

## Contents

*Preface* 9

PART ONE: SITUATING FETAL LIFE 13

- I *Paris 1870/71: Trauma in the Womb* 15  
II *Children, Fetal Life, and the Prenatal* 21  
III *The Unborn and the Human Sciences* 37

PART TWO: LIVING BEINGS 55

- IV *The Life of the Fetus* 63  
V *Pregnancy as Relation* 95  
VI *Prenatal Danger* 111

PART THREE: INNER LIFE 137

- VII *How the Pregnant Woman Feels* 141  
VIII *If the Fetus Senses* 161  
IX *What the Environment Does* 197

PART FOUR: POLITICS OF THE UNBORN 213

x *Thresholds in Time* 215

xI *Of Human Born* 239

*Acknowledgments* 249

*Notes* 251

*Bibliography* 317

*List of Illustrations* 351

*Index* 353

CHAPTER ONE

**Paris 1870/71:**

**Trauma in the Womb**

A child was conceived in Paris in May 1871 who would attract the attention of illustrious medical men thirteen years later. This girl, psychiatrist Charles Féré reported in 1884, had a “generally satisfactory constitution” and her skull was regular in form, though her face was somewhat disfigured by the scar of a cleft lip.<sup>1</sup> However, Féré continued, the child was tormented by an eyelid tic, could speak only with difficulty, and occasionally suffered from bedwetting. She read very badly and could hardly write; furthermore, she was drowsy, gloomy in temperament, and plagued by attacks of vertigo that made her drop things on the floor.

Féré ruled out family disposition as an explanation of these behavioral problems, for neither the family of the father, a respected lawyer, nor that of the mother showed any history of nervous illness, and the girl’s three older siblings had no symptoms of the kind. Everything suggested that the girl should be considered one of those children known in common parlance as the “children of the siege” (*enfants du Siège*) or the “children of the Commune” (*enfants de la Commune*). She had been conceived during the tumultuous days of the Paris Commune, more precisely the early hours of May 2, 1871. Just half an hour later, troops of the National Guard had burst into the lawyer’s apartment, whereupon his sensitive wife, terror-stricken, immediately fell to vomiting and did not regain her usual state of mind until

several days later. The family then left Paris and the pregnancy proceeded without further complications. It was fair to surmise, Féré concluded, that the daughter's irregularities had resulted from the "shock to the mind" — the *choc moral* — suffered by her future mother in the hours of conception, when the flood of political events surged into her apartment in the shape of the National Guard.<sup>2</sup>

Charles Féré, recounter of this noteworthy case, was one of a handful of French psychiatrists associated with Jean-Martin Charcot who, in the 1880s, took an interest in the cohort of children conceived and born between fall 1870 and spring 1871, during the German siege of Paris and the subsequent revolutionary events of the Paris Commune. The turmoil of that *année terrible* imposed tremendous stress on the local population. In September 1870, despite the defeat of its troops, the new French Third Republic refused to accept the peace terms for ending the Franco-Prussian War. The German forces responded by besieging Paris, starving the city into capitulation. From the end of the siege in January 1871, a political struggle set the royalist majority in the French National Assembly, which concluded peace with Germany, against radical republicans in Paris, who feared a restoration of the monarchy. In March, the city rose up against the national government by electing revolutionary republicans and socialists to govern in what would prove to be a short-lived "Commune." On May 21, 1871, national troops entered Paris. In the ensuing "bloody week," twenty thousand defenders of the Commune were killed.

Now, a decade later in the 1880s, it was said that the children conceived during those months of terror showed "developmental disturbances" (*troubles d'évolution*) with disproportionate frequency.<sup>3</sup> According to his colleagues, Désiré-Magloire Bourneville of the Hôpital Bicêtre, founder of one of the world's first child psychiatry departments, had also observed the phenomenon; at least, his photographic collection on childhood mental illness included several portraits of children of the *année terrible* (Figure 1).<sup>4</sup>

The definitive portrayal, however, was that presented by the psychiatrist and criminologist Henri Legrand du Sault in a much-noted



Gillequin,  
Genesl. constant.  
né le 19 juin 1871, à Paris ( Seine )

**Figure 1.** Photographic portrait of a young boy (born June 1871), taken at the Bicêtre hospital. Désiré-Magloire Bourneville, 1880–81.

1884 lecture at the Parisian Hôpital de la Salpêtrière. His discussion of the “influence of political events” on “physical and intellectual anomalies in the children conceived during the siege of Paris” established both the phenomenon and the label *enfants du Siège* in psychiatric debate as an umbrella description for the children of the siege and the Commune.<sup>5</sup> During his work at the Bicêtre and in the psychiatric infirmary of the Parisian police prefecture, Legrand du Saulle had gained access to empirically utilizable data that he summarized in his lecture. Of ninety-two children in the cohort in question, he reported, sixty-four had shown “physical or mental deformities”; specifically, thirty-five displayed “tubercular abscesses, a sloping forehead, a squint, epilepsy, hearing loss, stuttering, hemiplegia, clubfoot, incontinence, or rickets,” twenty-one suffered from “intellectual abnormalities” such as “reduced mental faculty, dejection, apathy, inattentiveness, semi-imbecility, and idiocy.” Eight children were “egoistic, perverted, immoderate, malicious, brutal . . . and obscene”; the remaining twenty-eight were feeble, but not conspicuously malformed.<sup>6</sup>

Just a few years later, Charcot himself noted in the clinical history of a man who since childhood had been sickly, nervous, and impaired in mobility that this patient, “born on April 13, 1871 (after the siege)” was “as one says, a ‘Child of the Siege.’” The reference to the *enfants du Siège* here appears to be entirely taken for granted, requiring no further explanation.<sup>7</sup>

All these physicians drew a connection between political events and childhood “anomalies” that was already commonplace in the streets of Paris at the time. Pediatricians, said Legrand du Saulle in his lecture, had long been consulted by mothers whose approach to etiology was brisk: “Monsieur, what do you expect? He’s a child of the Siege.” That, Legrand du Saulle commented, was “exact,” and it was “true.”<sup>8</sup> But what had given rise to this connection, a link that came to light in the throwaway comment of a mother and prompted the psychiatrist to consider the date of birth in children with problems?

Legrand du Saulle had more detail to offer. During the siege of

Paris, “the innermost conditions of fetal life” had been altered in these children. Even more precisely: “Before its birth, the fetus was subject to disastrous influences, and their pathogenic effect went as far as injuries to the brain.” This, then, was how Legrand du Saulle understood the bond between political event and childhood anomaly: as the pathological effect of a prenatal occurrence that had intervened in fetal life.

What exactly was it that had exerted such an influence? Two factors seemed so obvious that the psychiatrist had only to sketch out familiar vignettes: “What happens during the siege? The man leaves the apartment to get drunk while the woman stays at home, hungry; soon she dips her bread in wine to ease the absence of victuals, and so she slips gradually into . . . the habits of the alcoholic.”<sup>10</sup> But alongside malnutrition and alcoholism, Legrand du Saulle insisted, a third factor must be taken into account, namely “the state of mind in which we all found ourselves.” For even if Parisians had put on a brave face, they had in fact suffered a mental trauma, a *traumatisme moral*.<sup>11</sup>

By referring to “trauma,” Legrand du Saulle mooted a connection sure to pique the interest of the audience gathered at the Salpêtrière, which was made up of colleagues and students of Charcot.<sup>12</sup> Although at this time the term *trauma* in medical discourse still mainly followed the etymological tradition to describe the bodily “wound,”<sup>13</sup> since the 1870s it had increasingly been applied to psychological phenomena as well.<sup>14</sup> This expansion of the term’s scope was spearheaded by the school of thought around Charcot, which psychologized the notion of trauma partly in the context of research on hysteria, but partly also in response to the events of 1870 and 1871.<sup>15</sup> By adding the adjective *moral*, and thus bringing mental aspects into play, Legrand du Saulle articulated just that change.

Féré, a student and close collaborator of Charcot’s and later of Legrand du Saulle’s, picked up this thread when, citing Legrand du Saulle’s lecture on the *enfants du Siège*, he told the story of the unnamed lawyer’s daughter. In Féré’s view, her case was informative because it enabled the mother’s traumatization to be traced back to

a precisely recalled mental shock. The Charcot School saw the shock as the link that connected psychological traumatization with later symptoms.<sup>16</sup> Moreover, in this case there was no need to worry about a possible amalgamation of different causes. Legrand du Saulle's statistics had covered mainly children from the "poor classes," who were particularly hard hit by malnutrition and alcoholism. It was reasonably safe to assume, Féré argued, that in the case of the lawyer's daughter — the scion of "a different milieu" — the anomalies had been caused by the shock-induced "psychological state" (*état psychique*) of the expectant mother alone.<sup>17</sup> One could therefore contemplate here, in an isolated form, the "least well-known" yet "most interesting" factor: "psychical influence" (*influence psychique*).<sup>18</sup> Little wonder that Féré, who soon after the publication of his case history became the first secretary of the Société de psychologie physiologique, founded in 1885, and later vice president of the Société de biologie, would devote himself to this topic for the next fifteen years.<sup>19</sup>

This book is an attempt to understand the object of a curiosity that made a childhood anomaly in the present point to fetal life in the past. How could an event that took place in 1871 still be taking place in a child who blinked too frequently and irregularly in 1884, who was lost for words and could not find her way out of her dreams, who could ward off her body's floundering only by dropping objects on the floor? Starting from this question, we find that nineteenth-century talk of fetal life was not as self-explanatory as it may seem today. Rather, it reveals the historically particular and entirely novel manner in which the human sciences between the late eighteenth and the early twentieth century constituted the unborn and conceptualized the time before birth.

In the next two chapters, I introduce the theoretical and methodological orientations of this book, which combine the history of science with historical ontology. Presenting an overview of its argument, I show how *Of Human Born* proceeds by situating the story of the *enfants du Siège* within a larger history of the unborn and the human sciences.



CHAPTER TWO

**Children, Fetal Life,  
and the Prenatal**

*An Event in the History of Knowledge*

Charles Féré's speculations on the consequences of shock to the pregnant woman's mind are much more than an anecdote from the history of medicine. His notion of psychical influence brought together a new understanding of the unborn in the human sciences with a contemporaneous interest in the transmission of traits across generations — an interest that was, in turn, inextricable from a political concern with societal continuity. This is why the *enfants du Siège*, the children conceived or born during the terrifying year of 1870/71, form the crux of my study, as an event in the history of knowledge where such connections come into view and from which they can be explored. The children supply me with the guiding thread for an investigation in which I assume that everything about this nexus is historically specific.

That does not mean it is disconnected from what went before and what was still to come. References to pregnant women who are shaken by events and give birth to perplexing children evoke a very ancient idea: that like generates like. Thus, the ancients thought, pregnant women should contemplate sculptures and avoid funerals in order to ensure that beautiful and cheerful children would be born.<sup>1</sup> Equally, such comments foreshadow a present-day conviction: that the mother-to-be's lifestyle and circumstances lay the

foundations for the prospective child's health and must be taken into account as a third factor, alongside genetics and upbringing, in the emergence of individual characteristics.

