

THE CENTURY OF THE ORANGUTAN

by

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Although the Dutch today perceive their eighteenth century as one of decline after their Golden Age, it was a "century of the orangutan" and a Dutch one at that.¹ One of the most discussed and at the same time one of the least known animals in the eighteenth century was the "Orang-Utang," a generic name for apes then known, i.e. the chimpanzee and the orangutan, and everything that resembled them in some degree (the gorilla was unknown still). The anthropoid ape sat at a pivotal reference point, whether on the Chain of Being (*scala naturae*) in Enlightenment debates about what defined a human being or in the constant corrections of Galen's anatomical works. The most reliable accounts of apes in early modern Europe were published by Dutch physicians and natural historians.

The *Histoire naturelle* of Georges Louis Leclerc de Buffon (1707-1788), the most popular text at the height of the natural history fashion, could not keep up with the Dutch data.² Professor Jean Nicolas Sébastien Allamand (1713-1787) of Leiden contributed 41 articles on mammals, which were not, or only insufficiently, treated by Buffon, in Amsterdam editions of Buffon's *Histoire naturelle*, many of which reappeared later in the 1776 and 1782 supplements of Buffon's Paris edition.³

The governors of the Dutch colonies in both the east and west sent rare species to the menagerie on the outskirts of The Hague, called



Figure 1. "Oerang oetang uit de dierentuin van stadhouder Willem V, een appel plukkend," 1777. Painting of Het Kleine Loo Orangutan, plucking an Apple, and a Springbuck by Tethart Philip Christian Haag (1737-1812), originally German, Prince William's court-painter. Royal Cabinet of Paintings, Mauritshuis, The Hague, The Netherlands. The original, 174 x 110.5 cm, is in color. The scene with an ape eating strawberries from a plate with a fork, depicted on the wall, is based on a 1776 painting by Haag, since 1795 in the Herzoglichen Museum in Braunschweig, Germany. The original drawings of Het Kleine Loo orangutan by Haag are in the Artis Library, University of Amsterdam.

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"Het Kleine Loo," near Voorburg (not to be confused with "Het Loo," the ancestral palace near Apeldoorn). The menagerie of the Prince of Orange, Stadholder William V (1748-1806), surpassed that of Louis XVI because it had animals that had never been seen alive in France.

For many years Arnout Vosmaer (1720-1799), the Director of the Stadholder's Menagerie and also of his Natural History Collection, tried to get a living orangutan for Het Kleine Loo.⁴ In 1776 Vosmaer learned that he would get a surviving orangutan from Indonesia via the Cape of Good Hope (both under Dutch control). George Forster (1754-1794) saw her on the Cape during Captain James Cook's second voyage:

We were likewise favoured with the sight of a live ourang-outang, or ape, [in Cape-Town] from the island of Java, of that species which has the honour to be adopted as a near relation by several philosophers. ... This animal has, I am told, been since brought over to the menagerie of the Prince of Orange, at the Hague.⁵



Figure 2. "Oost Indische Orang-Outang." Drawing by T.P.C. Haag sketched from life, engraving by Simon Fokke (1712-1784), reproduced as plate XV in Arnout Vosmaer, *Description de l'espece de singe aussi singulier que très rare, nommé orang-outang, de l'isle de Borneo* (Amsterdam: Meijer, 1778). Library of Congress, Prints and Photographs Division, Washington, DC.

The first orangutan to arrive alive in Europe was brought to The Hague on 29 June 1776 after a one-year voyage. Vosmaer lodged the young female in his own house but, as crowds of the curious constantly grew, he was forced to move his guest to Het Kleine Loo. Thousands had the pleasure of seeing her, including Dr. Petrus Camper (1722-1789), the Dutch artist and anatomist.⁶

The little infant orangutan loved parsley and strawberries, ate with a fork from a Blue Delft saucer, and drank from a silver cup. When she became sick in November, Amalia von Schmetten, Princess von Gallitzin (1748-1806), obtained the Stadholder's promise that she would receive the animal, in the event of death, to send to her friend Petrus Camper for anatomical dissection. The next day the orangutan died and the "Orangutan War" erupted.⁷

Either from carelessness or because he was caught by surprise by the ape's sudden death, the Prince had neglected to give Vosmaer orders. As was

customary with the deceased exotic animals, Vosmaer ordered the ape to be stuffed for the Royal Cabinet of Natural History. Consequently, the taxidermist damaged the animal for dissection. Reproaching Vosmaer for not having given him immediate notice, the Prince ordered the carcass to be sent to Petrus Camper in Friesland.

The ape affair quickly became a *cause célèbre*. Many angry letters were exchanged between highly-placed persons in The Hague society split between Vosmaer's and Camper's claims on the ape body. Vosmaer sent Camper a defensive letter. He had followed orders or the lack thereof to the best of his abilities. He had preserved the ape's entrails in alcohol. He could not believe that Camper wanted to dissect it, ranking his [the latter's] "private pleasure above the interest of the Royal Cabinet." Vosmaer was surprised that Camper had not mentioned anything about it when he had been with him a few days earlier, and also that Camper wanted the orangutan, since Vosmaer had already sent him "the same animal" (in 1773) a few years before in alcohol, which had been dissected by him, even though the entrails had been missing. He reminded Camper that he had already sent him a dead elephant and another orangutan (both in 1774) in alcohol. It was not his fault that the entrails of that one had been decayed. Finally, he ended his letter saying that, since the waters were frozen, the present orangutan would have to go by cart which could harm the bottle.

