Minds Make Societies

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[Sample from] Introduction:

Human societies through the lens of nature

Why should society be a mystery? There is no good reason why human societies should not be described and explained with the same precision and success as the rest of nature. And there is every reason to hope that we can understand social processes, as their impact on our lives are so great. Since there is no better way than science to understand the world, surely a science of what happens in human societies is devoutly to be wished.

But, until recently, we had nothing of the kind. This was not for lack of effort. For centuries, students of societies had collected and compared facts about human groups. They had tried to compare places and times and make sense of it all, often desultorily groping for principles of society or history that would emulate the clarity of natural laws. In many cases this effort proved fascinating and illuminating. But there was little sense of cumulative progress.

All this is changing, mostly because evolutionary biology, genetics, psychology, economics and other fields are converging to propose a unified understanding of human behavior that is based on evidence. Over the last few decades, a variety of scientific fields have made great progress in explaining some crucial parts of what makes humans special, and in particular, how humans build and organize societies. [...]

What sort of things do we want explained?

One should never start with theory. Instead of first principles and deductions, let me offer a collage – a ragtag, fragmentary and unorganized list of phenomena we would want a proper social science to explain.

Why do people believe so many things that ain't so?

All over the world, a great many people seem to believe things that outsiders judge clearly absurd. The repertoire of what counts as reasonable in one place, and utter nonsense in another, is vast, indeed is one of the main sources of material for anthropologists. Some people fear that contact with outsiders will make their penis disappear, while others hope that reciting a formula can make a stranger fall in love with them. In modern places, people transmit to each other all kinds of rumors and urban legends. Some say that AIDS was engineered by the secret services. Others maintain that the machinations of witches are certainly the explanation of illness and misfortune. It would seem that human minds are exceedingly vulnerable to low-quality information – and that no amount of technical progress seems to make much difference.

Why political domination?

Man, some have said, is born free yet everywhere is in chains. Why do human beings tolerate domination? Social scientists, it seems, should try to explain to us how political domination can emerge and subsist in human groups. They should explain people's submission to autocratic emperors for most of Chinese history, their enthusiasm for nationalistic demagoguery in 20th century Europe, their tolerance of totalitarian communist regimes for seventy years, or their acceptance of kleptocratic dictators in many parts of contemporary Africa. If it is true that the history of most hitherto existing society is the history of domination by kings, warlords and elites, what makes such oppression possible, and durable?

Why are people so interested in ethnic identity?

All over the world, and for as long as records exist, people have considered themselves members of groups, most often of ethnic groups, that is, of supposedly common descent. People are prepared to see the world as a zero-sum game between their own and other ethnic groups, which justifies all manners of segregation, discrimination, and easily leads to ethnic strife or even warfare. Why do people find such ideas compelling, and seem prepared to incur large costs in the pursuit of ethnic rivalry?

What makes men and women different?

In all human societies there are distinct gender roles, that is, common expectations about the way women and men typically behave. Where do these come from? How do they connect to obvious differences in anatomy and physiology? Also, if there are distinct gender roles, why are they so often associated with differences in influence and power?

Are there different possible models of the family?

Related to gender roles, there are considerable debates in modern societies about the proper or natural form of the family. Is there such a thing? Children require parents, but how many and which ones, and in what arrangements? These discussions are often conducted in terms of ideology rather than appeal to scientific facts. But what are the scientific facts about the diversity and common features of human families? Do these facts tell us what forms of the family are more viable, or what problems beset them?

Why are humans so uncooperative?

Humans spend a great deal of energy in conflict, between individuals and between groups. The frequency and nature of conflicts, and the extent to which they lead to violence, vary a lot between places. What explains such differences? Also, Is human conflict an inevitable consequence of our nature? For instance, people used to think that there was some aggressive urge in humans, that needed to be released, a bit like pressure building up inside a furnace, until the steam escapes through a safety valve. Is that a plausible description of human motivations? If not, what explains violence and aggression, and the need for humans to develop elaborate ways to manage conflicts?

Why are humans so cooperative?