This postulate is currently enjoying enormous popularity, driven largely by the epigenetic turn in biology. Breaking open the always artificial dualism of “nature” and “nurture,” epigenetics finds that environmentally conditioned changes in the organism have the capacity not merely to regulate the activity of genetic material, but to alter the material itself.<sup>2</sup> As the embryonic or fetal organism is considered particularly receptive to environmental influences, being still in the process of development, this paradigm shift adds momentum to the medically oriented research field of the “developmental origins of health and disease” (DOHaD), a field that asks how physical and psychological dispositions are “programmed” in the womb.<sup>3</sup> When it comes to influences on the development of the embryofetal organism, the question also arises of whether such effects will be perpetuated in the organism's offspring.<sup>4</sup> This interface between epigenetics and DOHaD is thought to herald a new epoch by bringing together the research objects of heredity and development, which in the twentieth century were largely insulated from one another by the disciplinary wall between genetics and embryology.

It is no surprise that such research found its way rapidly into an optimization-hungry literature of advice and self-help that judges everything the pregnant woman does, or fails to do, by the well-being of her prospective child. A popular science manual published some years ago promises to explain “how the nine months before birth shape the rest of our lives,” giving both practical tips and an accessible outline of scientific research at the intersection of DOHaD and epigenetics.<sup>5</sup> But of the many factors potentially shaping the future child, the one that remains most fascinating today is the psychological factor, and in particular the question of how the effects of traumatic experiences — whether war, natural disasters, or genocide — can persist across generations by acting on the pregnant organism or the parental genes.<sup>6</sup>

A special challenge for the historian arises from the fact that Féré's hypothesis of psychological influence can at once be linked to a present-day research trend and ranged within a *longue durée* going back to antiquity. This configuration immediately suggests two possible historiographical approaches, both of which I intend to avoid.

First, the current fascination with the concept of prenatal influence makes it tempting to interpret related ideas from the past as chiefly a prehistory of the present. In this frame, today's interest would be a translation of past intuitions into positive knowledge about biological processes. All previous peaks in interest would appear as a kind of misguided scrabbling and stammering in the drawn-out process of discovering the facts. Yet this narrative of knowledge gradually becoming correct tacitly assumes that when people talked about prenatal influence at different points in history, they were always talking about the same thing. It erases the query: What exactly was it that they were talking about?

Second, the regular resurgence of the idea of influence across so many centuries seems to imply there is something unchanging at work, namely, the question of how to explain the characteristics of a human being. Yet that would be to say both too little and too much: too little, because every era formulates the question differently; too much, because the object of the investigation is defined as being an answer and, as such, one variant within a series of answers. A history of the same question, then, is unable to ask: What exactly was the question?

Both these ways of relating Féré's hypothesis of psychical influence to its precursors and descendants assume there is something always the same, whether fact or question. If I wish to avoid both approaches, that is not because they are wrong in themselves, but because they shackle the work of historicization. Only when we allow for the possibility that it is not always the same thing that is meant, or the same question that is answered, does the historical specificity of Féré's hypothesis come into view. This specificity is what interests me here, and it is what can give historical depth to the study of a present-day concern by sharpening our sense of conceptual

alterity. Against this backdrop, let me return to the knot of events out of which I began to disentangle my guiding thread.

Henri Legrand du Saulle was not an embryologist, neither was he a gynecologist. He was a psychiatrist, specializing in criminology, who encountered children in the infirmary of the police prefecture. This was where everyone was brought who had “lost their senses” on the streets of Paris — *tout ce qu’il y a de délirant* is how Legrand du Saulle put it in his lecture on the children of the siege — and who were then committed to the Salpêtrière if they were girls or the Bicêtre if they were boys.<sup>7</sup>

Among these were some children of the 1870/71 cohort. Legrand du Saulle extracted them from the series of the children who were out of their mind, because they belonged just as much to another series: the sequence of violent events that had commenced in 1789 and “inflamed” the political arena once again in 1871.<sup>8</sup> Legrand du Saulle was interested in the event, and he was interested in the child as such. That was no coincidence. In the nineteenth century, science was turning ever more intensely to the nonadult, setting up children’s wards in asylums, turning physicians into pediatricians, and encouraging psychologists to observe their own sons’ and daughters’ everyday lives. Psychologists, in particular, began to build a doctrine of development that bestowed on children the promise — and shadow — of their future, and on adults a historical depth that could now be plumbed through the figure of childhood.<sup>9</sup> At the same time, the “event” as such took its place within a new vision, the passing of time as a historical process. The event was the meeting-point of before and after, creating a course of things, as Reinhart Koselleck has said, by binding together the past as “experience” and the future as “expectation.”<sup>10</sup>

Like Legrand du Saulle, Féré was neither a gynecologist nor an embryologist. He completed his doctorate in neurology under Jean-Martin Charcot’s direction in 1882, and from 1887 would care for mentally ill patients at the Bicêtre, interested in precisely how physical factors relate to psychological ones and how disease spreads not only within populations, but from generation to generation. How do

anomalies and pathologies wend their way through time? How do they persist, changed or unchanged, even when the bodies and biographies they mark have vanished and new ones have emerged that contain, in some way or another, what they received from their originators?

Engrossed by such questions, Féré, like his peers, named this intermeshing of disease and genealogy “degeneration.” His experimentally meticulous attention was directed especially to the differing ways in which disease lodges itself in the processes of reproduction. Whether a future child can be affected by a sensitive mother’s feelings to such an extent that they leave physical and psychological traces, as he suspected in the case of the lawyer’s daughter, was a scientific enigma that perfectly bundled Féré’s many and varied interests.

When they listened to what Parisian mothers told them of children whose steps and words escaped the norm, who could not control themselves, whose impulses, movements, and feelings slipped from their grasp, neither Legrand du Saulle nor Féré was concerned with the begetting and birthing of human beings. What the two psychiatrists saw when they counted and described such children was “fetal life” — as if the child were a transparent surface through which shimmered what had previously been. My guiding thread, then, is one twined out of event, child, and anomaly. It leads me to a place where the three came together as observers of childhood irregularities asked about the events of pregnancy and thus gave significance to the time before birth. There it was that, toward the end of the nineteenth century, the word *prenatal* arose.

In this book, I consider not the mothers — who probably wondered why anyone would bother to puzzle over the peculiarities of the terrible year’s children — but those who wanted to know. That means we must think of this place as an “epistemic space,” the term used by Staffan Müller-Wille and Hans-Jörg Rheinberger in their account of how the concept of heredity arose in the modern period. It was fed by sources that, heterogeneous in themselves, together “created a set of coordinates that made it possible to conceive of reproduction no longer only as the personalized and individual generation of offspring,

but also as the transmission and redistribution of a more or less atomized biological substance.”<sup>11</sup> Proposing as I do to treat the “prenatal” as an epistemic space as well, two aspects of this explanation are important for my study: what it seeks to explain, and how.

First, what does it seek to explain? In the course of the nineteenth century, the life sciences replaced the ancient idea of the “generation” of human beings by human beings (the Latin term being *generatio*) with the notion of a “reproduction” of the species. The making of children by parents was now seen less as the work of the parents than as that of the human species. The species continued its existence by remaining itself through the *transmission* of characteristics, while also giving rise to multifarious individuals through the *distribution* of characteristics.<sup>12</sup> As the idea of a generational connection through the transmission of biological material became more firmly delineated, a new problem took shape: Where should the contingent influences on the organism developing from that material be situated within the events of generation? At the end of the century, Féré would encapsulate the dilemma in his conceptual distinction between “true heredity” (*hérédité vraie*) and pathologically inflected “accidents of pregnancy” (*accidents de la gestation*).<sup>13</sup>

Historians have regarded distinctions of this kind around the turn of the twentieth century as marking a process by which “heredity” split off from “development.”<sup>14</sup> It would be too hasty, though, to conclude that those two matters had previously been unified. What interested Féré was not simply that rule-based heredity and contingent influences could be distinguished — that very distinction had been in common use since the beginning of the nineteenth century.<sup>15</sup> At stake, rather, was exactly how the two factors relate to one another and together form a generative context.<sup>16</sup> If transgenerational continuity ever was restricted entirely to the transmission and distribution of genetic material, as has been said with regard to the twentieth century, then the distinction between two modes of that continuity — transmission and influence — had certainly been debated much earlier. The more exclusively the concept of heredity

was applied to transmission, the more urgent was the need to find a conceptual framework for influence as well.

It was in response to that need that, around 1900, the term *prenatal*, generally used as an adjective, became current; the related terms *antenatal* and the German *vorgeburtlich* also established themselves. Over the course of the twentieth century, this terminology would here and there, dispersed across different disciplines, configure the very same research questions that are addressed today in the research field named DOHaD, where they are once again placed in the context of hereditary processes, this time under the rubric of epigenetics.

Any study of “the prenatal” requires a definition of its form. The prenatal is not a theory, an object, a discourse, or a discipline. It is an enabling of statements, just as Rheinberger and Müller-Wille set out for the case of heredity. The notion of the epistemic space that they apply draws attention to the ways in which different types of things enter into relationships with one another and different types of questions fuse or branch apart, without prejudging the logic of that process as the consolidation of a theory, the discovery of an object, the invention of a discourse, or the establishment of a discipline — in short, for the purposes of my argument, without regarding the emergence of the concept of the prenatal as the vanishing point of a development *toward* something. Instead, this book attends to how, in both objects and questions, the old was continued and the new was created; it tries to give describable form to a particular constellation of historical continuity and discontinuity.<sup>17</sup> To that end, I use the figure of “space,” but I should point out right away that this does not refer to a locality antecedent to what occurs within it. This space is opened up *by* something occurring.

In an epistemic space, that something is the making of knowledge. I do not mean a knowledge that portrays or fails to portray what is given outside it, nor a knowledge that has nothing to do with its referent and is defined only through its relationship to other knowledge; neither do I mean a knowledge that adds a particular freight of meaning to something already given. The knowledge I am interested in is

one that makes what it asks about through the questions it poses and that is therefore always more *doing* than product or achievement. Such knowledge becomes concrete in what Hans-Jörg Rheinberger calls “epistemic things.” These are the things toward which the effort of knowing is directed. They may be objects in the narrow sense, but also structures, reactions, or functions arising through the material orders of wanting-to-know — experiment and observation.<sup>18</sup> In such “things,” curiosity fuses with instrument, hand, and object. This, Rheinberger and Michael Hagner point out, subverts the notion of purity that tries to demarcate science from its organization, idea from materiality, yet “finds no correspondence in the process of making science.”<sup>19</sup>

Knowledge made concrete in epistemic things is thus primarily science as praxis: an activity that is not determined either by a natural object or by its results, but that has to be inferred from its procedures, since it is through those procedures that it constitutes the things of which it treats.<sup>20</sup> The encounter between the children of 1870/71 and the Parisian psychiatrists harbored a thing of just this kind. When they described the children as embodying an entanglement of present anomaly and past event, the psychiatrists were speaking of what it is that can turn a present event into a future anomaly: fetal life.

Following the tracks of the *enfants du Siècle* in pursuit of this epistemic thing, I do not wish to argue that the ties between child, event, and anomaly merely opened up to scientific curiosity a fetal life that was always already there. I am interested in how scientific curiosity configured fetal life in such a way that event and anomaly could be interwoven within the child, by exploring development, time, and transmission. Only by characterizing the child as development, the event as historical time, and the anomaly as a part of generational processes could the scientific gaze pass through the *enfants du Siècle* to see fetal life.

