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The Space Between

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Abstract: Buchanan and Powell hope to rescue optimism about moral perfectibility from the 'received view' of human evolution, by tweaking our view of the innate character of morality. I argue that their intervention is hampered by an unnecessary commitment to nativism, by gender bias within the received view, and by liberal presuppositions.

Keywords: received view, nativism, androcentrism, liberal bias

*There is fiction in the space between
the lines on your page of memories
write it down but it doesn't mean
you're not just telling stories.*

Tracy Chapman 2000 'Telling Stories'

The 'Received View' of the evolution of human morality assumes that morality started out as an adaptation that enabled Pleistocene men to use cooperation in order to be better at killing—killing prey for meat, and killing each other, in tribal warfare. 'Evoconservatives' have argued that this story, if true, limits our moral perfectibility, because it implies that we are irredeemably hardwired for ethnocentrism and out-group hostility. In *The Evolution of Moral Progress* Buchanan and Powell's aim is to modify the story, in order to accommodate a more optimistic vision of humanity. They do this primarily in two ways: By tweaking the understanding of what it means for ethnocentrism to be hard-wired, in a way that makes it more malleable; And by claiming that cooperation is but one strand in a dynamic moral bundle.

In this response piece I argue that Buchanan and Powell concede too much to the 'Evoconservative', and to the 'Received View' more generally. In particular, I'll claim that Buchanan and Powell's arguments are influenced by three sorts of bias which undermine their view: 'Nativism'—A bias towards explanations which posit innate causes of human behaviour; 'Androcentrism'—A bias towards explanations

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which centre men and in which women tend to be invisible; and Liberalism—A bias towards liberal or individualistic social arrangements, which treats them as morally preferable to collectivist or communitarian social arrangements. I argue that each of these kinds of bias inclines the authors towards one possible explanation or perspective, and away from alternatives that are equally consistent with available data. In doing so I hope to further an ideal described by Helen Longino, which is that science is best served by expanding the diversity of the perspectives from which we tell our narratives.

The Evolution of Moral Progress is an ambitious attempt not only to reconcile moral realism with Darwinian naturalism, but to forge a compromise that is optimistic about human moral perfectibility. Buchanan and Powell tell a wonderfully rich and stimulating story. I admire the sophisticated and coherent compromises they offer, and feel confident that they will inspire other researchers to turn over just the right remaining stones. But the evidential distance separating us from the facts about morality's origins is huge, and some of the assumptions that underpin Buchanan and Powell's story don't seem non-negotiable, from where I am standing.

1 What's At Stake?

Buchanan and Powell open by acknowledging the lengthy history of speculation about the State Of Nature—an imagined primordial era in which mankind expressed his original, uncivilised self. The State Of Nature has long been viewed as yielding implications about the ideal way to organise society, because it defines the constraints within which politicians need to work, just as the qualities of a raw block of clay shape the affordances open to a sculptor. It is not enough to determine what we would *like* society to look like; we need also determine what sort of society is *possible*. Right-wing thinkers have generally followed Hobbes' pessimism, holding that primordial man is nasty and brutish, and that there is thus a need for top-down control to save us from the worst of ourselves (Hobbes 1651). Rousseau adopted the complementary, optimistic, position, imagining a noble savage, gentle so long as he was innocent of the corrupting forces of civilisation (Rousseau 1762). However, sometime during the Darwinian Revolution, a general consensus emerged that Darwin supported the pessimist. Everyone from T. H. Huxley to Matt Ridley rushed to the conclusion that life is a ruthless competition, that selfish genes imply a nature red in tooth and claw, as Hobbes predicted (Ridley 1997). The political Left responded by rejecting nativism, insisting that the

clay was not that important after all and, even with the most selfish of ancestors, mankind could yet be perfected, under the right sort of government.

It should be shocking that such hugely consequential questions, about the appropriate scope and character of political intervention and coercion, have been settled by appeal to a made-up history. Of course, the historical fables were acting at best as a sort of thought experiment, at worst as a narrative to sell the conclusions the authors had independently arrived at. The question now is: How far have things advanced? We have subsequently garnered all sorts of independent lines of evidence in the hope of putting together something like a falsifiable scientific model of the State Of Nature. We have geological data, genetic and phylogenetic data, fossil evidence, accurate carbon dating, comparative zoology, neurological and psychological data and a wealth of methodology and theorizing helping us to put it all together (Currie 2018).

