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Books Forum: Animal Evidence

Javier Lezaun (Review Editor)

The encounter of human and nonhuman species has long been a productive site of inquiry in the social sciences and the humanities, but over the past few years, and under the loose category of ‘animal studies’, the transactions of humans and nonhumans have provided the analytical cutting edge in the re-invention of many disciplines. It is as if the social sciences and humanities were finally converging with the life sciences in their capacity to extract analytical value from the encounter with animals—even if their entanglements seem to be of a radically different material and ethical nature.

Studies of the co-evolution of humans and (nonhuman) animals serve today as a key engine of innovation in philosophy, anthropology, science studies, comparative literature, or history of art, to name just a few of the fields where the intrusion of traditionally excluded nonhumans has altered the course of research and theory. The list could, however, be much longer. In fact, we might even begin to dispense with lists altogether. A feature of this interest in the ‘significant otherness’ of animals is precisely its ability to undermine traditional disciplinary boundaries, throwing cherished dichotomies and separations into a most productive confusion.

This Books Forum offers a glimpse of some current work in this area of inquiry. Harriet Ritvo reviews the recent books of Donna Haraway and Sarah Franklin on the forms of companionship and mixture that characterize the co-evolution of humans and animals. Gail Davies writes about three recent publications on the epistemologies (and eschatologies) of animal evidence. Finally, Alain Pottage reviews Michel Serres’ *The parasite* on the occasion of its English re-issue.

Can we discern any long-term intellectual trends in this renewed engagement with animal agency and evidence, especially for the field this journal is concerned with, the social studies of life and the life sciences? One possible implication, as Gail Davies points out in her review, would be the prioritization of biological agency. In searching for bonds that unite human and nonhumans and would allow us to tell the stories of their mutual constitution—by anthropomorphizing animals, animalizing humans, or both—the temptation could be to rely on a new form of vitalism, the explicit or tacit understanding that the biological is the only lingua franca in which these encounters, contracts and mixtures can be framed. As the three reviewers suggest, the issue at stake is not simply how to think about (or with) animals, but how to invent forms of writing that do justice to the exuberance of connections and entanglements that this field of inquiry is unearthing. As Pottage

argues in his commentary, Serres uses the conventions of the fable in *The parasite* not only to facilitate the transfer of qualities from humans to animals (and vice versa), but also to foreground the text's self-referentiality. Similarly, the intrusion of autobiographical idioms—what Ritvo describes as 'explicit authorial interventions'—in some of the other works reviewed in this forum also expresses a discontent with conventional genres of academic writing and argumentation, suggesting that new forms of communication, with animals but also between humans, are the necessary consequence of taking the nonhuman seriously.

Making Animals Real

Review of: Donna Haraway, *When species meet*. University of Minnesota Press, 2007.

Sarah Franklin, *Dolly mixtures: The remaking of genealogy*. Duke University Press, 2007.

By Harriet Ritvo

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We are frequently told that animals are good to think with. That they can be hard to write about is mentioned less often. One reason for this may be that there is voluminous evidence to the contrary: a steadily increasing stream of academic books and articles about animals, and even an emergent field called ‘animal studies’. Like many labels, however, this one is an umbrella, convenient rather than definitive. The nature of the animals (or, more abstractly, ‘the animal’) discussed in the work it subsumes is extremely varied. At least potentially, it conflates all non-human kinds, from ants to zebras. (This generous, homogenizing embrace produces its own limitations, of course, and it is still more likely to submerge the experiences of individual animals.) Since such work is normally produced by scholars in the humanities and social sciences, rather than by zoologists or veterinarians, it describes or engages a range of human relationships with other creatures.

One relationship, however, is oddly absent—or perhaps not so oddly, in view of the conventional constraints on academic prose. As Donna Haraway points out in *When species meet*, people in general are extremely likely to own companion animals. In 2006, about 63 percent of American households had pets, including 73.9 million dogs and 90.5 million

cats, among many other kinds of animals (p. 47). It is probably safe to assume (based on anecdote and observation, rather than statistics) that scholars who choose other animals or human–animal relationships as their research area are even more likely to live with domesticated animals than are other members of their society. Perhaps—to speculate more extravagantly—they are more likely to volunteer at humane societies and zoos, or to go birding or otherwise seek out wild animals on their own turf. But this concrete experience with animals seldom surfaces in their scholarship, although it may underlie and inform it. And the personality and experience of their animal subjects tends to be similarly elusive.