This combination interlocks a history of psychological influence with another history. A fetal life constituted by development, time, and transmission was exactly what, in the nineteenth-century



sciences of the human being, described the unborn. At the same time, these three things were what systematically inserted the unborn into the emergence of the human sciences as such. To study fetal life was also to raise the question of how the human subject began. As a result, my guiding thread leads me from the auditorium of the Salpêtrière into the laboratories, labor wards, and libraries where human physiologists, psychophysicists, and psychologists investigated pregnant and fetal bodies.<sup>21</sup>

Starting my path through archives and libraries with the 1884 appearance of the *enfants du Siècle* in the Salpêtrière's lecture hall, I tracked, on the one hand, the research to which they inspired Féré, which would become crucial to an agenda of prenatality lasting well into the early twentieth century. On the other, my search for the pre-conditions of Féré's work led me to the diversity of ways that fetal life was studied. I discuss these for the period between the late eighteenth and the mid-twentieth century because it is within this temporal purview — expanding in concentric circles from the 1880s — that the historical specificity of “fetal life” can best be illuminated.

There are three important consequences of my decision to mirror the genesis of my study in its written representation by consistently relating the story of the unborn in the human sciences to the story of the *enfants du Siècle*. The first of these consequences is my focus on French sources. They take pride of place due to my starting point in the Parisian “year of terror” (*année terrible*) and because the making of fetal life was driven by an experimentally oriented physiology that arose particularly early and vigorously in France.<sup>22</sup> However, reciprocal reception and shared interests link the French studies to those of German-speaking and some English-speaking scholars and scientists, requiring me to compile a transnational corpus of sources.

My portrayal's passage through time, and this is the second consequence, also transgresses borders to an extent since it crosscuts the chronological order. I am confronted again and again with what Ludwik Fleck called the “genesis of scientific facts.”<sup>23</sup> Those facts include the distinction between maternal and fetal blood; the transmissibility

of one pathogenic agent and the nontransmissibility of another; the fetus's sensitivity to pain. Looking at such facts, I am concerned less with the logic of their emergence as captured in dates and protagonists than with how, through their study, fetal life — and through fetal life, the unborn of the human sciences — was constituted. This emphasis guides my account's movement across time, when and where it commences, and how it flashes back or hastens ahead.

Finally, the book crisscrosses a landscape of scientific fields and subjects that was just beginning to take shape in the nineteenth century. This procedure reveals the edges of the space that was staked off during the nineteenth century by addressing the time before birth. Even less than the study of embryogenesis, which would eventually achieve some identity as “embryology” but continued to be divided in complicated ways, did the study of fetal life coalesce into a discipline of its own.<sup>24</sup> It remained an interest distributed across medicine, physiology, and psychology.

The dispersal of material about fetal life is as historically specific, and contingent, as the story of the children who came to be known as the *enfants du Siècle*. But contingency is not the same as coincidence — and this is how my attempt to contextualize one episode became a book that aims to describe the unborn in the sciences of the human being.

### ***The Book in Chapters***

The project of excavating a historically specific constitution of the unborn out of Féré's conjectures on psychological influence initially takes us back into the eighteenth century. It was then that a momentous shift, described in the pioneering work of Barbara Duden, turned a woman's being with child into the process of embryofetal development, and thus the unborn into a “biological, objective fact.”<sup>25</sup> The “objective” component in this triad indicates that a somatic certainty of being pregnant was replaced by a scientific knowledge about pregnancy; the “biological” component shows how the object of that objectifying knowledge was constituted: as an organism. The

unborn, previously said to form a unit with the nourishing body of the mother — growing in her womb by breathing, eating, sensing, and dreaming with her — now became the object of research practices that used human and animal embryos and fetuses to study everything that characterizes a living being in the biological sense: anatomical form, physiological function, and the transformative process of development.<sup>26</sup> As Lorna Weir remarks, this modern, biological reconfiguration of the unborn has been noted now and again, but not studied historically.<sup>27</sup> Although Duden, in particular, has examined the crucial role played by anatomical visualizations of embryonic development, and though we have rich research on embryology's work of "producing development," as Nick Hopwood puts it, very little has been written about the distinctively physiological investigation of the unborn in the nineteenth century.<sup>28</sup> It is this that I discuss in Part 2, "Living Beings."

In that part, my first step is to unpack a question that the unborn posed once it was configured biologically (Chapter 4): When a being is located in the body of another but cannot, if it is to become an individual organism, live the life of that other, how does it live? How does it form its blood, how does it sustain itself, how does it move, how does it feel? This was answered first in topological terms: the fetus lives *in* the mother, just as every other organism lives in a milieu without which it cannot feed, breathe, or move. The fetus's life, thus, is "uterine" or "intrauterine."

Yet even while the life in the womb was being defined spatially, research activity began to address its specific temporality. Fetal life was interesting as a developmental process in which vital functions took shape. In a second step, I show how this physiological perspective on the unborn kept vividly present something that anatomical work on the dead object could afford to neglect: the body of the pregnant woman, without whose labor of sustenance the fetus cannot be alive. The biological objectification of the unborn thus gave rise not only to an individualized embryofetal organism, but also a maternal-fetal relationship (Chapter 5).

Starting from this assumption, as I explain in a third step, the traditional puzzle of congenital illnesses and malformations could be teased out in new ways — no longer as an expression of experiences that have befallen mother and child jointly, but as a consequence of pathogenic influences of the maternal environment on embryofetal development (Chapter 6). In the late nineteenth century, this relationship seemed to find its exemplary embodiment in the *enfants du Siècle*, so much so that they prompted Féré to shift his work on hereditary genealogies of disease into a new, experimental direction by carrying out trials on developmental anomalies. He combined the science of malformations, the “teratology” already established by naturalists, with the interest of midwives and pediatricians in the pathological unit of the pregnant woman and the unborn. At the beginning of the twentieth century, this combination gave rise to the program of prenatal pathology.

It was now possible to rethink the pregnant woman’s capacity to mentally shape the unborn as a form of influence. For hundreds of years, women and scholars had explained children’s abnormalities by that capacity, which was the object of the doctrine of maternal imagination so fiercely debated in the eighteenth century. Féré himself portrayed his hypothesis of psychical influence as being an echo of that idea. In Part 3, “Inner Life,” my starting point is work on fetal life that was oriented on psychological questions. I first trace how, in the early nineteenth century, a visual theory of maternal impression gave way to an emotional theory, modeled by psychophysiology, of the influence of maternal feeling (Chapter 7).

As I then show, there was speculation in this setting about whether the fetus was an organism capable of sentiment and of reacting to its mother’s feelings (Chapter 8). This is where the second strand of Féré’s research on psychical influence comes into play: his experiments on fetal movement, performed on pregnant hysteria patients. In his experimental setup, the physiologically constituted mother-fetus relationship took a psychological turn. But the unsettling question of the unborn’s interiority, which had already arisen

in the early nineteenth century, was still not resolved. The psyche having come to be seen as one organic function among many, a need arose to seek the point in time when its development began. In the 1920s, this sparked a psychoanalytic dispute on birth trauma that — symptomatically — failed to find an answer to the question.

Retracing my steps back to psychological influence, I show how, in the early twentieth century, the study of hormones made it possible to grasp materially the impact of maternal stress (Chapter 9). This did not merely fill an existing lacuna. Rather, the endocrinological perspective reconfigured yet again, in yet another historically specific way, the potency of maternal mental life.

In the course of the nineteenth century, the adjective *prenatal* in all its versions almost imperceptibly edged alongside, and increasingly overtook, the adjective *intrauterine*. An axiom formulated by the educationist Gabriel Compayré in 1893 indicates what was at stake: anyone wishing to understand the child (and in the child, the human being) must necessarily expand their gaze to encompass the “obscure history of the nine months of gestation.”<sup>29</sup> In the concept of the prenatal, the unborn was not simply defined in time. The time named in that concept has a special, historical quality. It is productive time, which passes by making something subsequent emerge out of something antecedent. It is this form of temporality that Michel Foucault meant when, in his history of the human sciences, he observed that in the nineteenth century everything empirical — thus also, or especially, “man” — came into the world as something historical.<sup>30</sup> The invention of the word *prenatal* was nothing other than a conceptual codification of the manner in which the nineteenth-century human sciences constituted the unborn as a “before birth” that, whether in the mode of precondition or impression, creates the conditions for an “after birth.”

In the nineteenth century, this modality tied the time of the individual to the time of society. The connection came into sharp focus with the mass pregnancy accident that occurred in Paris in the six months between fall 1870 and spring 1871. In the concluding Part 4, “Politics of the Unborn,” I immerse myself one more time in the story

of the *enfants du Siècle* (Chapter 10). This is because those children occasioned not only scientific discussion, but also a debate on the politics of memory, ignited by the question of what inheritance of the past was really embodied by the children of the year of terror. Legrand du Saullé's assertion in 1884 that the events resulted in a "degenerative," pathologically deformed link between the generations was politically explosive, given that the French defeat by Prussia and the bloody suppression of the Paris revolt needed to be assimilated into the self-image of the Third Republic. This coupling of scientific and political issues was not a factor intruding from the world outside the clinics and laboratories. It had its origins where psychiatrists listened to mothers defining their children by the historical event that had crashed into the continuing succession of generations — the chain that gave permanence to the imagined community of the nation. Thinking about the "obscure history" of the months in the womb raised fears that such continuity could be breached. Explorations of fetal life were thus also about the time of society.

That brings the story of the *enfants du Siècle* to a conclusion. There is still something to be added to the history of the unborn and the human sciences, however. In this book, I often speak of research practices — of what scientists set out to do and what they did to animal fetuses and to human women and newborns. To understand this doing, we also need to investigate the relationship that arose from scientists laying their hands on their objects (Chapter 11). That relationship interests me as a social relation between researchers and objects, one no more self-evident than is the constitution of the unborn as fetal life.<sup>31</sup> Certainly, it gave rise to all sorts of research objects, but in the sciences themselves, it also thwarted the perfect transformation of the "child-to-be" into a biological object. The subjects of research, human scientists, were still forced to acknowledge that their object — the unborn — was a human child, and thus something that was in principle their mirror image.

In the coming chapter, I flesh out that conclusion by unfurling my research perspective from the findings of my study. These findings

are grounded in the decision to do history of science as a historical ontology — as a history that shows how, in the making of epistemic things, entities are also created from which the world is composed. In the history of the unborn and the embryo, interest in this perspective has been heightened by historians such as Duden.<sup>32</sup> As my research proceeded, I realized the importance, too, of recent discussions in anthropology that challenge us to reflect fundamentally on what an ethnographic (or in my case, historical) investigation is actually about. Studies of present-day reproductive practices have been groundbreaking in these debates.<sup>33</sup> The next chapter therefore anticipates in four steps how, in the epistemic space of the prenatal, birth as a threshold was simultaneously abolished and confirmed; what that meant for the definition of the unborn; how ontological questions were turned into epistemological ones; and how this turn remained an ontological practice caught up in uncertainty. Uncertainty, because what the unborn actually *is* could not be conclusively decided through what was *known about* fetal life.

