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ARTICLE

Milk's Arrays

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Melanie Jackson, *Black Milk*, 2018.

Hidden in Plain Sight

In milk, all contradictions can be contained. Out of milk arises all imagination – but not an expansive one for those who imagine milk to be white and only white and so without hope. Hidden in milk, beneath and inside that whiteness, is a multitude, another world or worlds, invisible things and knowledge. Milk fans out widely, from reason to imagination. Any understanding of a phenomenon, this one of milk, is achieved through a synthesis of the 'whole' entity. This entirety of the thing includes all that is magical, dreamlike, absurd and incredible, as well as all that is real and lucid. In milk, there is blackness and whiteness and all that might be found in its spectrum of all possible and impossible colours.

Milk is white. Milk is every colour, and so milk has also been black, black in the mind's eye. As Paul Celan put it in his poem from 1944 titled 'Death Fugue': 'Black



Julio Guerra, *Mãe Preta*, 1955, Amaro, São Paulo.

milk of morning we drink you at dusktime, we drink you at noontime and dawntime we drink you at night, we drink and drink.' Celan's black milk is a perversity and a necessity. It is other to itself, wholly defamiliarised, a horror that must be imbibed without respite. For Elif Şafak, *Black Milk*, the title of her book on motherhood and writing, is a reference to postpartum depression and it 'shows that mother's milk is not always as white and spotless as society likes to think it is'. Out of that negativity, though, she claims, comes something generative: 'out of that black milk I was able to develop some sort of ink'.¹ Like Cixous, she might say: 'I'm brimming over. My breasts are overflowing! Milk. Ink. Nursing time. And me? I'm hungry too. The milky taste of ink!'²

There is another world of black milk, as Marcus Wood calls it; the milk of the Black slave mother, milk that flowed from the breasts of the Mammy and the Mãe

¹ Caroline Baum, 'Breaking down the boundaries', *The Sydney Morning Herald*, 17 March 2010, <<https://www.smh.com.au/entertainment/books/breaking-down-the-boundaries-20100316-qcfd.html>> [accessed May 16 May 2018].

² Hélène Cixous, *Coming to Writing and Other Essays* (Harvard: Harvard University Press, 1991), p. 31.

Preta into the mouths of white infants for four centuries in Brazil and North America, while their own children were compelled to go hungry or had to be fed on dirty water and animal milk.³

Beastly Practices

The producing body of the milk giver is no simple entity. It is monstrous. It refuses. It takes on other shapes. For example, humans have engaged and imagined other milk suppliers, which take on the figure of nonhuman caregivers. In myth, a nanny goat called Amalthea – tender goddess – was said, in some accounts, to have nursed the baby Zeus. Her horn, the *cornu copeia*, or horn of plenty, is said to have been donated to the caregiving Nymphs who had facilitated the transfer, in gratitude for their provision of honey, as well as milk. Other versions of the myth of Zeus have him suckled by a sow, fed ambrosia by a dove and nectar by an eagle.

A she-wolf fed Romulus and Remus, the abandoned twin offspring of Mars and Rhea, whose story recounts the founding of Rome and the Roman Kingdom. Goats often let the Gods and heroes of Antiquity suckle: Dionysus; Asklepios, God of medicine, and Aegisthus, killer of Agamemnon. Telephus, the son of Heracles and Auge, while exposed on Mount Parthenion, was said to have been suckled by a deer as portrayed on the 1st century CE fresco at Herculaneum – his name is perhaps derived from a dug and a doe.⁴ The altar of the Pergamon transposes this milk provider to a lion. Aeolus and Beotus, the sons of Melanippe, were exposed by King Desmotis, but saved by a suckling cow before becoming heroes. Hippothoon was twice exposed and twice fed by a mare, while the abandoned Miletus was suckled by she-wolves under Apollo's command. The grandfather of Habis, King of Tartessos, exposed his grandchild five times in different environments and every time Habis was breastfed by animals – pigs, hind and doe. Cyrus I of Persia was said in some accounts to have been nursed by a wild dog. With this milk came characteristics, transfers of personality, qualities that marked out these babies as chosen ones.

³ Wood, Marcus, *Black Milk: Imagining Slavery in the Visual Cultures of Brazil and America* (Oxford: Oxford University Press, 2013).

⁴ Apollodorus, *The Library, with an English Translation by Sir James George Frazer, F.B.A., F.R.S. in 2 Volumes* (Cambridge, MA: Harvard University Press; London: William Heinemann Ltd., 1921).