Nine days after the orangutan's demise, the bottle reinforced in a soldered lead container packed in hay in a wooden crate was sent off on a morning wagon. Crate #23 departed by ship from Amsterdam on 4 March. On 9 March Camper sent this letter from Franeker, paraphrasing Vosmaer sarcastically:

This morning I received the crate with the lead container, completely closed and undamaged, in which I found the body with the legs sawed off up to the joints of hands and feet, and sawed-broken-off at the second cervical vertebra, with a piece of the first vertebra, hanging in front of the neck, the tongue with the larynx. I have the honor to call myself...⁸

Suspecting that Vosmaer had wanted to be personally asked for the orangutan's body, Camper recalled that when Claudius Galenus (A.D.130-201), the Emperor's physician, asked for the heart of a big elephant killed in second-century Rome, he sent one of his best friends to the Emperor's cooks, who had taken the heart, with the respectful request to give it to him. In

contrast to Vosmaer, they immediately gave the heart to Galen's friend. If the Prince had promised Camper the orangutan, he did not have to ask the "servant's" permission.⁹

The ape's demise sparked opposing strategies for the study of the orangutan. Camper was a scientifically-trained anatomist, whereas the study by Vosmaer, a talented but self-taught man, did not go beyond looking into habits and lifestyles. One wanted to keep the orangutan in the collection, the other wanted to dissect it thoroughly. While Camper was unhappy with the state of the preparation sent to him, Vosmaer resented the pressure placed on him. The different outlooks accounted for the "Orangutan War."¹⁰ As the animal that most resembled humanity, the orangutan was the most valuable prize in the Prince's collection.

Chimpanzees and orangutans still confused together, the generic term "Orang-Utang" used for both species referred to a human-like, bipedal, lewd creature equipped for speech. The foundation for this Orang-Utang "myth" originated with Jacob de Bondt (1592-1631), a Dutch doctor who lived at Java for a number of years before he died there:

This amazing monster with its human visage ... does exist ... I saw several of each sex walking erect and in particular one female Satyr of which I give an illustration here, hiding her face with great shyness from strange men ... The Javanese say that they can speak, but do not choose to do so lest they be compelled to work, but that is ridiculous. They are called Orang-outang which means man of the forest, and it is said that they are born of the lust of women of the Indies who mate with apes and monkeys to satisfy their detestable desires.¹¹

In 1630, the first living anthropoid ape to reach Europe was presented to the Prince of Orange, Frederik Hendrik, from Angola in Africa.¹² Dr. Nicolaas Tulp (1593-1674), a distinguished Dutch physician, published a description. Unable to dissect the corpse, Tulp centered on the animal's sexuality because he was convinced that the chimpanzee was probably the lustful satyr described by the classical authors.¹³

In 1698 the second anthropoid specimen to appear alive in Europe was an immature male Angolan chimpanzee in London. Dr. Edward Tyson (1650-1708), the leading anatomist in England, became the first to dissect a chimpanzee. Relating 48 morphological likenesses, and only 34 differences, Tyson proclaimed that his ape "so much resembles a Man in many of its

Parts more than any of the Ape-kind, or any other Animal in the World, that I know of."¹⁴ Tyson's book became a model for comparative anatomy but it also created a persistent "Orang-Utang" paradigm.

Tyson erroneously believed that his chimpanzee was a biped. He thought that the ape had adopted the posture of "walking on its knuckles" only because of being ill and he had him drawn with a stick or rope for support.¹⁵ Tyson had heard the chimp cry like a child, but never speak, yet he could not find any physiological reason for the ape's muteness.¹⁶ He also found the brain to be as large in proportion to his body as in the case of the human.¹⁷

The image presented by Tyson, and his predecessors, of a sensual, bipedal animal with speech organs challenged eighteenth-century attempts to redefine humanity in secular terms as part of nature.¹⁸ Traditionally humanity was a specially created being apart from the rest of Creation. The first since Aristotle, Carolus Linnaeus (1708-1778) incorporated the human into the animal kingdom. Although Linnaeus seemed not to have known Tyson's work, Buffon disseminated Tyson's conclusions in his highly influential *Natural History* (1766, v. 14).¹⁹

Buffon defined the ape as "an animal without a tail, whose face is flat, whose teeth, hands, fingers, and nails resemble those of man, and who, like him, walks erect on two feet." He observed a live chimpanzee in Paris, but, from Tyson's influence, believed him to be a true biped.

The orang-outang which I saw, walked always on two feet, even when carrying things of considerable weight. His air was melancholy, his gait grave, his movements measured, his dispositions gentle, and very different from those of other apes [monkeys].²⁰

The two-year-old chimpanzee owned by the Sieur Nonfoux survived one summer in Paris but died by winter in London.

Signs and words were alone sufficient to make our orang-outang act ... I have seen this animal present his hand to conduct the people who came to visit him, and walk as gravely along with them as if he had formed a part of the company. ... All these actions he performed, without any other instigation than the signs or verbal orders of his master, and often of his own accord.²¹

Buffon agreed with Tyson that this upright ape could not speak.²² Although he reduced Tyson's category of differences between human and

ape, Buffon argued that the human qualities of the ape had been exaggerated. The human-like actions of apes were not due to "spontaneous" imitation but were simply the "forced" result of similar physical structures.²³ Tyson's claim that the principal difference between human and ape was the latter's inability to make use of its speech organs supported Buffon's Cartesian dualism:

Can there be a more evident proof than is exhibited in the orang-outang, that matter alone, though perfectly organized, can produce neither language nor thought, unless it be animated by a superior principle?²⁴

It was the lack of thoughts that prevented apes from speaking.²⁵

Johann Friedrich Blumenbach (1752-1840) agreed that "speech is the work of reason alone ... that other animals, although they have nearly the same organs of voice as man, are entirely destitute of it."²⁶ While Tyson, Buffon and Blumenbach saw the ape as mute because it lacked reason, others like Linnaeus,²⁷ Lord Monboddo²⁸ (1714-1799), Jean-Jacques Rousseau²⁹ (1712-1778) and Julien Offray de la Mettrie³⁰ (1707-1751) wondered if the ape could learn to speak.