© Copyright, Princeton University Press. No part of this book may be distributed, posted, or reproduced in any form by digital or mechanical means without prior written permission of the publisher.



CHAPTER THREE

**The Unborn and  
the Human Sciences**

*Continuity through Development*

There are many ways to tell the history of prenatal life. One could start from the adjective *prenatal*, letting the whole story branch out from the observation that this term became established in scientific talk about the unborn at the turn of the nineteenth to the twentieth century. That route would lead to a narrative of the “invention” of life before birth. My study supplies building blocks for such an account, showing that despite their changing denominations — some names being based on the entity (the fetus) and others on its locality (the uterus) — nineteenth-century physiological, psychological, and pathological investigations of the unborn always revolved around the same interest. Whether “fetal physiology,” “physiology of the embryo,” “uterine psychology,” “psychology of the fetus,” or “fetal pathology,” all were concerned with what comes before birth.

My own interest, however, goes beyond the history of an invention. When it looks at historical events, a narrative of that kind is bound to see only innovations — and those innovations can reveal themselves as such only teleologically, as viewed from the endpoint of the concept’s invention. Historiographically, the approach is unrewarding if only because it must regard everything that happened before the term’s coinage as a mere “prehistory” of what was

historically new: reading prenatality as part of the continuum of a biographical and clinical life history, or, as the educationist and philosopher Bernard Perez so vividly put it in 1882, making legible the very “first page in the book” of a person’s life.<sup>1</sup>

It is certainly true, as I will show, that nineteenth-century science’s interest in the unborn produced a birth-traversing continuity that was described by the concept of prenatality. However, this continuity was not new. Before the nineteenth century, too, the human being had originated in the unborn, birth had been one moment within its becoming, and the process of becoming had been under threat. In Aristotelian doctrine, the germ becomes first a nutritive soul like the soul of plants; then a sensitive soul, thus an animal; last, it is imbued with the rational soul, stemming from the divine, that defines the human being.<sup>2</sup> Physicians, theologians, and legal scholars in premodern Europe had construed this theorem as implying the presence of a future human being in the mother’s womb. They did not dispute the ensoulment of the unborn but disagreed stubbornly on the exact time when it occurred.<sup>3</sup> In the experience of pregnant women, the continuity that would carry the child-to-be over the threshold of birth commenced with the first sensation of the child stirring in the womb, “quickenning.” In the idea of animation in the sense of coming to life, *animatio*, that experience coincided with the scholars’ postulate of ensoulment.<sup>4</sup> Finally, the notion that, far from being always securely enclosed in the mother, the unborn is at risk is among those topoi around the formation of human beings that have spanned the ages.<sup>5</sup> What, then, changed in nineteenth-century science?

Crucial to the constitution of the unborn as something prenatal was the fact that continuity could now be construed as a temporal relationship. The term *prenatal* institutes a continuum by separating “before” from “after” in time while simultaneously locking them together. This particular continuity across birth springs from a notion of development that had come to prevail at the turn of the eighteenth into the nineteenth century. It marked the end of a long and vehement dispute between the advocates of preformation, who

thought of the ovum or sperm as an already-formed human body that only needed to grow, and the advocates of epigenesis, who argued that an organism arises out of initially unstructured matter, passing through different bodily forms. The work of anatomists on embryos resolved the controversy in the early nineteenth century, in favor of a new, teleological version of epigenesis.<sup>6</sup>

This gave a new shape to the time in which a human being emerges, as becomes clear in the contrast between preformation and epigenesis, and thus between growth and development: each is a process in time, but time is different in each case. Growth as *evolutio* in the sense of “unfolding,” writes Georges Canguilhem, is an “extension along the three dimensions of space,” which, despite representing “a succession, an ordered chronological series,” nevertheless remains external to time in that it mediates between successive “states of the organic form that are distinct, but not unlike.”<sup>7</sup> For development, in contrast, time is “operative time,” to quote Canguilhem; it is what “has moulded” the structure of the organism, to quote François Jacob.<sup>8</sup> Development is a process of change in a structure during which different forms emerge, fade, and succeed each other until the organism has attained a definitive arrangement of limbs and organs.<sup>9</sup> What makes an emerging being identical with itself across the passing of time is not its form, but the continuing change it undergoes — in other words, a historical process.<sup>10</sup> It is no coincidence that in German, such development was first known as *Entwicklungsgeschichte*, “developmental history.” In this paradigm, time is not the organism’s riverbed; the organism’s time is itself the river.<sup>11</sup>

When nineteenth-century physiology, medicine, and soon psychology turned to the time before birth, they were not discovering a beginning in pregnancy as something inaccessible to the soma of women, the doctrines of medicine, and the dogmas of religion. Rather, they construed the beginning in a different way, not by supposing and experiencing a moment of animation that attests to a “coming” child in the pregnant woman’s body but by observing a

story of development that transforms a germ into an embryo, an embryo into a fetus, a fetus into a newborn, and a newborn into a child. Time and space exchanged places. Whereas previously a child had announced itself in the “enclosure” of a female body, as Duden puts it, and the location in the mother’s body defined a time of anticipation, now a child took shape through development, and time defined intrauterine events as a phase before birth.<sup>12</sup> In one mode, space qualifies time; in the other, time qualifies space.

Both versions of the beginning — when something interior is exteriorized and when a before is discharged into an after — involve a continuity across birth. In the second mode, though, what carries the unborn over the threshold of birth is not a childness acquired during pregnancy, but a continuum of development. This changes the event of birth itself. As the moment in which the fetus is transformed into an infant, it is just one of many events in a process that constantly pushes before into after by making a germ into an organism, an organism into a subject.

Certainly, this process could be divided into phases or stages, bringing about different entities and the corresponding research fields: the embryo and embryology, the fetus and fetal physiology, the child and developmental psychology. But these divisions were permeable. If the embryo is connected with the fetus through development, and the fetus with the child as well, then one conditions the other not simply by preceding it temporally, but by enabling it logically, and is therefore a part of it. Only an organism that has organs can live, and only a living organism can respond to its life. Development as a continuum means that morphogenesis is also functional genesis, which is also psychogenesis. In short, the chronological sequence is actually a logical relation.<sup>13</sup>

Once an entity is separated out from this continuum, it becomes a liminal being — it is something by dint of no longer or not yet being something else, and as such it always points to that something else. The embryo is no longer germ and not yet fetus, the fetus is no longer embryo and not yet nursling, the nursling is no longer fetus and not yet child.

For this reason, physiologists of fetal life rarely insisted on their own, separate discipline or even subdiscipline, arguing instead for embryology to extend to physiological matters and joining forces with child psychology, whose gaze lingered ever longer on prenatal physiology as it became ever more obviously the gaze of developmental psychology.

### *Development in the Human and Life Sciences*

In the nineteenth century, the concept of development brought together medical, physiological, and psychological perspectives on the unborn — but it also tied the new sciences of the human being to the equally new sciences of life. It did so by creating the following state of affairs: The human being is an organism, just like every other living being. This organism is a product of development, and so is the interiority that distinguishes human beings from all other living creatures, to which they are nevertheless related through the shared historicity of everything that lives. This point is worth exploring because it means that the unborn's *biological* objectification was precisely what inscribed it into the *human* sciences.

The first step is to look at the eighteenth-century preconditions for the nineteenth-century human sciences. In order to become the object of empirical knowledge at all, “man,” previously divided into an earthly body and an immortal soul, first of all had to be brought down to the earth of experiential facts. This was the project of the “science of man” (*science de l’homme*), which challenged metaphysics for the title of “science of sciences” in the second half of the eighteenth century.<sup>14</sup> It defined the human being as a composite of mind and body, a bundle of “relations between the physical and the moral” — thus the title of Pierre-Jean-Georges Cabanis’s 1802 best-seller.<sup>15</sup> What had hitherto been a soul with transcendental origins, which took up residence in the earthly body only to move out again one day, was now defined by the science of man as a function of the organism named “psyche,” the central organ of which was the brain. On this basis, the human being was declared to be a natural being.

At the same time, the *science de l’homme* accorded man an

exceptional status among his natural peers. Like all other beings, man develops a physical body, but unlike all other beings, that process continues into the formation of a mind. That was the feat accomplished by the science of man: man shared his corporeality with animals and plants, but his interiority distinguished him from them and made him the “life-form of the organism at the highest stage of development.”<sup>16</sup> Intense attention thus now turned to the child. In 1801, for example, the Parisian anthropological society invited submissions for a competition to describe, on the basis of “daily observations of one or several infants,” the “sequence in which the physical, intellectual, and moral capacities develop.”<sup>17</sup>

During the nineteenth century, this embracive agenda of knowledge about the human being, covering both body and soul, would soon separate out into specializations. More precisely, the claims of the science of man to be the single, unified science almost immediately ceded to the disciplinary distinction between “life” and “man” that was taking shape at the same time. Groups of disciplines clustered around these two objects but remained connected like communicating vessels.

The life sciences were built on a changed view of the corporeality shared by all living beings. Until the eighteenth century, the visible structures of living creatures had been observed and used as the basis for an ordering of beings: which ones grip with hands and which with claws, which locomote and which put down roots, which see with eyes, which feel with antennae, and so forth. Now it was their *invisible* organization that came into play — the complex of organs and functions out of which life emerges. “Resemblances in depth,” writes Jacob, were now more important than “superficial differences.”<sup>18</sup> In this way, man became the same as animals and plants because, like them, he existed through organization.

There was more to this similarity, however. The nineteenth-century sciences of life also linked human beings to animals and plants through the postulate of a “single history” shared by everything that lives, the unbroken, successive genesis of natural beings.<sup>19</sup> When it became conceivable that whole species transform themselves by

splitting and branching off over a sequence of generations, Charles Darwin was able to conceive of species change.<sup>20</sup> The changing form of the embryo during development had helped to train attention on that profound process of transformation, but at the same time it became clear that, unlike embryos, species change in an undirected process, eventually to be named “evolution.”<sup>21</sup> Having toppled humanity from its transcendental throne, then reinstated it by new means at the apex of natural beings, the principle of development thus culminated in an evolution of species that made the human a provisional outcome among the array of genealogically related species. Meanwhile, the interiority that distinguished humanity also acquired its own sciences. It was explored by a whole range of disciplines whose object was man as a living, speaking, working individual and as the subject of knowledge, to cite Foucault’s definition of the human sciences.<sup>22</sup> No longer doubled as soul and body in heaven and on earth, man now, as an animal gifted with reason, lived halved: in a nature given to him and a culture that he carved out for himself from nature.