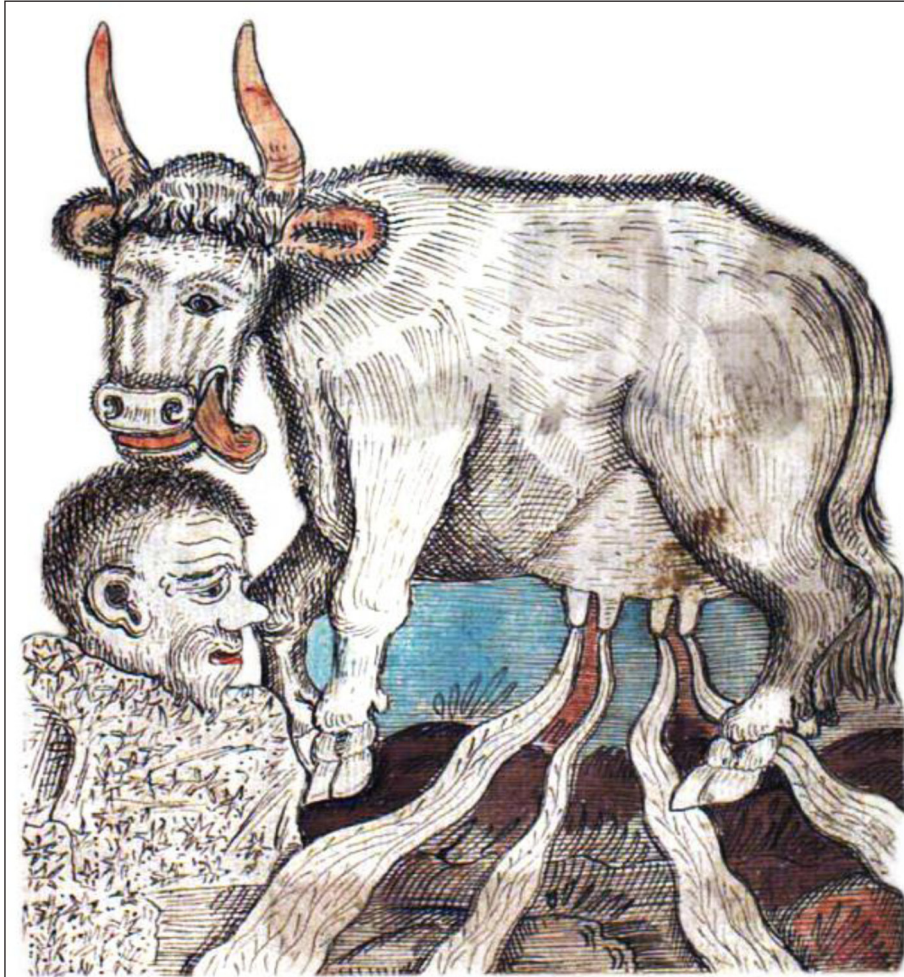


Melanie Jackson, *Romulus and Remus*, 2017.

Brigid, a Celtic Goddess or a Saint – the patron saint of Ireland and protector of dairymaids, cattle, midwives, Irish nuns and new-born babies – mingles with milk in many ways and her milk is miraculous. Some say her mother was a milkmaid and Brigid was born out of a milk pail, or at least doused in warm new milk, or *lemlacht*, on the threshold of the home, at sunrise, as her mother returned from milking. As an infant, she drank only the milk of a white cow with red ears, a faery cow, and when she grew up, she in turn gave away the animals' milk so freely, dispensing butter to the poor from a dairy that endlessly replenished itself. Brigid's milk was as freely given as the cows that gave their milk to her. Brigid could also turn water into milk or beer. Her festival on 1 st February is named Imbolc, but its etymology is obscure – perhaps it stems from the Old Irish meaning 'in the belly', and may be a reference to the pregnancy of ewes, or to the Old Irish for cleansing oneself, or to a proto-Indo-European root that means both milk and cleansing.

Between myth and rumour, Wild Peter, who appeared in North Germany in 1724, was covered with thick hair, said to have grown as a result of him suckling from a bear – he imbibed with the milk his nursing mother's characteristics.⁵ Carl Linnaeus

⁵ Julia V. Douthwaite, *The Wild Girl, Natural Man, and the Monster: Dangerous Experiments in the Age of*



Auðumbla licking Búri out of a salty ice-block, 1765, from the Icelandic manuscript NKS 1867 4to, Danish Royal Library.

shared this belief in the transfer of characteristics through milk – he professed that to suckle from a lioness would confer courage. In Egypt, donkeys were not favoured as wet nurses, for it was believed that a donkey's milk transmitted the animal's characteristic stupidity and obstinacy. The Hindu laws of Manu and the teachings of the Jewish Torah restrict milk from one-hoofed animals. But the Talmud ascribes bravery, strength and endurance to the goat, and the milk of a white goat is especially beneficial. The Hottentots were said to tie babies to the stomach of a goat to nurse.

