be understood as the result of the practical process of its production. A discourse analysis of the book would not suffice to understand van der Sande's

classification of Papuan race: the representation of Papuan race in *Nova Guinea III* is messy. There is no clear demarcation or classification of the race under examination: van der Sande fails to stamp the population with a coherent identity. Furthermore, his text does not evidence a vitriolic racial discourse on inferiority and therefore it remains unclear to what extent van der Sande was guided by the nineteenth and twentieth-century tradition of scientific racism [60].

With a praxiographic approach, we can study the process by which van der Sande produced complex and messy knowledge about Papuan race. By tracing the different enactments of Papuan race in different practices, this analysis tries to recognize indigenous involvement and the impact of material practices on knowledge production, along with the complexity and instability of the concept of “race”. Furthermore, it provides a means to analyze how complexity in practice is made into a more or less simplified—yet messy—racial classification for the publication *Nova Guinea III* through the use of Mol’s concept of a “virtual common object”.

The different practices can be located in two ways. First, by reading *Nova Guinea III* along and against the grain [57,61] to find observation and examination practices used to produce anthropometric information, and to identify what can be called calculation practices, used to convert anthropometric information into tables. Second, by analyzing personal documents such as Lorentz’s published journal on the expedition and a correspondence between van der Sande and Lorentz between 1905 and 1909, which provide crucial information on anthropological materials and techniques and the interaction between natives and the expedition group. As we will see below, this resulted in a combination of the praxiographic method with discourse analysis. By mapping these practices and the different enactments of race, we can better understand how racial knowledge was produced, from the first encounters with Papuans to the writing of *Nova Guinea III*.

5.1. Indigenous Involvement

Through close reading of the available sources of the expedition, it is possible to get a glimpse of the words, actions, and visions of the indigenous population of New Guinea. However scant, an impression of the contact between expedition members and the natives can be given, as well as the indigenous role in the production of knowledge.

Before indigenous people could be measured for anthropological purposes, the expedition team first needed to gain access to their villages. Apparently, this was not easy. In a letter dated February 6, 1907, van der Sande mentions that the inhabitants of some of the villages were “unprepared” for the arrival of the expedition team, which acted as an “outright hindrance” to any form of ethnographic or anthropological work [62]. The fact that the contact with inhabitants was essential to gaining access to villages shows that the scientists had to negotiate and that natives controlled boundaries and could refuse access. Sometimes they simply left their villages. In the diary of H.A. Lorentz, it is mentioned that the expedition members often made drum sounds to make villagers aware of their impending arrival and their peaceful intentions. The team was frequently taken into the villages, but in some cases encountered completely deserted towns, because the people had taken off after hearing the drum sounds ([63], p.72). In other places, whole villages turned out, with traders, interpreters, and children coming out to the beaches to meet the expedition team. From Lorentz’s travel journal it becomes clear that trading was one of the main activities of the expedition: nearly everywhere they went, the

expedition members traded blades, knives, mirrors, beads, tobacco, shells, and pieces of cotton for all sorts of ethnographic objects or just for “friendship” in general. In some cases, the scientists had to negotiate intensively for these objects ([63], pp. 55, 84; [64]). This shows that, to a certain extent, the people knew what the expedition members wanted, what they found valuable, and what they were willing to give for objects that in some cases had little value to Papuans.

This brief analysis of the encounters between expedition members and natives shows that the production of knowledge depended on the willingness of the people of New Guinea to provide the scientists access to their villages, which in turn is crucial for van der Sande’s examination of customs and bodies, *i.e.*, for producing ethnographic and anthropological knowledge. It suggests indigenous involvement and challenges the common assumption that scientists were the main or even sole actors in that process. This claim is further strengthened by the fact that native informants and guides also played a pivotal role during the expedition ([64], p. 173). In sum, the quantity and quality of information the expedition members received seemed to depend on their relationship with the inhabitants of New Guinea, as they had the possibility to set boundaries and control access.

By calling attention to the agency for all actors involved in practices, praxiography reminds us to look at the individual embodied encounters between “objects of knowledge” and “subjects of knowledge” in the production of body knowledge in practice, thus shedding light on indigenous involvement and experiences.