The obverse of conflict is cooperation, which attracts less attention, probably because it is is ubiquitous and therefore invisible. Humans are extraordinarily cooperative. They routinely engage in collective action, in which people coordinate their actions to get better results than they would in isolation. People in small-scale societies go hunting or gathering food together, and often share most of the proceeds. In modern societies they join associations or political parties to achieve particular goals. Every single one of our behaviors takes place in the context of some interaction with other organisms of our species. But we also see many differences in the level or content of cooperation. Is there a cooperative inspect in human beings? If so, what conditions favor or hinder its expression?

Could society be just?

Most human societies have class or rank distinctions. In very small-scale societies they are mostly to do with skills and intelligence – prestigious individuals are successful hunters or a spellbinding storytellers. In all other societies, production results in unequal incomes and wealth. In some cases the difference seems a simple effect of political dominance. Warlords, aristocrats, dictators, or the *nomenklatura* of communist regimes, simply appropriated the best resources. But in most modern democracies the economic process leads to unequal outcomes

without any such direct thefts. The main question of modern politics is, What to do with such outcomes? But this question itself raises many others, that our social scientists should be able to answer, e.g., What do people mean when they say they want a just society? Why does that goal motivate people to advocate diametrically opposite policies? And is there a common human notion of justice, or does it differ from place to place? And, Can humans actually understand the complex processes that lead to unjust or unequal outcomes?

What explains morality?

Why do we have moral feelings, and strong emotional reactions to violations of moral norms? People the world over have moral norms and pass moral judgement, but do they do it on the basis of the same values? And how does morality enter the minds of young children? Many moralists described human nature was entirely amoral, suggesting that ethical feelings and motivations were somehow planted in our minds by "society". But how would that happen?

Why are there religions?

There are organized religions in many places in the world. In small-scale societies there are on religious institutions, but people talk about spirits and ancestors. So it seems that humans have a general susceptibility to such notions. Is there a religious instinct, some specific part of the mind that creates these ideas of supernatural powers and agents, those gods and spirits? Or, on the contrary, do these religious representations illustrate some possible dysfunction of the mind? In either case, how do we explain that religious activities include collective events? How do we explain that humans seem to entertain such an extraordinary variety of religious ideas?

Why do people monitor and regiment other people's behaviors?

The world over, people seem to be greatly interested in moralizing, regulating and generally monitoring other people's behaviors. This is of course very much the case in small-scale groups, where one live sunder the tyranny of the cousins, as some anthropologists described it. But in large, modern societies, we also see that people are greatly interested in others' mores, sexual preferences, in the way they marry or take drugs. This certainly goes beyond self-interest, and raises the question, Is it part of human nature to meddle?

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[...]

The questions listed here are at the centre of many contemporary debates throughout the modern world. […] Because these are pressing and important questions, there is of course a great demand for easy, sweeping answers that would both explain and motivate, tell us how society works and, by the same token, how to make it better. Many political ideologies are based on that kind of promise of a magic bullet that answers most issues and provides a guide for action as well, a promise that is never actually fulfilled.

But we can do better. In particular, we can step back and ask, What do we actually know about the human dispositions, capacities or preferences involved in all these behaviors?

Rule I: SEE THE STRANGENESS OF THE FAMILIAR

[...] Understanding very general features of human cultures, like the existence of marriage or religious beliefs or moral feelings, requires that we step aside, not just from local norms, but from humanity itself. How could we do that? The economist Paul Seabright suggested that we consider human behavior from the viewpoint of other animals. As he points out, if bonobos for instance studied humans, they would marvel at the way we spend an inordinate amount of time and energy thinking about sex, longing for it, imagining it, singing, talking and writing about it, whilst actually doing it so very rarely – rarely, that is, compared to bonobos. Gorillas would be astonished that the leader in human groups is not always the most formidable individual, and puzzle over the question of how weaklings manage to exert authority over big bruisers. A chimpanzee anthropologist would wonder how humans can huddle together in large crowds without constant fights, why they often remain attached to the same sexual partner for years, and why fathers are at all interested in their offspring.[1]

[…]

Seen from an evolutionary standpoint, all human cultures do seem exceedingly strange, all customs seem to cry out for explanation. Most of what humans do, like form groups and have marriages and pay attention to their offspring and imagine supernatural beings, all this becomes slightly mysterious. It could have been otherwise. And in most animal species it certainly is.