Enlightenment (Chicago: University of Chicago Press, 2002), pp. 22–25.



A woman breast feeding two puppies whilst two Mexican peasants implore her to feed their baby, which is lying on the floor on a bed of straw. Chromolithograph after A. Utrillo, Wellcome Collection no. 17506i.

Others believed that goats were libidinous beasts, and some recommended donkeys as wet nurses instead, since the donkey represented morality. Hippocrates, Galen, Aretaeus and Alexander of Tralles all recommended the milk of asses, considering it to be the best antidote against poisons and disease. Galen had it brought directly to an ill patient's bedside, as he believed that, as with semen, air would contaminate it. The warmth of milk in the teat was deemed to contain its invigorating spirit, a belief that persisted in science into the eighteenth century and in folklore beyond. The practice of cross-species feeding extended into the modern age. In 1816, the German



Étienne Aubry, *Farewell to the Nurse*, 1776–77, oil on canvas, 51.9 × 62.8 cm, The Clark Museum, Williamstown.

physician Conrad Zwierlein published *The Goat as the Best and Most Agreeable Wet Nurse*, a treatise that recommended wet nursing by goats. This treatise was dedicated to vain and coquettish women, who would not feed their babies, and sick and weak ones, who could not.

While the animal aspects of breastfeeding were acknowledged in the pre-modern period, such that images of interspecies nutrition were available without concern or horror, the modern period introduces a series of separations and divisions of class and status. Attendant on this is a philosophy of Humanism dependent on hierarchies of beasts and humans, as well as a pyramidal structure within humankind, which renders these other hierarchies problematic. The very act of breastfeeding, of women feeding babies, begins to appear as an animal act, suitable only for those who live amongst animals and are themselves considered more animal-like. Why would a woman of status wish to turn herself into a *Milchkuh*? At other times, and on other

women's breasts, animals like puppies, kittens, piglets and monkeys have fed, to toughen up the nipples and improve the milk flow, to relieve engorgement, and to prevent conception. In the case of Mary Wollstonecraft on her deathbed, puppies sucked milk that was thought to be tainted out of her breasts, to divert poison milk from the lips of the newly born.

Abandoned syphilitic children suckled from mercury-infused goats and other creatures. Teats, not nipples, were for their mouths. Today's plastic bottles have teats rather than nipples too, linking these artificial feeding mechanisms to cross-species wet nursing, which has now become, for the most part, an alien practice.

Posh Totty

In eighteenth century Europe, breastfeeding was unfashionable amongst the aristocracy and rising middle classes. Ladies believed it would ruin their figures, spoil their health and interrupt the endless rounds of card games, social visiting and theatre trips. For royal brides, or others bound by duty to issue as many heirs as possible, breastfeeding was discouraged in case it made future pregnancies less likely. Aristocratic nipples were considered 'vestigial', as male nipples were – as if they had evolved to transcend their use in base, more animal-like acts. Later research, by contrast, has found that nipples are as fundamental to human life as limbs, ears, and all other shared organs. They precede in utero sexual differentiation and appear on the bodies of all mammals.

In Paris, wet nursing often involved a separation of birth mother from baby, for the wet nurses might live in the countryside around Paris, and the child would be raised by the wet nurse and her family for as long as eighteen months. This then led to another separation, more broken bonds. A painting from around 1776–77, *Farewell to the Nurse* by Etienne Aubrey, depicts the agonised scene of an aristocratic couple reclaiming their child from the arms of the wet-nurse and her family, much to the now older child's distress. The practice of wet nursing died out in Europe in the nineteenth century, as a fear spread that the milk of the poor might pass on syphilis, tuberculosis or cholera to the children of the wealthy. Some had rejected it earlier, convinced by the arguments of Carl Linnaeus and Jean Jacques Rousseau on the moral necessity and natural law of a mother breastfeeding her own child.

In the tenth edition of *System Naturae* from 1758, Linnaeus attributed humans to a class of animals defined by the capacity of the female of the species to suckle: mammals. This designation as 'mammalia' underlined the role of feeding from the mammarys and replaced a previous term from Aristotle, according to which many creatures were classified: quadrupeds. For Linnaeus, breastfeeding was a natural law, and wet nursing – and bottle-feeding – an unnatural vice.