Firsthand experience with primates was available to Dutch naturalists because they either lived in Dutch colonies or were privileged with specimens from their contacts there.³¹ In 1770 Camper became the first to dissect the genuine orangutan. His father, Florentius Camper (1675-1748), observed a living orangutan when he was Minister of the Dutch Reformed Church in Borneo (1702-1713), an event published by his companion:

Also Orang Hoetans, or forest people, are found here, a kind of rare ape, that walk erect, and in all parts have the shape and habits of a human, only speech is lacking. I have seen two alive, the last with Mr. Camper, the Seigneur of Ouwerkerk aan de IJssel, who still has the specimen in his possession, now in a jar in spirit at his home in Leiden.³²

Originally Petrus Camper focused on the rare orangutan as a medical doctor out of zeal to track down the anatomical sources of the great Galen, but he increasingly became angered with his contemporaries who anthropomorphized the ape, whether intentionally or innocently. Camper began to campaign against the ape's supposed abilities to breed with humans, evolve into humans, walk like humans, speak like humans, and physically resemble humans in the head.

Why one would ask with reason, did Tyson, Buffon and

various others draw their orangutans and jockos [chimps] with straight human knees? Certainly to make little men of them without paying attention to the fact that they not only mislead others by their authority, but humiliate and short-change the sublimity of the human being above all creatures: It is not only ignorant travellers and amateurs who relate and embellish strange things from far-off lands, but also the directors of the first naturalist cabinets of Europe, who through their poorly stuffed animals keep alive the foolish illusion [that they] were not really [animals]!³³

Camper's crusade was theologically motivated. Convinced of a strict separation between humanity and beast, he believed that science was perfectly capable of confirming theology—an assumption that defines him as a classic eighteenth-century physicotheologian.

In 1768, before he had ever received his first orangutan, Camper had demonstrated in the Anatomy Hall of Groningen that only people enjoyed the advantage of erect posture. He questioned Enlightenment "philosophizing" rhetorically:

One cannot read without astonishment what great pains Rousseau, De Buffon, and Linnaeus took to convince us that human beings really walk erect only by having learned this art, while apes do it so naturally.³⁴

Without having recourse to metaphysics, Camper distinguished six physical proofs for humanity's natural and unique bipedal capacity based on the mathematics of the human skeleton alone.³⁵ In physicotheology, unique characteristics have purposeful ends.

The grand corporeal advantage enjoyed by man is, that he can walk, and even sit, in an erect attitude. I may also add, that man alone is able to repose upon his back; and that, by the centre of motion being placed in the middle of his body, he is enabled to turn himself, to bend his body in a great diversity of manners, and to walk with peculiar facility.³⁶

By 1770 it was not difficult for Camper to demonstrate that for the same morphological reasons the orangutan could not be but a quadruped.

Concentrating more on the structures directly involved in locomotion and with posture than had Tyson, Camper became convinced that the

orangutan could not reasonably be expected to walk erect.

I venture to add that it is impossible that orang-outangs can walk naturally in this way, for then the center of gravity of the whole body would have to be in the movement of the hips. They then ought to have a spinal column which, like ours, had the form of a Roman 'S' and the sacrum would have to be formed in quite a different way, circumstances which are true only for us and for which Desaguliers³⁷ as well as Borelli³⁸ have shown the reason. If I were to enlarge on this, esteemed listeners, I could show you from the thigh muscles that they cannot walk erect; and ... from the attachment of the muscles to the tibia that, if they sometimes walk erect at all, they then walk, like rats and other animals, with crooked or bent knees.³⁹

In 1776 Camper found his mechanical analyses to be confirmed by the living orangutan's actions. She crawled around Het Kleine Loo, or as close as possible near the heater, on all fours; and sometimes used one hand to shove herself forward. When she did occasionally stand up, which she mostly did when she first arrived, was still strong and could defend herself, her legs were bent. Her habit of hanging on the bar of her little room for hours verified Camper's anatomical conclusion that the orangutan was built to grasp on to tree branches like birds. This fit with his teleological view of nature that form followed function. The orangutan's destiny was to live daily in trees; hence its foot was shaped differently from the human's, with longer feet, longer toes, resembling a hand.⁴⁰

Camper's conclusions pointed out the absurdity of illustrating the animal upright with a walking stick. This popular iconography may have started from the exotic animal's original pilgrimage context (the Crusades) or have continued from the classical pose of satyrs with staffs. In 1778 Vosmaer published that observing the orangutan alive made the human characteristics commonly ascribed to the ape disappear, yet, he succumbed to sensationalism and had Het Kleine Loo orangutan stuffed standing up in the Prince's Cabinet. Camper sketched this pose in a ridiculous manner in his private diary.⁴¹ For his book Vosmaer chose drawings of the living orangutan by the court painter, T. P. C. Haag (1737-1812), instead of the naturalistic representations by Aart Schouman (1710-1792) who otherwise drew most of Vosmaer's exotic animals, sketched from life for the first time. Haag seemed to emphasize the ape's human characteristics.⁴² Otherwise

Vosmaer's book was superior to the others of his time because his plates were mostly drawn from life rather than from museum specimens.

Camper's monograph on the natural history of the orangutang appeared in 1782. From 1770 to 1777 Camper had examined a total of eight orangutans (not counting the one in his father's collection), and was able to dissect five of them. They were all of the same shape, the same color of hair, very young and small, and the "country they all came from was Borneo, from which island they are first sent over to Java, and so to Holland by the Cape of Good Hope."⁴³ Distinguishing the orangutan as a distinct species from the chimpanzee, Camper suggested that the original Malay name of orangutan be used exclusively for the Asian species.⁴⁴

None of Camper's specimens had their brain preserved, but the speech organs of Hoffman's, Hope's, Van Hoey's, and Vosmaer's two orangutans—including Het Kleine Loo specimen—were in good enough condition for him to dissect.⁴⁵ In his monograph Camper explained the problem of speech in its broadest context:

Since so many great travellers and famous authors regarded the highly extolled Orangs found in Africa as well as in Asia almost as human beings; and their muteness or failure to speak was considered by many people as a political principle, in order that they should not be made slaves and be forced to labor, rather than as a real defect of the speech organ, it was a matter of great importance not only to natural history [*Natuurkunde*] but also to anthropology [*Menschkunde*] to know whether apes, and in particular the Orang-utans, kept silent, that is did not speak, in order to outwit the civilized nations or from an imperfection in their structure and organic system?⁴⁶

Camper's predecessors were divided between two opinions concerning anthropoid speechlessness, both sides assumed that the vocal organs were the same in human and ape. A physicotheologian like Camper could not accept the idea of redundant design by the Divinity. The Supreme Being would never have created superfluous or useless organs. Fortunately for him, the orangutan has laryngeal pouches (whereas the chimp does not) which Camper argued constricted the passage of air from the lungs when the animal exhaled.⁴⁷ There was no possibility of language because the vocal organs of the orangutan were not suited to the utterance of words; the definitive evidence that *homo sapiens* alone had the physical capacity for

speech. As it was, Camper's explanation of the process of speech formation was incorrect, but it remained a plausible theory until the work of Georges Cuvier (1769-1832).⁴⁸ Puzzled by the difference between the vocal organ he dissected and that described by Tyson, Camper suggested that Tyson may have observed carelessly. Nor did Camper discuss the chimpanzee's incapacity to walk upright from the reports by Tyson or by Buffon's anatomist.⁴⁹ This may appear out of character for Camper's professed cautious empirical approach, but it typified his tendency to leave subjects incomplete once a burning question had been resolved for him.⁵⁰

Finally, Camper criticized Tyson's work as incomplete as far as the genitals were concerned, for "that is where indeed the greatest difference should be, if one may rely on Galen, who dissected Apes or animals of the Monkey Species only."⁵¹ The greatest difference between the human and the orangutan was in the male reproductive organs; the orangutan had a bone in the penis like the canine species. The variety of reproductive methods in nature testified to the Creator's desire to separate the classes of animals.⁵²

Apes, therefore, did not threaten the sanctioned status of humanity. The first to dissect the genuine orangutan, Camper did not have much difficulty in determining that it was a mute quadruped and disproving the theory of apes as potential humans. He adamantly denied any affinity between the human being and the anthropoid ape for a dozen different reasons. The titillating ape images were deceitful, apes could not walk on straight legs, could not speak, could not have sexual relations with humans; they had no lips and no nose, their eye sockets were too close together, their facial angles differed by twelve degrees,⁵³ their jaw was right-angled, and, like other animals, they had an intermaxillar bone.

Nevertheless, Het Kleine Loo orangutan was a "dissection manquée" for an intact orangutan with a still-preserved brain.⁵⁴ Camper was never able to compare this significant part with Tyson's chimpanzee.⁵⁵ He contended that



Figure 3. Pen sketch by Petrus Camper in his private diary. "Verblijf te Parijs en Terug Reyze 1777," 1 September 1777, p. 59. University of Amsterdam Library, Manuscript Department. II F36-37.

his thorough dissection of the recently deceased orangutan would have done the public more good than her display in the Prince's Cabinet of Natural History. An anonymous contemporary who agreed with his view wrote this poem entitled "*Consolation to the Very Learned Master Petrus Camper:*"

The hope of all Dutchmen eager for knowledge ceases
when, Sir, your noble desire came to naught,
for while your dissection was to have taught
About the orang's brain, Vosmaer cut it to pieces.

Thus from time to time it is to be understood
that the target of stupidity is of the kind,
which, when allying with evil, prevents the mind
From reaching well-earned fame, for the common good.

Have courage, the orang's bridegroom lives for tomorrow,
but, since her loss gives his suffering heart much sorrow,
He will soon decease due to mourning and grief.

We will finally find hope when your wish is fulfilled,
when you are able to examine the body by sadness killed,
You'll find within the bridegroom's head an orangutan
brain.⁵⁶

Vosmaer did not mind emphasizing the ape as humanlike if such sensationalism enhanced the prestige of the Prince's Cabinet, whereas Camper was dead set on dehumanizing the animal.⁵⁷ The "Orangutan War" illustrated the gap between the "cultural elite" and the "vulgar" or common people.⁵⁸ The public could visit the Royal Cabinet three mornings every week whereas only the learned could read Camper's zoological publications with understanding.

Neither Tyson nor Camper knew adult anthropoid apes. The great apes undergo great changes in maturing which radically reduce their morphological resemblances to the human species. Only in 1779 was a large orangutan finally captured on Borneo by a Dutchman. More large orangutans started to reach the Netherlands. When Camper received the skull of an adult orangutan in 1783, he concluded that it was another new species. The confusion between the young and mature orangutans was cleared up only after his death.

In conclusion, Camper tried to stop the humanizing embellishments of

his colleagues toward the great apes by his endeavors as anatomist, artist, and physicotheologian, and in demanding more accuracy in both observations and representations. His monograph served as a standard far into the nineteenth century. However, neither Vosmaer's stuffed orangutan nor Het Kleine Loo itself survive in the Netherlands today. The century, which the Dutch disdain, was an exciting one for orangutan science in which they made the major contributions. In 1795 the French plundered the Stadholder's specimens from Africa and the East Indies that they knew only from the publications of Dutch naturalists, among them the skeleton of the "large orang-outan described by Camper." While Cuvier and Etienne Geoffroy Saint-Hilaire (1772-1844) published several papers on the "Pongo of Wurmb," it is the Dutch who are still active in orangutan conservation and research today.

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Notes

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1. During my dissertation research on Petrus Camper, I read that the Dutch referred to their eighteenth century as "eeuw van de orang-utan" but I have since been unable to find this source back or evidence of what it claimed. It was written in Dutch.

2. Georges Louis Leclerc, comte de Buffon, *Histoire naturelle générale et particulière avec la description du cabinet du roy*, 15 volumes (Paris: L'Imprimerie royale, 1749-1788).

