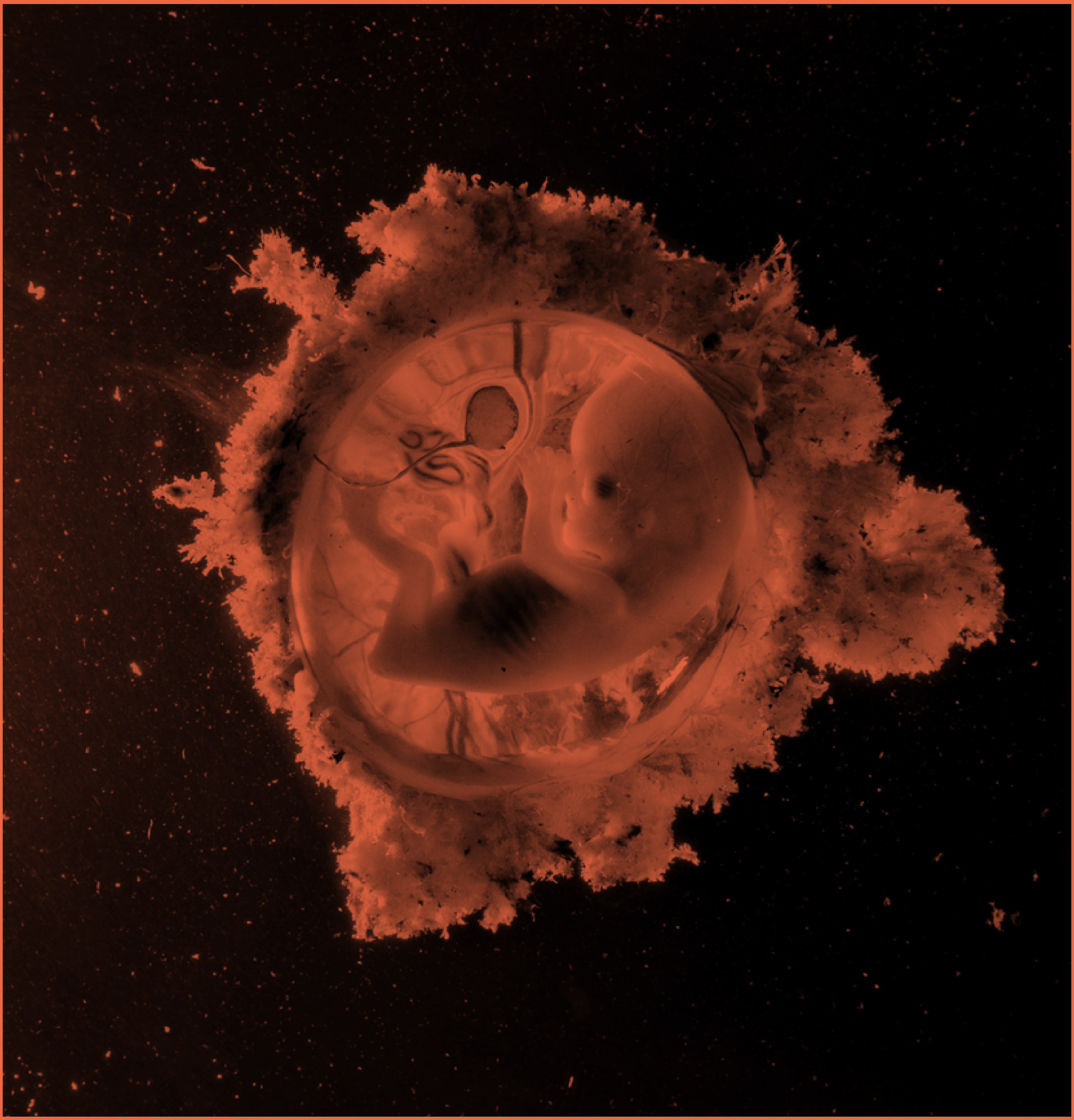