William Cadogan was another influential advocate of breastfeeding and his 'Essay upon Nursing and the Management of Children from their Birth to Three Years of Age', from 1749, admonished those mothers who refused to feed their own babies, passing them out to wet nurses or using artificial means. He was a physician to the Foundling Hospital in London and considered that his own observations of infants, as one of the 'Men of Sense', qualified him to speak on the best course of nutrition. Indeed, his hospital, run by enlightened physicians, would allow the world to emerge out of the darkness of female custom:

The *Foundling Hospital* may be of more Use to the World, than was perhaps at first imagin'd by the Promoters of it; it will be a Means not only of preventing the Murder of many, but of saving more, by introducing a more reasonable and more natural Method of Nursing. In my Opinion, this Business has been too long fatally left to the Management of Women, who cannot be supposed to have proper Knowledge to fit them for such a Task, notwithstanding they look upon it to be their own Province.⁶

Cadogan understood the 'Lower Class of Mankind' to be confined by their poverty, their 'Want of Superfluity' within the 'Limits of Nature'. It is the rich who suffocate their young under a 'Load of Finery' and stuff them with dainties until they are sick.

Aristocratic beauty queens in pre-revolutionary France were also dairy queens – if milk flowed not from their breasts, it streamed from the architectural follies, the

⁶ William Cadogan, *An Essay Upon Nursing, and the Management of Children: From Their Birth to Three Years of Age. By a Physician* (London: J. Roberts, 1749).

only architectures they were allowed to commission. The devoted women played together at Versailles and elsewhere with faux-peasant fashions and pleasure dairies. As the country whirled into revolution, Marie-Antoinette – known as Madame Deficit – copied another queen of France, Catherine de Medici, who, childless and unpopular, had the first of her pleasure dairies built at Fontainebleau. Marie-Antoinette's was at Rambouillet, and here she and her bosom friends could play at being milkmaids and consume milk products from a sixty-five piece Sèvres porcelain service. One of its forms was the 'breast cup', flesh-coloured, tipped by a pert nipple in pink. It was handleless and designed to be cupped in the hands. Rumoured – falsely – to be cast from Marie-Antoinette's own breast, it became a symbol of her suspect lasciviousness. She also had the peasants' wooden dairy churns and buckets copied in perfect porcelain mimesis.

Other aristocratic women indulged in the craze of the pleasure dairy. One was Madame de Pompadour, who, ensconced in the court, became a bosom friend of the king. As a courtesan of King Louis XV, she was known more unkindly as a royal whore. For pleasure, she sponsored pastoral festivals and set up model working dairies for royal entertainments. She was responsible for designing porcelain drinking vessels for milk, such as the *trembleuses*, made by Sèvres too. Rather than being associated with the fertile, health-sustaining properties of milk, she was frigid and sickly. To cure her various ills, she consumed vast quantities of milk. Her face was covered by a white mask of makeup made of milk to disguise her blemishes. It was said that she suffered from *fleurs blanches*, white flowers, used as a slang term for a disease known as leucorrhoea, derived from the white discharge visible in menstrual blood.

In the pleasure dairies, the women of the elite indulged in a public fantasy of being nurturing, in touch with nature, maternal, fertile – every quality that France needed to regenerate itself without suffering the agonies of revolution. It did not work. And for these elite women, a separation of significance came with it. It was that of their heads from their bodies, as the new regime overturned the hierarchy: 'au reste, après nous, le Déluge'.



Nipple-cup known as the Breast bowl: Jatte-téton, dite bol sein, 1788, Sèvres Porcelain Manufactory, Musée National de la Céramique, Sèvres, France (Photo: M. Beck-Coppola).



Melanie Jackson, *Marie Antoinette* (with digital glitch), 2017.