[...]

Fine, one might think, our evolved nature could explain the fact that we live in societies, but could it explain the different ways we live, in different societies with different norms? After all, the questions I listed above are all about processes that differ from place to place. Family relations are different in Iceland, Japan and the Congo. The way we commonly frame social justice issues is certainly different in modern mass-societies, agrarian kingdoms and small groups of foragers. For millennia, most people in past civilizations considered the exis-

tence of slavery as a fact of life, certainly unfortunate for the slaves themselves, but not morally repulsive. That is not the case anymore, at least in most societies. Religious doctrines and beliefs in magic, as well as other odd beliefs, also seem very different in different places. So, could a study of human evolved nature, presumably the same in all these places, explain such diverse outcomes?

To answer this question would (and in fact does) take a whole book. But the main answer is that, yes, our evolved capacities and dispositions do explain the way we live in societies, and many important differences between times and places. But we cannot, and should not try to demonstrate that in terms of theory. Rather, we can examine some important domains, like the form of human families or the existence of political dominance, and see how they make much more sense once we know more about the human dispositions involved.

GETTING INFORMATION FROM ENVIRONMENTS

To understand the logic of evolutionary explanations, including the explanation of complex social behaviors, we must be clear about the way organisms in general pick up information from environments. Rather than laboring the point in theoretical terms, it may be more help to use some examples, and talk about the birds and the bees.

In many species of birds, reproduction follows the seasons. During Spring and early Summer, males and females size each other up, select a partner, build a nest, mate, and are blessed with a few eggs that promptly hatch. The parents feed their offspring for several weeks, after which they all part. At the beginning of Autumn, the cycle could in principle start again, but the birds now seem to have lost the appetite for sex and parenting. This makes sense as food is most abundant precisely when needed to feed the offspring. In migratory species, late Summer and early Autumn is also a time when individuals re-grow feathers and build up muscle mass in preparation for long journeys. So they need to sustain themselves rather than bring worms to hungry squeakers. In many species the sex organs shrink during that season.[2]

This yearly schedule of reproduction constitutes an adaptation to the ecology of middle and high latitudes of Eurasia and the Americas. The environment simply could not support more than one clutch a year; the time required for courtship, nest-building and mating, and feeding offspring, imposes that one starts early in the Spring. Once-a-year reproduction is optimal, given these conditions. It is an evolved property of these organisms, part of their evolved characteristics.

But what about their genes? As far as zoologists know, there is nothing in the birds' genome that would compel them to reproduce only once a year. There is no mechanism to stop

then from reproducing shortly after having successfully brought up their young. The once-a-year cycle is triggered by a much simpler, genetically informed system, that prompts hormonal changes resulting in an interest in reproduction, only when the length of daylight passes a specific threshold. As days get longer in the Spring, this system triggers the cascade of behaviors that result in reproduction.

So a complex evolved property (reproducing only once a year in high latitudes) depends on two distinct pieces of information. One is a genetically controlled clock with a hormonal trigger (days longer than a certain time *d* prompt reproductive behaviors), the other one (days of length *d* occur twice a year) is stored in the apparent motion of the sun on the ecliptic plane. [...] The important point here is that you can get an evolved trait or behavior of organisms, without genes that specify *that* trait or behavior. To the extent that stable properties of environments supply the additional information required, natural selection never had to supply it through genes.

It may seem that there is a great distance, between thrushes and warblers detecting that the time is ripe for sex, and complex human behaviors like building political systems and learning technology. Indeed, it is a great distance, because humans acquire vastly more information, of more diverse kinds, from their environments than other organisms, and because they acquire most of it from other humans. But the principles of information apply to the complex case as they do to the simple one. [...]