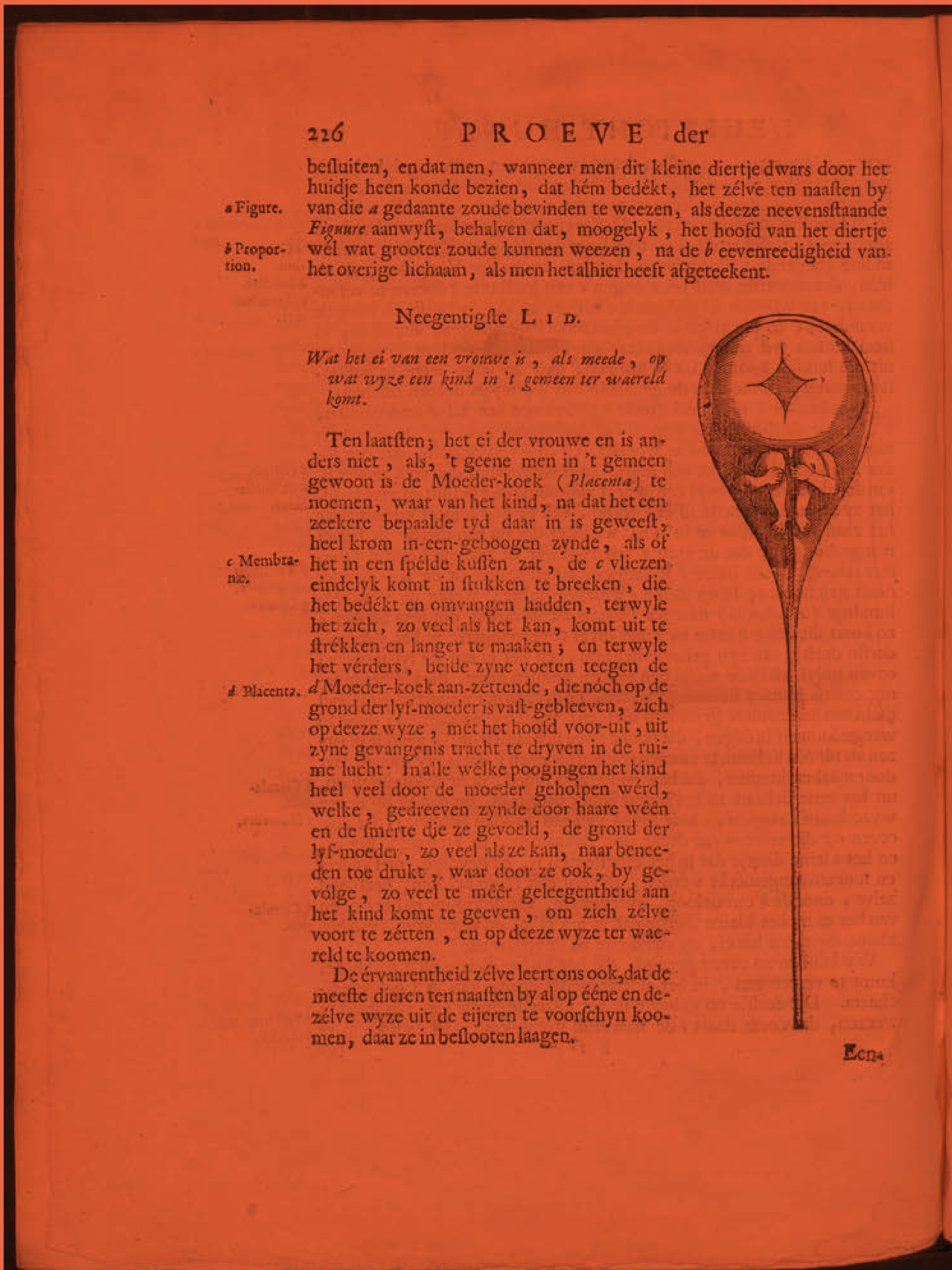


