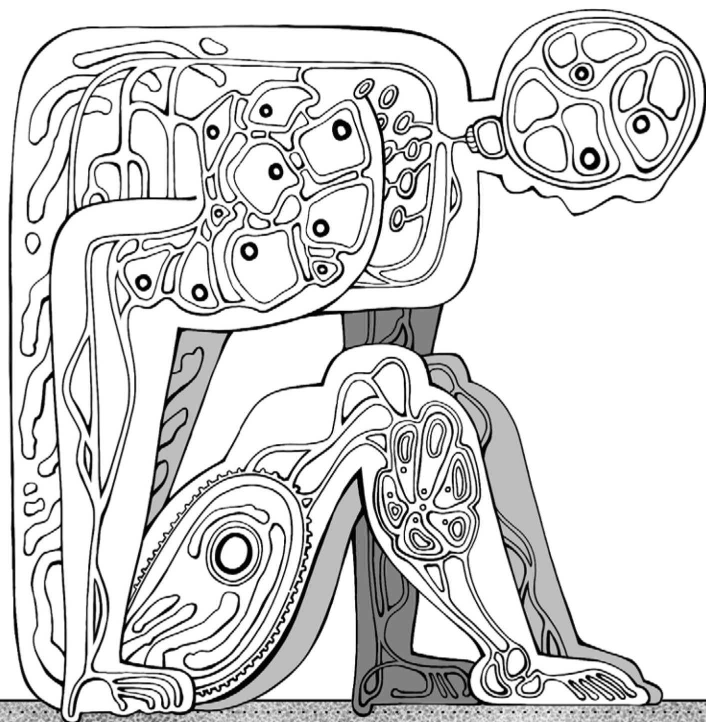
DEEP ROOTS



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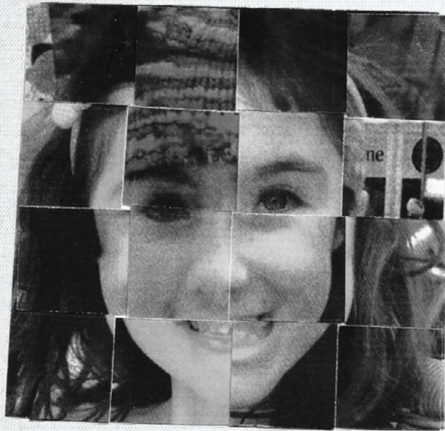
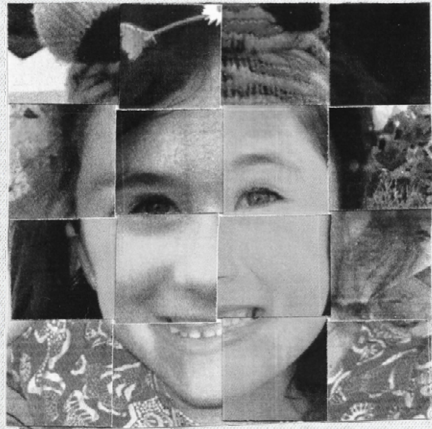
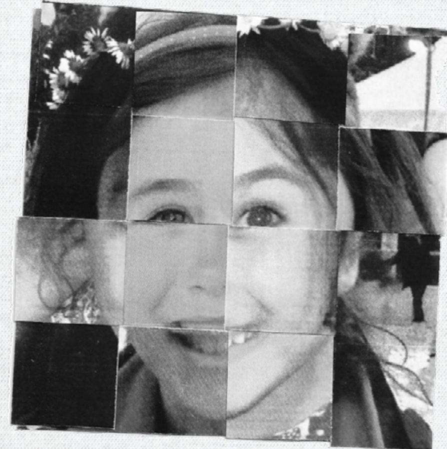