Nonetheless, the real-life State Of Nature was a long time ago, and evidence degrades over time. There is a lengthy gap or '*evidential distance*' between the data (footprints, bones, gene homologies, cave paintings) and the hypotheses (This is what man wanted, That is how he got to be the way he was). While any gap remains, to bridge it requires some story-telling, some imagination, some narrative license.¹ The fables have changed, but one constant is our attempts to derive normative insights from them. One might think the right response is to refrain from story-telling altogether, to stick to the facts. I don't think this is the right move—to do so would either deprive us of an enormously fecund explanatory strategy (Currie/Sterelny 2017) or, worse, drive the narrative element underground and leave us with fables dressed up as facts. Rather, the cure for bad stories is more stories.

2 On the Need for Alternative Stories

It is generally accepted that science has a problem of underdetermination, in that empirical data regularly fails to uniquely determine theory-choice, because two or more different hypotheses are consistent with the available data. Longino argues that there is always a space between evidence and theory, a gap between data and

¹ Currie claims, on the contrary, that time doesn't put the historical scientist at any disadvantage, because although evidence degrades over time, the breadth of evidence increases, because as causal effects disseminate over time they create ever more 'smoking guns' that the clever scientist can trace backwards (Currie 2016). Nonetheless, I think Currie would be hard pressed to deny that such traces grow fainter as they spread out, and that the space for alternative interpretations expands, just as Longino claims.

the stories that we tell about that data (Longino 2002a; 1990). To close that gap, to position a piece of data as providing us reason to accept or prefer one story over another, scientists rely, not on data itself, but on other things they bring to the decision. These may be ideas about what values a theory should maximise, but they are also likely to include values that are very much subjective, shaped by the idiosyncratic standpoint of the individual, their life, their place in society (Longino 1996). Theory-choice is biased, in other words, by the social, political, religious, economic and other biases that all of us inherit and accumulate. But whilst the standard view is to think that science should strive to be objective, impartial, to avoid bias and value-ladenness (Bois 1898; Harding 1986), Longino argues that values can be good for science (Longino 2004). Without values we would be unable to make the necessary leap from data to hypothesis at all. Instead of avoiding values, Longino argues that we should seek a multiplicity of different values, by pursuing diversity amongst those who do the story-telling.

An explanation that is plausible from a variety of different standpoints is vindicated more, on this view, than an explanation that has never been evaluated from more than one standpoint, because a social process of critical scrutiny allows the background assumptions with which underdetermination has been solved to be revealed (Longino 2002a). The result is never totally a-perspectival, but diversity can at least “expose questionable background assumptions than can be invisible when shared by a group of similarly situated knowers” (Grasswick 2018). If the scientific community is appropriately diverse and uses appropriate procedures to arbitrate and combine the different standpoints from which its narratives are constructed, then Longino is optimistic that at the community level there will emerge a perspective that has more objectivity than that of any individual scientist taken alone.

Longino and Doell point out that the ‘evidential distance’ between data and theory is particularly long in the case of human behavioural evolution, where we attempt to reconstruct and interpret human behaviour that took place thousands of years ago, from scant traces of the physical morphology of those humans (Longino/Doell 1983). We may find fragments of pots, but only imaginative inference allows us to suppose what the pots were used for. We may find footprints from which we can make reasonable conjectures about gait and mode of travel, but these are far from giving us access to the minds and ideas of the locomotors. Since 1983 we’ve gained all sorts of genetic evidence and methodological techniques for analysing it, but there is still no direct empirical route from facts about ancient DNA to facts about ancient dreams and desires. We remain dependent on lengthy inferential leaps in order to tell a story about the behaviour of early humans (Shaw-Williams 2014). What’s more, the political stakes of such stories

make human behavioural evolution an irresistible magnet for modern day values (Adovasio et al. 2007).

I've picked out topics from *The Evolution of Moral Progress*, in respect of which I think the authors have made a choice, where the data is consistent with a different story being told: the role of genes in human evolution; the role of women; and finally the endpoint of the process of moral progress. I'm not pushing the truth of my alternative stories, but rather hoping to expose some assumptions within what Buchanan and Powell accept as the 'Received View' which are more optional than they at first appear.

3 The Story So Far

In Chapter Four Buchanan and Powell describe what they call the 'Received View' of the origins of human morality. According to this story, Pleistocene humans underwent natural selection for a set of behaviours/attitudes that raised human fitness by making humans better at coordinating social behaviour and reducing costly intragroup conflicts (120). Broadly, morality was an adaptive social technology for enhancing cooperation. It included norms for egalitarianism, and policing/punishment of breaches of those norms, as well as evaluative attitudes towards "kin, kith, strangers, patriots, non-reciprocators, gluttons, cheats, murderers and the like" (123). The adaptation arose in a tribal context, in which cooperation took place between individuals who were familiar with one another but not closely related. Buchanan and Powell identify two popular explanations for this early morality:² Cooperative foraging, in which the focus is especially on big-game hunting, and Cultural Group Selection (Bowles 2009; Boyd et al. 2003; Boyd/Richerson 2002), in which the focus is on inter-tribal warfare. Cooperative hunting is assumed to have been a key 'ecological design problem' for the evolution of early morality, because killing a large and dangerous animal with non-projectile weapons would have required shared intentionality, for coordinating the kill (Tomasello 2016). Hunting also requires fairness norms, because if the spoils of the hunt were not shared fairly among the hunters then those individuals would not be incentivised to join in future endeavours (Skyrms 2004).