20. Lennart Nilsson, Human foetus at 13 weeks, TT / Science Photo Library



226 PROEVE der

beſluiten, en dat men, wanneer men dit kleine diertje dwars door het huidje heen konde bezien, dat hém bedékt, het zélve ten naaſten by van die *a* gedaante zoude bevinden te weezen, als deeze neevensſtaande *Figuure* aanwyſt, behalven dat, moogelyk, het hoofd van het diertje wél wat grooter zoude kunnen weezen, na de *b* eevenreedigheid van het overige lichaam, als men het alhier heeft afgeteekent.

a Figure.

b Proportion.

Neegentigſte Lid.

Wat het ei van een vrouwe is, als meede, op wat wyze een kind in 't gemeen ter waereld komt.

Ten laatſten; het ei der vrouwe en is anders niet, als, 't geene men in 't gemeen gewoon is de Moeder-koek (*Placenta*) te noemen, waar van het kind, na dat het een zeekere bepaalde tyd daar in is geweeſt, heel krom in-een-geboogen zynde, als of het in een ſpélde kuſſen zat, de *c* vliezen eindelyk komt in ſtukken te breeken, die het bedékt en omvangen hadden, terwyle het zich, zo veel als het kan, komt uit te ſtrékken en langer te maaken; en terwyle het vérders, beide zyne voeten teegen de *d* Moeder-koek aan-zéttende, die nóch op de grond der lyf-moeder is vaſt-gebleeven, zich op deeze wyze, mét het hoofd voor-uit, uit zyne gevangenis tracht te dryven in de ruime lucht: In alle wélke poogingen het kind heel veel door de moeder geholpen wérd, welke, gedreeven zynde door haare wêên en de ſmérte die ze gevoeld, de grond der lyf-moeder, zo veel als ze kan, naar beneeden toe drukt, waar door ze ook, by gevólge, zo veel te mêêr geleegentheid aan het kind komt te geeven, om zich zélve voort te zétten, en op deeze wyze ter waereld te koomen.

c Membranæ.

d Placenta.

De érvaarentheid zélve leert ons ook, dat de meeſte dieren ten naaſten by al op ééne en dezélve wyze uit de eijeren te voorſchyn koomen, daar ze in beſlooten laagen.

Een-

4. Nicolaas Hartsoeker, *A homunculus in sperm*, c. 1694, pencil, published as part of his French-language paper entitled *Essai de Dioptrique*, 1694. Wellcome Collection, London

Cabinet: Egg, Foetus, Baby

Trudy Dehue (1951) is a sociologist and historian of science. She published the book *Ei, Foetus, Baby* (2023) in which she analyzes how our knowledge about pregnancy was established. The names of world-famous men are associated with this, but surely pregnant women were needed too? Dehue also points out that the word 'fact' comes from the Latin verb *facere*: 'to do' or 'to make'. According to Dehue, facts are not discovered, but produced, in an attempt to understand and get a grip on nature. They are human creations, which is why it's important to note that for many centuries it was exclusively men who established our knowledge about pregnancy. Especially for this exhibition, Dehue selected objects and books that tell a story about the historical development of our knowledge about pregnancy, the uterus, and 'the egg', 'the foetus' or 'the baby'. What sort of methods were used to examine the pregnant woman and the contents of her uterus? And how were the findings communicated with others through words, numbers, and—above all—images?

1. Charles Estienne, *De Dissect Partium*, 1546, woodcut, illustration from Idem, *La Dissection des parties du corps humain diuisée en trois liures*, 1546. Groningen University Library, Special Collections

For centuries, the pregnant person has been seen as a barrier between the researcher and their research object. The knife was the most important research tool. Researchers asked artists to depict their findings. At this time, it was common for artists to apply their talents to science and produce drawings based on descriptions by surgeons and biologists.