For as long as I can remember, I've had trouble relating to others. I have lived much of my life feeling like there was an invisible wall between myself and 'people', and I existed in some other state—not quite a person, but a haphazard bundle of nerves, neuroses and overflowing emotions that I couldn't package up quite as neatly as I should. As I've matured and come to understand myself better, I've made sense of these experiences and recognise them as depersonalisation—dissociation characterised by distance between a person and their sense of self. I found comfort in stories of humanoid androids, alien beings, or those written about animals, trying to come to a conclusion about my place in the world. I'm far from alone in trying to ascertain an answer to this existential question; Plato's choice to define man as a featherless biped, anecdotally disputed by Diogenes the Cynic brandishing a plucked chicken as a man, begins a millennia-long debate between philosophers, scientists and theologists into what exactly makes a human, a human. Within this publication, I've sought to examine how others define our humanity and how this relates to my own identity, to try and find some certainty about who I am, and who we are to each other.

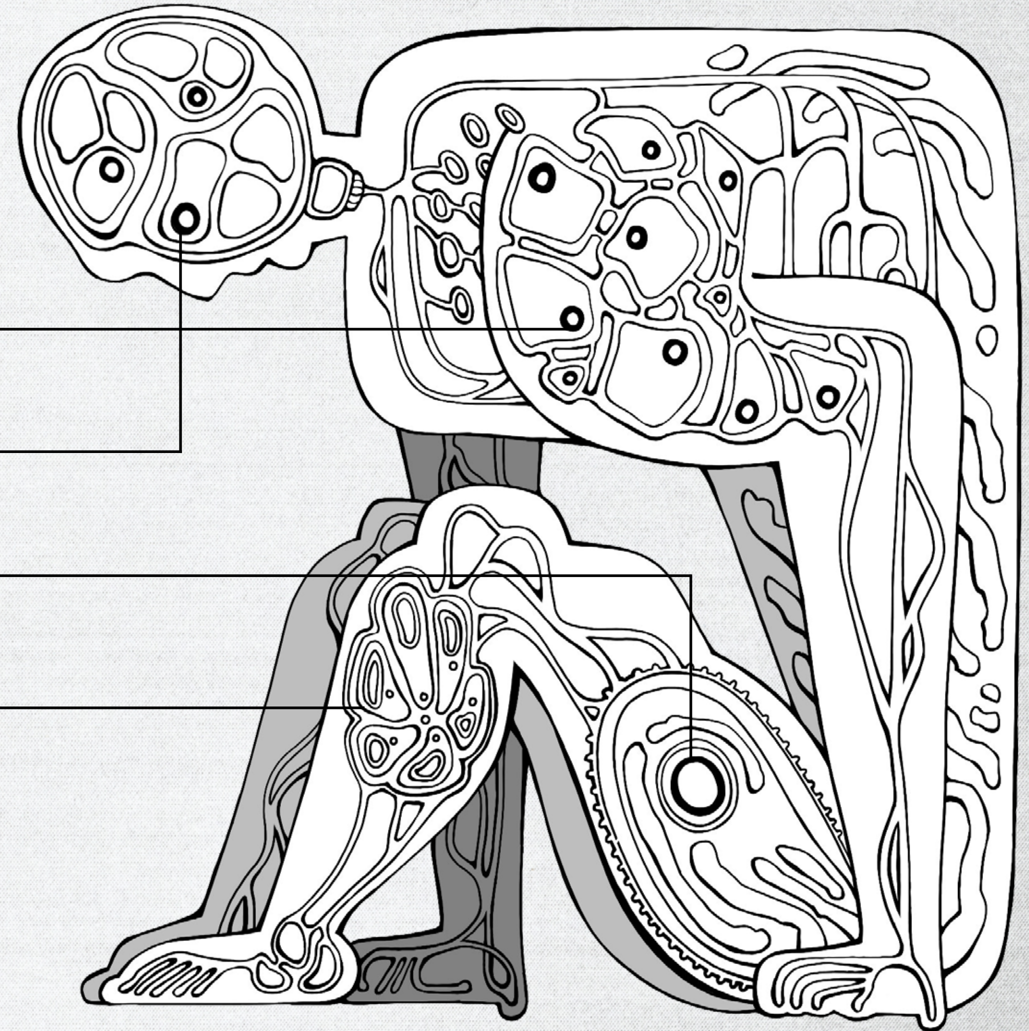
Between 1990 and 2003, a massive effort was undertaken between six countries and 20 institutions to sequence the exact genome of a human (National Human Genome Research Institute, 2024). Now, we have a fully complete map of the human genome and every strand of our DNA, including exactly how it differs from other genomes sequenced, such as E. coli, or mice. The answer to my main question, then, seems simple—we have a 3 billion-letter-long list of every base that makes up human DNA, gap-free (National Institute of Health, 2022). This gives us the ability to take any DNA sample and determine not only if it's human, but it's direct lineage, disease risk, and even history of migration.