5.2. Complex Data, Simplified Classification

After gaining access to villages, van der Sande searched for natives who permitted him to measure their bodies. He would fill the measurements into standardized anthropological forms, and used this information about “the Papuan body” to compare this group of people to other populations around the world. As such, he hoped to racially classify “the Papuan” to gain an understanding of human variety and racial dispersion ([62], 22 February 1906 and 24 November 1906).

Van der Sande’s anthropological measurements produced a large amount of body data. By focusing on the different enactments of race, resulting from different materials, techniques, actors, and sites, it becomes possible to sketch how van der Sande, in measuring bodies, produced messy, complex, and contradictory information about Papuan race.

In the examination of one person, van der Sande measured many different “sites” of the body: skin color, nails, hair, teeth, arm span, skull size, jaw, body length, eyes, face, weight, fingers, hands, feet, and toes. All these different body sites required specific techniques and materials. Following praxiography, we can argue that these body sites produce a specific enactment of race in their interaction with techniques and materials of racial research. Van der Sande illustrated this *modus operandi* in discussing skull measurements in one of the letters. He complained that some anthropologists measured the length of the skull from the chin to the crown, while others took the length of the chin to the top of the skull. These different techniques produced different results, which, according to van der Sande, were incompatible and unsuitable for racial classification and comparison ([62], 11 June 1909). The enactment of race further multiplied when some body parts were measured for different goals with different techniques. For example, teeth were examined for their size and the extent to which they were cutting. In the size of the teeth van der Sande found the distinct “Papuan”

character of megadontism ([59], p. 341), while measuring teething might have led to supporting a different racial classification.

Thus, these multi-varied body sites with their own techniques of analysis produced different enactments of race which could be used to support different racial classifications. Furthermore, variable scientific practices produced large amounts of complex and contradictory anthropological information and data, and as can be determined from the letters, this was a problem that was recognized and discussed by anthropologists. As such, a focus on techniques, materials, and sites demonstrates not only the difficulty of studying Papuan race in practice, but suggests the complexity and fragmentation of the Western notion of Papuan race itself. Although the anthropological data was fragmented and messy in practice, van der Sande strove in *Nova Guinea III* “to connect the ethnographical and anthropological results obtained by the Expedition, with what has already been written by others about New Guinea”. ([59], preface). He did so by comparing his results of measurement to other studies, by combining all sorts of statistical information in tables and graphs, and by comparing them to each other and other races around the world. This means that van der Sande had to deploy modes of coherence to bring the data together and work towards a racial classification of the Papuan race. Inevitably, these techniques of coherence were characterized by ignoring or erasing possible contradictions between different enactments of race. Van der Sande deployed three ordering techniques: by relating enactments to the “body”, “geography” and “population”.

The first step in bringing the different enactments together was by filling the different measurements of one body into a single anthropological form. The different measurements of body sites became relevant in relation to each other: they said something about the race of a single body. In this way, possible contradictions between differing measurements and enactments were erased.

In the second step Van der Sande combined the different measurements of different body parts. Through calculations, he produced statistics, such as medians, maximums, and minimums. Next, he attached these numbers to specific geographical clusters, such as “Lake Sentáni” or “Humboldt Bay”. These clusters were combined in tables, which for instance compared the height, weight, and head measurements of these different geographical groups.

Then, van der Sande further zoomed out and compared the Papuans of his study to Papuans of other studies, by including their statistics in the tables. This continued through the comparison of “the Papuan” in general to other geographical clusters, such as Melanesians, Africans, and Europeans. Thus, these geographical sites were produced for the sole purpose of comparing them to other geographical sites.

These comparisons between geographical clusters of different sizes were combined in the practice of writing the chapter “Anthropology” for *Nova Guinea III*. Here van der Sande deployed another ordering strategy to make sense of the anthropological data. We have seen that race was enacted in relation to body sites, geographical clusters, and the entire “Papuan” population. These three logics—of the body, of geography, and of population—came together in the practice of writing the book: not only did they depend on each other in the process of zooming out and ordering information, they were combined into single paragraphs or even sentences. For instance, body sites and geographical clusters were linked to ethnographical characteristics. Thus, by letting biological sites refer to other sites, van der Sande made biological enactments of race say something about other enactments, for instance ethnographical enactments. As such, the referral of sites to each other enabled van der Sande to make

essentialist claims about “Papuan” race. This suggests that he was trying to find Papuan essences and in order to do so he wanted to present the multiple enactments as a unity or a racial core in his book. By erasing differences, and by combining the logics of the body, geography, and population in terms of referral, van der Sande aimed at presenting Papuan race as a unified object. However, this unity was imaginary, and pieced together. The referral of different sites to each other gives us a glimpse of these imaginary connections. The racial unity is, to use Mol’s term, a “virtual common object”. This explains the messy representation of “Papuan race” in the book: the complexity measuring, defining and categorizing race in practice dominates.