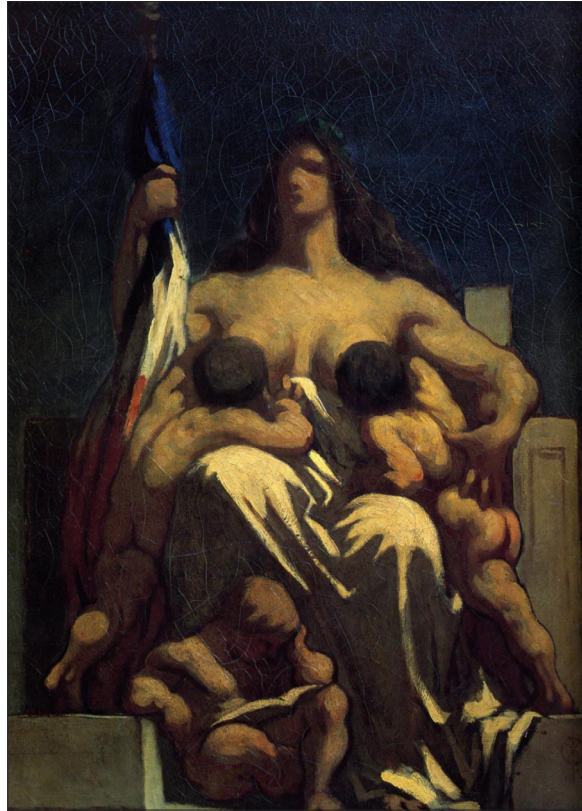
Republican Milk

The image of the prim mother of the Republic, the stabilising force after the French Revolution who dispenses mercy and enlightenment from her breasts, is one negation of the aristocratic women whose heads fell. The French draughtsman Honoré Daumier made several images of women nursing. In 1848, he entered a sketch into a state-sponsored competition. The aim was to define the painted face of the Republic for a picture replacing the portrait of the old king at the Hotel de ville. Daumier's sketch, *The Republic Nourishes and Instructs Her Children*, is of a classically dressed woman in white robes, seated inside a space with two children feeding from her exposed breasts, while a third reads at her feet. It is almost a direct transposition of Delacroix's *Liberty at the Barricades*, with the armed defenders of the Republic depicted as (atypically older) suckling children. In Daumier's sketch, Liberty is now tethered to a chair, flag rolled up at her side. The image suggests that it is the duty of women to nurture the citizens of the state. No longer bare breasted and in the throes of revolutionary struggle, they now have reproductive duties. Captured in this official art – to be enlarged to more than four metres square – are instruments of the state, milk-laden breasts, which have become metaphorical.

It is no coincidence that, in the new Republic, actual women were no longer able to institute feeding networks, and informal networks of wet nursing became illegal.

Formulaic

Over time, as the nineteenth century passes on, issues of milk supply become crucial in the context of deprivation and displacement. Instead of the state dispensing metaphorical milk in the shape of welfare to its citizens, state and private industry combine to control the supply of milk to those who are becoming undernourished within the ravages of the industrial capitalist system. Milk's fortunes are entwined with the state of national health. Milk became institutionalised as an essential food-stuff for the general population over the course of the following centuries, and its properties were extolled by the government as an essential part of the diet. William Prout, the London physician who developed ideas of nutrients through his chemical analysis in the 1820s, alighted on milk, 'which he decreed the only article actually furnished and intended by nature as food. It is, he observed, composed of the three



Honoré Daumier, *The Republic Nourishes and Instructs Her Children*, 1848, oil on canvas, 73 × 60 cm Musée d'Orsay, Paris.

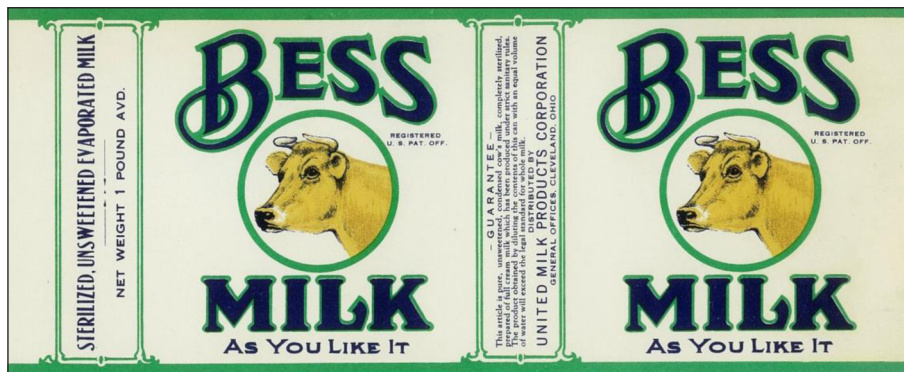
necessary ingredients for healthy life, for milk alone, and the mechanism by which milk is secreted, 'were designed, and made what they are, by the great Creator of the universe': 'In milk, therefore, we should expect to find a model of what an alimentary substance ought to be—a kind of prototype, as it were, of nutritious materials in general'.⁷ Industry and the market came rapidly to deliver this ever-so natural and simultaneously divine substance to the masses, in ever newer and improved versions.

In the nineteenth century, animal milk – cow's milk – comes to the fore as a substitute for mother's milk for the mass population. There was apparently a happy coincidence between the superior taste of cow's milk and its profitability. Cow's milk more easily presents a predictable and constantly manageable flow that can be

⁷ William Prout, *Chemistry, meteorology, and the function of digestion, considered with reference to natural theology* (Philadelphia, Carey, Lea & Blanchard, 1836), p. 234.

subjected to technical analysis and commodification, and thereby incorporated into the necessary systems of economy and policy that are emergent. The imperative of 'purifying' milk became a driving principle of the modern era and it is in milk that public health battles occur. Nowhere was bacteria pursued more aggressively than in milk – which nurtures when drunk directly from the body, and has a tendency to poison when removed from it – the milky environment perfect as it is for nurturing all scales of life, including those not congruent with human life. In milk, a battle against disease, against microbes, took place. Louis Pasteur fought microbes in milk in the laboratory, as part of a war that seemed to parallel the one being fought by Napoleon in Russian territories and elsewhere. Healthy people are needed to defend the country, and so the twin sciences that emanate from the dairy – that of Pasteurisation and vaccination, as developed by Edward Jenner from cows against smallpox – develop industrially and are incorporated into effective public health policies. Hygiene is the result of this laboratory work – with Pasteurised milk becoming more widely available from the 1890s – and it makes possible the mass deaths of millions of healthy men in the muddy, rat-infested trenches of the First World War; for had the war on the microbes not been won, then the war in the trenches could not have proceeded. Even in the heat of battle, the war on microbes kept alive so many bodies where before so many had succumbed, so that they might, subsequently, die in excessive numbers on the battlefield.