RULE II: INFORMATION REQUIRES EVOLVED DETECTION

So far, so simple. But the interaction of genes with environments has some unintuitive consequences. One of them is that there is no such thing as *the* environment – there are only particular environments from the standpoint of organisms with particular genes. The fact that day-length passes a particular threshold, at some point in Spring, may have important consequences in some birds' brains. But it leaves most other organisms completely indifferent. Dung beetles carry on eating and digesting dung with the same enthusiasm, entirely oblivious to what quails and warblers find so important. And that is not because beetles are less complex organisms than birds. Often the apparently simpler animal detects what more complex ones ignore. For instance, salmon and eels can detect subtle changes in the amount of salt dissolved in the surrounding water – these are parts of the environment for those fish, and a crucial piece of information for organisms that migrate between fresh and salt waters – but such changes are not detected by supposedly complex organisms like ducks, otters or human swimmers.[3] [...]

The same is true for human organisms. For instance, an aspect of our environment that is packed with relevant information is the the direction of people's gaze. In more precise terms, the relative sizes of two fragments of the white sclera, on both sides of the iris, that are visible when we open our eyes, can be used to infer a line of sight, which is itself used to select the object a human being is attending to. It is clear even to infants that this is an important piece of information, which commands their attention and can reveal to them what someone is paying attention to, that is, a person's invisible mental states.[4] Extracting information from the environment requires knowledge, because, strictly speaking, that information consists of cues (e.g., the two white areas of the eye) that trigger specific inferences (e.g., an estimate of the ratio of right/left sclera area leads, via some subtle trigonometry, to the computation of a specific direction of gaze, which itself supports a representation or a mental state, e.g., "she's looking at the cat"). This rather complex computation requires not just the geometric competence, but also a host of prior, very specific expectations. That is, the system cannot compute what you are looking at without assuming, among other things, that there is indeed such a continuous line between eyes and objects, that it is always a straight line, that it does not go through solid objects, that attention usually focuses on whole objects, not parts of objects, that the first object on that line probably is the one attended to, and so forth.[5] These are all pretty subtle and complicated assumptions, that you need to do something apparently as simple as detecting where someone is looking.

But the subtlety does not stop there. Knowing where someone is looking also tells you about that persons' mental states. If there are four different cookies on the table, and a child's gaze is intently fixated on one of them, which one do you think she really wants? Which one will she pick up? This kind of guessing-game is trivially easy for most of us. But some autistic people have a hard time with that task, and they answer at random. They can tell you which one the child is looking at – no problem there. They know what it is to want something. But the link between looking at the brownie and wanting the brownie is often opaque to them.[6] It takes a special pathology to alert us to this fact – the connection between direction of gaze and intentions is a piece of information that we must add to our understanding of the scene. That the child prefers the brownie is information only if you have, again, the right kind of detection system.

What detection systems an organism possesses, is of course a consequence of evolution. Humans constantly use gaze-detection to infer each others' mental states, an immensely useful capacity in a species where individuals depend on constant cooperation with others for their survival. Being able to infer what other people are looking at is a great advantage when you need to coordinate your behavior with them. If you see gaze-detection in this evolutionary perspective, you could also predict that domesticated animals, to the extent that they interacted with humans, might be able to detect human gaze too. That is precisely the case for

dogs, whose domestication included human-dog interaction, for protection and then hunting, two tasks for which some minimal understanding of human intentions was an advantage. By contrast, chimpanzees can detect gaze in humans only after excruciatingly long training, and even then their performance is not great – because their evolutionary history did not include such joint-attention interaction with humans.

To repeat, then, information is there only if you have the right detection system – and you have the detection system because having it, or a slightly better version of it, proved advantageous to your forebears, over many generations.

[...]