In both Haraway’s *When species meet* (along with some of her earlier work) and Sarah Franklin’s *Dolly mixtures: The remaking of genealogy*, on the contrary, members of their touchstone species are insistently present. The books themselves are very different, although each author is appreciatively aware of the other’s work. Haraway takes the acknowledgment of animal presence as her subject and her mission in *When species meet*, beginning with the question ‘Whom and what do I touch when I touch my dog?’ then declaring that ‘I think we learn to be worldly from grappling with, rather than generalizing from the ordinary’ (p. 3). Franklin’s ovine subjects emerge in her discussion more obliquely. Her opening questions are less tactile, more conventionally abstract and academic: for example, she asks ‘how we can position a shape-shifting sheep within a broader discussion about kind and type, species and breed, sex and nation, empire and colony, capital and livestock?’ (p. 4). And of course, dogs and sheep are very different creatures, both intrinsically and in their relation to humans, although some of them have a long shared history. It is also significant that the individual animal who anchors Haraway’s narrative is her own beloved companion Cayenne Pepper, who would have no public profile if she did not live with a distinguished scholar, while the individual animal who anchors Franklin’s narrative was an international celebrity, who was reported to enjoy the human attention that attended her fame while she

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lived, and who has subsequently been installed as a marquee exhibit in the National Museum of Scotland.

It would, therefore, be easy to understand Dolly as merely if powerfully iconic. For both scientists and the general public, the circumstances of her conception and birth signified the possibility of exciting advances in basic understanding as well as in biomedical technology. Otherwise, there was little to distinguish her from the millions of other sheep who continue to populate British pastures and uplands, many of whom belong, as did Dolly's surrogate mother, to the Scottish Blackface breed. (The choice of sheep as subjects for this experimental enterprise reflected their ready availability, as much as any special appropriateness.) The set of special meanings that Dolly carried was also, of course, what attracted Franklin's scholarly attention. The first chapter of *Dolly mixtures* focuses on Dolly's production by cloning (or, as Franklin explains, a version of cloning) at the Roslin Institute near Edinburgh. Even in that context, she was primarily important as a harbinger of copies to come, as she was herself a copy of the Dorset ewe whose mammary cell had (with a great deal of technical assistance) given her life. Indeed, the theme of repetition dominated the reception of the news about her birth. Although the cloned lamb was hailed a triumph for the scientific team led by Ian Wilmut, the scale of the triumph would depend on the replicability of their elaborate process. Franklin explains the science and technology that resulted in Dolly in the context of a series of related experiments at Roslin, which produced other bioengineered lambs.

As she shows that Dolly's significance lay in (anticipated) mass production, however, Franklin also emphasizes Dolly's paradoxical individuality. If Dolly had been one of many, she would not have become so famous—or at least she would not have remained so famous. The contrast between her apparent ordinariness and her unique situation continued throughout her life. All these circumstances combined to form her personality. A photograph of her with her creator (should he be called her father?), which is reproduced in *Dolly mixtures* (p. 11), suggests the farmyard, or even, in its striking intimacy, the suburban garden, rather than the laboratory. One corroboration of the success of the original experiment was Dolly's ability repeatedly to conceive and give birth in the conventional way.

Despite recurrent concerns that clones would be less robust than ordinary animals, her death did not distinguish her from the rest of her ostensible kind. She was euthanized in 2003 because she had contracted a disease that is common among sheep who live together in close quarters. But she had become arthritic at an unusually early age, and analyses at several points in her life suggested that her DNA might be more fragile than that of other sheep. Nor could her distinctiveness be summarized in merely biological terms. Franklin quotes Ian Wilmut on their special relationship: 'People think . . . I could make another Dolly . . . but . . . they don't understand . . . that . . . there would never be another sheep like her' (p. 160).