Key among these discoveries was the confirmation that our genes are not

just those of Homo Sapiens, but are mixed with Neanderthals and Denisovans, early hominids that interbred with us around 50,000 years ago before their extinction (Stringer, 2019). Around 2% of non-African modern humans' DNA is that of Neanderthals, who were known to create jewellery, use pigments for self-adornment, had the capacity for speech, and in places buried their dead (Galway-Witham et al., 2019). All these traits 'feel' human.

The argument of whether these beings were a sub-species of human, or their own separate species', has been hotly debated, and from that uncertainty comes questions about if a genome alone is really enough to define a being as human. This overall debate is interesting, as some arguments seem much easier to prove than others—the existence of a concrete human genome, for example, versus the more intangible existence of the soul. However, the more you investigate the subject, the more you realise that scientific delineations sit on shaky ground as well. 2% of Neanderthal DNA doesn't stop someone being human—would 50%? Would an individual with 100% Neanderthal DNA, raised alongside us, be a human, or would we see them differently? And a slightly stranger line of enquiry—if we were able to create a human being entirely in a lab, would we treat them the same as people conceived traditionally?

The idea of a 'homunculus' or 'simulacrum' cropped up in the 16th century, in which alchemists attempted to create artificial life using such gristly tools as

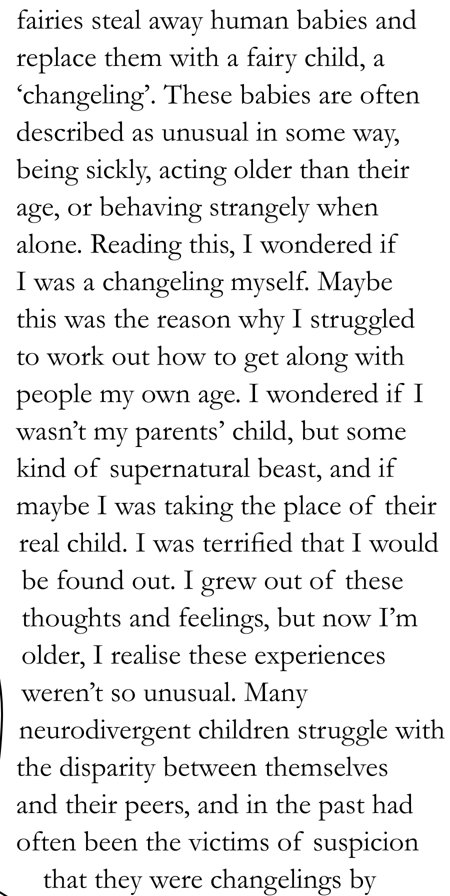


human semen, blood, and horse dung (Campbell, 2023). These experiments sought to create synthetic life, but it was believed that the resulting being would have no soul and therefore wouldn't be a true human. Philosophical outlooks on this artificial life vary; according to ancient Greek philosopher Aristotle's framework for what defines a man, this homunculus could be classed as a 'rational animal', capable of human attributes like logical thought and speech. Others may argue that an artificial or cloned human can't have a 'soul', and therefore can't be considered a person.