3. L. C. Rookmaaker, "J.N.S. Allamand's Additions (1769-1781) to the Nouvelle Edition of Buffon's *Histoire naturelle* published in Holland," *Bijdragen tot de Dierkunde* 61 (1992): 131-162. In 1779 Petrus Camper informed Buffon that the orangutan differed from Tyson's African ape. January 4, 1779, letter draft, Universiteitsbibliotheek Leiden [Library of the University of Leiden], BPL 247.94. Later Camper's son updated Buffon again in Paris. Letter by Adriaan Gilles Camper to his father, March 19, 1786. Hans Bots and Rob Visser, eds., *Correspondance, 1785-1787, de Petrus Camper (1722-1789) et son fils Adriaan Gilles Camper (1759-1820)* (Amsterdam: APA-Holland University Press, 2002), 194-196.

4. Arnout Vosmaer, *Description d'un recueil exquis d'animaux rares, consistant en quadrupèdes, oiseaux et serpents, des Indes orientales, et occidentales. Sayant trouvés ci-devant vivants aux ménageries appartenant à son Altesse Monseigneur le Prince d'Orange-Nassau* (Amsterdam: Elwe, 1804), pp.9-10. Vosmaer's book, known as the *Regnum Animale*, gave descriptions of some animals never given before, not even by Buffon. Professor Allamand used Vosmaer's work.

5. 30 Oct.-22 Nov. 1772. George Forster, *A Voyage round the World, in His Britannic Majesty's Sloop, Resolution, commanded by Capt. James Cook, during the Years 1772, 3, 4, and 5*, vol. 2, (London: B. White, 1777), 553.

6. "I saw the Orang once again with the Princess Gallitzin. She had broken loose, and walked around on all fours as Mister Vosmaer had testified to me." Petrus Camper, "*Reyze naar Bentheim, Cleef*

en Brabant gedaan in den jaare 1776 en van Breslau naar Parijs in den jaare 1777 en van Friesland weder naar Parijs in April 1787," 26 July 1776, p. 45. Universiteitsbibliotheek Amsterdam, ms. II F 36-37 [University of Amsterdam Library].

7. R. P. W. Visser, "De Ontdekking van de Orang Oetang 1641-1840," *Spiegel historiel* 10 (1975): 263-264. Leonard de Gou, *Biografische bijdragen over achttiende-eeuwers* (Haarlem: Joh. Enschede en Zonen, 1989), 67-70. M. Mazel, "Van een aap in 1777," *Die Haghe* (1909): 361-380. W. Martin, "De Aap van 1777," *Die Haghe* (1934): 152-155.

8. Vosmaer wrote a *Journal about What Happened Concerning the Orang-outang 1777. At the Request of His Serene Highness Available for Reading by the Public Given to His Library by A. Vosmaer, Director of the Cabinet, etc., Zoo, etc.* in which he described the entire orangutan affair day by day; three copies were made of it. One copy is "De Orang outang van Prins Willem V," Koninklijke Bibliotheek, 's-Gravenhage, ms. 78B13 [Royal Library, The Hague] and two copies are "Stukken betreffende den Strijd tusschen Petrus Camper en A. Vosmaer over den Orang-outang 1777," University of Amsterdam Library, ms. IVB.5.

9. Learning about Vosmaer's journal from the royal librarian, Camper was infuriated by Vosmaer's claim that the orangutan had arrived more than two weeks earlier and by Vosmaer's description of him as a liar. Camper marked up Vosmaer's diary copy with personal clarifications. "Stukken betreffende den strijd tusschen Petrus Camper en A. Vosmaer 1777," University of Amsterdam Library, ms. IVB.5.

10. After the discussion finally died down in Dutch society, George Forster publicized the "Orangutan War" abroad in his book, *A Voyage round the World*, pp. 553n-554n. Later, when Forster was in Amsterdam, he wrote Vosmaer to excuse himself for his discourteous publication which had resulted from incomplete information and Vosmaer forgave him. Letter from Johann G. A. Forster to Mr. Vosmaer, 1 November 1778, The Hague [copy probably by Petrus Camper], University of Amsterdam Library, X62.a. Vosmaer, *Description*, pp. 19-20. By the time his orangutan monograph was published, Camper too was over his anger with Vosmaer.

11. Jacobus Bontius, *Historiae naturalis & medicae Indiae orientalis* ["Natural and Medical History of East Indies"] (Amsterdam, 1658).

12. The brother of Hugo Grotius reported that "a monster, man or beast, I wouldn't know which to call it," arrived in The Hague from Africa. Ernest-Théodore Hamy, "Documents inédits sur l'Homo Sylvestris rapporté d'Angola en 1630," *Bulletin du Muséum d'Histoire naturelle*, 7 (1897): 277-282, as cited in Claude Blanckaert, "Premier des singes: dernier des hommes?" *Alliage* 7-8 (1991): 114.

13. Nicolaus Tulpus, *Observationum medicarum libri tres* (Amsterdam, Apud L. Elzevirum, 1641): 274-79.

14. Edward Tyson, *Orang-outang, sive Homo Sylvestris: or, The anatomy of a Pygmie Compared with that of a Monkey, an Ape, and a Man. To which is added, A Philological Essay Concerning the Pygmies, the Cynocephali, the Satyrs, and Sphinges of the Ancients, Wherein it will appear that they were all either Apes or Monkeys; and not Men, as formerly pretended* (London: Thomas Bennet and Daniel Brown, 1699), 2.

15. Tyson, *Orang-outang*, p. 14. In fact apes move in a semi-erect position by resting upon their knuckles as well as upon their feet.

16. Tyson, *Orang-outang*, p. 25. "As to the Larynx in our Pygmie ... there is nothing that I can further add, but only say, that I found the whole structure of this Part exactly as 't is in Man." Tyson, *Orang-outang*, p. 51.