Buchanan and Powell are persuaded that the warfare explanation has priority, because hunting would be bedevilled by a higher-order altruism problem (Boyd et al. 2003), in which hunters are tempted to look the other way in order to

² I'll distinguish 'early' morality, which is parochial—only extended to group-mates—from morality 'proper'—which is universalist.

avoid the costs associated with policing fairness norms, a problem which “only group-level selection can solve” (123). The warfare explanation posits “frequent and frequently lethal intergroup-conflict, where losing groups are extinguished and the individuals composing them are killed, dispersed, absorbed by winning groups or marginalised to resource-poor areas” and assumes that groups with parochial morality tended to outperform other groups in economic and military competition. Early morality made tribes win more wars because they were better coordinated in battle, had larger group sizes, and were less likely to waste their resources on internal conflicts. In sum, the story is that morality emerged as a genetic adaptation to violent group competition. There was selection for genes which made humans cooperative, even altruistic, in interactions with group-mates, and anti-pathic or even hostile to anyone who is not a group member. We are cooperative, but only to insiders. We are quick to distinguish ‘us’ from ‘them’ and to act aggressively and selfishly towards ‘them’.

Evoconservatives point out that this is a problem for any morality that requires universal extension of moral status, an ‘expanded circle’ (Singer 1981), because tribalism is in our genes. That is, moral inclusivism might be morally right, but it is likely to be too ambitious for our crooked timber.

Buchanan and Powell make two interventions. First, they argue that the claim that modern humans are hardwired for ethnocentrism is too simplistic. Second, they argue that morality has subsequently outgrown its functional roots, and come to incorporate much more than just norms for cooperation.

In the next sections I detail three sorts of bias which undermine Buchanan and Powell’s view.

4 Stories about Genes

One bias that commands an overly large share of the literature on human evolution is towards nativism—the assumption that there are innate determinants of human behaviour. This takes a variety of forms, from Hauser’s innate moral parameters that get toggled on and off (Hauser 2006) to Haidt’s general purpose cognitive and emotional modules that are necessary precursors to full morality (Haidt 2012). Buchanan and Powell are persuaded that inter-tribal conflict in the Pleistocene left an imprint on modern human psychology, but they don’t commit to many specifics. They do argue that there is evidence that ethnocentrism is innate, and that because the Received View predicts genetic selection for ethnocentrism, evidence for innate ethnocentrism constitutes evidence for the Received View (and especially for violent group selection). They then give two rea-

sons why the Evoconservative conclusion—that this innate ethnocentrism means that progress towards a more inclusivist future is impossible—is unreasonable.

First, they point out that genes selected in the Pleistocene are not the only determinants of modern day behaviour, stressing various ways in which culturally engineered social environments interact with the genetic components of our psychology. Buchanan and Powell argue that “we should not think of morality as a stable evolutionary key to the fixed ecological lock of cooperation” (124) but should instead give credit to niche construction, ecological engineering and to cultural selection in shaping our ethical dispositions. This will allow us, they argue, to recognise those dispositions as much less rigid, as much more open-ended and flexible, than tends to be assumed.

This is a welcome corrective to the determinism of the Received View, which often discusses humankind as some kind of ready meal whose ingredients were placed into the Pliocene, awaiting the Pleistocene ‘ping’ at which Eternal Man stepped out. *The Evolution of Moral Progress* emphasises that human evolution goes on, in both genetic and non-genetic forms, which means that there never was any real State Of Nature off of which we can read the essential constraints demarcating human potential.

Second, Buchanan and Powell draw upon the biological notion of phenotypic plasticity—the ability of an organism to use feedback from the environment to choose from within a range of phenotypes made possible by the genome—to argue that even the strictly innate part of our morality is not unconditionally tribalistic. Rather, the genes selected in the Pleistocene were for *conditional* exclusivism (188). Just as a water flea acquires defensive spines and armour if it develops in water where there are chemical signals indicating predators, but lives as an unarmoured, and thus more motile, flea if there are no such threatening cues, so humans, Buchanan and Powell argue, have evolved an adaptively plastic capacity for exclusivist proto-morality.³ Tribalism is part of our norm of reaction, but only part of it. Within the parameters of normal development of those same genes lies a more universalist phenotype, one whose interpersonal behaviour is permanently set to ‘kin’. The relevant environmental signals upon which the trait is conditionalised are signals of resource scarcity, violence, over-crowding, social free-riding, disease or threats to group identity—summarised as signals of out-group threat.