In this woodcut by Charles Estienne from 1546, a woman holds open a hole in her abdomen, showing two placentas and her unborn twins. She is depicted 'living', although she would of course never have survived such a medical experiment. In the same way that facts are made, such illustrations are not images, but imaginings.

2. Gerard de Lairesse, *Representation of a Foetus of a Human Being in a Uterus*, c. 1689, engraving, illustration from Govert Bidloo, *Ontleding des menschelyken lichaams*, 1690. Utrecht University Library

3. R. Strange after I.V. Rymsdyk, *Dissection of the pregnant uterus, showing the foetus at nine months*, 1774, reprinted in 1851, Wellcome Collection, London

Here, the entire abdominal wall has been opened up. It is clear how medical knowledge was gained: by cutting. The rest of the female body is out of view and becomes an anonymous carrier of the foetus. Jan van Riemsdyk shows the position of the foetuses in the abdomen in the final stages of pregnancy, attached to the placenta.

4.

The conception stage has long been shrouded in mystery for scientists, and describing the early stages of pregnancy—even before anything could be seen with the naked eye—was the highest attainable goal for many a researcher. One common belief was that sperm cells already contained tiny, preformed humans, as depicted in this book by Nicolaas Hartsoeker (1656–1725). He believed that the 'tail' would become the umbilical cord, and the woman would merely provide the placenta. Hartsoeker described how, after intercourse, a miniature person grows inside the woman until 'the membranes finally break into pieces.' It pushes off with 'both feet against the placenta' and attempts, 'to propel itself, with its head first, out of its prison ... into the spacious air'. Here the woman is described as a temporary landlady, or even a 'prison guard'.[1]

3.

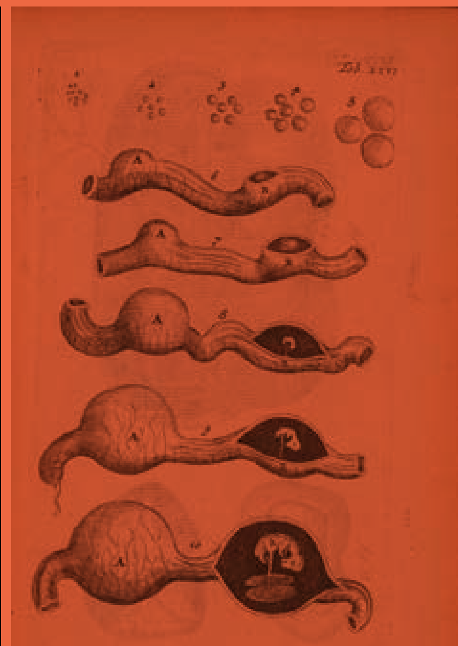
1. Nicolaas Hartsoeker, *Essay de Dioptrique*, Paris, 1964, 105

5. Francesco Sesoni, *The examination of the uterus, the natural posture of a child at birth, an uterus cut open and a chair used for the delivery of children*, 1743–1745, engraving with etching. Wellcome Collection, London

'Naïve' representations of a miniature person inside a sperm cell or centuries-old depictions of unborn humans as large as toddlers in the uterus evoke wonder today. With today's knowledge, they might even seem comical. But such ideas live on. You can think of mother and foetus as a single entity or as two separate people.

6. Jan Verkolje, *The Dutch Physician and Anatomist Reinier de Graaf (1641–1673) in his Study Room*, 1847, pen in grey ink, washed grey, 22 x 20.1 cm. Museum Boijmans Van Beuningen, Rotterdam, heritage of F.J.O. Boijmans

'Reinier de Graaf in his study room'—The title of this print refers to the physician and anatomist Reinier de Graaf and not to the anonymous woman on his study table. De Graaf (1641–1673) became world-famous for his research into human reproduction. The 'Graafian follicle', which is still part of our vocabulary today, is named after him. De Graaf believed that this was a fertilized egg, but it is actually a relatively large follicle in the ovary. He tried to prove it was an egg by boiling and eating it: he claimed that it tasted and felt like a bird's egg.