Franklin also places Dolly in a series of historical and contemporary contexts. She connects the industrial possibilities implicit in cloning technologies with more traditional mass production of sheep and other livestock, and she forcefully resurrects the etymological connections between livestock and capital. (Her recurrent use of etymology is one of the many appealing cross-disciplinary features of *Dolly mixtures*.) Her account of the evolution of sheep breeds in Britain, and their consolidation through the development of pedigree and related institutions, provides an extended genealogy for the experiments at the Roslin Institute. Robert Bakewell, the celebrated eighteenth-century breeder, whose New Leicester sheep constituted one of the early triumphs of biotechnology, had no children, but Ian Wilmut may be his notional descendant, as Dolly may be the notional descendant of his valuable rams (unlike their breeder, they also produced numerous physical offspring). An alternative institutional genealogy derives from the transportation of British sheep to Australia. Franklin emphasizes their importance in the formation of its identity as a colony and a nation, noting that the Roslin Institute itself was established between the First World War and the Second World War as part of an effort to consolidate imperial agricultural relationships. She concludes with a moving discussion of the foot and mouth disease outbreak of 2001, during which Dolly was carefully quarantined to avoid the infection, to which she would otherwise have been as vulnerable as other sheep. The official response to this catastrophe, which was partly epizootic in its origins and partly economic, involved the slaughter of large numbers of sheep by military assault. The lurid photographs provoked public outrage, which demonstrated the extent to which the lives and

deaths even of sheep who possessed no individual media presence could nevertheless engage the feelings of the general public.

One of the things that makes *Dolly mixtures* such an interesting and unusual work of scholarship is the range of expertises that Franklin has combined, including anthropology, sociology, biology, veterinary medicine, history, agricultural science and politics. In most other respects, however, it conforms to genre expectations. Franklin figures only occasionally as a character, although it is clear that she has talked with many of the people whose sheep-work she discusses. Her tone maintains standard academic distance, although it is clear that she is fond of sheep. In *When species meet*, Donna Haraway is counterconventional in every possible sense. The first person is ubiquitous, and she insists that her readers be aware of her as a physical and emotional presence as well as an intellectual one. At the (literal) center of the book is an account of her relationship with her father, and of his relationship with his companion crutches and wheelchair; her partner Rusten Hogness appears frequently, as do various friends, colleagues and students. She describes her relationship with Cayenne Pepper abstractly, as love, and also very concretely: 'Her red merle Australian shepherd's quick and lithe tongue has swabbed the tissues of my tonsils, with all their eager immune system receptors' (p. 16). She repeatedly interrupts her own exposition to insert other perspectives and other genres: extended quotations, emails, cartoons, newspaper cuttings.

Haraway argues, both explicitly and by demonstration, that her subject requires such hybrid literary techniques. Her purpose, she explains, is 'to build attachment sites and tie sticky knots to bind intracting critters, including people, together in the kinds of response and regard that change the subject—and the object' (p. 287). The related metaphors of entanglement or knotting therefore recur throughout *When species meet*. Their significance extends beyond the interconnection of humans and other kinds that is the book's headline concern. Borrowing from Bruno Latour, Haraway lists a series of 'Great Divides' that she hopes to bridge: animal/human, nature/culture, organic/technical and wild/domestic. She is constantly aware of the need to address such oppositions on the pragmatic level of the everyday and ordinary, with examples drawn from familiar experience, rather than in the abstract reaches of theory, which is not, however, to say that theory is absent. She mingles references to Latour, Derrida, Freud, Darwin,

Chomsky, Merleau-Ponty, Marx and Foucault with accounts of training dogs, feeding cats and socializing around the barbecue—another Great Divide bridged.

The distinctive and engaging style and structure of *When species meet* also allows Haraway to intervene in an unusual range of serious controversies. The question of the limits of the human, or the degree to which it overlaps with or interpenetrates other animal categories, has inspired centuries of philosophical debate. On the intellectual level it remains generatively unresolved, and will probably continue in that condition for the indefinite future. But on the level of practice, much depends on the tentative answers. Even dog training, including the agility training competitions in which Haraway and Cayenne Pepper participate, can be controversial. From a strictly human perspective, Haraway herself points out that it is a luxury sport, and so subject to general critiques of consumerism and the distribution of disposal income. From a somewhat broader perspective, it is not clear whether dogs welcome this activity. Haraway thinks that they do, and she is certainly persuasive with regard to Cayenne Pepper. But sometimes her account of training sounds like a kinder, gentler version of that of the late Vicki Hearne, a poet-philosopher-animal trainer whose highly disciplined methods, although lyrically described, have been criticized as harsh or abusive. Even the decision to nurture a litter of orphaned feral cats presents difficult choices, some (although not all) of which depend on how the creatures are categorized. Feeding and protecting them after their mother was killed gives them life, but allowing or requiring them to grow up as barn cats exposes them to injury, disease and premature death.