Learning how to be good and menstruate

Another consequence of information detection is that the more information organisms pick up from their environments, the more complex their detection systems will need to be. Moving along a continuum of complexity, from rather simple protozoans to cockroaches to rats to humans, we find organisms that acquire more and more information from their surroundings. But the capacities of these organisms also become vastly more complex. Far from being a zero-sum game, the acquisition of more information from environments requires more information in the system. In fact, it is a good rule of thumb of cognitive evolution, that organisms that learn more are the ones that know more to start with. (This should be unsurprising to computer users above a certain age, who can compare systems they use nowadays to those available twenty years ago, now-vintage computers that could "learn" much less – i.e., receive and process much less information, of fewer different types, from the digital environment – because they had less prior information, i.e., less complicated operating systems than more recent ones.)

More complex organisms can engage in more learning than simpler ones. Learning is the general and very vague label that we use to describe a situation in which an organism acquires some external information, which modifies its internal states, which in turn modifies its subsequent searches for information. Here are a few examples of how learning unfolds in human minds.

Being good...

Children […] can learn about invisible things – morality is a good example. Even infants are sensitive to antisocial behavior. They dislike puppets that clearly try to hinder or harm other puppets.[7] But how does one get from such evaluation, based on actual interaction, to

the moral quality of actions? True, children can attend to the kinds of actions that others around them, adults in particular, seem to condone or condemn. But a difficult problem is to figure out how to generalize from these particular situations. People tell you that it was quite wrong to attack an old lady in a dark alley and steal from her purse. Fine, but how do you conclude that it is also wrong to short-change a blind person? One might think that this is not hard – all you have to do is to notice that, in both cases, someone used force to exploit another individual, to extract resources from them against their will. But to produce that generalization, you must first assume that the old lady's weakness is relevant, rather than her age or gender or the fact that it all happened in a dark alley. So the developing child has to consider concrete situations, but also paint them over, so to speak, with such abstract notions as freedom vs. coercion, exchange vs. exploitation – before associating the behaviors with such emotions as shame, pride, admiration or disgust.

It would seem that information about morality is available, in people's explicit statements about morality. But, when people use general moral reasoning principles, the evidence shows that the principles are justifications for the particular judgements, after the fact. That is to say, when we engage in moral reasoning we generally consult our intuition (is this right or wrong?) and then try to provide principles that would justify that intuition. In many cases, we still find the behavior wrong, or commendable, even though none of our explicit principles applies.[8] Clearly, the mind is doing some computation, away from conscious access, and we are aware of its results, and sometimes try to ground it in general principles, although we do not need that at all.[9]

There is in the mind a moral learning system, a detector for morally relevant information in the environment. That much is made obvious by the fact that some people lack it. Psychopaths are people for whom the notion of society imposing norms by warnings, punishment and rewards, is actually valid. Individuals of that kind do realize that a range of behavior leads to punishment, which is against their interests. They conclude, simply, that they must manage to get the benefits of bad behavior without the unpleasant consequences.[10] They survive, and sometimes thrive, by exploiting others and making sure they can get away with what others intuitively find repulsive and exploitative. This peculiar syndrome has of course attracted considerable attention, and there is now a large amount of evidence concerning the specific brain activation patterns, hormonal profiles, and modes of thought associated with that behavior. As this condition is partly heritable, it seems that it is one of the possible consequences of a specific genotype, through extremely complex cascades of gene-switching, brain development, hormonal release and early-developed habits of thought.[11]

So the story of the child simply picking up moral understandings from the local culture, by observation and generalization, is terribly misleading. It seems plausible only if we do not bother to fill in the blanks in that description, and specify exactly what information is picked

up, how and when, by what system. Then, suddenly, spontaneous realism appears for what it is, a fantastic construction made of mirages.

...and having sex

Now ponder the question, How do young girls learn to menstruate? It may seem a strange question, but some aspects of reproduction do involve some form of learning. Consider a special case, the prevalence of early teen pregnancy in some parts of the United States. This was and still is clearly associated with with socio-economic status and education as well as ethnicity. Poorer young women (in the lowest quartile of income) are about four times more likely than the upper half of the income distribution to become pregnant before the age of twenty. Many social programs tried to address what was seen as a pathology, or as the result of ignorance. But they had practically no effect, and were based on dubious assumptions anyway – in modern urban environments, young women do know how sex leads to pregnancy.