7. Reinier de Graaf, *Rabbit's Eggs from the Third Until the Eighth Day After Conception*, 1671, engraving, illustration from Idem, *Een nieuw ontwerp van de ledematen der vrouwen tot de voort-teelinge dienstig*, 1671. Groningen University Library, Special Collections

In this famous book, the seventeenth-century physician and anatomist Reinier de Graaf (1641–1673) mentions that 'people, as well as all animals that give birth to live babies' begin life as an egg. He examined those internal eggs, for example, by slaughtering female rabbits a few days after having them 'play' with males. This allowed him to create a pregnancy calendar of the 'rabbit egg'. Here De Graaf depicted the development of the offspring.[2]

8. Louis Th.J. Auzoux, *Pregnancy model: seventh month*, 1875–1900, papier-mâché sculpture. Rijksmuseum Boerhaave, Leiden. Photo: Tom Haartsen

Numerous three-dimensional models were made for the teaching of obstetrics. The French physician and anatomist Louis Auzoux (1797–1880) had a papier-mâché factory for anatomical models. He also manufactured uteruses showing the various stages of foetal development. The uterus shown here has a movable flap with a transparent window.

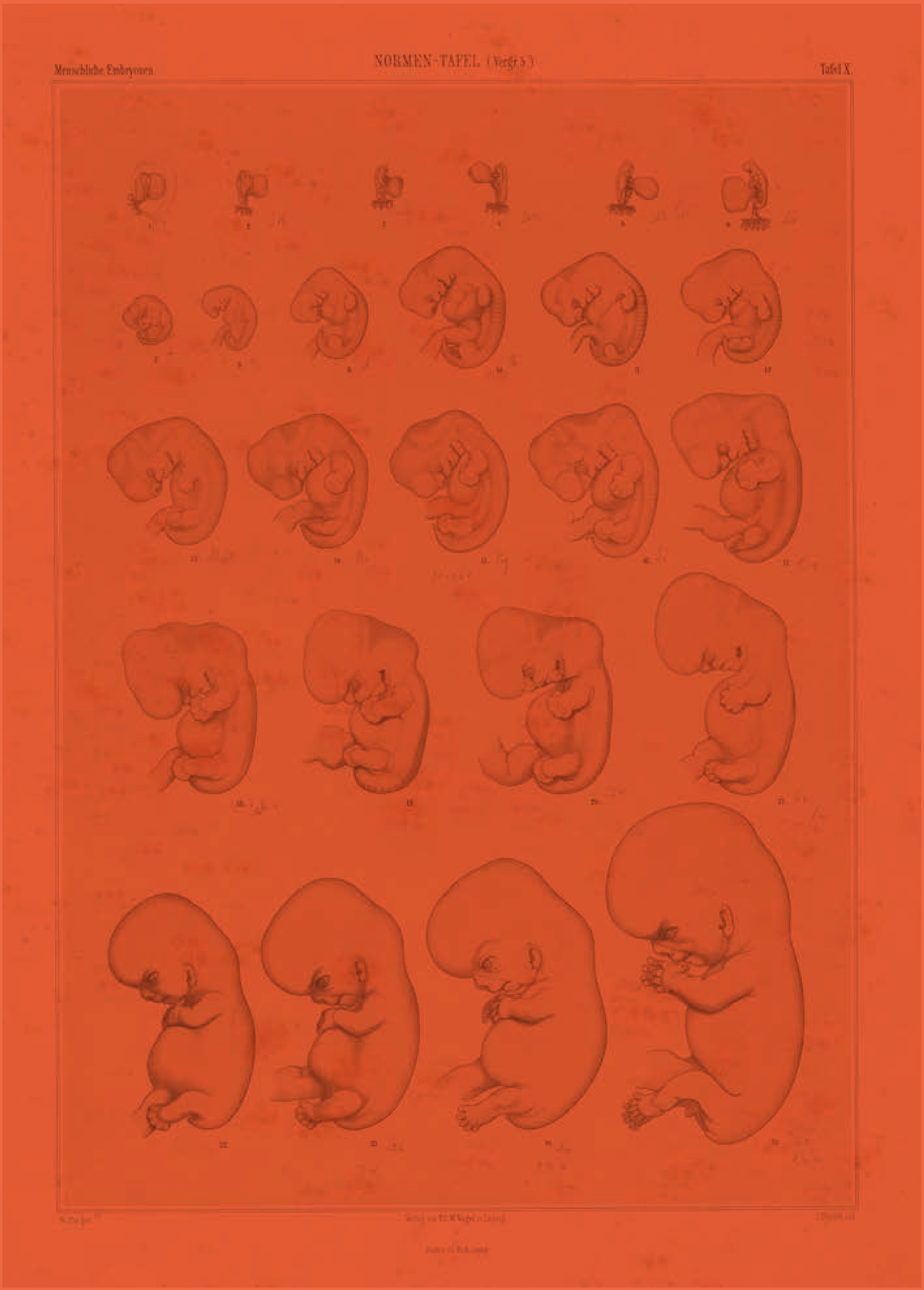
9. Stephan Zick, *Removable Figure of a Pregnant Woman*, 1650–1750, ivory, 24 x 6.5 x 6.5 cm. Rijksmuseum Boerhaave, Leiden