This is where definitions become a little hazy, and it becomes clear that personal convictions, morals, and spiritual beliefs are difficult to remove from this question. It's even inherent in the wording of the question itself; am I asking what makes someone human, or what makes someone a person? Could someone be a person without being human?

DNA is what builds us. It's the foundation for who we become, and a record of who we've been. What it can't explain, however, is culture, personality, or how we're shaped by life experience; nature versus nurture is an age-old debate, which forms the crux of this publication; if it's our DNA that shapes us, and our genome that defines our path though life, do the rest of the factors I'm going to discuss matter at all?

s a child, I often felt alienated from my peers. I spent much of my time reading, where I came across the idea of a changeling in a book of fairy tales. In folklore,

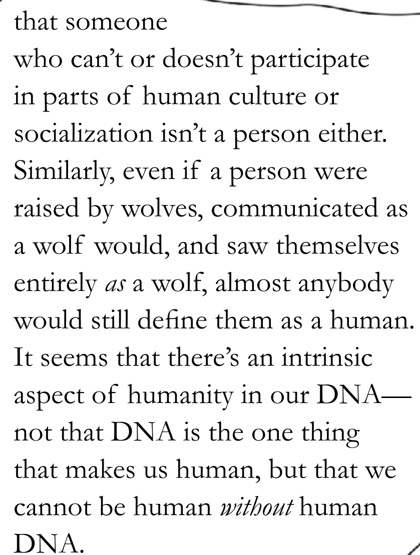


fairies steal away human babies and replace them with a fairy child, a 'changeling'. These babies are often described as unusual in some way, being sickly, acting older than their age, or behaving strangely when alone. Reading this, I wondered if I was a changeling myself. Maybe this was the reason why I struggled to work out how to get along with people my own age. I wondered if I wasn't my parents' child, but some kind of supernatural beast, and if maybe I was taking the place of their real child. I was terrified that I would be found out. I grew out of these thoughts and feelings, but now I'm older, I realise these experiences weren't so unusual. Many neurodivergent children struggle with the disparity between themselves and their peers, and in the past had often been the victims of suspicion that they were changelings by adults. Many people have had similar thoughts and feelings about themselves—that they don't feel like enough, that they worry people would find out they weren't the same as everyone else, that they must mask aspects of their true selves to fit in.

In *Innovation in the Collective Brain* by Michael Muthukrishna and Joseph Henrich (2016), Muthukrishna proposes the existence of a collective or cultural brain, through which we have shared information crucial to our survival, such as the identification of edible plants or dangerous animals, or soft skills like gossip, cultural preferences, and social norms. This 'collective brain' holds information important to a society, and ensures that members of that society will be educated '*both horizontally throughout the population and vertically/obliquely from generation to generation*' (Muthukrishna and Henrich, 2016, p13). It's clear that knowledge that's passed through generations shapes who we are. When we're young, we learn about ourselves by watching. The people who we're surrounded by as children shape who we grow into as adults. Body language, etiquette, language, preferences, and even our values are informed by our experiences with family in early life. A human, raised by humans, comes to understand what it means to be human. Could a human raised by non-humans have this same experience? Could a non-human raised by humans?

The term 'feral children' is used to describe a child who's grown up isolated from human contact, often having no desire or capacity to understand human language, and no framework for human socialisation. While the capacity for complex social behaviour is built into us, the skills themselves aren't, but are learned from our group—from our collective brain. It could be argued then that what makes us human is our being informed by the experience of other humans.