If teen pregnancy is not just an aberration, why does it occur? Large-scale studies show that many factors contribute to the phenomenon. One major, and very surprising factor, is that young women whose biological father was (for whatever reason) absent from the household during early and middle childhood, are most likely to engage in early sexual activity but also to become pregnant at an early age.[12] The separation of parents but also the timing of separation are strongly predictive of early menarche (first period), early sexual activity and teen pregnancy.[13] These factors remain even if one controls for the effects of socio-economic status, ethnicity or other social factors. But what is the connection between father absence, long before the girl's puberty, and early sexual maturation? There is no evidence that it has anything to do with a lack of parental authority (fathers as laying the law) or economic status, or of local norms, i.e., young girls just imitating what is done around them. None of these factors would explain the link between father absence and the timing of a girl's first menstruation.

A more plausible explanation, that is still partly speculative, is in terms of learning. The fact that one has no father may provide a growing girl with an indication that, in her environment, fathers generally do not invest in their offspring. If durable investment from high-value males is unlikely, and if one's own prospects are also unlikely to improve, an efficient strategy would be steeply to discount the future, by increasing the number of one's offspring and having them as early as possible, while sampling available men until one finds the best one on the market, so to speak.[14] That is a strategy that is mostly open to very young women, at the peak of attractiveness in the eyes of such males. All these factors would converge to favor an early reproduction strategy, whereby a woman produces more children earlier. This

explanation makes sense of many other features of the phenomenon, like the fact that young women with no fathers express more interest in infants, even unrelated ones. This interpretation is of course not definitive, as we have to fill many gaps in the proposed causal chain – and it takes vast amounts of data to disentangle the effects of different variables. Also, it may be the case that some of the variance in such behaviors is driven by genetic differences, so that daughters tend to replicate their mother's reproductive strategies partly because they carry the same genes.[15]

Naturally, there is no need for conscious decision-making here. Young women do not think in these quasi-evolutionary terms, assessing the local mating market in terms of their potential costs and benefits. Rather, they respond to internal motivations and preferences, among which sexual attraction, romantic love, a longing for children and the satisfaction of having them. Away from conscious access, a specific process attends to relevant information in the environment and motivates one among the several reproductive strategies available to humans.[16]

Intuitive inference systems

I mention these examples of learning to illustrate some properties of the mental systems that organize human behavior, by acquiring vast amounts of information from the environment, including of course from other individuals and what they do and say. Learning is made possible by a whole range of mental mechanisms that I call here intuitive inference systems (other common terms are "modules" or "domain-specific systems").[17] The "inference" part of the name just means that they handle information, and produce modified information, according to some rules. For instance, some system in the brain receives a continuous stream of speech and turns it into a largely imagined stream of discrete words with boundaries between them. Another system identifies such things as word order, or prepositions, or case endings if you are listening to Russian, and other morphological information, and uses it to parse the sentence, forming a new representation that specifies who did what to whom and how.

The human mind comprises a great number and a great variety of such systems, carrying out the most diverse computations, such as detecting people's line of gaze, assessing people's attractiveness, parsing sentences, telling friends from enemies, detecting dangerous pathogens, sorting animals into species and families, creating three-dimensional visual scenes, engaging in cooperative action, predicting the trajectory of solid objects, detecting social groups in our community, creating emotional bonds to one's offspring, understanding narratives, figuring out people's stable personality traits, estimating when violence is appropriate or beneficial, imagining non-existent agents, learning what foods are safe, inferring dominance

from social interactions or appreciating music – and many more. These constitute a rather disparate menagerie, but inference systems have some important properties in common.