Textiles, leather, and ivory were also used to produce anatomical models. Whole-body models often had a cut, peephole, or hatch through which the foetus could be seen or removed. This ivory model is of an entire female body, lying on her back with a rotatable arm, detachable front and removable foetus.

10. A.A.L.M. Valpeau, *Pregnancy Calendar*, 1833, lithography, in Idem, *Embryologie ou ovologie humaine, contenant l'histoire descriptive et iconographique de l'oeuf humain*, 1833. Utrecht University Library

Mainly thanks to invention of the microscope in the early seventeenth century, depictions of embryos as

2. Reinier de Graaf, *Een nieuw ontwerp van de ledematen der vrouwen tot de voort-teelinge dienstig*, Haarlem, 1991, 84.



12. Wilhelm His, *Anatomie Menschlicher Embryonen*, before 1880. Utrecht University Library miniature humans disappeared from the books. Anatomist and surgeon Alfred Velpeau (1795–1867) studied the development of embryos and created an early pregnancy calendar for humans. The pins used to hang up the body material here emphasize how the research was conducted and how the material was preserved. In Velpeau's time, the embryological view of pregnancy started to emerge, which taught us to think about the development in terms of the various stages of the unborn baby, as opposed to a gradual process in the pregnant person's whole body.

11. A.A.L.M. Valpeau, *Baby in Egg*, 1833, lithography, in Idem, *Embryologie ou ovologie humaine, contenant l'histoire descriptive et iconographique de l'oeuf humain*, 1833. Utrecht University Library

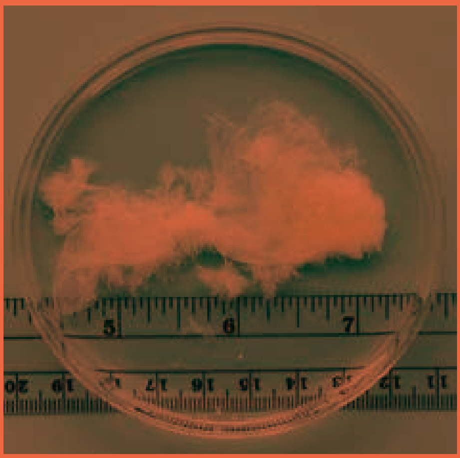
Embryology was also called 'ovology' (the study of eggs) and the subtitle of Velpeau's book was *L'Oeuf Humain* ('The Human Egg'). According to Velpeau, this engraving shows 'an egg at three month of pregnancy'. However, at that time, it was not yet possible to determine the exact moment of conception. Furthermore, the unborn child 'in the egg' here looks like a child around the age of one or two. How did the researchers actually obtain their material? The women as providers of embryological research material barely get a mention in historical accounts.