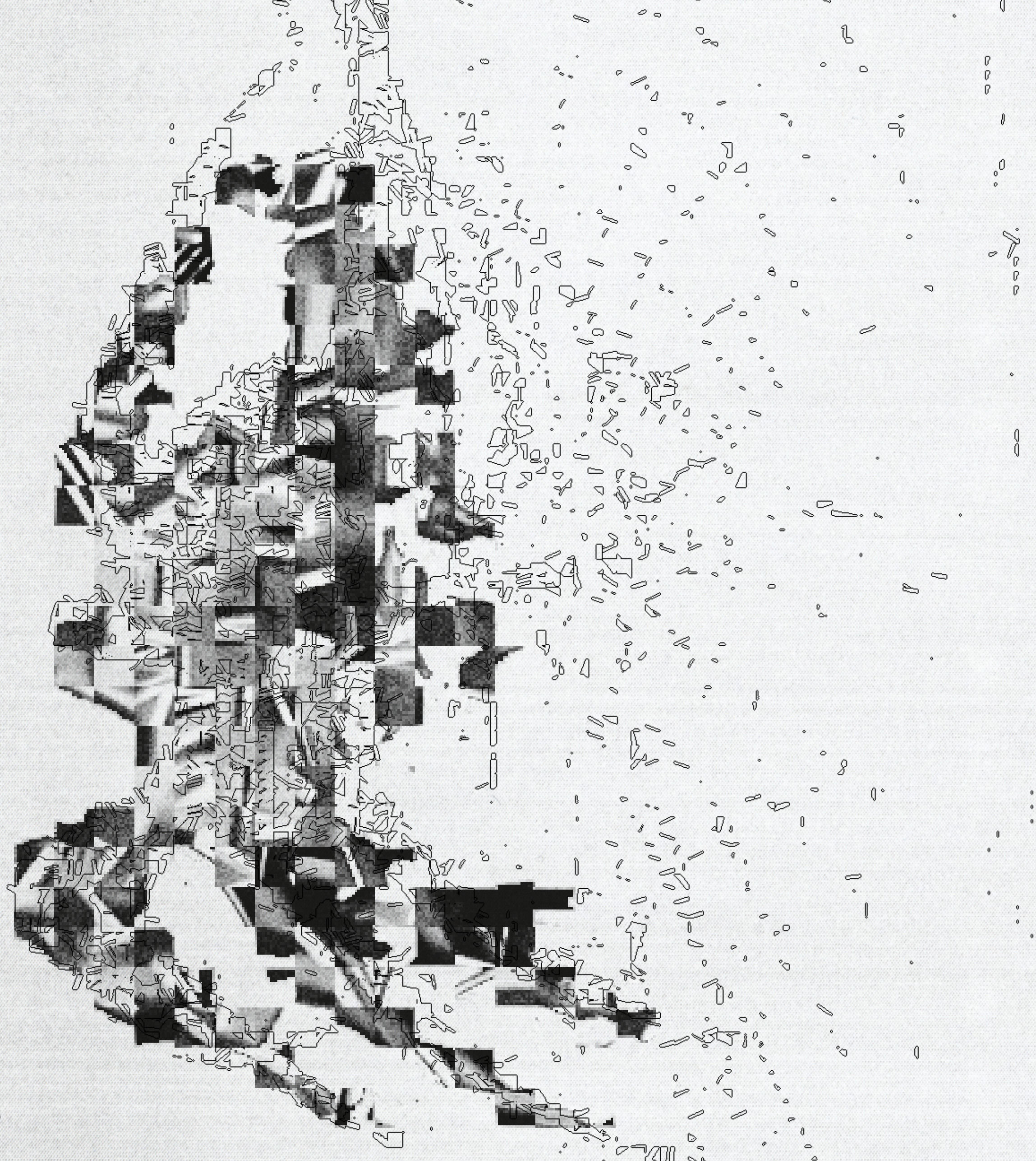
Our culture and connections fundamentally shape us into who we are, and they tell us what's safe; as children we learn to fear predators by the reactions of adults around us, and we can even develop phobias purely based on another's fear. I believe it's true that a part of what makes us 'us' is our culture, and our culture is irrevocably determined by lineage, but this argument falls flat in several ways. It would be disgusting to make the argument that somebody not raised by humans isn't a human, or



that someone
who can’t or doesn’t participate in parts of human culture or socialization isn’t a person either. Similarly, even if a person were raised by wolves, communicated as a wolf would, and saw themselves entirely *as* a wolf, almost anybody would still define them as a human. It seems that there’s an intrinsic aspect of humanity in our DNA—not that DNA is the one thing that makes us human, but that we cannot be human *without* human DNA.