This intensified the striving for knowledge in both the human sciences and the life sciences. Life and the human being together formed a reversible figure, for biological research was entirely permeated by the human sciences. Even when hen’s eggs and rabbits were laid out on laboratory tables, when science’s objects were forms and functions abstracted from species, the search for knowledge was always “and self-evidently” (as Philipp Sarasin writes of anatomy and physiology) concerned with the human being.<sup>23</sup> For my own purposes, let me add that even when the shared historicity of species was at stake, the quest for knowledge was always directed to the issue of how that extraordinary species had arisen whose young come into the world so much less finished — so much less similar to the adult — than those of other species and need so much more time to achieve an adult form. It was babyhood, regarded as a developmental extension, that “made man what he is,” as the philosopher John Fiske would conclude at the end of the nineteenth century.<sup>24</sup> Not for nothing did Darwin,

## Index

- ABNORMALITIES. *See* Anomalies.
- Advice literature, 22, 234.
- Affect, 145, 147–49; anxiety affect, 185–87, 192; every affect is composite, 185; mental affections, 154.
- Alcohol/alcoholism, 9, 19–20, 96, 111, 117–18, 134, 156–57, 215–17, 220, 226–27.
- Alton, Eduard d', 77.
- Anatomy: anatomical representations of human embryo, 56, 57, 58; objectification of unborn, 242; and physiology, 59–62, 73–77.
- Ancient thought: aesthetics of procreation, 234; *animatio*, 38, 46, 66–67, 70, 87; Aristotelian doctrine on process of becoming human being, 38, 87; fetus breathes through mother's mouth, 67; human being, generation of, 26, 65–66; influence as novel articulation of, 112; like generates like, 21, 142; looking at beautiful statues creates beautiful children, 145–46; maternal impression, 9–10, 32; medieval conception of human being, 51–52; mental influence at moment of conception, 138, 159; procreation as creative work of parents, 126; psychological influence aligns with recent research and, 23.
- Animal life, 68–72; and experimentation, 75–76, 81–84, 107, 150–51, 160, 204, 239; vs human being, 171, 194.
- Animatio*, 38, 46, 66–67, 70, 87.
- Animation (*Beseelung*), 38, 70–72, 85.
- Anomalies, 9, 50; behavior disorders, 208–209, 212; causation of, 153–55, 233; child, event, and anomaly, 25, 28, 231; congenital deformities, 120, 122–23, 208, 228, 231; deformities, 18, 118, 131, 137–38, 145, 147–48, 150–55; degeneration, 25, 34, 158, 224–31; developmental, 32, 118–20, 154, 156, 167, 210, 218, 226, 233; and fetal life, 20, 25; functional stigma, 157–58; and influence, 154, 156, 209–10; madness, 158, 218–20, 222, 230; monstrosities, 118–20, 122, 137, 151–53, 155; neurosis, 182–83, 187–89, 191, 193, 202–203, 212; and political events, 18–19, 24, 53, 215–18; and psychological influence, 32, 62.
- Antenatal pathology, 120, 122–23, 133, 139.  
*See also* Prenatal pathology.
- Anthropology, 35, 44–46, 177; and fetal life, 87; interested in the child, 42; and physiology, 71–73.
- Anxiety, 134, 144, 159, 182, 202–203, 220, 227; anxiety affect, 185–87, 192; birth as origin of, 185–88, 190; and separation from mother, 187–89, 193.
- Apert, Émile, 133.
- Aristotle, 38, 87, 99.
- BAER, KARL ERNST VON, 58, 77, 84.
- Ballantyne, John William, 122–23, 133, 139, 159, 201–202, 208, 236–37; *Manual of Antenatal Pathology and Hygiene* (1902–1904), 120.
- Beaunis, Henri, 64.
- Bennholdt-Thomsen, Anke, 143.
- Bernard, Claude, 48–49, 63, 104.
- Bernfeld, Siegfried, 192–94, 241–42.



- Bible, 72.
- Bichat, Xavier, 75–76, 81, 83, 85–86, 91, 165, 174;  
*Physiological Researches on Life and Death*  
(1800), 68–73.
- Billard, Charles, 113–15.
- Birth: all that changes with, 70, 72, 89, 102; as  
origin of anxiety, 185–88, 190; before/after,  
79–80, 88, 122, 172–73, 183–84; birth trauma,  
33, 187–90, 192–93; born vs unborn, 67–69,  
71–73, 88, 108–9, 178, 191, 241–42, 246; and  
childcare, 265 n.45; continuity across  
threshold of, 38, 40, 45, 48, 50, 69–70,  
80–81, 83, 89, 91–93, 170–71, 183–85, 189–91,  
207–8; and development, 48, 241; as epi-  
phenomenon, 241; fetal life ends with,  
48; mind at, 184–85; not a dramatic turn-  
ing point, 178; as object of research, 10–11;  
as origin of ambivalence, 187; premodern  
idea of preformed human body, 38–39;  
senses formed after, 74; shock of, 186;  
as stage of life within continuum of  
development, 122–23; study of child  
must commence before, 158–59; and  
time, 108, 178.
- Bischoff, Theodor, 148, 150–51.
- Bloch, Iwan, 137.
- Blondel, James, 142, 144.
- Blood: bloodstream formation, 79–80; dis-  
tinction between maternal and fetal, 29,  
67; and hormones, 198–201; and maternal  
impression, 141–43, 148, 202; and pathol-  
ogy, 113–14; separate blood circulation,  
95–97, 100, 142; uteroplacental circulation,  
67.
- Bonjean, Louis-Bernard, 221.
- Bourgeois, Xavier, 114–15, 132, 134.
- Bourneville, Désiré-Magloire, 16–17.
- Burdach, Karl Friedrich, 84–85, 91, 103,  
134, 149.
- CABANIS, PIERRE-JEAN-GEORGES,  
41, 82–83, 163–65, 170; *Rapports du physique  
et du moral* (1802), 83.
- Canestrini, Silvio, 176–80, 243; experimenta-  
tion on newborns, 176–78, 179–81.
- Canguilhem, Georges, 39, 123, 137.
- Caron, Charles A., 235.
- Carus, Carl Gustav, 103, 149–50.
- Castro, Eduardo Viveiros de, 45.
- Charcot, Jean-Martin, 16, 18–20, 24, 124, 161,  
182, 230; psychologization of notion of  
trauma, 19–20.
- Child: anatomical representations of, in  
womb, 56, 57; becoming child, 87, 89, 170;  
childcare, 235, 265 n.45; disposition  
imparted in womb, 135, 155, 208–209, 212;  
first motion of, or quickening, 38, 66,  
70–71; health of, influenced by mother-to-  
be's lifestyle, 21–22; infant brain, 176–77;  
longitudinal study of, 204–207; madness,  
158; mental illness, photographic collec-  
tion on, 16, 17; more animal than human,  
194, 241; natural history of, 206–207; and  
nature, 102; neurosis, 212; as object of sci-  
entific interest, 24, 42–44, 171, 207–208,  
240, 243–45; parental similarity of, 126–27;  
potential of, 70; prenatal as necessary  
for understanding of, 33; psychogenesis,  
170–73, 184; separation from mother,  
187–89, 193; similar to each other but dis-  
similar to parents, 232; study of, must  
commence before birth, 158–59; those  
who have lost their senses sent to police,  
24, 156–57. *See also* Birth; Embryo; *Enfants  
du Siègle*; Fetal life; Fetus; Germ; Human  
being; Just-born; Maternal-fetal relation-  
ship; Newborn.
- Child psychiatry, 16.
- Child psychology, 41, 93, 168, 185; and fetal  
physiology, 172, 174, 176, 178; fetal psychol-  
ogy, 161–62, 167–70.
- Children of year of terror (1870/71). *See*  
*Enfants du Siègle*.
- Churchill, Frederick B., 92.
- Combe, Adolphe, 159.
- Compayré, Gabriel, 33, 158, 172, 241.
- Conception, 68–69, 135, 138, 159, 234. *See also*  
Fertilization; Procreation; Reproduction.
- Consciousness, 164–65, 175, 178, 241; as  
expression of interiority, 45; first  
expression of, 193–94; preceded by sense  
impression and reflex movement, 162;  
self-consciousness, 85; unconscious,  
164–65, 168–70, 173, 183, 187–89, 193, 224.  
*See also* Mental/mind.
- Culture, and nature, 43–45, 48.

INDEX

- DARESTE, CAMILLE, 117–19, 133, 206–207, 226, 232.
- Darwin, Charles, 43, 128, 228; notes on his children, 43–44.
- Davids, Anthony, 209.
- De Vault, Spencer, 209.
- Dechambre, Amédée, 235.
- Deformities, 18, 118, 131, 137–38, 145, 147–48, 150–55.
- Degeneration, 25, 34, 158, 224–27, 230–32; and eugenics, 228–29; and heredity, 123–26, 130–32, 156, 227–29.
- Delage, Yves, 135.
- Demangeon, Jean-Baptiste, *Considérations physiologiques sur le pouvoir de l'imagination maternelle* (1807), 144–46.
- Descartes, René, 141, 264 n.38, 290 n.2.
- Descola, Philippe, 44–45, 246.
- Development, 10, 22, 24, 28, 38–44, 192–94, 246; arrested, 118, 151–52; and birth, 48, 122–23, 241; concept of, 41; continuum of, 40, 122–23, 173; defined, 39; developmental anomalies, 32, 118–20, 154, 156, 167, 210, 218, 226, 233; developmental life, 51, 87, 91–93; developmental origins of health and disease (DOHaD), 22, 27; disrupted, 116, 119–20, 123–26, 139, 147–48, 150–51, 160, 167, 240; embryofetal, and unborn as objective fact, 30–31; embryofetal, and psychical influence, 32; embryofetal, standardized drawings showing development of, 56, 57, 58–59; embryonic development, 31, 64, 80, 184, 239; *Entwicklungsgeschichte* or developmental history, 39, 58, 77, 80, 83–84, 87, 105, 171; and environment, 201–204, 206–207, 212; and evolution, 43, 262 n.21; graduality of, 85–86; growth and, 39; and heredity, 22, 26–27, 132, 185, 277 n.102; and human being, 246; human being distinguished by interiority, 41–45; human development, ideal of, 183–84; and influence, 224; interiority as highest stage of, 42; knowledge of, 44–45; longitudinal method as decoder of, 205–207; and newborns, 178; nineteenth-century notion of, 44; and organism, 55–56, 58, 79; from organism to subject, 44–48, 194, 246; and pregnancy, 58; and psychogenesis, 172; and sensation, 169; and time, 39–40; and variation, 205–206. *See also* Anomalies.
- Developmental biology, 58.
- Developmental psychology, 41, 167–68, 172, 192–93, 197, 205.
- Disease: intergenerational transmission, 24–25, 113–16, 123–26; predisposition as the cause of all causes of, 125.
- Dissection, 59, 77, 79, 109, 163.
- Döllinger, Ignaz, 101–103; *Outline of Physiology* (1842), 77–81, 83–84.
- Dubois, Paul, 163.
- Duden, Barbara, 30–31, 35, 40, 70; on history of anatomical representations of unborn, 56.
- Dumas, Jean-Baptiste, 95.
- Dupont, Jean-Claude, 46.
- Dupouy, Dr., 215–18, 221, 224, 231.
- EARTH, 41, 43, 72, 79, 102–103.
- Ego, 164, 182–83, 187–88.
- Embryo: anatomical representations of, 56, 57; comments on terminology, 11; early work on, 46; maternal influence on, 134, 169; physiology of, 63–64; standardized drawings showing development of, 58–59; trompe l'oeil representation of, 59; unavailability of living human embryos for experimentation, 105–6, 109, 233, 240. *See also* Fetus.
- Embryology, 30–31, 41, 63–64, 93, 280 n.46; as science of developmental history, 77, 257 n.24.
- Embryonic development, 31, 64, 80, 184, 239.
- Embryonic life, 103.
- Enfants du Siècle*, 15–20, 116–17, 237; case of the lawyer's daughter, 15–16, 19–20, 25, 157, 161, 197, 216, 218, 220, 232; comments on terminology, 18, 252 n.5; definitive portrayal of, 16, 18; and degeneration, 224–31; developmental disturbances, 16; disappearance of, by 1940s, 201; Dupouy challenges portrayal of, 215–18, 231; as event in history of knowledge, 21, 231; and fetal life, 28; and Freud, 182; and influence, 224; marked pathological influence on, 158; as mass pregnancy accident, 33–34, 133–34; and maternal-fetal relationship, 32; as natural