These systems operate, for the most part, outside consciousness. We simply cannot be aware of the way we identify each word in speech, that is, retrieve it in less than a tenth of a second from a data-base of perhaps fifty thousand lexical items. In the same way, we do not know what exact computations take place somewhere in our minds, yielding the result that an individual is attractive or repulsive. We do not have to engage in deliberate reasoning to feel disgust at gross violations of our moral norms, like assaulting the weak and betraying one's friends. That is why we call these systems intuitive, meaning that they deliver some output, e.g., the impression that a food is disgusting or that an individual is a dear friend, without us being aware of how the mental systems reached that conclusion. All we can report is the conclusion itself – which of course we can then reason about, explicate or justify. But the intuition did not need those reasonings. [...]

Rule IV: Ignore the ghosts of theories past

The study of human behavior is encumbered by the ghosts of dead theories and paradigms. It is extraordinarily difficult to stamp out those importunate, zombie-like pests. For instance, it seems that explaining human behavior requires that we talk about "nature" and "culture", or the various contributions of "nature" and "nurture" to our behavior. Or it may seem possible and also really important to distinguish what is "innate" from what is "acquired" in our capacities and preferences. Is the propensity to engage in warfare "cultural" or "natural"? Do the obvious differences between men's and women's behaviors result from nature or nurture? Could moral feelings be somehow natural, a product of our "biology", or are they the product of social pressure, of cultural norms?

These oppositions are generally based on an antiquated vision of genetics, in which stable and inflexible genes interact with unpredictably diverse and changing environments. But that is doubly misleading. Environments do include many invariant properties, which is why natural selection can work. In fact, I mentioned that a highly stable aspect of migrating birds' environment, the apparent motion of the Earth through the seasons, made it possible for a genetic adaptation to limit their reproduction in an adaptive manner. Conversely, gene activation can be switched on or off by other genes, by co-activators, repressors, and a whole menagerie of other non-genetic material in the gene's chemical environment. Indeed, a great achievement of molecular genetics is to show how these multiple interactions result in the construction of highly complex traits and behaviors from relatively simple genetic material.[18] [...]

The positive program

A proper social science should answer, or at least address, the pressing questions I listed at the beginning of this chapter – why do humans engage in those social behaviors, like forming families, building tribes and nations or creating gender roles? [...]

The following chapters chart the development of this naturalistic science of human societies, from the way we form groups to the way we interact in families, from human attraction to religious notions to their motivation to create ethnic identity and rivalry, from the intuitive understanding of economics to their disposition for cooperation and friendship. This should not imply that we now all there is to know about those topics, far from it. But we can already perceive how they make more sense in the context of human evolution. There is great promise in that vision, and some would have said even grandeur, if we can make progress in explaining human behavior as a natural process.

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[1] (Seabright, 2012, pp. 157-161)
[2] (A. Dawson, King, Bentley, & Ball, 2001; Gwinner, 1996)
[3] (Sola & Tongiorgi, 1996)
[4] (Butterworth, 2001; Onishi & Baillargeon, 2005; Surian, Caldi, & Sperber, 2007; Woodward, 2003)
[5] (Downing, Dodds, & Bray, 2004; Hooker et al., 2003; Pelphrey, Morris, & McCarthy, 2005)
[6] (Baron-Cohen, 1991, 1995)
[7] (J. K. Hamlin, K. Wynn, & Paul Bloom, 2007)
[8] (Haidt, 2001; Haidt, Bjorklund, & Murphy, 2004)
[9] (Greene & Haidt, 2002)
[10] (Blair et al., 1995)
[11] (Blair, 2007; Viding & Larsson, 2010)
[12] (Deardorff et al.; Ellis et al., 2003; Ellis, Schlomer, Tilley, & Butler, 2012; Nettle, Coall, & Dickins, 2011; Quinlan, 2003)
[13] (Quinlan, Quinlan, & Flinn, 2003) (Flinn, Ward, & Noone, 2005, pp. 567; Jayakody & Kalil, 2002)
[14] (Edin & Kefalas, 2011)
[15] (Ellis et al., 2012; Mendle et al., 2009; Rowe, 2002; Waldron et al., 2007)
[16] (Del Giudice, 2009)
[17] (Barrett, 2014, pp. 316-319; Boyer & Barrett, 2015; Sperber, 2002)
[18] (Carroll, Grenier, & Weatherbee, 2013)