CREATIVITY

The arts, culture, and creativity can feel like the most human things of all. While other species may undertake artistic tasks, their intent behind it is different. A male bower bird, for example, creates elaborately woven stages, decorated with bright and beautiful objects, but he does



this to attract a mate. Some animals like great apes, dolphins, and octopi craft and use tools, but these act as purely functional objects like armour. Birds sing beautiful and complex melodies, but these are designed to warn, attract, or boast. The human urge to create, while undefinable, seems to stem from something different. We create to communicate, to represent, to decorate, to play; we create for creativity's sake. This acts to separate creative actions and art; art is an impossible thing to define, but I would argue that art is always communicative or expressive of something *other* than function or necessity.

Philosopher Karl Marx explores this motivational difference, defining humanity's 'species-being' as inherently productive and creative. In Capital, he writes that '*A spider conducts operations that resemble those of a weaver, and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality.*' (Marx, 1867). By this, he describes the difference in creative intention between a human and an animal; an animal creates repetitively, functionally, and without a creative drive, whereas a human's desire to create something new is an inherent part of them.

Records of human creativity date back tens of thousands of years; the oldest-known rock art discovered, found on the Indonesian island of Sulawesi, is at least 67,800 years old (Ghosh, 2026). The UK is home to carvings between 11,000 and 13,000 years old, found

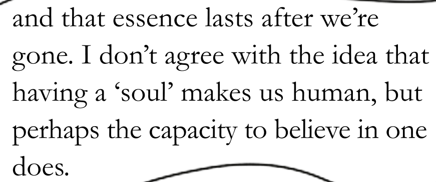
in the Creswell Crags caves (Valdez-Tullett, 2023), and an around 12,000-year- old engraving of a human figure carved into the rib-bone of an extinct woolly rhinoceros was found there (The British Museum, 2023). We've been documenting our lives and the world around us for millennia, and these carvings, paintings and symbols still hold emotional weight today. I love examining palaeolithic art, and my fascination with the origins of our creativity stems from the empathy I feel for these pieces. Carvings at the Creswell Crag caves in England, or the Knowth and Newgrange tomb keystones in Ireland, demonstrate our attempts to understand the world, and our place within it. While I can't speak to somebody living tens of thousands of years ago, I can place my hand in a hand-print they painted and recognise animals from my own experience that they drew. That drive to create and to document, which I see reflected in myself, feels like a timeless connection to human history and to who we are. Frustratingly, defining what makes something human means defining what *isn't* human, and most of these ideas that I've examined so far involve exclusion; saying a human is defined by an exact genome means a Neanderthal isn't human. A human is defined by their lineage, so a human raised in isolation couldn't be a part of the collective. When arguing that creativity makes us human, I end up saying that only humans can be creative. This issue of defining who *we* are by what *others* are not, or don't have, is difficult, and no case more than my next topic:

THE SOUL

n philosopher Max Scheler's work *The Human Place in the Cosmos*, published in 1928, he writes on the difficulty of defining what a human is. He argues between the scientific definition of a human as an animal, and the philosophical idea of a human being something greater, from a Christian and a theologist's perspective. This theosophical influence is visible in how he defines a human. Scheler breaks life down into four layers: 'vital feeling', actions driven by need alone, 'instinctual life', actions driven by instincts, 'habitual behaviour', actions driven by the ability to connect past events to new ones through memory, and finally 'practical intelligence', which enables actions driven by purpose and independent decision-making. However, he argues that these traits alone are not enough to make a human being; he states that what separates us from an animal that can walk and talk, is the 'geist', or 'spirit'. Unlike other philosophers of his era, he believed that animals *could* be capable of complex decision-making, and what separated us from them was more spiritual.