INDEX

- experiment, 156–60; pathologization of, 218–22, 224; photographic portraits, 16, 17; and political events, 34, 215–21; and politics of memory, 34, 217, 221; as remarkable episode in history of medicine, 9; as research starting point, 29, 53; those with lost senses sent to police, 24, 156–57; and the unborn, 29; what happened, 19.
- Ensoulment. *See* Soul.
- Environment, 102–103; and development, 201–204, 206–207, 212; environmental influence, 22, 129, 202–203, 206, 226, 229; and organism, 61.
- Epigenesis, and preformation, 38–39, 58, 259 n.6.
- Epigenetics, 27; epigenetic turn in biology, 22.
- Erasmus, Desiderius, 138.
- Eugenics, 228–29, 234–36.
- Evolution, 43, 230; and development, 262 n.21.
- Experimentation: and animal life, 75–76, 81–84, 107, 150–51, 160, 204, 239; control groups introduced, 118; *enfants du Siège* as natural experiment, 156–60; and fetal life, 75–76, 81–84, 240; on fetal movement, 32, 163; and human embryos, 105–106, 109, 233; and infant brain, 176–77; influence to be understood through, 117–19, 135–36; on living animal fetuses, 75–76, 81–84; and maternal-fetal relationship, 97–101, 105–109, 143; and maternal impression, 139–40, 167; and newborns, 108–109, 174–78, 179–81, 241, 243; and physiology, 109; and pregnant women, 177, 204, 209; pregnant women as barrier to, 105, 107–108, 240–43; statistical persuasion, 156–57, 225, 232–33, 312 n.67; and timing, 119–20; with toxins, 111, 118, 197; unavailability of living human fetuses for, 105–106, 109, 233, 240–43; and unborn, 109, 175; war as natural experiment, 201–102.
- FEAR, 22, 144, 147–48, 153–55, 202, 223–24, 231, 237.
- Feelings: anxiety, 134, 144, 159, 182, 185–88, 190, 202–203, 220, 227; distinguish different qualities of, 155, 157; fear, 22, 144, 147–48, 153–55, 202, 223–24, 231, 237; and fetus, 47, 91; and maternal impression, 9–10, 25, 32, 135, 137–44, 139, 141, 144–50, 152–53, 155–60, 163, 166–67, 208, 210, 228, 232; sorrow, 148, 152–53, 155; stress, 16, 33, 134, 144, 202–203, 207–12, 228–29. *See also* Sensation.
- Fels Longitudinal Study, 204–207, 209.
- Fels, Samuel L., 204.
- Féré, Charles, 15–16, 19–20, 30, 63, 116–20, 121, 122–25, 134, 136, 138–39, 156–57, 160, 168, 182, 206–208, 215–18, 237; case of the lawyer's daughter, 15–16, 19–20, 25, 157, 161, 197, 216, 218, 220, 232; on consequences of shock to pregnant woman's mind, 21, 62; on degeneration, 25, 224–29; educational background, 24; on *enfants du Siège*, 224–25; on *enfants du Siège*, research after, 29, 32; *La famille névropathique*, 124–26, 128–33, 135, 228; on fetal movement, 161–66; and influence, 55; on Paris Commune, 220–21; on psychological influence, 23, 32, 195, 197, 203, 211; on true heredity vs accidents of pregnancy, 26, 50, 133.
- Ferenczi, Sándor, 182–92; *Theory of Genitality*, 187, 192.
- Ferreira, Antonio J., 209.
- Fertilization, 78, 84, 95, 127–28. *See also* conception; procreation; reproduction.
- Fetal life: ambivalence of, 93; and anomalies, 20, 25; anthropological element in description of, 71; beginning of, 68; birth marks end of, 48; comments on terminology, 11; as developmental history, 87; and *enfants du Siège*, 28; as epistemic space, 28, 51, 236; and experimentation, 75–76, 81–84, 240; and function, 86–88; fundamentally uterine or intrauterine, 31; and human sciences in nineteenth century, 20–21, 28–30, 52–53; and individuality, 103–105; knowledge of, 51; and mind, 81–86, 139–40, 161–62, 164–65, 168, 170, 192–94; as object of research, 10–11, 25, 47, 61–62, 206, 241; physiological particularization of unborn through study of, 65; and science, 240; study of, lacks material, 240–43; as vegetative, 68–72, 174, 176; and war, 201–204.
- Fetal movement, 32, 69, 74, 83, 86–87, 91, 106, 161–66; cause of, 166; and fetal psychology, 161–62, 167, 169; first motion, 38, 66, 70–71; instinctive movement, 166; interpretation of, 163–64; and maternal impression, 162;

INDEX

- and sensation, 162–64; voluntary movement, 163–64.
- Fetal pathology, 37, 113, 115–17, 119–20, 132, 156, 236.
- Fetal physiology, 37, 40, 48–49, 92–93, 113, 166–67, 185, 199, 236; and child psychology, 172, 174, 176, 178; and newborn, 108–109.
- Fetal programming, 10.
- Fetal psychology, 161–62, 167–70; and fetal movement, 161–62, 167, 169.
- Fetal sensibility, 64, 81–82, 88–89, 91, 164–65, 168–69, 175, 177, 184; beginning of, 169–70, 175.
- Fetus: becoming child, 87, 89, 170; capabilities of, 32, 190; comments on terminology, 11, 37; as unfree individual dependent on mother, 103–105; detached from all relationships, 60, 65; and infant, distinction between, 178; “The Life of the Fetus” (Haller), 60; a life peculiar to, 65; and mother, 31; and nutrition, 98; as object of physiological interest, 107; potential of, 71; senses form after birth, 74, 85; sensitivity of, 91, 162, 169; as vegetative life, 68–72, 174, 176. *See also* Embryo; Maternal-fetal relationship.
- Fischer, Jean-Louis, 138.
- Fiske, John, 43.
- Fleck, Ludwik, 29.
- Folklore, 210.
- Foucault, Michel, 33, 43, 52, 210–11, 229, 233.
- Franco-Prussian war, 34, 217, 227. *See also* *Enfants du Siège*; Paris Commune.
- Freud, Sigmund, 182–94; *The Interpretation of Dreams* (1909), 185; *Moses and Monotheism* (1939), 182; skeptical of Rank, 189–92.
- Function: animal vs vegetative, 68–70; change of, over life-course, 74; and fetal life, 86–88; and form, 31, 42–43, 47–48, 60, 73, 93; life as function of organism, 73; and maternal-fetal relationship, 200; nothing happens in mind without modifying organic functions, 161; organism as structure-function complex, 59; and pathology, 113–14; physiology vs anatomy on, 73–77; of placenta, 97, 101; and psyche, 33, 41; as relation, 104; reproductive function as most delicate, 228; study of, 64–65.
- Functional stigma, 157–58.
- GALIBERT, JEAN-PAUL, 53.
- Garley, Dorothy, 186–87, 192.
- Generations, 222–24.
- Geoffroy Saint-Hilaire, Étienne, 118, 151–57, 206–207, 226, 232–33, 237; *Considérations générales sur les monstres* (1826), 153, 155; *Philosophie anatomique* (1822), 152–53.
- Geoffroy Saint-Hilaire, Isidore, 154–55, 157.
- Germ: and anomalies, 131; in Aristotelian doctrine, 38; and development, 64, 88, 123; germ plasm vs somatoplasm, 127–29; from germ to organism to subject, 40, 44, 47, 194, 239, 246; germinal life, 78; heredity vs development, 92, 119; preformation vs developmental history, 58, 84, 151; risks of intrauterine life for, 115.
- God, 72.
- Goethe, Johann Wolfgang von, *Elective Affinities*, 53.
- Graber, Gustav Hans, 187, 195.
- Guzzoni, Alfredo, 143.
- HAECKEL, ERNST, 184, 263 n.26.
- Hagner, Michael, 28, 45.
- Halban, Josef, 198–99.
- Haller, Albrecht von, 58, 98, 142, 145–46, 149, 236; “The Life of the Fetus”, 60.
- Hearing, 18, 47, 66, 74, 89, 106, 169, 175.
- Heredity, 182, 188, 206, 221–22, 224–26; vs accidents of pregnancy, 26, 50, 92; ambivalence of, 132; and degeneration, 123–26, 130–32, 156, 227–29; and development, 22, 26–27, 132, 185, 277 n.102; emergence of, 25; explainability of, 127; vs hereditary, 125; and influence, 127–31, 224; and pathological, 125.
- Hippocrates, 67, 99.
- His, Wilhelm, 63; *Anatomy of Human Embryos* (1880–1885), 58.
- Historical ontology, 20, 35, 50–51, 53.
- Home, Everard, 149.
- Hopwood, Nick, 31.
- Hormones, 33, 198–201.
- Hufeland, Christoph Wilhelm, 113, 115, 122, 134, 147.
- Hug-Hellmuth, Hermine, 185, 187.
- Human being: vs animal life, 171, 194, 241;