17. "That the Brain is reputed the more immediate Seat of the Soul itself, one would be apt to think that since there is so great a disparity between the Soul of a Man, and a Brute, the Organ likewise in which it is placed should be very different too. Yet by comparing the Brain of our Pygmie with that of a Man, and with the greatest exactness observing each Part in both, it was very surprising to me to find so great a resemblance of the one to the other, that nothing could be more." Tyson, *Orang-outang*, p. 54.

18. Using the ancient thesis of a Chain of Being, Tyson concluded that the "Animal of which I have given the Anatomy, coming nearest to Mankind; seems the Nexus of the Animal and Rational." Tyson, *Orang-outang*, p. iii.

19. Georges Louis Leclerc, Count de Buffon, *Natural History, General and Particular*, trans. William Smellie, (London: W. Strahan, 1785): 9 v. The original French appeared in 1766, the same year that his

rival, Linnaeus, issued the twelfth edition of his *System of Nature*.

20. Buffon, *Natural History*, v. 8, p. 86. Buffon's view that the ape was a true biped like humanity was odd because Tulp and Vosmaer, who saw a living chimpanzee and a living orangutan respectively in Holland, witnessed them to be quadrupeds.

21. Buffon, *Natural History*, v. 8, p. 87.

22. "I saw him frequently, and I can affirm, that he neither spoke, nor expressed himself by hissing, and that he did nothing which a well-trained dog could not perform." Buffon, *Natural History*, v. 8, p. 80.

23. "The ape and the human body are two machines similarly constructed, and necessarily move nearly in the same manner. ... endowed with the human structure, the ape must move like man." Buffon, *Natural History*, v. 8, p. 73.

24. Buffon, *Natural History*, v. 8, p. 96. Camper considered this kind of reasoning unscientific, because it referred to a metaphysical principle. For Buffon, however, the absence of corresponding functions for corresponding structures indicated that, although nature proceeded in a Chain of Being between living beings, there was an exceptional gap between the faculties of the human being and those of the animal most resembling him.

25. Buffon, *Natural History*, v. 2, p. 363.

26. Johann Friedrich Blumenbach, "On the Natural Variety of Mankind (1775)," *On the Variety of Mankind: 'De Generis Humani Varietate Nativa' (1865)*, ed. and trans. Thomas Bendyshe (New York: Bergman Publishers, 1969), 84.

27. Linnaeus described the Troglodytes as having "a language of their own which they speak in a whistle, so difficult, that scarce any one can learn it except by long association with them; and they are so incapable, according to the accounts of some, of learning our language, that they can say nothing except the affirmative and negative particles." Thomas Bendyshe, "The History of Anthropology," *Memoirs Read Before the Anthropological Society of London 1 (1863-1864)*: 456.

28. In the first of his 6 volumes, Lord Monboddo (James Burnet) counted the orangutan among the species of humanity as a variety at a certain early stage, before the development of speech. Alan J. Barnard, "Monboddo's Orang Outang and the Definition of Man," *Ape, Man, Apeman: Changing Views Since 1600*, eds. Raymond Corbey and Bert Theunissen (Leiden: University of Leiden, 1995), 71-85.

29. Rousseau pointed out that linguistic competence in itself was not a natural characteristic of the human species but had to be mastered and that it had not yet been demonstrated that the orangutan could not be similarly trained. Robert Wokler, "The Ape Debates in Enlightenment Anthropology," *Transactions of the Fifth International Congress on the Enlightenment 192 (1980)*: 1171.

30. In his *L'Homme-machine* (1748), La Mettrie argued that Tyson's anatomical data indicated that there was every reason to assume that apes could be taught to talk. Since apes were apt in imitation, La Mettrie suggested applying Johan Conrad Amman's method with the deaf and dumb, based upon imitation. Aram Vartanian, *La Mettrie's 'L'Homme Machine': A Study in the Origin of an Idea* (Princeton, 1960).

31. Jacob de Bondt, Nicolaas Tulp, Josua van Iperen, Frederik Schouwman, Petrus Camper, Jacob Cornelis Mattieu de Radermacher, and Friedrich von Wurmb.

32. F. Valentijn, *Beschryvinge van het eiland Borneo, en onzen handel aldaar. Oud en Nieuw Oost-Indien, vervattende een naaukeurige en uitvoerige verhandelinge van Nederlands mogentheyd in die gewesten 3 (1726)*: 242 as translated in Colin P. Groves and L. B. Holthuis, "The Nomenclature of the Orang Utan," *Zoologische Mededelingen uitgegeven door het Rijksmuseum van natuurlijke historie te Leiden 59 (1985)*: 411-417. The research by my aunt, Ellen C. Schwarz, is greatly appreciated.

33. "Waarom, zal men met rede vraagen, hebben dan Tyson, de Buffon en verscheidene andere hunne Orangs en Jockos met rechte menschelyke knien getekend? Zekerylyk om 'er mannetjes van te maaken zonder op te letten, dat zy niet alleen met hun gezag hier door andere misleidden, maar de verhevenheid van den mensch boven alle Schepselen vernederden en te kort deeden? Het zyn dan niet alleen onkundige reizigers, en liefhebbers om van verre landen vreemde dingen te verhaalen en op te cieren, maar de bestierders van de Eerste Natuur-kabinetten van Europa, die door hunne kwalyk opgezette Dieren, den dwaazen waan bleeven levendig houden, als of 'er waarlyk Beesten gevonden

wierden, welke zeer naar menschen geleken, zoo zy het niet wezenlyk waren!" Petrus Camper, *Natuurkundige verhandelingen over den orang-outang; en eenige andere aap-soorten. Over den rhinoceros met den dubbelen horen; en over het rendier*. (Amsterdam: Meyer en Warnars, 1782), 36.