12.
Wilhelm His (1831–1904) made many important contributions to modern embryology and it took him great effort to produce this pregnancy calendar containing drawings of the embryo at various stages of development, known as 'normal plates'. To do so, he studied immature foetuses or female sex organs from gynaecologists. He preserved his 'research specimens' in fluids. Wilhelm His created this pregnancy calendar and also described the many dilemmas involved. How could he determine how old a foetus was if he did not know the date of conception? Was a larger foetus always older?

13. Like Velpeau, Wilhelm His (1831–1904) also uses the word 'egg' in his book, alongside the terms 'embryo' and 'foetus'; he regarded them as synonyms. They do not yet represent stages of pregnancy, as was later established. Here, Wilhelm His has an embryo in his hand; you might almost forget that it has been magnified many times and therefore does not reflect reality. In this image, it is not the woman and foetus that form the focus of the image, but the scientist.

14. Human embryo approximately 8 weeks old preserved in liquid, Bolk Collection, 1904, organic (human) tissue in preservation liquid, in a glass jar, approximately 8x5x8 cm, Museum Vrolik, Amsterdam UMC. Photo by Sanne Mos, Museum Vrolik, Amsterdam UMC.

This is an embryo preserved in fluid from an estimated seven weeks after conception.



15. 9-week old embryo tissue in glass, MYA Network; see www.myanetwork.org/the-issue-of-tissue/.

It would take until the late twentieth century before women would start promoting a unified model of pregnancy themselves, with the slogan 'my body, my choice'. Now, in the twenty-first century, a network of US pro-choice doctors and activists distribute similar images to the ones shown here depicting the early stages of pregnancy. They do this to provide a realistic image of the stages of the embryo, if a women decides to undo a pregnancy. They also do this as a response to campaigns from the anti-abortion lobby, who often use images of mature foetuses in their propaganda material.

Determining the age of a foetus remained a difficult problem for a long time. People tried to do this by asking women who were about to have a hysterectomy to have intercourse first, in order to obtain a human embryo. 'Making' an embryo in this way for research purposes is no longer permitted. However, between 1934 and 1955, over two hundred women sent cards to researchers upon request just after possible conception but prior to a hysterectomy. If a fertilized egg was then found after their hysterectomy, it was possible to determine how many days after fertilization it was from. This US research project with removed uteruses and fallopian tubes taught us a lot about ovulation and the early fertilized egg. The immense contribution of women to this research has been rarely mentioned. These famous imaginings of 'the Harvard egg', from 11 to 12 days, were named after the university where they were made.

17. Kurt Warnekros, *Table 26: Birthing Position and Posture of the Upper Extramities at the End of the Expulsion Period in the Facial Position*, x-ray in Idem, *Geburt und Nachgeburtsperiode im Röntgenbild*, 1925. Photo: J. F. Bergmann

The nineteenth century saw a growing requirement for technology to examine the body from the inside, without surgical intervention. As of the early twentieth century, X-ray technology enabled us to see through the body. During delivery, women were placed on an X-ray machine to record the various stages of childbirth. However, it took almost a century before it emerged this was extremely harmful and dangerous to humans, especially pregnant women and newborn babies.