- Aristotelian doctrine on process of becoming, 38; awareness of self, 82–83; becoming human, 46, 48, 71; before/after birth, 79–80, 88, 122, 172–73, 183–84; beginnings of, 50, 52, 241, 246; biblical creation, 72; child more animal than, 194, 241; and consciousness, 194; defined, 41, 72, 86, 241; and development, 246; differences between people, 204, 206; distinguished by interiority, 41–45, 60, 86; eugenics, 228–29, 234; and experimentation, 99, 105–106, 109, 233; fetus distinguished from, 103; free only in death, 275 n.59; how to explain characteristics of, 23; and illness, 114; intrauterine life as riskiest epoch of, 115; medieval conception of, 51–52; and nonhuman, 45, 48, 51, 60; as object of research, 10–11, 52, 246; from organism to subject, 44–48, 194, 246; physiology as science of, 65; prenatal as necessary for understanding of, 33; and psyche, 41; and psychogenesis, 170–73, 184; search for knowledge always concerned with, 43–44; as subject and object of knowledge, 52; and unborn, 47.
- Human development, ideal of, 183–84.
- Human sciences: and development in nineteenth century, 246; and fetal life in nineteenth century, 20–21, 28–30, 52–53; and relation between subject and object of knowledge, 240, 244; search for knowledge concerned with human being, 43–44.
- Human subject: beginning of, 11; definition of, 244; from organism to subject, 44–48, 194, 246.
- Humanities, 171.
- Hunter, William, 97; *Anatomy of the Human Gravid Uterus* (1744), 56, 61; on uteroplacental circulation, 67.
- Hutmacher, Rahel, 247.
- IMAGINATION. *See* Maternal impression.
- Individuality, 49, 60, 66–68; and fetal life, 103–105.
- Infant brain, 176–77.
- Influence, 55; and anomalies, 154, 156, 209–10; and confusion over cause and effect, 117, 119, 144, 210; endogenous vs exogenous factors, 202; and *enfants du Siècle*, 224; environmental influence, 22, 129, 202–203, 206, 226, 229; and eugenics, 234; and heredity, 127–31, 224; and intergenerational transmission, 26–27, 92; maternal impression, 9–10, 25, 32, 135, 137–50, 152–53, 155–60, 163, 166–67, 195, 197–98, 200, 202, 208, 210–12, 228, 231–32; mental, 134–39; as novel articulation of ancient thought, 112; and pathological, 129; and pregnancy, 134, 169, 209; prenatal influence, 23, 92, 209; psychical influence, 10, 20–21, 23, 32–33, 62, 136, 138–39, 144, 157, 159, 195, 197, 203, 210–12, 211–12, 216, 232; resurgence of idea of, 23. *See also* Feelings; Maternal impression; Psychical influence; Shock; Trauma.
- Intergenerational transmission, 21–22; anxiety affect, 185–87, 192; child–parent similarity, 126–27; of disease, 24–25, 113–16; generation, 222–24; hereditary degeneration, 123–26, 130–32; heredity, 25–26, 92; heredity and influence, 127–31; influence, 26–27; of pathogenic agents, 29–30; and relation, 50; and reproduction of species, 26; of trauma, 22, 312 n.63.
- Intrauterine life, 11; bliss of, 187; fetal life is fundamentally, 31; intrauterine puericulture, 235; as riskiest epoch of human life, 115.
- JACOB, FRANÇOIS, 39, 42, 59, 112.
- Jacquemier, Jean-Marie, 163–64.
- Janet, Pierre, 167.
- Jones, Ernest, 186–87.
- Jordanova, Ludmilla, 61.
- Jourdan, Antoine, 146–47.
- Just-born (*das Ebengeborene*), 108, 174, 178, 184, 241, 244. *See also* Newborn.
- KAGAN, JEROME, 205.
- Kant, Immanuel, 243–44, 246.
- Knowledge: of development, 44–45; of fetal life, 51; human being as subject and object of, 52; of nature and culture, 45; non-knowledge, 242, 246–47, 314 n.10; relation between subject and object of, 240, 244; and science, 28; search for, always concerned with human being, 43; and

- unborn, 242, 246; the unborn as biological objective fact, 30–31, 41.
- Koselleck, Reinhart, 24.
- Kussmaul, Adolf, 174–75.
- LABORDE, JEAN-VINCENT, 219.
- Lamarck, Jean-Baptiste, 129–30, 182.
- Latour, Bruno, 48.
- Legrand du Saulle, Henri, 16, 18–20, 24, 133–34, 159, 182, 215–17, 223–24, 226; on *enfants du Siècle*, 219–22, 230; lecture at Hôpital de la Salpêtrière (1884), 18–19, 24, 29, 34, 116, 156, 160, 215, 220, 222, 225.
- Life: awareness of self as general principle of, 82; explanation of, reduced to cell structure, 128; as function of organism, 73, 109; as historical process, 78; as incessant activity, 78; as object, 239; organization of, 59–60, 73; as process, 78; as relation, 49, 102, 109; science of, 67; and self, 164; vegetative vs animal, 68–70.
- Life sciences, 44, 171, 230; organization of living being, 42, 59, 102; search for knowledge, 43; and unborn, 52.
- Lilienfeld, Abraham M., 208–209.
- Living being: as outcome of historical process, 55, 78; as object of research, 31; organization of, 42, 59, 102.
- Longitudinal studies, 204–207.
- Lucas, Prosper, 132; *Treatise on the Philosophy and Physiology of Natural Heredity* (1847–1850), 130, 139.
- Lugt, Maaikje van der, 46.
- Lüttge, Werner, 199.
- Luys, Jules Bernard, 164, 169.
- MADNESS: IN CHILDREN, 158; revolutionary, 218–20, 222, 230.
- Magendie, François, 59–62, 81–82, 86, 91, 97, 99, 148–49; *Précis élémentaire de physiologie* (1816–17), 73–77.
- Malebranche, Nicolas, 67, 141–42, 176; *Recherche de la vérité* (1688), 66.
- Maternal-fetal relationship, 31–32, 101–104, 140, 166–67; birth trauma, 33, 187–90, 192–93; blood circulation, 95–97; bodily unity, 141–42; child's first motion or quickening, 38, 66, 70–71; detachment of, 59–61; and disease, 113–16; and *enfants du Siècle*, 32; and environment, 201–204; and experimentation, 97–101, 105–109, 143; and function, 200; hormonal exchange, 198–201; inaccessibility of newborn for research, 240–43; intimacy of, 61, 66, 102–103, 114, 141–42, 145, 148, 199–200, 211–12; as link between two individual organisms, 67; as object, 240; as organic unity, 49, 55, 66, 146, 200–201; placenta as relation, 49, 202; psychological turn, 32–33; reconnected, 62; separation from mother, 187–89, 193; time of, 50, 188; and war, 201–3. *See also* Blood; Heredity; Influence; Intergenerational transmission; Maternal impression; Placenta; Relation; Shock.
- Maternal impression, 9–10, 25, 32, 135, 137–50, 152–53, 155–60, 163, 166–67, 195, 197–98, 200, 202, 208, 210–12, 228, 231–32; direct vs indirect influence, 145–46, 148–50; every agitation transmitted to embryo, 169; and experimentation, 139–40, 167; and fetal deformity, 147; and fetal movement, 162; vs psychical influence, 144; rejection of, 155; turn from maternal impression to emotional influence, 146–47, 150; *Versehen*, 137, 149–51, 200, 232. *See also* Feelings; Influence; Psychical influence; Shock; Trauma.
- Mayer, August Carl, 99, 101.
- Meckel, Johann Friedrich, 118, 151.
- Mental/mind: beginning of, 10, 83–86, 175, 183, 191–93; at birth, 184–85; and body, 84; comments on terminology, 251 n.1; criterion for mental activity, 162, 168; defined, 161; developmental history of, 87; and fetal life, 81–86, 139–40, 161–62, 164–65, 168, 170, 192–94; human being distinguished by interiority, 41–45, 60, 86; human mind, 84, 171, 176–77; infant brain, 176–77; influence, 134–39; mental trauma, 19, 230–31; neurological trace, 169–70; nothing happens in mind without modifying organic functions, 161; as physical sensibility, 82–83; psychogenesis, 170–73, 184. *See also* Consciousness; Psyche; Psychical influence; Psychology; Soul.
- Millot, Jacques, 124, 147, 234–37.
- Modernity, 45, 52.

- Monstrosities, 118–20, 122, 137, 151–53, 155.  
Moreau de Tours, Paul, 158, 216, 218, 221.  
Morel, Bénédict Augustin, 229–30; *Traité de dégénérescence* (1857), 130, 225–27.  
Morgagni, Giovanni Battista, 242.  
Morgan, Arthur, 204.  
Morin, Antoine, 96.  
Mother: and fetus, 31; mothers' gaze does not objectify, 243; mothers' talk devalued, 242–44; separation from, 187–89, 193; unmarried, 151–52, 155, 207–209, 233.  
Movement. *See* Fetal movement.  
Müller, Johannes, 84, 103, 148–49, 151, 174; experiments on animals, 75–77, 81–82, 239–40; *Handbuch der Physiologie* (1837–40), 80; “On the Physiology of the Fetus,” 75.  
Müller-Wille, Staffan, 25, 27.  
  
NASSE, CHRISTIAN FRIEDRICH, 71–73, 75, 81, 85–86.  
Nature: and child, 102; and culture, 43–45, 48; and nurture, 22, 233 n.2.  
*Naturphilosophie*, 77, 85, 103.  
Needham, Joseph, 92, 98, 136.  
Neurological trace, 169–70.  
Neurosis, 182–83, 187, 189, 191; childhood, 212; prenatal, 202–3; separation from mother, 187–89, 193.  
Newborn: and consciousness, 193–94; cries of, 243–44; and experimentation, 108–9, 174–78, 179–81, 241, 243; inaccessibility of, for research, 240–43; as object of research, 243, 246; research interest in, 207–8; and sensation, 174–75; and taste, 74, 175. *See also* Just-born.  
Nonhuman, 45, 48, 51, 60.  
Normal, and pathological, 111.  
Nutrition, 64, 88–89, 91, 104, 114, 131, 202–203, 206–207, 229; disruptions to, 117–18, 134–35, 145–46, 160, 167, 198, 201, 228; malnutrition, 9, 19–20, 112, 115, 202, 216, 226, 228; and organism generation, 48, 68, 239; and placenta, 75, 96–98, 100, 102, 112, 199.  
  
OBJECT: birth as, 10–11; child as, 24, 42–44, 171, 207–208, 240, 243–45; embryofetal development as, 30–31; fetal life as, 10–11, 25, 47, 61–62, 206, 241; fetus as, 107; human being as, 10–11, 52, 246; life as, 239; living being as, 31; maternal-fetal relationship as, 240; mothers' gaze does not objectify, 243; newborn as, 243, 246; pregnant women as, 269 n.24; relation between subject and object of knowledge, 240, 244; the unborn as, 10–11, 30–31, 34–35, 41, 51, 240, 242, 269 n.24.  
Organism, 48; capacities drawn from heredity or influence, 92; and development, 55–56, 58, 79; and environment, 61; fragmentation of, into individual functions, 75; historicity as property of, 78; life as function of, 73, 109; from organism to subject, 44–48, 194, 246; as structure-function complex, 59.  
  