Thus, by zooming out using the “ethnographic microscope” ([49], p. 50), from individual body sites of measurement, to anthropological forms, geographical groups, and the “Papuan” as the subject of *Nova Guinea* III, we can analyze the ordering strategies which brought different enactments of race together into single numbers, characteristics, and essences. This praxiographic analysis thus provides insight into the attempts to turn the complexity of body analysis in practice into more simplified theories of the body. This case study does not want to suggest that these ordering strategies are chronologically separate phases, as Johannes Fabian has rightly argued ([65], p. 198), but wishes to map them and see how their relations can be understood. This case study analyzed race in light of Mol’s praxiography. It does not aim to provide a comprehensive overview of the literature on the history of New Guinea, Papuan race, or scientific racism, nor provide an extensive analysis of van der Sande’s anthropological work or the expedition. It is presented here to show what praxiography can reveal or might do in light of these types of histories. Like Mak, this case study has taken a different approach to textual sources and tried to pull out the practicalities of producing racial knowledge. It aimed to demonstrate how van der Sande attempted to produce a coherent object “Papuan race”, thus studying those practicalities in relation to the discursive process of categorizing the people of New Guinea. By examining the relationship between practice and discourse in this particular case, this example also shows that medical discourse came into being in complex and messy practices. Van der Sande’s “Papuan race” is not a self-evident, coherent object but enacted and temporarily tied together through and across different practices. Similar to Mak, this case study questions the singularity and force of medical discourse.

Above, the question was raised to what extent praxiography could reveal the material aspect of racial research. This example from Dutch anthropology might historicize the Western notion of “Papuan race” as a “virtual common object”, stressing its instability by demonstrating modes of fragmentation and unification. Here, the materiality of the body is addressed by discussing techniques, materials, sites, and actors that were active in the enactment of the category “Papuan race”. It also shows that a lot more can be done. By zooming in on specific body parts in practice and by studying the techniques and materials of the observation, measurement, and analysis of the body in detail, historians could reveal a far more material body than that has been presented here.

Secondly, we asked if praxiography could help body historians zoom in on indigenous involvement and experience. By searching the available publications and egodocuments for hints and clues, this study tried to provide an overview. Yet, this remained a form of discourse analysis, combined with the study of practices. As a method of analyzing practices, praxiography makes multiple actors visible but does not necessarily reveal the feeling, experiencing body. Thus, praxiography mainly ends up being a reminder to take all human and non-human actors in knowledge producing practices into consideration.

We still need to study how the relationship between human and non-human actors can be demonstrated in histories where some of those actors are mostly muted in the source material. We could start by searching for more information on native experience, but also try to include their understanding of the body in our studies in order to access a body that is not merely the object of Western knowledge production.

6. Conclusions

Since the cultural turn, body historians have approached the body as a historically variable object, subjected to the power of science and disciplined by social norms. However, this has produced a historical body that is an agentless substance, and historians have neglected the individual experiences of encounters between “objects” and “subjects” of knowledge and the materiality of the body in those encounters. While there is a fear that turning to materiality might essentialize the body and undo the important work of deconstructing seemingly fixed notions of biological difference, new approaches such as praxiography might offer a solution. With its methodology of ethnographic participant observation, praxiography focuses on bodies in practice, as an acting agent amongst other agents, such as sites, materials, and techniques. Thus, it allows space for the materiality of the body, but does not turn to essentialism: praxiography focuses on the ontological instability or multiplicity of the body, how it is differently enacted in every practice and has managed to form a seemingly natural unity.

Moreover, although seemingly paying less attention to the deconstruction of disciplining discourses on gender and race, praxiography might provide new ways of opening up historical power relations by looking at the relationship between practices of knowledge production and the representation of the body that is produced through the process of creating a “virtual common object”. Thus, instead of erasing the political importance of deconstruction, this approach presents the perspective that first, scientists were not dominant in producing body knowledge, and second, that social norms inscribed onto the body were not powerful, united constructions but loosely-tied, unstable enactments. By understanding the process of producing meaning as a practice, we might be able to rethink the binary opposition between practice and discourse. A praxiographic approach to body history thus potentially opens up new ways of looking at power and norms in regard to gender, sexuality and race.