³ I suspect this isn’t an optimal example, because I think that ‘facultative’ would be a more apt descriptor than ‘developmentally plastic’. The water flea has a small developmental window in which its state is determined, and it is fixed for life after that. I think Buchanan and Powell’s point would be better served by treating parochial morality as something that can toggle on and off throughout an individual’s lifetime.

This plasticity was adaptive, they claim, because the environment sometimes involved conditions of peace and material plenty, in which cooperative behaviour enabled early humans to access new sources of food via collective hunting; to solve squabbles without injury; and to work together for mutual advantage. Other times, we must assume, the environment instead was one of harsh scarcity, and in these conditions people who adopted the inclusivist phenotype were taken advantage of, and lost battles in wars against rival tribes.

On this view, then, men are neither blank slates, ready to be moulded into any shape; nor determined by their genes to be violent and selfish. Instead, men have the potential to be nasty or nice, depending on the consequences. The punchline comes from drawing out the pragmatic consequences of accepting this as a true depiction of the state of nature. If we have this plastic phenotype, then moral progress is possible. Early-morality became morality proper, we can assume, when we came to understand that the ‘good times phenotype’ is superior, in a normative sense. We created norms which encourage people to adopt the inclusivist attitude even when the times aren’t so good. We went even further, Buchanan and Powell argue, in expanding the circle, by increasing the range of the ‘good times phenotype’ to include actors such as disabled persons and non-human animals, even though inclusion of these agents doesn’t make sense from the point of view of the original adaptive function of the interpersonal attitude.

Further progress is possible yet, they argue, because as well as continuing to mould and supplement our genetic heritage with cultural selection and niche construction, we can also work with that heritage, by controlling the extent to which the environment contains those threat cues that trigger the tribalistic phenotype. It’s easy to be kind in paradise, so if we can keep getting more comfortable, then we can keep getting nicer to each other. In other words, humans are morally perfectible so long as we can eradicate disease, famine and violence, or at least work to make sure that humans develop in an environment in which these phenomena do not seem likely. Buchanan and Powell recognise that this won’t be an easy task (although there is no mention of the likelihood that climate change is going to prevent us from being able to proceed with the pace of scientific, medical and agricultural progress that some of us have thus far enjoyed!). As well as having it good, people must *know* that they have it good. Unfortunately, certain selfish political agendas are served by perpetuating the opposite impression—by creating the illusion of insecurity and out-group threats (340). To maintain the kind of environment in which people grow up to be peaceful and generous it is vital, therefore, that those agendas are frustrated and that discord and discontent are not falsely exaggerated. In the age of false news and social media then, Buchanan and Powell’s message is timely.

One of the best things about *The Evolution of Moral Progress* is the moves it makes away from the nativism that runs through the Received View. But I wonder why they don't go even further, to treat morality as not simply flexible, shaped in part by culture—a dog on a long genetic leash, as it were—but as potentially having an entirely cultural origin.

In support of their claim that ethnocentrism is innate Buchanan and Powell point to data suggesting that ethnocentrism emerges at around three years of age; that it is cross-cultural; that it is cognitively automatic; and that children innately essentialise human groups (130). 'Innate' can mean many different things (Griffiths/Machery 2008) but I take it that what's at stake for the Evoconservatives is whether ethnocentrism is inevitable. But children could learn to be ethnocentric via general associative learning: in a world where childcare is carried out primarily by close relatives, and often in fairly racially segregated societies, children learn that they get what they want most often from people who look like them. Many children will also acquire explicit teaching about the relative status of rival groups through for example religious sermons, sporting activities and observations of the people with which their carers interact. In any case, compared to behaviours for which there is evidence of emergence within a few days or weeks of birth, at age three exclusivist morality is not particularly early-onset at all. Essentialism is a rich and complex philosophical explanatory scheme that has been developed over centuries of explicit debate, and which is implicitly encoded in our linguistic schemes. There is no reason not to expect children to learn this cultural product as they learn language. In any case, we know that ethnocentrism isn't fixed or informationally encapsulated, but is instead sensitive to many environmental cues ranging from threat cues to hormones such as oxytocin (Bethlehem et al. 2014; Dreu et al. 2011).

Buchanan and Powell themselves point out that cross-cultural universality does not prove innateness – nobody thinks that cooking is innate, for example. In fact, Buchanan and Powell concede that “the ‘innateness’ or ‘instinctual’ nature of in-group/out-group bias has not been established beyond a reasonable doubt” but they think the facts are “strongly suggestive that it is genetically pre-specified to some degree” (131). This looks like a case where a bias is being allowed to settle an undetermined question.