Nor does Haraway hesitate to entangle hot-button issues in her multi-species knots. The ethics of scientific experimentation on animals, both in laboratories and in the wild (crittercams), is a recurrent concern, as is the ethics of meat production, meat eating and hunting. Her accounts of debates about these very difficult issues seem open-minded—that is, she is respectful of most points of view, whether she shares them or not. (Of course, there are notable exceptions, such as the deep ecologist who publicly suggested that rape would be an appropriate way to punish Haraway for her interest in cyborgs.) And she consistently embeds these potentially philosophical questions in the ordinary situations where the consequences of abstract commitments become concrete. For example, she

describes a department party at which the host roasted a feral pig that he had previously shot, to the dismay of vegan and vegetarian guests who felt that the conspicuous presence of this food, whether or not they ate it, was both unethical and aggressive. Haraway sympathizes with both the hunter and the critique of hunting, with the intelligent and gregarious pigs and the people who deplore their effect on the fragile ecology of coastal California, with opponents of factory farming and the need of cats to eat meat. She wonders why, on an earlier occasion, the discussion of whether it was appropriate to eat a human placenta had sparked a more thoughtful, although also impassioned, discussion.

When species meet thus represents an impressive attempt to overcome some of the barriers, or to repair some of the elisions, inherent in conventional academic discussion of animals. Most strikingly, it reintroduces the animals themselves, as feeling physical beings, not as abstractions or opposing principles. It does not necessarily provide an accessible model for others to follow. Haraway has a very original persona, and anthropology seems more flexible with regard to scholarly style than do some other disciplines. In any case, most scholars probably share Franklin's disinclination to convert themselves into their own subjects. And, as *Dolly mixtures* demonstrates, real animals can figure in humanities and social science scholarship without such explicit authorial intervention. What is mostly necessary is to remember that they exist.

Thinking, Reasoning and Writing with Animals in the Biosciences

Review of Lorraine Daston and Gregg Mitman (Eds.), *Thinking with animals: New perspectives on anthropomorphism*. New York: Columbia University Press, 2005.

Erica Fudge, *Brutal reasoning: Animals, rationality, and human in early modern England*. Ithaca, NY: Cornell University Press, 2006.

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Linda Birke, Arnold Arluke and Mike Michael, *The sacrifice: How scientific experiments transform animals and people*. Indiana: Purdue University Press, 2007.

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Introductory histories

It makes sense to start with some history, or rather with some histories. There are a number of relevant histories, which introduce these three texts and the use of history sets the scene for an exploration of the themes that link them.

The first of these is the history of animal studies as a sub-disciplinary site of enquiry within the contemporary humanities and social sciences. There is now a small, vibrant and growing group of scholars exploring and rethinking the place of nonhuman animals in different contexts. Many of the authors here have played a key role in the vitality of this interdisciplinary field. *The sacrifice* is written by feminist biologist Linda Birke and UK sociologist Mike Michael, working here with US sociologist Arnold Arluke. All three have written extensively in the past on contemporary relations to nonhuman animals, particularly within the biosciences. The edited collection, *Thinking with animals*, includes contributions from philosopher of science Elliott Sober, film-maker Sarita Siegel and professor of ethics James Serpell, with the greater number of essays from historians of science. Wendy Doniger, Paul White, Sandra Mitchell, Cheryce Kramer and the editors, Lorraine Daston and Gregg Mitman, present their analysis of anthropomorphism in a wide diversity of times and places, including angels in medieval writing (Daston), experimental animals

in Victorian physiology (White), celebrity elephants in conservation practice (Mitman) and digital beasts in photographic archives (Kramer). In *Brutal reasoning*, literary scholar and historian Erica Fudge extends the chronology back, with a detailed exploration of arguments over animal and human rationality in early modern England, until the publication of Descartes' *Discourse on method* in 1637.

It is impossible to do justice to the full set of ideas in these texts, particularly as I am not an historian. A thorough review of the use of historical sources and analysis in relation to prevailing interpretations will have to wait for another reviewer, and perhaps another journal. Yet, reading the three texts together, something important emerges about the complex use of these histories in giving shape to a wide range of human/animal issues likely to be of direct interest to readers of *BioSocieties*. Such histories reveal the complexity of past relations to animals, belying the way history is evoked and simplified in public debate over new biotechnological interventions or conservation issues. On an individual scale, human (and animal) biographies reveal histories of development or descent that define boundaries between reason and emotionality, distributing rationality to certain actors while disqualifying others. Stories about the weaving together of human ideas and emotions, technological practices and animal bodies, whether in the development of standardized laboratory animals or the emergence of a digital animal gaze, hint that the *longue durée* of history also involves shifting affective relations between these actors, which may be changing what it means to be human.