So far, praxiographic analyses have been limited to seemingly hierarchical encounters between doctors and patients or scientists and natives. The potential of a praxiographic analysis of bodies in history can be tested in future by expanding its topics outside of these types of encounters. Also, this methodology should include more attention to corporeal experience. In any case, it is undeniable that the material turn has affected and enriched the field of body history and that historians should take note of it.

Acknowledgments

The authors would like to thank Ed Jonker, Kristine Steenbergh, Melvin Wevers and the anonymous referees for their helpful comments on a previous version of this article.

Author Contributions

Sections 1, 2 and 4 have been written by Willemijn Ruberg; Sections 3 and 5 by Iris Clever, however both authors have read and approved the final manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

References and Notes

1. Thomas Laqueur. *Making Sex: Body and Gender from the Greeks to Freud*. Cambridge: Harvard University Press, 1990.
2. Peter Stearns. *Fat History: Bodies and Beauty in the Modern West*. New York and London: New York University Press, 1997.
3. Joan Jacobs Brumberg. *Fasting Girls: The History of Anorexia Nervosa*. Cambridge: Harvard University Press, 1988.
4. Lyndal Roper. *Oedipus and the Devil: Witchcraft, Sexuality and the Religion in Early Modern Europe*. London: Routledge, 1994.
5. Rosemarie Garland-Thomson. *Extraordinary Bodies: Figuring Physical Disability in American Culture and Literature*. New York: Columbia University Press, 1997.
6. Philipp Sarasin. *Reizbare Maschinen: Eine Geschichte des Körpers 1765–1914*. Frankfurt am Main: Suhrkamp Verlag, 2001.
7. Nadine Ehlers. *Racial Imperatives: Discipline, Performativity, and Struggles against Subjection*. Bloomington: Indiana University Press, 2012.
8. Alain Corbin, Jean-Jacques Courtine, and Georges Vigarello, eds. *Histoire du Corps*. Paris: Seuil, 2004, vol. 1.
9. Alain Corbin, Jean-Jacques Courtine, and Georges Vigarello, eds. *Histoire du Corps*. Paris: Seuil, 2005, vol. 2.
10. Alain Corbin, Jean-Jacques Courtine, and Georges Vigarello, eds. *Histoire du Corps*. Paris: Seuil, 2006, vol. 3.
11. Linda Kalof, and William Bynum, eds. *A Cultural History of the Human Body*. London: Berg, 2010, vol. 1–6.
12. One other new and interesting approach is the use of philosopher Gilles Deleuze's work to focus on the becoming of bodies, also in relation to other bodies. See Lisa Helps. "Body, Power, Desire: Mapping Canadian Body History." *Journal of Canadian Studies* 41 (2007): 126–50. For this article, however, we have chosen to focus on praxiography.
13. Roy Porter. "History of the Body." In *New Perspectives on Historical Writing*. Edited by Peter Burke. Cambridge: Polity Press, 1992, pp. 206–32.
14. Norbert Elias. *The Civilizing Process*. Oxford: Blackwell, 1969, vol. I.
15. Norbert Elias. *The Civilizing Process*. Oxford: Blackwell, 1982, vol. II.
16. Mikhail Bakhtin. *Rabelais and his World*. Bloomington: Indiana University Press, 1984. Originally Published in 1965.