Genetic determinism has a surprisingly small amount of evidence in its favour, given the widespread and often uncritical nature of its support. Cecilia Heyes argues that the evidence is consistent with a different story—one in which the genetic foundation of human morality and cognition more generally is really very minimal (Heyes 2018a; 2018b). Sterelny argues that adults scaffold moral development by organising the learning environment of the next generation in such

a way that moral development is robust even without being genetically inherited (Sterelny 2010).

Buchanan and Powell argue that the Received View gets the nature of the innate basis of morality wrong—because exclusivism is developmentally plastic rather than obligate— and that Evoconservatives overstate the extent to which genes constrain human behaviour. Though I think these moves are in the right direction, I think they could go further, and that Buchanan and Powell have not fully shaken off the nativist bias which shapes the Received View. Nativist stories have had ample air time at this point, whilst the alternatives have yet to be exhausted.

5 Stories about Mothers and Others

Buchanan and Powell endorse Bowles' version of the Received View, in which morality evolved in the crucible of war (Bowles 2009; Choi/Bowles 2007). On this perspective, groups full of parochial altruists succeed because (only) their members are willing to risk their lives in order to defend their group-mates from aggressors, or to achieve some advantage over competitor groups. They also assume a role for cooperative ('big game') hunting and for the need to divide the spoils of these activities. These activities are focal because they are risky—there is an element of danger that would tempt a purely selfish individualist to opt-out—and because they require several individuals to coordinate their behaviour.

We might also note that both activities have been predominantly carried out, through most of history, by men. Women are almost entirely absent from *The Evolution of Moral Progress*. Their only role is as recipients of progress when, in the 20th century, some of them are granted Suffrage. Buchanan and Powell explain that this is because up until that point, moral norms were only applied in interactions between males, because they evolved as a strategic solution to collective action problems in hunting, defense and warfare (172). But women weren't involved in hunting, defense or warfare, their role was limited to "reproductive and rearing roles", so men stood to gain nothing from extending moral status to them.⁴ Early morality was a strictly male affair, that evolved to bond first brothers-in-

⁴ Feminist ethicists note that ethical theories generally continue to assume that morality is something conducted amongst equals, completely ignoring all the relationships that are characterised by dependence, rather than by equality (i.e. with children, the elderly, the sick and the disabled) (Kittay 2013).

arms, then men with their trading partners, and only later turned into something less self-serving.

Of course Buchanan and Powell are not commending this state of affairs, but their story does seem to have inherited the androcentric bias that is rife in the literature. Of course it makes sense to leave women out if they weren't the ones doing the evolving (Slocum 1975). But what if the only reason we think women weren't doing any evolving is because men keep leaving them out of their stories (Morgan 2001; Zihlman 2012)? It really was Man that exited the cosmic microwave in the Received View, because all the key evolutionary advances are assumed to involve men killing things, men fighting wars, and men killing each other.

From my standpoint, I'm surprised by a view which hopes to start at fighting and end at peace, when there are so many overlooked possibilities for explaining brotherly love by starting with actual brotherly love, and sisterly love and motherly love. Why we don't start the explanation of virtue and peaceful cooperation in terms of something less horrible, something a little more cuddly and loving? This isn't to say that nobody mentions mothers at all. Joyce begins his account of moral evolution with a chapter called 'Love in the Pleistocene' which roots morality in maternal care (Joyce 2007). The trouble is, Joyce treats maternal care as explained by kin selection and there treats the matter as closed. Kitcher gives a similar treatment (Kitcher 2011). Kin selection can only explain relations between relatives, so the standard assumption is that maternal care couldn't possibly be key to understanding human morality more broadly. The problem with this line of thought, I think, is that it doesn't attend to the particularities of human maternal care.

Since we split off from our common ancestor with Chimpanzees something very significant happened: human infants became increasingly altricial—born helpless and dependent for an increasing length of time. They cannot cling on to their mother, but must be supported. They have weak immune defences and can't maintain their own temperature. They gain independence very slowly. In existing hunter-gatherer societies juveniles are dependent on others for nutrition for around 15 years. But instead of stretching out interbirth intervals to accommodate the extra work required to care for these altricial infants, the opposite happened. Interbirth intervals approximately halved (Hrdy 2011). Hunter-gatherer women birth their helpless, demanding infants every two to three years, almost twice the rate that chimpanzees do. Even allowing for very high rates of child mortality, this implies that it was common for Pleistocene mothers to be rearing two or three highly dependent offspring at any given time.