Formula milk, made up from cow's milk, is presented as a fix to problems of undernourishment and infant mortality – and it will become a part of the quest for 'scientific motherhood'. The history of infant feeding was a triangulation between the promises of technology, commercial pressure, and the promotion of biology (or scientific knowledge of the body). Women's inadequate knowledge of infant nutrition, it would seem, could be augmented by the application of science. First invented by Justus von Liebig in 1867, 'Liebig's Soluble Food for Babies' was manufactured and sold in London by the Liebig's Registered Concentrated Milk Company. It was composed of cow's milk, wheat, malt flour and potassium bicarbonate. By 1883, there were twenty-seven patented brands of infant food on the market.



'Bess', Condensed Milk Label, 1915.

In the 1910s, evaporated milk began to be widely commercially available at low prices. Milk corporations funded clinical studies that suggested that babies who were fed on evaporated milk formula thrived better than breastfed babies, when their weight gain was compared. In North America particularly, some paediatricians promoted the view that bottle-feeding was as good as breastfeeding, based on progressive weight gain. The monitoring of growth then became a benchmark justifying the charts and weighing clinics. As infant welfare and health surveillance grew, there was a notional standard established on the basis of readings from these formula-fed babies. In today's climate, there may be more concerns that these weight gains and formulae contribute to diabetes and obesity in later life – and now feeding 'success' is as likely to be measured in achieving cerebral milestones. In the rapidly growing Asian markets, breast milk substitutes make unsubstantiated claims that the addition of vitamins will increase height, weight and intelligence. A mother from Vietnam, who spends nearly all of her income on formula milk from a German manufacturer, observed that: 'Most people here look for the weight and the height ... We always see chubby children on formula packages and on TV. We all want that.'⁸

Most of the medical profession adhered for some time to the idea that bottle feeding was better than breastfeeding. It was regularised. It overcame problems associated with rationing. It fed into the same atmosphere of 'salvation through

⁸ *Milking It: How milk formula companies are putting profits before science*, Changing Markets Foundation, 31 October 2017, <<https://changingmarkets.org/wp-content/uploads/2017/10/Milking-it-Final-report-CM.pdf>> [Accessed 16 May 2018].



Advertisement for Carnation Milk, 1957.

technology' that fuelled the Space Race and the 'white heat' of technology of the post war period. This knowledge was taken forward aggressively in projects of exporting Western infant products to be imbibed by colonised bodies. Rationalisation of milk supply allows the penetration of exchange relations into new markets.⁹

Milk Is Not Enough

Breastfeeding is not just about the provision of milk. It is also not just about intimate bonds. Like the act of reproduction, lactation is the enactment of a splitting, of a formation of self and part-self that is to become other. It disrupts the dominant motif of the bounded body, of sovereign individuality. Milk is a bridge between bodies: an emission from one and incorporation into another. This can be evidenced in the rela-

⁹ Thuy Linh Nyugen, Nyugen, Thuy Linh, *Childbirth, Maternity and Medical Pluralism in French Colonial Vietnam 1880–1945* (Rochester: Rochester University Press, 2016).

tively recent proliferation of the brelfie, the breast-feeding selfie – at once an image of self and not-self, of bodies joined in the transmission of milk.¹⁰ Brelfies are part of the phenomenon of narcissistic self-imaging triggered by the confluence of the camera and the Internet in the smartphone. They are also an act of conscious image making. These images of breastfeeding are not metaphorical, idealised or pornographic, but normalising, various and self-authored. Maternal nursing, as a bodily practice located at the breast, challenges notions of the rational, autonomous individual. Lactational embodiment fits conceptually within the frameworks proposed by Elizabeth Grosz, who argued that 'women's corporeality is inscribed as a mode of seepage'.¹¹ The maternal subject, Julia Kristeva reminds us, is 'the place of a splitting'¹² – simultaneously the self and not the self; and the act of breastfeeding materialises this conceptual framing. In this light, the breastfeeding selfie can be understood as a site of both rupture and bridging, an evocation of a simultaneously split and dual subject.