There are also more immediate stories told by authors about the growth of interest in animal studies. Many identify a shift in sensibilities towards animals and nature, evidenced through the progress of environmental ethics and the emergence of animal rights. Mitchell (ch. 5 in Daston and Mitman) suggests these new understandings of animals are enhanced by the growth of sciences like cognitive ethology. Yet elsewhere there is concern about the increasingly instrumental manipulation of animal bodies and a decreasing trust in science (Birke *et al.*, p. 156), which may prompt the search for other disciplinary voices to speak about and sometimes for animals. There are also disciplinary shifts: animals occupy the rich conceptual borderlands of the social sciences and humanities, and exploration of their position within the networks of everyday life is part of an increasing emphasis on materiality and

other agencies, rethinking the nature of the social itself. Taking these intellectual threads into history provides further insights and raises additional challenges, particularly in tracing the bodily animal through the partiality of historical and literary texts. The books thus constitute an intriguing set of arguments about the way historical imaginations and material practices constitute a vexed inheritance, which is inescapable in contemporary negotiations around our different ways of living and living alongside animals. So, in turning to these complex histories to make sense of a complex present, where do you begin?

The discourse of reason

'We begin, as is often the case in these debates, with Aristotle' (Fudge, p. 15). Divine classifications are central to early modern ways of knowing animals and humans. As Fudge explains, these classifications are given shape by Aristotle, who posits the existence of different kinds of soul—vegetative, sensitive and rational. Plants, animals and humans share a vegetative soul, the root of nutrition, growth and reproduction. Animals and humans both have a sensitive soul, the source of perception and movement. The distinguishing characteristic of the human is thus the rational soul. The capacity for reason underpins human superiority, yet it proves to be a precarious definition.

In this discourse, the primacy of the human can only be evidenced through the exhibition of reason in action. 'Dog' laughter, mundane dreams, childish exuberance, unwarranted cruelty, imprudence and intemperance all threaten to undo the divine definition of humans based on reason. Following the fall, the human ends up divided against itself, involved in 'a constant struggle of mind against body, reason against desire' (Fudge, p. 13). Animals are central to shoring up these oscillations of identity. Four chapters, entitled 'Being human', 'Becoming human', 'Becoming animal' and 'Being animal', elaborate the complex movement between dogmatic classifications and empirical unfoldings in the context of England in the sixteenth and early seventeenth centuries, detailing the rich array of literary and other work concerned with the relation between human and animal behaviours.

Animal identities shift in this account as well, as they occupy the spaces of both real animals and prompts to the abstract. Much of the book charts the replacement of real animals with the symbolic,

supporting varied instrumental uses of animals, and of women and other cultures too, but this is an uneasy cosmology full of emergent contradictions. The instability of both human and animal categories causes confusion. As Fudge suggests: 'if an animal is the thing that a human is not, and yet a human can cease to be (or never become) the thing it is, then an animal is something much more than other: it becomes kin' (p. 60). There are several moments when alternative forms of kinship emerge. The lack of resolution offered by the 'discourse of reason' offers space for alternative philosophical views, from Plutarch and others; perhaps most famously from Montaigne. A different kind of animal being is offered by the empirical uncertainty of Montaigne's question: 'When I play with my cat, who knows if I am not a pastime to her more than she is to me?' As Fudge continues: 'This cat, he insists, is his cat, not a fictional one. It is an animal in the world and not a beast in a book' (p. 95). These everyday interactions with animals offer another space for interpreting the hold of the discourse of reason within this period. There are glimpses of more mundane encounters, in the give and take of living alongside animals for transport, sustenance and pleasure, but these are rarely recorded. It is possible that everyday understandings of animal reason diluted the reach of the discourse of reason, but tricky for a historian to claim so. This paradox is explored in the penultimate chapter, through the apparently wondrous exploits of Morocco—the intelligent horse—and his master Bankes. Yet as Fudge concludes (p. 174), it is possible that this animal's celebrity flows from the quality and humour, as opposed to novelty, of their performance of intelligent horsemanship.