Some authors argue that this required a radical new mode of rearing. Instead of the ancestral style of rearing which is strictly dyadic, humans began allomothering—sharing the work out amongst older siblings, grandmothers (Hawkes et al. 1998) and other group members (Hrdy 2011; Kramer 2010). Hawkes

argues that grandmothers have been singularly important in facilitating the survival of children, especially in provisioning them with a regular supply of carbohydrates. But Hrdy assumes that grandmothers were only one of a large pool of allomothers that included siblings, aunts, male relatives, fathers and unrelated group-mates.

I propose an alternative story in which, instead of assuming that women were passively hanging around waiting for men to invent something, we assume that morality began with Pleistocene mothering.⁵ Human maternal care—the provision of nurturing care to a juvenile—shares some, probably innate, foundation with other species: It requires a willingness to pay costs to direct fitness for the benefit of the juvenile; it is triggered in response to hormonal, behavioural and morphological cues from the juvenile; it readily misfires and gets expressed in the wrong context, i.e. in response to juveniles who are not related to the mother;⁶ it is conditional—a mother only provides care to a juvenile if her material and physiological circumstances are appropriate (Hrdy 2000); and finally, it has a dark side. To protect a juvenile sometimes requires protecting it *from* another agent, and mothers can be ruthless against perceived threats to their charges.

Care: In addition to these properties, care of a highly altricial infant likely demands increased impulse control and docility—to maintain a nurturing attitude to an enormously demanding burden—and mindreading/empathy—to work out what the infant needs even when it almost entirely lacks communicative sophistication.⁷ Next we require the mother to deal with several juveniles at a time, which requires simultaneous monitoring of multiple sets of different needs. Finally, the shift to cooperative reproduction brings its own cognitive demands—the need to teach a sibling how to care for the infant, to work out whether the aunt can be trusted not to hurt the baby while I'm away foraging, to keep track of who is shirk-

5 I use the term mothering to pick out a relation of care between a younger individual and an older individual who is the juvenile's primary attachment figure, without insisting it goes along with biological relatedness, or that it can only be carried out by women/females. But it seems appropriate to use 'mother' rather than parent, because in our ancestors it will have been exclusively the biological mother. The challenge is to explain how we evolved so that parenting became more widely shared.

6 As when animals spontaneously adopt an infant of another species, even an infant that normally triggers predatorial behaviour. See De Waal's example of a chimp carefully tending to a bird with a broken wing, or the famous case of the lioness who adopted a baby Oryx. I don't think we need to think of this as evidence of morality in non-humans, as De Waal does, but as evidence that it's fairly easy for the parenting instinct to accidentally cause animals, including humans, to care for individuals that aren't their offspring (Waal 2015).

7 Care is an other-directed attitude and practice of attentiveness which requires mind-reading and empathy (Ruddick 1989).

ing their childcare duties (Burkart et al. 2017; Vaesen 2012). Of course, the more complex all of this gets, the more work there is to do to teach the next generation of carers how to do it all.

If this is right, then women already expanded a circle of nurturing care out from the mother-infant dyad, to group-mates more broadly. Only a further push out to strangers would be needed to shift it into something less proto-moral and more moral-proper. On this story, women are not 20th century recipients of an ethic invented by men in the crucible of war. Rather, we explain the persistence of oppression of women into the modern day by pointing out that adult men were the last in the tribe to get the memo.

Sterelny is one of few male authors who takes cooperative reproduction seriously as a driver of human evolution (Sterelny 2012). But he argues that cooperative foraging/hunting is likely to be more important, for two reasons. First, cooperative reproduction only require pairwise coordination, while hunting requires true collective intentionality because the whole hunting party must coordinate simultaneously (Tomasello 2016). Second, hunting is the likely context in which impulse control evolved, because the hunter has to creep quietly up on his quarry (Sterelny 2015).

I suspect that Sterelny might underestimate the complexity of cooperative reproduction on both fronts. It's easy for me to think about how much impulse control is required for a human to deliver gentle care to an infant that wakes up screaming every couple of hours. And it's easy for me to think about all the simultaneous coordination that is required to successfully chivvy multiple children into the appropriate attire and out of the door for a fixed time every day. Of course I don't pretend that Pleistocene mothers had to do the school run, but we know that our ancestors were itinerant, and every time the group moved to a new camp ground it must have taken significant coordination, especially given that each infant monopolised at least one of its furless mother's hands, leaving only one other hand to guide toddlers and carry supplies. When it comes to resource division, and the evolution of fairness norms, it is generally the successful hunting party that is put into focus—the meat must be divided in such a way that each hunter is sufficiently motivated to join the hunt next time around. Anyone who has lived with multiple children is likely to imagine a different selective design problem. Food sharing is not something that only happens between male hunters. And in fact our norms around fair distribution are much more complex than a simple norm for equality, which is what you'd expect when resources have to be shared amongst agents who are not equals, but who have varying needs and claims (Kittay 2013).