17. Recently, Bakhtin's concepts have been used in a study of the belly: Tina Ebbing. *Körpermitte: Eine Kulturgeschichte des Bauches seit der Frühen Neuzeit*. Frankfurt am Main: Campus, 2008.
18. Mary Douglas. *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*. London and New York: Routledge, 2008. Originally Published in 1966.
19. Michel Foucault. *Discipline & Punish: The Birth of the Prison*. New York: Vintage Books, 1995. Originally published in 1975.
20. Michel Foucault. *The Will to Knowledge: The History of Sexuality*. London: Penguin, 1998, vol. I. Originally Published in 1976.
21. Roy Porter. "History of the Body Reconsidered." In *New Perspectives on Historical Writing*, 2nd ed. Edited by Peter Burke. Cambridge: Polity Press, 2001, pp. 232–60.
22. Kathleen Canning. "The Body as Method? Reflections on the Place of the Body in Gender History." *Gender and History* 11 (1999): 499–513.
23. Judith Butler. *Bodies that Matter: On the Discursive Limits of "Sex"*. London and New York: Routledge, 1993.
24. Judith Butler. *Gender Trouble: Feminism and the Subversion of Identity*. London and New York: Routledge, 1999. Originally Published 1990.
25. Barbara Duden. *The Woman beneath the Skin: A Doctor's Patients in Eighteenth-Century Germany*. Translated by Thomas Dunlap. Cambridge: Harvard University Press, 1991. Originally Published 1987.
26. Micheline Louis-Courvoisier, and Severine Pilloud. "The Intimate Experience of the Body in the Eighteenth Century: Between Interiority and Exteriority." *Medical History* 47 (2003): 451–72.
27. Lyndal Roper. "Witchcraft and Fantasy in Early Modern Germany." *History Workshop* 32 (1991): 19–43.
28. Moira Gatens. *Imaginary Bodies: Ethics, Power and Corporeality*. London: Routledge, 1995.
29. Elizabeth Grosz. "Inscriptions and Body-Maps: Representations and the corporeal." In *Feminine, Masculine and Representation*. Edited by Terry Threadgold and Anne Cranny-Francis. Boston and Sydney: Allen & Unwin, 1994, pp. 62–74.
30. Elizabeth Grosz. "Bodies and Knowledges: Feminism and the Crisis of Reason." In *Idem, Space, Time, and Perversion*. New York and London: Routledge, 1995, pp. 25–43.
31. Elisabeth Grosz. *Volatile Bodies: Toward a Corporeal Feminism*. Bloomington and Indianapolis: Indiana University Press, 1994.
32. See also the work of Anne Fausto-Sterling, who proposes a "life-course systems approach to the analysis of sex and gender", in which culture and biology continually interact in producing body systems: Anne Fausto-Sterling. "The Bare Bones of Sex: Part I—Sex and Gender." *Signs: Journal of Women in Culture and Society* 30 (2005): 1491–527.
33. Ivan Crozier. "Introduction. Bodies in History—The Task of the Historian." In *A Cultural History of the Human Body*. Edited by Ivan Crozier. Oxford and New York: Berg, 2010, vol. 6, pp. 1–22.
34. Roger Cooter. "The Turn of the Body: History and the Politics of the Corporeal." *ARBOR Ciencia, Pensamiento y Cultura* 186 (2010): 393–405.
35. Dror Wahrman. "Change and the Corporeal in Seventeenth- and Eighteenth Century Gender History: Or, Can Cultural History be Rigorous?" *Gender & History* 20 (2008): 584–602.
36. Daniel Lord Smail. *On Deep History and the Brain*. Berkeley: University of California Press, 2008.