Perhaps the site of giving milk, of the mother splitting herself, causes social anxieties. This anxiety is mobilised to validate the social separation of the breastfeeding woman from the public environment, whether through shame or through lack of paid maternity leave, which produces the need for the technological fix of the breast pump. Sometimes the breastfeeding woman is directed to separate herself and her baby from the rest of the world, by taking up a position in the toilets. Breast pumps are now designed so that women can continue to be optimally productive while using them – expected to work at the computer whilst lactating, even whilst away from home on business in hotels, or while exercising. As milk is known better through the smartness of our technologies and analytical abilities, its essence is extracted and negated, while the messy body is constituted negatively as a source or vessel. Optimisation is not conceived of as an emotional and embodied issue, but a question of the quality of the fluid, a nutritional source for the brains of the intelligent,

¹⁰ Boon, Sonja and Beth Pentney, 'Virtual lactivism: Breastfeeding Selfies and the Performance of Motherhood', *International Journal of Communication*, 9 (2015), 1759–1772.

¹¹ Elizabeth Grosz, *Volatile Bodies: Toward a Corporeal Feminism* (Bloomington, Indiana: Indiana University Press, 1994), p. 203.

¹² Julia Kristeva, *Desire in Language: A Semiotic Approach to Literature and Art* (Columbia: Columbia University Press, 1980).



Hands Free Pumping Bra, 2016. Courtesy of Simple Wishes.

adaptable workforce of the future, extracted remotely from the newly-freed bodies of a female workforce that need not leave its desks to do the work of reproduction.

Luce Irigaray wrote in 1981, 'All Western culture rests on the murder of the mother'.¹³ Lacan identified the mirror stage as an archetypal moment in the development of an individual's sense of self, through which an infant comes to perceive itself as a coherent whole by identifying with the reflection in a mirror. This feat of triumphant self-integration lends the individual, Lacan suggests, the thrusting 'impresiveness of statues'. It is the process which 'constitutes the ego' with the 'attributes of permanence, identity, and substantiality'. Irigaray noticed that this mythic developmental moment never actually involves a mirror. The identity of the child – who in Lacan's account is always imagined as male – is not actually formed in relation to an impassive reflecting object, but rather, in relation to an active reflecting person. And to her mind, it was far from incidental that this person-being-depicted-as-a-mirror is most usually a woman. That is, this mirror-person is a mother. We are a culture that despises vulnerability, dependency and welfare, and this erasure of the maternal, or her turning into a mere reflection, finds a parallel in the abhorrence of the 'bovine',

¹³ Luce Irigaray, *Le Corps À Corps Avec La Mère* (Editions de la pleine lune, 1981).

the compliant, and the exploited. Contempt for interspecies dependency renders the co-dependent human relationship invisible.

Milk Sops

Ours is a social climate that oscillates between a political economy of nostalgia, and paranoia about a techno-utopian euphoria and exaltation in the face of extinctions. Extreme transhumanist fantasies of jettisoning the body altogether and uploading consciousness onto new improved substrates permeates this climate in a further repression of the long-promulgated Cartesian mind-body split.

Redundant Stock

Milk – like skin – is fully abstractable from its source. The body is no longer required, in industrial processes that remain still on the fringes of the economy. In effect, the cow's body is no longer needed once the genetic sequence has been obtained, though the marketing speaks rather idealistically of cows being released to roam free. Producing milk or leather is visualised more as a harvesting of data. In contemporary dairy industrial farming, the cow's body is discardable in any case. It becomes the location of a series of processes to be 'optimised' – utilising a language that pervades the industry, where 'yield' must be increased by manipulating the cows' feed, medication, living conditions, and genetics.

The application of artificial breeding techniques to improve livestock is now routine in the dairy industry. Given the advances in embryo transfer technology from the 1970s onwards and the development of sexed semen identification in the 1990s, the dairy industry became enmeshed in dairy genetics. Companies specialising in cattle genetics provide catalogues containing an almost limitless assortment of semen from sires at all pricing points for a worldwide marketplace. There is no longer a need to have live bulls at the dairy. Instead a phial or 'straw' of frozen sperm arrives.

Genetic animal 'improvements' are often tied into alliances of scientific, government and corporate policy. In similar fashion, humans identified as 'under-capitalized' and thus biopolitically 'backward', are targeted. The language of optimisation and improvement permeates economics, the food industry, agriculture, and overseas



Bull Semen Straws, copyright Animal Breeding Europe <<http://www.abreeds.co.uk/>> [accessed April 2018].

development programs. Humans that do not eat large amounts of meat and dairy, for example, may not be considered 'optimal' eaters.