It is important to note that I'm not suggesting that there is some innate foundation to morality that only females possess. This would go against my arguments against the nativist bias, as well as perpetuating problematic patriarchal assump-

tions about womanly duty. I do suggest, instead, that women have long performed different social roles to those performed by men, and these roles differentially affect and shape the behaviours and attitudes of women and men. There is, furthermore, a runaway process in that the differential experiences of women lead women to create different environmental scaffolds for the women who come after them, so that girls develop in a different learning environment from that experienced by boys. In a nutshell, there is no obvious reason to think that human maternal care and allmothering in particular aren't entirely socially learned/scaffolded, rather than innate.

How much difference does this alternative perspective make to Buchanan/Powell's narrative? Perhaps only a little. It's plausible that Pleistocene morality is parochial whether we take war or cooperative reproduction to be its principle selective context. Motherhood has its dark side just as much as tribal social instincts do (Dreu et al. 2011), and it's equally plausible that the expression of the nurturing phenotype is conditional, and is not triggered uniformly in all contexts. It's plausible, equally that there are things we modern humans can do to modify the environment in order to elicit the nurturing phenotype more often. Many of the required modifications would be identical to each scenario, I think—to avoid eliciting development of the 'armoured' phenotype we would try to make sure individuals develop in an environment in which they feel safe, and well supported, and well-resourced. A move to a parenting-centred story about the evolution of morality might tempt us to give additional emphasis to the importance, for the development of the more moral phenotype, of receiving adequate parenting—of developing in the care of nurturing individuals who have decent impulse control, decent mind reading abilities and so on.

I don't pretend that Buchanan and Powell are the only or the worst perpetrators when it comes to erasing women from stories about human evolution. But *The Evolution of Human Morality* represents yet another missed opportunity to fix the problem.

6 Stories about Where Cooperation Takes You

In the Received View, morality is treated as a social technology, a mechanism for solving collective action problems, for securing cooperation against free riders and altruism failures. Morality is taken to be, if not constituted by cooperation, then very closely allied, at least in its early stages, with cooperation. Buchanan

and Powell say that there is more to morality than just inclusivity⁸ (chapter 3) and they argue this by giving examples of moral progress that don't seem well-characterised as gains in inclusivity. Even so, I think there is a tension between the emphasis they give to cooperation, on the one hand, and their liberal values.

A quick thought experiment teaches us, I think, that the moral facts are not exhausted by facts about which norms or behaviours maximise cooperation. Fans of *Star Trek* will be best served here by reflecting on the Borg,⁹ a species of alien whose members share a collective hive-mind. Captain Picard is forcibly assimilated into the Borg in the fourth season of the TV series, allowing the aliens access to his 60 years of memories and expertise. The salient point for present purposes is that Picard's assimilation into the Borg is a Bad Thing, morally speaking. It doesn't seem as if Picard has entered a morally superior phase in his existence on account of the fact that he is cooperating more closely with the Borg than he was with the *Star Trek* crew. If anything, Lucutus seems to be a moral step down from Picard. But Picard's assimilation is an event in which inclusivity is increased: Lucutus cooperates with the Borg more closely than Picard cooperates with anyone. So in this case a step up in cooperation doesn't seem to coincide with an increase in morality.

One might object that the moral facts are here affected by identity: Lucutus is cooperating with the wrong team! But suppose we are in a position where the *Star Trek* crew can, if they choose, emulate the Borg. If moral progress was only about increasing cooperation then the correct moral intuition would be in favour of such a change. It seems obvious, at least, that Buchanan/Powell have a rather different sort of morally perfect society in mind, one in which the sanctity of the individual and of the free marketplace (251) is uppermost. If so, then cooperation is not the only maximand guiding their process, and a rather more explicit treatment of the other maximand—political liberalism—ought to be provided, as well as an explanation of how this assumption is consistent with their insistence that it would be a mistake to think we could accurately identify the likely high-point of moral progress from our limited vantage point.

For a philosopher of biology like myself, a more obvious stimulant of these intuitions is the major transitions in evolution (Clarke 2014). At some point in our evolutionary history some cells gave up their existence as independent organisms and switched to life within a collective. Cooperation within such collectives was probably riven with conflict in the early days, but the selective advantage of col-

⁸ This is in contrast to Peter Singer or Oliver Scott Curry, who argues that “it is precisely these solutions to problems of cooperation that constitute human morality” (Curry 2016; Singer 1981).