In the final chapter, the decisive metaphysics of Descartes cuts through these confusions. Here it becomes clear that what is at stake is not only alternative ways of knowing animals, but also different epistemologies of life itself. Descartes' animals were automata, bereft of any kind of soul. Descartes managed to formulate an absolute distinction between human and animals. The only soul was a human rational one: the movement of human and animal bodies mechanically given by organic predispositions. It offered resolution to the endless ethical questioning about human conduct and animal behaviour accompanying the discourse of reason. As Fudge suggests, 'rather than presenting an ethical problem, Descartes has it seems, solved some of the most troubling ones' (p. 162). This included worries about the growing science of animal vivisection.

Suggestions that this practice might involve both the suffering of brute creatures and the brutalizing of scientific gentlemen were anaesthetized. As one follower of Descartes writes: 'I exclude them from life, that they never die in pain' (p. 160).

The achievement of a mature form of human rationality is defined in the same manoeuvre. The human is now always-already human, and failures of reason no longer destabilize the human/animal boundary. Yet humans can be childish and foolish, if they interpret animal behaviour as if animals had individual human motivations. 'For the Cartesian [...] the almost instinctive anthropomorphic thought processes of humans could be countered by an act of will. Refusing to anthropomorphize, refusing to believe one's childish first impressions, was therefore crucial to a full understanding of the world' (p. 154). While this is a period now seemingly far removed, *Brutal reasoning* nevertheless introduces a concern with the human self, compassion for animals and performance of reason, which resonate with contemporary animal controversies and the other texts.

The error of anthropomorphism

Darwin once wrote a memo reminding himself never to use the terms 'higher' or 'lower', when referring to the evolution of animals (Sober, in Daston and Mitman, p. 91). However, there is no such reticence when narratives of cultural development are mobilized to pass judgement on individual biographies, the status of other societies or on ethical ways of relating to animals. Despite initial hostility to Descartes' ideas in England, the taken-for-granted danger of anthropomorphism, as inimical to science, is the dominant narrative explored in the nine chapters of *Thinking with animals*. Following Darwin, anthropomorphism could be traced back to animal ancestry, it was ascendant at an early stage in the development of the human race, retained by primitive peoples, women and children, and overcome by the civilizing education of modern science (White, in Daston and Mitman, p. 60).

Sober, in his philosophical analysis of the bias embedded in thinking about the dangers of anthropomorphism, suggests this is still widespread. For science, anthropomorphism is both a factual mistake and an intellectual failing (Sober, in Daston and Mitman, p. 85). 'Emphasis on the error of anthropomorphism and a relative lack of attention to the opposite part is part of more general pattern in scientific culture in which tough-mindedness is

valued' (p. 86). Yet, as Sober demonstrates, both anthropomorphism and its converse 'anthropodenial' can be inappropriate. Further, he illustrates that replacing concepts of 'lower' and 'higher' animals with notions of 'ancestral' and 'derived' characteristics can alter this balance. Replacing a linear hierarchy of higher and lower organisms with more intricate evolutionary linkages means 'there is no presumption in favor of treating human beings as different from the rest of nature; on the contrary there is a circumstance in which the presumption is precisely in the opposite direction' (p. 96).

It is in the sociological account of Birke, Arluke and Michael that we find some reasons for the continued refutation of anthropomorphism. If Fudge's work demonstrated the complex histories of animal reason, Birke *et al.* thoroughly document the complex present of animal experimentation in the UK and USA. Theoretical ideas from the sociology of science highlight tensions emerging in the practices of animal research: between procedures inside the laboratory and the circulation of data outside, between desires for standardization and the specificities of animal care-taking, between avoiding public stigma and the need to enrol people into a 'core set', and so on. The search for consensus in the light of these tensions is enacted both materially and socially—through the stabilization of animals genetically, the standardization of animal housing and experimentation protocols, and through the socialization of animal researchers. The progress of scientists, from childhood dissection classes to medical school 'dog-labs', is part of a rite of passage necessary to participate in scientific culture. It involves the development of various strategies to deal with difficult ethical issues, including academic and emotional divisions of labour, as well as the suppression of anthropomorphism in the process of 'becoming a biologist'.