Geist, to Scheler, is what allows humans to choose to defy an animal instinct or need. It's what allows us to understand complex concepts, and forms the framework for a consciousness, core values, and appreciation. Most importantly to Scheler, he argues that '*a being having spirit is not tied anymore to its drives and environment, but is "non-environmental" or, as I wish to put it, "world-open: such a being has "world."*'' (Scheler, 1928, p.27)—essentially that the essence of what makes us human is our freedom, our ability to defy our environment and our instincts, to experience and understand without limits; to be 'world-open'. He uses this concept to promote 'human exceptionalism', the idea that humans are above animals, or the highest form of life. He almost crosses the line towards deifying humanity and the geist, putting him in an interesting middle ground between religious scholars who would condemn this elevation of humans as the 'highest life', and scientists of the age who could argue that the effects of 'geist' could be explained by human physiology.

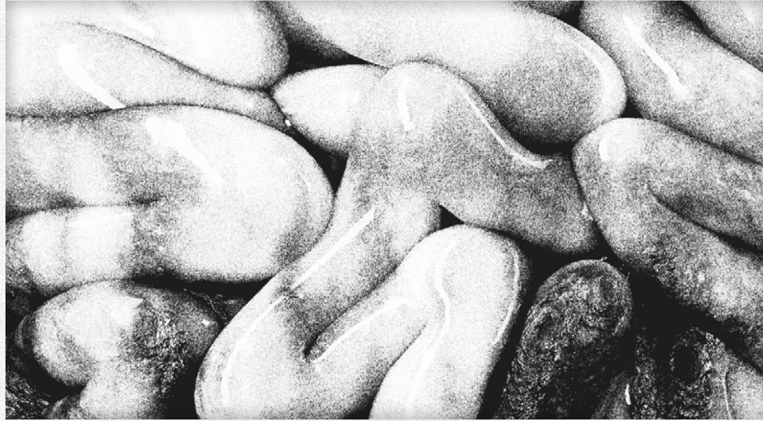
This provides a good framework for why people believe the 'soul' makes us human; work by religious philosophers like Scheler help to show the idea of the soul as being rooted in human exceptionalism, and by that defining humanity as someone with a soul, *we exclude animals from the ability to have one*—in essence, by suggesting only humans have 'geist', Scheler states that an animal, or non-human, has no inner world, and undertakes action informed by necessity, instinct, association and intent, but not complex emotion, thought, self-identity, or freedom. This topic suggests so many more areas of exploration; the development of human religion, and belief in afterlives and the endurance of a soul after death, are ancient concepts, and arguably very human in and of themselves. We as Homo Sapiens, or 'wise men', seek to understand our environment and our place in it. We look for purpose and meaning, and it's a comforting thought that there's a certain essence that makes a person a person,

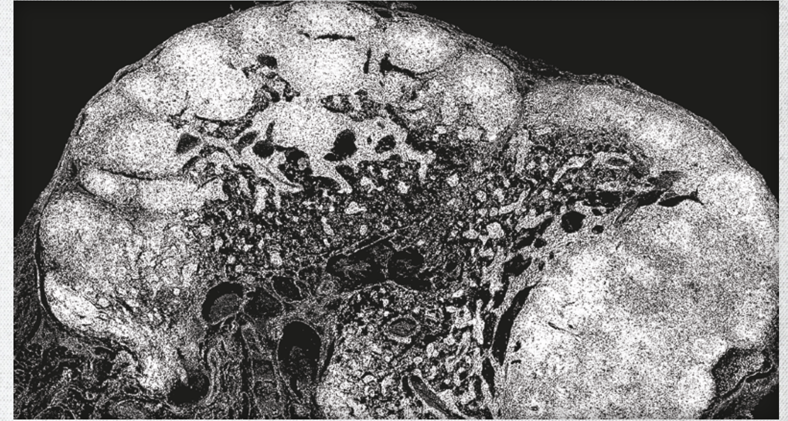


and that essence lasts after we're gone. I don't agree with the idea that having a 'soul' makes us human, but perhaps the capacity to believe in one does.