34. "Men kan niet zonder verbaasdheid leezen, hoe veel moeite Rousseau, De Buffon en Linnaeus zig gegeven hebben om ons te overtuigen, dat de menschen waarlyk door konst alleen overeynde gaan, en in tegendeel dat de aapen dit uyt de natuur doen." Petrus Camper, "Redenvoering over de Voortreffelijkheid der Menschen boven alle andere Dieren ... gehouden in den Schouwburg der Ontleedkunde te Groningen, den 14 van Slachmaand [Nov.], 1771, p. 8.

University of Amsterdam Library, ms. IV A 11.1.

35. First, the joints of the vertebrae were all horizontally erect. Second, the legs were longer than the arms. Thirdly, the arms and legs in profile were exactly midway between chest and back. Fourthly, the human head was precisely in equilibrium on the uppermost vertebra when it was kept upright. Fifthly, in humans the spinal processes inclined backwards because less leverage was required. And finally, there were no protective bones on the inside of the hands' knuckles. Petrus Camper, "Inleiding tot de openbare lessen over de ontleding van spieren en ingewanden, gehouden te Groningen van 29 Nov. 1763 - 6 April 1768," 15 March, 1768, pp. 101-107. University of Amsterdam Library, ms. II F 71.

36. Petrus Camper, *The Works of the late Professor Camper, on the Connexion between the Science of Anatomy and the Arts of Drawing, Painting, Statuary, etc. in Two Books containing a Treatise on the Natural Difference of Features in Persons of Different Countries and Periods of Life; and on Beauty, as exhibited in ancient sculpture; with a new Method of Sketching Heads, National Features, and Portraits of Individuals, with Accuracy, etc.*, trans. Thomas Cogan (London: C. Dilly, 1794): 144-145.

37. Jean T. Desaguliers (1683-1744) was the accomplished disciple of Newton and an able experimenter in physics. I. Bernard Cohen, *Science and the Founding Fathers: Science in the Political Thought of Jefferson, Franklin, Adams, and Madison* (New York: W. W. Norton & Company), 42.

38. Giovanni Alfonso Borelli (1608-79) explained the workings of the human parts using mechanical models. His *De motu animalium* ["On the Motion of Animals"] (1680-1) was the supreme example of the application of the science of mechanics to the study of the living organism. He was most successful in the treatment of muscular movements, using mathematics and diagrams, so that his treatise looks like a textbook in mechanics. Herbert Butterfield, *The Origins of Modern Science 1300-1800* (New York: The Free Press, 1957): 135.

39. "Ik durf er byvoegen onmogelyk te zyn, dat de orangs natuurlyk zoo kunnen gaan, want dan moest het zwaartens middenpunt van het geheele lighaam, in dat der beweging van de heupen zyn. Dan moesten zy eene ruggraat hebben, die evenals de onze de gedaante van eene Romeynsche 'S' hadde en het heiligbeen op eene gansch andere wyze gevormd zyn, omstandigheden, die by ons alleen waar zyn, en waarvan Desaguliers zoowel als Borelli de rede aangetoond hebben. Mogt ik uytwyden G.T.! Ik zou UL: uyt de deyspiere toonen, dat zy niet kunnen overeynde gaan; en uyt de inhegting der spieren in het scheenbeen overtuygen dat zoo zy al eens overeynde gaan, zy als dan even als de ratten, en andere dieren met kromme of geboogen knien loopen." Petrus Camper, "Redenvoering over de Voortreffelijkheid der Menschen boven alle andere Dieren gehouden in den Schouwburg der Ontleedkunde te Groningen, den 14 Slachmaand [Nov.] 1771," p. 10. University of Amsterdam Library, ms. IV A 11.1.

40. Camper, *Natuurkundige verhandelingen*, pp. 71-72, 35, and 83. Camper, "Redenvoering over de Voortreffelijkheid der Menschen boven alle andere Dieren," p. 6.

41. Petrus Camper, "Verblijf te Parijs en terug Reyze 1777," 1 September 1777, p. 59. University of Amsterdam Library, ms. II F 36-37. This small sketch is published for the first time in this article (Figure 3).

42. Frans Grijsenhout, "Dessin sur le vif dans la ménagerie de Son Altesse, Les artistes et le jardin zoologique du prince Guillaume V," *Een vorstelijke dierentuin: de menagerie van Willem V*, eds. Bert C. Sliggers and A. A. Wertheim (Zutphen: Walburg Instituut, 1994): 61-86.

43. Camper, "Account of the Organs of Speech of the Orang Outang," *Philosophical Transactions* 69 (1779): 146.

44. Petrus Camper, "Kort berigt wegens de ontleding van verscheidene Orang Outangs, en inzonderheid van die in de diergaarde van Zyne Doorluchtigste Hoogheid, den Heere Prinse van Orange,

Erfstadhouder, enz. enz. gestorven is, in den jaare 1777," *Algemeene vaderlandsche letter-oefeningen* 1 (1779): 35. Camper, *Natuurkundige verhandelingen*, pp. 25, 32, and 37. Camper, "Redenvoering over de Voortreffelijkheid der Menschen boven alle andere Dieren," p. 8.

45. Dr. Johann Paul Hoffman was a Batavia physician who had been Camper's student in Groningen. Mr. Hope was the Director of the East India Company of Amsterdam. Dr. van Hoey was a physician in The Hague. The burghers of the Dutch Republic enjoyed an exceptionally high number of natural history collections.

46. "Aangezien zoo veele groote Reizigers, en Schryvers van naam, de zoo hoog opgevyzelde Orangs zoo wel in Africa als in Asie voorvallende, byna voor menschen hielden; en hun stilzwygen, of niet spreken, van veelen aangemerkt wierdt voor een staatkundig beginzel om niet tot slaaven gemaakt, en tot arbeid gedwongen te worden, eerder dan voor een wezenlyk gebrek in het spraaktuig; was het een stuk van groot belang in de Natuurkunde niet alleen, maar in de Menschkunde, te weten: of Aapen, en inzonderheid de Orang-Outangs zweegen, dat is, niet spraken, om de gepolystste Natien te verschalken? dan uit eene onvolkomenheid in hun maakzel, en werktuigelyk gestel?" Camper, *Natuurkundige verhandelingen*, p. 38.