37. Rick Dolphijn, and Iris van der Tuin. *New Materialism: Interviews & Cartographies*. Ann Arbor: Open Humanities Press, 2012.
38. Karen Barad. "Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter." *Signs* 28 (2003): 801–31.
39. Marjolein Kuiper. "Wild denken over verschil: Het filosofisch activisme van Annemarie Mol." *Tijdschrift voor Genderstudies* 1 (2006): 51–57.
40. Bruno Latour, and Steve Woolgar. *Laboratory life: The Social Construction of Scientific Facts*. Beverly Hills: Sage Publications, 1979.
41. Steven Shapin, and Simon Schaffer. *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life*. Princeton: Princeton University Press, 1985.
42. For the discipline of history, see also Harvey Green. "Cultural History and the Material(s) Turn." *Cultural History* 1 (2012): 61–82.
43. John Law. *After Method: Mess in Social Science Research*. London and New York: Routledge, 2004.
44. Marianne de Laet, and Annemarie Mol. "The Zimbabwe Bush Pump: Mechanics of a Fluid Technology." *Social Studies of Science* 30 (2000): 225–63.
45. Arthur W. Frank. "The Body Multiple: Ontology in Medical Practice by Annemarie Mol." *American Journal of Sociology* 109 (2003): 532–34.
46. Christian Bueger. "Pathways to Practice: Praxiography and International Politics." *European Political Science Review* (2013): 1–24.
47. Beate Littig. "On High Heels: A Praxiography of doing Argentine tango." *European Journal of Women's Studies* 20 (2013): 455–67.
48. Amade M'Charek. "Beyond fact or fiction: On the Materiality of Race in Practice." *Cultural Anthropology* 28 (2013): 420–42.
49. Annemarie Mol. *The Body Multiple: Ontology in Medical Practice*. Durham: Duke University Press, 2002.
50. Jan Golinski. *Making Natural Knowledge: Constructivism and the History of Science*. Chicago: University of Chicago Press, 1998.
51. James Secord. "Knowledge in transit." *Isis* 95 (2004): 654–72.
52. Soraya de Chadarevian. "Microstudies versus big picture accounts?" *Studies in History and Philosophy of Biological and Biomedical Sciences* 40 (2009): 13–19.
53. Ed Jonker. "Van relativisme naar oordeelsvorming: Recente tendensen in de wetenschapsgeschiedschrijving." *Studium* 1 (2011): 2–15.
54. Geertje Mak. "Lichaamsgeschiedenis, sekse en zelf." *Gender en Het Historische Lichaam: Jaarboek Voor Vrouwengeschiedenis* 28 (2008): 34–60.
55. Geertje Mak. *Doubting Sex: Inscriptions, Bodies and Selves in Nineteenth-Century Hermaphrodite Case Histories*. Manchester: Manchester University Press, 2012.
56. Achim Landwehr. "Jenseits von Diskursen und Praktiken: Perspektiven kriminalitätshistorischer Forschung." In *Verbrechen im Blick: Perspektiven der neuzeitlichen Kriminalitätsgeschichte*. Edited by Rebekka Habermas and Gerd Schwerhof. Frankfurt and New York: Campus Verlag, 2009, pp. 42–67.

57. Ricardo Roque, and Kim Wagner. "Introduction: Engaging Colonial Knowledge." In *Engaging Colonial Knowledge: Reading European Archives in World History*. Edited by Ricardo Roque and Kim Wagner. Basingstoke: Palgrave Macmillan, 2012, pp. 1–32.
58. Iris Clever. "Papuan race in practice: The enactment of race and the practical turn in colonial history." Research Master History, Utrecht University, Utrecht, the Netherlands. Unpublished paper, 2012. This paper discusses a much more detailed analysis of Van der Sande's work. Due to limited space, only its conclusions are presented here. Iris would like to thank Dr. Geertje Mak for selecting this case study for her master's thesis, and pointing her towards Annemarie Mol's work for the analysis. Our stimulating discussions were fundamental to the analysis. Dr. Geertje Mak is preparing an article on race and praxiography in relation to this case study, see Geertje Mak. "Enactments of Sex, Enactments of Race around 1900 and the Question of Surface." Paper presented at Race and Racialization—Meaning and Consequences of Biological Differences, RNAAS-Hendrik Muller summer school, Leusden, June 2013.
59. Gijsbertus Adrian Johan van der Sande. *Nova Guinea*. Leiden: Brill, 1907, vol. 3.
60. In a recent overview of Dutch anthropological work in the Indonesian archipelago, historian Fenneke Sysling argues that finding a single marker of race was problematic on a local level. She discusses how Dutch anthropologists relied on techniques besides measurement, such as photography, to categorize humans. See Fenneke Sysling. "The archipelago of difference: Physical Anthropology in the Netherlands East Indies, CA. 1890–1960." Ph.D. Dissertation, Free University Amsterdam, Amsterdam, The Netherlands, 21 February 2013.
61. Ann Laura Stoler. *Along the Archival Grain: Epistemic Anxieties and Colonial Common Sense*. Princeton: Princeton University Press, 2009.
62. Mr. H.A. Lorentz (1871–1944), correspondence with G.A.J. van der Sande, 6 February 1907. 1905–1914 [Nieuw-Guinea Expeditie]. National Archive, The Hague, The Netherland. Collection 384, access no. 2.21.183.51, inventory no. 8.
63. Hendrikus Albertus Lorentz. *Eenige maanden onder de Papoea's*. Leiden: Brill, 1905.
64. David van Duuren, and Steven Vink. "Expeditions: Collecting and Photographing." In *Oceania at the Tropenmuseum*. Edited by David van Duuren and Daan van Dartel. Amsterdam: KIT Publishers, 2011.
65. Johannes Fabian. *Out of Their Minds: Reason and Madness in the Exploration of Central Africa*. Berkeley: University of California Press, 2000.