PANCKOUCKE, CHARLES-LOUIS-FLEURY, 147.  
Pander, Christian Heinrich, 58, 77.  
Paris Commune, 15–16, 18, 215–17; “bloody week,” 16, 34, 217; child development influenced by, 158; pathologization of, 218–22, 224; and politics of memory, 217. *See also* *Enfants du Siège*.  
Parkhurst, Elizabeth, 208.  
Parnes, Ohad, 222.  
Pasamanick, Benjamin, 208–209.  
Pasteur, Louis, 118.  
Pathological: and heredity, 125; and influence, 129; and normal, 111; pathologization of Paris Commune, 218–22, 224. *See also* Development; Disease; Fetal pathology; Intergenerational transmission.  
Peiper, Albrecht, 177.  
People of color, 52; racism, 229.  
Perez, Bernard, 38, 167–70, 182; *Psychologie de l'enfant* (1882), 167, 169–70.  
Physiology: and anatomy, 59–62, 73–77; and anthropology, 71–73; defined, 65; of the embryo, 63–64; and experimentation, 109; of fetal life, 164, 235; and psychology, 171–72; ultimate task of, 81. *See also* Experimentation; Fetal physiology.  
Pinard, Adolphe, 101, 103, 115–16, 122, 163, 165, 235–37.  
Placenta: and blood circulation, 96–97, 100, 202; and disease, 115; function of, 97, 101;

INDEX

- and maternal impression, 147–48, 150, 152–53; and organic individuality of mother and child, 67; and nutrition, 75, 96–98, 100, 102, 112, 199; permeability of, 111–113; placental secretions, 198–200; as principal means of communication, 100, 104; as relation, 49, 55, 62, 101, 103, 202; uteroplacental circulation, 67; and womb, 279 n.21.
- Pleasure/displeasure, 69, 86, 91, 183, 185, 188, 190.
- Politics: and childhood anomalies, 18–19, 24, 53, 215–18; and *enfants du Siècle*, 34, 215–21; politics of memory, 34, 217, 221; pregnancy and biopolitics, 233; pregnancy, politicization of, 313 n.74; revolutionary madness, 218–20, 222, 230.
- Pomata, Gianna, 211.
- Populations, 233; and pregnancy, 236.
- Predisposition, 120, 122, 125, 128, 130–31, 133, 169, 186, 219–20, 228.
- Preformation, 38–39, 58, 93.
- Pregnancy: and biopolitics, 233; defined, 195; and development, 58; *enfants du Siècle* as mass pregnancy accident, 33–34, 133–34; and eugenics, 235; and hormones, 198–99; and influence, 134, 169, 209; outside marriage, 152, 155; plastic force of, 10; politicization of, 313 n.74; and populations, 236; as relation, 49, 103; scientific knowledge about, 30; true heredity vs accidents of, 26, 50.
- Pregnant women: anatomical representations, 56, 57, 58; as barrier to experimentation, 105, 107–108, 240–43; and childcare, 235; detached from representation of embryo, 59, 65; emotional shocks influence fetal life, 9, 21, 25; and eugenics, 234; and experimentation, 177, 204, 209; influence on unborn, 32; judgement of, by well-being of prospective offspring, 22, 237; maternal impression, 9–10, 25, 32, 135, 137–50, 152–53, 155–60, 163, 166–67, 208, 210, 228, 232; as maternal organism in physiology of fetal life, 61; objectification of, 269 n.24; unmarried, 151–52, 155, 207–9, 233. *See also* Embryo; Feelings; Fetus; Influence; Maternal-fetal relationship; Maternal impression; Mother; Prenatal; Women.
- Prenatal, 10, 29; danger, 156–57, 202; as epistemic space, 25–28, 35; establishment of term, 37–38, 50, 92, 122–23, 236; influence, 23, 92, 209; invention of, 33, 37–38; as necessary to understand human being, 33; neurosis, 202–203; and relation, 51; turn toward category of, 159, 206.
- Prenatal pathology, 32, 159, 230. *See also* Antenatal pathology.
- Preuss, Julius, 167.
- Prévost, Jean-Louis, 95–97.
- Preyer, William T., 52, 122, 137, 174–75, 182, 184–85, 240–41, 243–44, 246, 270 n.1; *The Mind of the Child* (1882), 89, 90, 91–92, 170–72, 184–85, 192; on psychogenesis, 170–73, 184; *The Special Physiology of the Embryo* (1883), 63–65, 86–87, 86–89, 90, 91, 99–100, 105, 108, 111–12, 123, 165–66, 170–72; studies his own children, 244–45.
- Procreation, 67, 84; advice on art of, 234; as creative work of parents, 126; and germoplasm continuity, 127; and influence, 130–31; as moment of conception, 138. *See also* Conception; Fertilization; Reproduction.
- Psyche: beginning of, 33, 83–86, 191–92, 194–95; continuum of, 185; experiential development of infant psyche, 184, 212; as function, 33, 41; and human being, 41; human mind, 84, 171, 176–77; mental trauma, 230; as physical sensibility, 82–83. *See also* Mental/mind.
- Psychiatry, political stakes of French, 218.
- Psychical influence, 10, 20–21, 23, 32, 136, 138–39, 144, 157, 159, 195, 197, 211–12, 216, 232; aligns with ancient thought and recent research, 23; and childhood abnormalities, 32, 62, 209–10; and environment, 203; vs maternal impression, 144; and study of hormones, 33. *See also* Feelings; Influence; Maternal impression; Shock; Trauma.
- Psychoanalysis, 182–83, 185–89, 191–93.
- Psychogenesis, 170–73, 184.
- Psychology, 93, 171, 187, 191; child psychology, 41, 93, 168, 174, 185; developmental psychology, 41, 167–68, 172, 192–93, 197, 205; fetal psychology, 161–62, 167–70; and physiology, 171–72; and unborn, 191, 195.



- RACISM, 229.
- Rank, Otto, 187–95; Freud skeptical of, 189–92;  
*The Trauma of Birth* (1929), 187, 192, 195.
- Relation, 243; eighteenth-century explanations of, 61; function as, 104; and intergenerational transmission, 50; life as, 49, 102, 109; placenta as, 49, 55, 62, 101, 103, 202; and prenatal, 51; between subject and object of knowledge, 240, 244; and time, 78; and unborn, 49–50. *See also* Maternal-fetal relationship.
- Reproduction, 25–26; as most delicate function of all, 228; procreation as creative work of parents, 126; studies of present-day reproductive practices, 35. *See also* Conception; Fertilization; Procreation.
- Revolutionary madness, 218–20, 222, 230.
- Rheinberger, Hans-Jörg, 25, 27–28, 45, 239.
- Ribot, Théodule, 161, 164–65, 224; *Hérédité psychologique* (1873), 135.
- Roederer, Johann Georg, 143.
- Rogers, Martha E., 208–209.
- Rouch, Hélène, 49, 55.
- SARASIN, PHILIPP, 43.
- Schauenstein, Adolf S., 99.
- Schelling, F. W. J., 77.
- Science: certainty is opposed to, 193; and fetal life, 240; genesis of scientific facts, 29–30; history of, 20, 35, 44; and knowledge, 28; of life, 67; relation between subject and object of knowledge, 240, 244; scientific gaze, 243; and unborn, 34, 240; unborn as biological objective fact, 30–31.
- Science of man, 41–42, 171, 234.
- Second World War, 201.
- Self, 82–86; and life, 164.
- Self-help literature, 22.
- Selheim, Hugo, 198–201.
- Sensation, 66, 81–83, 87; and development, 169; and fetal movement, 162–64; fetal sensibility, 64, 81–82, 88–89, 91, 164–65, 168–69, 175, 177, 184; human being defined by sentience, 72; importance of unconscious sensation, 170; limited stimuli in womb, 70, 85–86; and maternal impression, 137, 141–42; mental events based on, 162; neurological trace, 169–70; and newborns, 174–75; physical sensibility, 82–83; pleasure/displeasure, 69, 86, 91, 183, 185, 188, 190; Preyer on, 89, 91; senses form after birth, 74, 85. *See also* Feelings.
- Sexuality, 182, 185; bliss of intrauterine life, 187.
- Shock: of being born, 186; *choc moral* results in childhood irregularities, 16, 147, 209; defined, 252 n.16; fetal life shaped by emotional shocks inflicted on pregnant women, 9, 21, 135, 162; psychological traumatization and subsequent symptoms, 19–20; similar effects to poison, 117.
- Simmel, Georg, 255 n.10.
- Soemmerring, Samuel Thomas, *Icones embryonum humanorum* (1799), 46, 56, 57, 58.
- Sontag, Lester Warren, 201–209.
- Sorrow, 148, 152–53, 155.
- Soul: *animatio*, 38, 46, 66–67, 70; body and, 41–43, 66, 84, 87, 170; debated, without studying the child, 244; from embryo to child, 172; ensoulment, moment of, 38, 46, 66, 87; human being vs animal, 38, 72; medieval transmigration of, 51; mother-child souls bound together, 142, 169, 212; poetry of infant soul, 245. *See also* Mental/mind.
- Spaeth, Josef S., 99.
- Species: change, 43; comparative view of, 63; distinctions between, 108; and evolution, 230.
- Stott, Denis Herbert, 209.
- Strathern, Marilyn, 49.
- Stress, 16, 33, 134, 144, 202–203, 207–12, 228–29; historical transformation of, 210.
- Subjectivity, 44–47; from organism to subject, 44–48, 194, 246.
- Sully, James, 242–45.
- TALMADGE, MAX, 209.
- Taste, 74, 85, 169, 175.
- Temkin, Owsei, 80.
- Teratology, 32, 116–20, 132–33, 139, 150–51, 154–56, 167, 197, 206, 226, 229, 283 n.24.
- Time: and birth, 108, 178; and development, 39–40; event as meeting-point of before and after, 24; fetal life, specific temporality of, 31; of individual tied to time of

INDEX

- society, 33–34, 232, 236; life as a historical process, 78; of maternal-fetal relation, 50, 188; and prenatal, notion of development springs from, 38; and prenatal, or everything empirical is also historical, 33; and relation, 78; timing in experimentation, 119–20; and unborn, 237.
- Touch, 47, 74, 106, 169, 175.
- Toxins, 111, 118, 120, 134, 197, 203.
- Trauma: birth trauma, 33, 187–90, 192–93; increasingly applied to psychological phenomena since 1870, 19; intergenerational transmission of, 22, 312 n.63; maternal trauma, 134; mental trauma, 230–31; psychologization of notion of, 19–20; rise of concept of, 252 n.14.
- Turner, Elizabeth K., 208–209.
- UNBORN, the: anatomical representations of, 56, 57; becoming child, 87, 89, 170; as biological objective fact, 30–31, 41, 51; and the born, 67–69, 71–73, 88, 108–109, 178, 191, 241–42, 246; comments on terminology, 11, 37; and *enfants du Siècle*, 29; and experimentation, 109, 175; exposed to stimuli, 178; and human being, 47; impressionability of, 141; interiority of, 32–33; and knowledge, 242, 246; little written about physiology of, 31; maternal impressions' influence on, 141–44; nineteenth-century constitution of, 20–21, 29–30, 33, 38, 51; as object of research, 10–11, 34–35, 240, 242, 269 n.24; organic individuality of, 49, 60, 67–68; physiological particularization of, 65; physiological view on, 74; pregnant women's influence on, 32; and psychology, 191, 195; and relation, 49–50; and science, 34, 240; and subjectivity, 46; and time, 237.
- Unconscious, 164–65, 168–70, 173, 183, 187–89, 193, 224.
- Uterus. *See* Womb.
- VALENTIN, GABRIEL GUSTAV, 103.
- Vedder, Ulrike, 222.
- Vegetative life, 68–70; fetus as, 68–72, 174, 176.
- Versehen*, 137, 149–51, 200, 232.
- Vignes, Henri, 133.
- WAR: and fetal life, 201–204; as natural experiment, 202.
- Watson, William, 113.
- Weir, Lorna, 31.
- Weismann, August, 127–29, 131–32.
- Willer, Stefan, 222.
- Winther, Rasmus, 129.
- Witt, Foster de, 96.
- Wolff, Caspar Friedrich, 58.
- Womb: absence of stimuli in, 70, 85–86; access to, desired for research, 240–43; child's disposition imparted in, 135, 155, 208–209, 212; dangers to child in, 134; as enclosure, 102; and eugenics, 234, 236; fetal sensibility begins in, 175; as ideal stage of human development, 183–84; and maternal impression, 162; and placenta, 279 n.21.
- Women: capable of objectifying, 245; detached from representation of embryo, 59; detached from study of fetal life, 60–61; as other in human sciences, 52. *See also* Mother; Pregnant women.