47. Camper, "Account of the Organs of Speech of the Orang Outang," *Philosophical Transactions* 69 (1779): 155-156.

48. Wokler, "The Ape Debates," p. 1173. Victor Sánchez-Valencia, "Petrus Camper (1722-1789) over mens, aap en spraak," *TABU, Bulletin voor Taalwetenschap* 29 (1999): 21-36.

49. Camper, *Natuurkundige verhandelingen*, p. 89. Tyson, *Orang-outang*. Georges Louis Leclerc, comte de Buffon [Daubenton], "Description du jocko," *Histoire naturelle*, v. 14 (1766): 72-83. Louis Jean Marie Daubenton, "Mémoires sur les différences de la situation du grand trou occipital dans l'homme et dans les animaux," *Histoire de l'Académie royale des sciences avec les mémoires de mathématique et de physique* (Paris, 1764), 568-579.

50. Robert P. W. Visser, *Zoological Work of Petrus Camper (1722-1789)* (Amsterdam: Rodopi, 1985), 15, 111 and 114.

51. Petrus Camper, "Redenvoering over den oorsprong en de kleur der zwarten," *De Rhapsodist* 2 (1772): 381.

52. Camper, *Natuurkundige verhandelingen*, p. 67. Petrus Camper, *Redenvoering over de overeenkomst tusschen de dieren en gewassen*, trans. Cornelius van Engelen (Amsterdam: F. Houttuyn, 1764), 23. Camper, *The Works of the late Professor Camper*, p. 32. Camper, *Natuurkundige verhandelingen*, pp. 61-68. However, in his private diary, Camper confessed that he had been amazed at how the female orangutan's genitals (Het Kleine Loo) resembled those of a human's. Camper, "Reyze naar Benthaim," 1776, p. 45. University of Amsterdam Library, ms. II F 36-37.

53. Miriam C. Meijer, "Facial Angle," *History of Physical Anthropology: A Encyclopedia*, ed. Frank Spencer (New York: Garland, 1997): 373-378.

54. Camper's first public statement: "She was soon cut to pieces by the order of Mr. Vosmaer, to be stuffed for the Museum of His Serene Highness the Prince of Orange; but, as this cannot be done without preserving the face, a part of the skull, hands, and feet, it is very evident, that Mr. Vosmaer was obliged to cut off the head and the other extremities, and to destroy the most interesting parts for natural knowledge. I was very sorry to hear the fate of this curious and uncommon creature, more especially as I had great reason to flatter myself with the dissection of the entire animal as soon as it was dead." Camper, "Account of the Organs of Speech of the Orang Outang," pp. 151-152.

55. "Here was one of the best opportunities (which will not be repeated for another century perhaps) to get to know the rarest animal that resembles humanity the most." "Voilà une des plus belle 5 occasions (et qui n'arrivera peut-être d'avantage [sic] de 100 ans) de connaître l'animal des plus rares et qui approche le plus de l'homme." Letter from Prince Dimitri Alexewitsch Gallitzin to Professor van Swinden, 30 January 1777, as cited in Leonard de Gou, *Biografische bijdragen over achttiende-eeuwers* (Haarlem: Joh. Enschede en Zonen, 1989), 67.

56. "Vertroosting aan den Hoog Geleerden Heere Petrus Camper. Gij ziet Uw edele wensch, O Camper! dan mislukken en met hem mist zyn hoop 't weetgierig Nederland. Want daar het van het brein des Orang van Uw hand Volmaakter kennis wacht? snyd Vosmaers mes 't aan Stukken. Dus ziet men nu

en dan de Wetenschappen drukken; dus staat vernuft ten doel voor vrydig onverstand en hindert het, terwyl 't met boosheit zamenspant, ten algemeenen nut, verdienden roem te plukken. Schep echter moed, myn Heer! des Orangs Bruigom leeft; doch daar hem haar gemis het grievendst hartzeer geeft zal binnen korten tyd Hem rouw en smert versluiten. Dan zien me in 't eind ons hoop dan ziet ge uw wensch voldaan wanneer Gij 't zielloos lyk naukeurig gae wilt slaan Gij zult in 's Bruigoms hoofd het brein eens Orangs vinden." Anonymous, The Hague, 1 February 1777. Poem [my translation] by a Camper contemporary who sympathized with him. "Stukken betreffende den strijd tusschen Petrus Camper en A. Vosmaer over den Orang-Outang" (Copies) 1777, University of Amsterdam Library, ms. IV B.5, as cited in Carel Eduard Daniëls, *Het leven en de verdiensten van Petrus Camper* (Utrecht: Leeftang, 1880), pp. 122-123, note 71.

57. The "Orangutan War" resurfaced in the nineteenth century. Dr. G. C. J. Vosmaer resurrected the quarrel between his grandfather's great uncle and Petrus Camper in a book review of Dr. Carel Eduard Daniëls's biography of Camper, *Het leven en de verdiensten van Petrus Camper* (Utrecht: Leeftang, 1880). G. C. J. Vosmaer, "P. Camper, het leven en de verdiensten," *De Nederlandsche spectator* 29 (1881): 251-254, 274-275, 290-291. Carel Eduard Daniëls, "Nog eens Petrus Camper: antwoord aan Dr. C. G. J. Vosmaer," *De Nederlandsche spectator* 32 (1881): 274-275.

58. Lorraine Daston and Katharine Park, *Wonders and the Order of Nature, 1150-1750* (New York: Zone Books, 1998), 18-19. Other scientists' poor opinion about Arnout Vosmaer's scientific knowledge are described in L. C. Rookmaaker, *The Zoological Exploration of Southern Africa (1650-1790)* (Rotterdam: A. A. Balkema, 1989), 120-128.

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