Cooked Food

Every concept I've brought up thus far has begun and ended the same way—this could make us human, but it's debatable. None have been concrete enough to say that we're the only ones do something; creativity is hard to define and it's hard to say there's no creative force behind any animal's actions, our genome often contains material from non-humans like Neanderthals, the existence of the soul is hard to prove and it's hard to argue we would be the only beings to possess one, and while lineage informs our personhood, it doesn't solely define it. There is something I came across in my reading, however, which is concretely something only we do. That is cooking our food.
It seems absurd to define what makes us human as 'beings that cook our





food', but it feels easy to argue. Other animals have been known to season or prepare their food; Japanese macaques wash potatoes in salt water for seasoning, shrikes impale poisonous grasshoppers on thorns for days to allow their toxins to degrade, and capuchin monkeys dry nuts in the sun to make their shells easier to crack (Gunn, s.d.). However, no other animals cook their food with heat. Some primates prefer the taste of cooked food, but none can prepare it but us. Cooking our food is not just a trait only we have; it's likely the reason why we developed so many other cornerstones of our species, as it was what enabled us to grow such large brains. Gathering food is demanding, and the caloric need of such large brains is massive compared to other similar primates—a gorilla spends ten

hours a day gathering and chewing food to support its size, even with a relatively small brain; 'brain matter "costs" more calories than other body mass, according to the "expensive tissue hypothesis." (Mott and National Geographic, 2012). Only 30-40% of raw food's nutrients are reached through digestion, where cooked foods can yield 100%. Learning to cook our food allowed us to speed up the process of digestion and soften tough foods and fibres to spend less time chewing, letting us take in enough calories to support our developing brains, and give us more time to become social, build societies, and develop better ways to live.

For all the reasons that cooking our food has shaped us into who we are as a species, this still feels more than a little arbitrary.

We wouldn't have these massive brains without our DNA, and perhaps other species could develop equally rapidly with the same single skill. I'm putting this forward as my personal hypothesis, but realistically, all of these factors interact and overlap to form our species. We cook our food because our DNA requires more calories and gives us the capacity to wield fire. Food is cultural, and connects us to our history and lineage. The culinary arts have transformed food into an art form, made for pleasure rather than function. Food nourishes our spirit, and I never feel more connected to a person than when I cook for them.

At the end of the day, there's no real answer to this question. Our capability for emotive, rational, historically and scientifically informed arguments on this subject demonstrates in the first place the inherent complexity of what makes us people. Defining the one thing that makes us human as cooking our food sounds silly, but it's as arbitrary as any other reason—every theorist I've discussed can put forward a different answer, as can you.

For many years, I felt lonely in my search to understand myself. My curiosity for the world came from fear, and even my drive to develop this publication stemmed from my fears about who I'd be once I graduate and exist independently from any comforting, compressing structure of education. My search for understanding, self-definition, self-acceptance, and self-recognition has made me who I am as a creative practitioner, friend, writer, and thinker. I don't wonder anymore if I'll find a place in the world, if I'm fundamentally different to others, or if I'm missing a piece. I don't have an answer to end this text; I can't draw any neat conclusion, other than that it's none of these things alone, or maybe all of them together.

I feel human when I cook for my friends. I feel human when I inconvenience myself to help another. I feel human when I learn from other humans. This publication can act as a bookend to years of questioning; now, I know us better.

Deep Roots is a publication centred around what exactly it is that makes us human, considering ideas spanning creativity, the soul, lineage, and our DNA. It contains writing on personal experience, alongside anthropological and philosophical perspectives, visualised through editorial design and sculpture. It aims to examine the facets of everyday life that can lead to feeling 'inhuman', and how the history of our species has shaped who we are today.

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