Dairy is the industry that pioneered the application of big data, assisting milk's accelerated abstractions into chemical components, economic actions and bodily manipulations. It has provided a model for other industries to generate their algorithmic futures. Big data has been implemented in dairy farming more than in any other industry, and – combined with the financialisation of species and individual worth – pioneered in the field of animal science through quantitative analysis.

Can we identify domesticated animals as trapped – albeit over time and space, intergenerationally? Is the fully roboticised milk production line a transformed representation of its maker, the hunter, and the prey animal, its victim, and of their mutual relationship? Capitalism depends not just upon the exploitation of labour and knowledge, but the expropriation of land and its resources, and the co-option of bodies and body parts as bioreactors. Is the in-vitro mammary gland, which operates as a bioreactor, a form of entrapment? Is the new science of cellular agriculture a form of entrapment? The depletion of species and environmental loss of the present is identified as an acceleration of the burden of human entrapment in dependent relationships, rather than a consequence of the human entrapment of and instrumentalisation of nature, first through industrialisation and then through technoscience, which still seeks to offer positivist solutions for degradation, as it simultaneously quickens it. Like many experimental cellular farming technologies, technoscience is offered as a foil to try to combat the spectre of collapse and destruction, by utilising

a frenzy of growth and regeneration. What to think of a distinctly vampiric, indeed, masculine obsession, posed by the renewed interest by venture capitalists in parabiosis, the transfusion of young blood into old people's veins?

Reproduction is never left alone. Reproduction and the sustenance of life are endlessly augmented. But there is one very present, tangible way in which reproduction and life sustenance is affected today. Over 1000 UK midwives are from EU countries and their future is now uncertain, in a context in which there is already a national shortage of around 35,000 midwives. In August 2017, a charity, Fertility Network UK, collated evidence that there were restrictions being imposed on access to NHS-funded IVF in some areas of England: 'England pioneered IVF approaching 40 years ago, but that achievement is meaningless if only those who can afford to pay for IVF benefit from it'.¹⁴

This climate, with its disdain for dependency, the flesh and vulnerability, matches a neo-liberal market-driven economy that draws on pseudoscientific fantasies of genetic and geopolitical advantage. In an age of the surveillance state and corporate data extraction, to be bodiless seems to represent emancipatory freedoms. It is an arena for unrestrained depravity, of ungendered, unracialised, unembodied, multiple selfhood. Likewise, for those who want to disavow their flesh, and hive-mind their intelligence onto some more robust substrate, singularity seems like an attractive proposition. But what we really know is, within our lifetimes at the very least, to be without a body is quite simply to be dead. There is no more present, efficient and fast-acting way for a state to perpetrate ultraviolence on the bodies of its citizens, than the removal of a public health service.

Milky Abyss

Milk is a liquid latent with the power of annihilation as well as the capacity to provide life. Its shapings are driven by the attempt to wrestle control of supply, to entrap the milk-giver, to take its milk from it and to remake that milk as something else, as anything else, even as something so different to itself, it barely registers as milk at all.

¹⁴ See 'NHS access to IVF being cut in England', BBC News, 7 August 2017, <<http://www.bbc.co.uk/news/health-40848097>> [accessed 16 May 2018].

We are far from milk being just milk, however nutritious and feeding it is supposed to be. The force of history, the bio-medicalisation of the body, the intervention of politics into the very start of life: all that is clear. Milk's components have now been more closely identified: casein, whey, lactose. Each of these has multiple uses. Milk is still mobilised as a cipher of nature, as rendered in the work of lactivists: militant advocates of the normalisation of breastfeeding.¹⁵ It is, though, a highly technical, technologised fluid, and one of the most technologized fluids on the planet. Milk's capacity is to be extendable, to issue in various ways.

Competing Interests

The authors have no competing interests to declare.

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Melanie Jackson is an artist working with writing, moving image, and sculpture. She tries out tactics of representation which remain provisional rather than definitive, treating the gallery as a stage for experimentation with art roles. Here is mimicry, documentation, myth fabrication, cultural voyeurism, performance, animation, political commentary, music, installation, craft and the cultivation of aesthetic delight. She works as a tutor at the Royal College of Art. Recent solo exhibitions include *Deeper in the Pyramid* at Grand Union, Birmingham, and *The Urpflanze (Part 1)* and *The Urpflanze (Part 2)* at the Drawing Room and at Flat Time House, London. She has also held solo exhibitions at Chapter, Cardiff, Matt's Gallery, London and Arnolfini, Bristol and exhibited internationally in group exhibitions such as Take Me to the River, DRF Biennale, Osaka, Japan, and The Global Contemporary, ZKM Museum of Contemporary Art, Karlsruhe, Germany.

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¹⁵ See Faircloth, Charlotte, *Militant Lactivism?: Attachment Parenting and Intensive Motherhood in the UK and France* (Berghahn Books, 2013).

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