18. Cover of *Life Magazine*, 10 September 1965

And then ultrasound arrived. In 1965, the US magazine *Life* showed the use of ultrasound in pregnant women to a wide audience for the first time. Ultrasound, originally developed in the shipbuilding industry to examine ships' hulls underwater for irregularities, used ultrasonic sound waves to form images. Because these waves move better through water, a lot of water was needed between the piece of equipment and the 'object' being examined. The photo in *Life* shows a pregnant woman lying between her bed and a large water-filled bag, used to conduct the sound waves. The ultrasound screen was facing towards the medical professionals, so only the could see the image of 'the baby's head'.

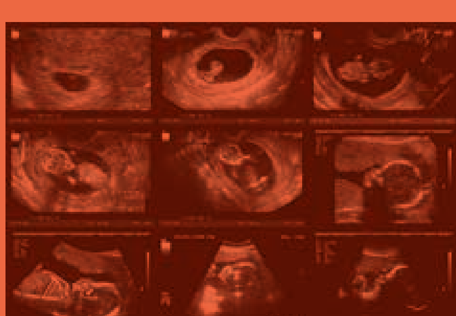
19. Spreads of the article 'Exploration of Prenativity', with photographs by Fritz Goro, *Life Magazine*, 10 September 1965

Life magazine bubbled with technological progress optimism. Many medical studies used animals as 'research tools'. This issue includes photos of a 'placenta stimulator' to test the effect of added medications. Tests were carried out on unborn possums with the ultimate goal of using the chemical treatment of the human placenta to 'stimulate the appearance, mentality and talents of children before they are even born'.

20. Cover of *Life Magazine*, 30 April 1965

In 1965, *Life* presented the now iconic photographs by Swedish photographer Lennart Nilsson. They were groundbreaking. Eight million copies of this issue of the magazine were sold worldwide.

The bottom right of the cover reads 'Living 18-week-old fetus shown inside its amniotic sac'. In reality, Nilsson had used dead foetuses from an abortion clinic, coloured them and positioned them in certain ways. For example, he put the thumb in the mouth of a foetus to take a picture of it for the cover of his famous book *A Child Is Born*. He made the background darker and more abstract, causing medical scientists to later point out in books such as *Picturing Personhood* and *Making Visible Embryos* that he seemed to replace 'the mother' with 'the firmament', making embryonic development seem somewhat divine or otherworldly.



21. Ultrasound. Photo: Ursa Hoogle/Getty Images

With the advent of ultrasound, screens replaced glass jars containing foetuses in preserving fluid. As a result, the unborn child can now be studied alive and in real time. For pregnant women, this means they can watch their own child grow, instead of just studying the average image of someone else's child. In addition, this technique makes it possible to determine the sex at an early stage.

In addition to images and numbers, pregnancy calendars often describe foetal development with words such as 'baby' or 'child', and refer to a 'head' or 'face' even in the first few weeks. This choice in terminology creates the impression of a fully developed and independent individual, right from the start of the pregnancy. However, if the foetus is considered a stand-alone human being with independent rights, legal questions arise with regard to the rights of the pregnant person.

Indeed, under Article 11 of the Dutch Constitution, every human being has the right to the inviolability of their body, which implies that each person can decide for themselves what happens to their body. If unborn life were also to become an independent legal entity, that right could become more complex for pregnant people and this could have far-reaching legal consequences for the right of self-determination.

Trudy Dehue states, 'Facts about the contents of a pregnant belly do not give us a glimpse into the "natural" process of fertilization and pregnancy. Left undisturbed, an unborn child is invisible inside a body with which it is intimately connected. Left undisturbed, it also consists of tissue, blood, and bones, as opposed to papier-mâché, ivory, ink, or pixels. Left undisturbed, it doesn't have wonderful colours and it goes through gradual processes that cannot be broken down into millimetres and phases. In the same way that words and numbers cannot capture reality, but instead replace it, illustrations are not images, but imaginings. That's why we need to ask ourselves in which ways the facts would be different if they had not, for centuries, been established by people who cannot themselves become pregnant and give birth'.

Translated by Alice Tetley-Paul