⁹ With thanks to Jess Isserow for the example.

lective life was so great that mechanisms evolved to limit such conflict and push the cells to ever greater levels of cooperation. The result was a multicellular organism. The parts of an organism enjoy maximal cooperation with one another, and their biological fitness is maximised. Some biologists even equate organismality with maximal cooperation (Queller/Strassmann 2009). Following this general logic then, the outcome of continued selection for cooperation amongst humans would be another transition: a state in which humans lost their individuality and became subsumed within a collective social entity (Stearns 2007). If humans were to transition, to become mere parts in a new superorganism, what would this look like? In fraternal transitions, such as in multicellulars and honeybee colonies, the organism is typically massively hierarchical, with the many sacrificing themselves for the few, and individuals subsumed within the state. In 'egalitarian' transitions, such as in endosymbiosis, things tend to be fairer, but one or both partners tends to compromise their separateness. Mitochondria, like many symbiotes, lost most of their genome on the way to achieving conflict-free cooperation with their host. Across the living realm, cooperation sits in a delicate balance *against* individuality. Gains in cooperation are losses in individuality. To a liberal eye, the life of a honeybee worker or mitochondrion is one of slavery, tyranny of the highest order. So a human evolutionary transition seems at odds with Buchanan and Powell's liberal commitments. We might say that evolutionary transitions (and/or the Borg) disrespect the separateness of persons (Scanlon 1998). So the moral naturalist must either say that separateness isn't a moral good after all; or explain what else is needed, in addition to inclusivism, that can accommodate the separateness of persons; or explain what it is about humans that excludes them from this evolutionary logic.

This might look like grist to Buchanan/Powell's mill, because they advocate pluralism about the content of morality. Although they think inclusivity is important, they argue it cannot exhaustively constitute morality, because there are consensus examples of moral progress which are not well characterised as gains in inclusivity. For example, the demoralisation of masturbation is generally accepted to be a good thing, but doesn't involve extending moral status to a subject previously lacking it. *The Evolution of Moral Progress* tells us very little, however, about what lies within this plurality, by design. Buchanan and Powell give good reasons to doubt that any attempt to reduce morality to a single function, or to describe the end-point of moral progress, can be trusted. But I worry that this move to pluralism is only superficially helpful. You might expect that the book would start with a characterisation of moral progress. But Buchanan and Powell argue that their project can proceed without doing so—instead they provide a list of consensus examples of moral progress. We might not agree about which ethical theory correctly identifies what's moral about these instances, but if we can agree that the supplied

examples belong on the list then we can sidestep such disagreement, they claim. In fact they argue that given our limited vantagepoint, we are best advised against attempting such ambitious tasks as describing the end-point of moral progress, or even settling arguments between moral realists and anti-realists. This allows Buchanan and Powell to cast their account as humble and reasonable, but at the same time positions it as unifying. Whether you're a Kantian, an error theorist, a pessimist or a transhumanist, *The Evolution of Moral Progress* has the answer for you.

However, the case of the Borg shows us that the need is not simply for cooperation to be supplemented by some other values, to deliver a complete account of morality. Rather, the lesson is that cooperation *trades off* against individualism. What's good for the group can be at odds with what's good for the individual. What maximises cooperation may infringe separateness of persons. There is a tension between inclusivism and individualism that Buchanan and Powell fail to confront. But if we accept that cooperation is just one among multiple moral maximands, and that these maximands can trade-off against one another, then the prospects for achieving a consensus view of moral progress and its evolutionary basis are rather dimmer than Buchanan and Powell suggest.

7 Conclusion

Buchanan and Powell tell a gripping yarn, complete with good guys and bad guys and a cliff-hanger ending. Maybe it is even right. But I have tried to persuade the reader that there are at least three types of bias in the story: a bias towards biological determinism (less marked than in some of their peers, but active nonetheless); an androcentric bias, which assumes that human morality evolved mainly in the context of make activities; and a liberal political bias, which assumes that the limit-point of moral progress is an economically and politically liberal society. In each of these three respects, my aim has been to establish that those biases are optional. That the story could be told in a different way, without changing any of the empirical evidence.

I don't pretend to have adequately explored those possible stories here, nor to have established that such stories are better than the counterparts provided by Buchanan and Powell. At most I have gestured towards three spaces where I think a story *could* be told, *deserves* to be told. My own standpoint has much more in common with Buchanan/Powell's than it has differences, and we'll need all the diversity we can get in order to concoct a robust story. I have argued that we will collectively be in a better position to evaluate all the stories about moral evolution

when these possibilities, and others, have been exhausted. Hopefully we will all agree that humans are capable of great kindness as well as great harm, and make progress towards Buchanan and Powell's worthy goal—of figuring out how to get less of the harm and more of the kindness.

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