Yet, unlike Fudge, Birke *et al.* have the opportunity to integrate expressions of public sentiments into their research, and here the complexities proliferate. From the politics of animal rights extremism to public opinion surveys, various forms of public voicing challenge these scientific cultures and framings of animals. The centrality of rationality to continued scientific practice is thrown open. Despite the work done to exclude 'irrational' others, and stage a dialogue with the 'better-informed' members of the public (p. 162), emotional repertoires increasingly figure in political life. Those promoting animal experimentation 'must also tackle the tricky terrain

of emotions, acknowledging some of their own emotionality as, for example, pet-owners, while diminishing the (over)emotionality of the public'. They conclude: 'for all the emphasis on rationality, emotions—passions—do run high throughout, and on both sides of, this debate' (p. 170).

Tracing exclusions

Writing about animals, is in a sense, about reading for exclusions. This is a point made historically by Fudge and in the contexts of contemporary science by Birke *et al.* Reading across these books it is possible to suggest that they themselves encompass exclusions, which may point to opportunities for future empirical and theoretical work. First, there is the absence of geography. With few exceptions, notably Doniger writing on zoomorphism in ancient Indian texts (Daston and Mitman, ch. 1), a universalized Western history of attitudes to animals is narrated and mobilized in these books, and so in this review. What geography there is is evident in its absence. Standardization is seen to effect placelessness in the practices of modern science (Birke *et al.*, p. 37), suggestions of alternative epistemologies only existing in the 'othering' by Western scientists of those not trained or working in Western contexts (Birke *et al.*, p. 158). As science becomes increasingly, but also unevenly, globalized, there is further scope to explore more symmetrically the nature of these differences. So too, there are differences around gender, appearing in all the books as another 'other' to the dominant conception of the human, but often in a rather partial way.

In relation to the animals, there are absences too. A relatively narrow range of species is used to develop these analyses. Primates have long carried the burden of personifying the human/animal divide, acting as a vehicle from which to explore gender and family relations, and so they do here as well. African elephants figure increasingly as emblematic of an affective wild. Dogs occupy positions that demonstrate the ambiguities of domestication in both home and laboratory spaces. Rats and mice embody the instrumentalism of modern genetics as they increasingly become akin to machines. More opaque are the lives of animals other than mammals, including insects, fish, reptiles and amphibians. In a different context, Descartes wrote: 'it is more probable that worms, flies, caterpillars and other animals move like machines than that they all have immortal souls' (Fudge, p. 155). The question now may not be

the ensoulment of these animals, yet consideration of the affective and social lives of such animals still has the potential to offer insights into shifting understandings of and relations to the biosphere.

There is also, arguably, scanty attention paid to animals as other than representative of human practices or species traits. Sometimes this is deliberate. Birke *et al.* acknowledge 'our focus is more on how humans understand animals' identities ... because it is contradictory human understandings that underlie the controversy' in animal research. Yet something may be missing from this; as Fudge points out, our taken-for-granted conceptions of humans and their understandings already include the animal. It is when the lives of particular animals are explored that they become more than is assumed in the historical category of animal and so generate alternative potentials. Given biography, animal lives are revealed as constituted by and constitutive of their own complex histories, through relations that include the cultural practices of their own kinds, material interventions with the landscape and interactions with varied care-takers. This is most evident in Gregg Mitman's chapter on the active role of elephant communities in shaping landscapes, and Siegel's discussion of the divergent cultures of orang-utan groups (both in Daston and Mitman). It also emerges in considering the enhanced well-being of people living with pets, not as some 'uniform therapeutic intervention', but as dependent on a dyadic interaction between animal and human behaviours (Serpell, in Daston and Mitman, p. 127). In such accounts, animals overspill their symbolic functions, and this has the potential to transform both human and animal lives.

Yet, conversely, there are times when it feels as if the emphasis on animals is to the detriment of other things that might have agency. This sounds a contrary criticism of three books seeking to redress the silent effacement of animals in social science. Yet the risk is in implying that biological entities are unique in enacting transformations of human identity and social life. Certainly, their often ready responsiveness means animals are invested with such capacities, yet, as Daston's analysis of medieval angelology alongside twentieth-century comparative psychology shows, animals are not exceptional in this and a comparative approach can yield insights into the changing nature of anthropomorphism and alternative comprehensions of nonhumans. In *The sacrifice* Birke *et al.* effectively elaborate the sociological, institutional and technological elements that embed animals in experimental systems: 'what is represented as comparison between

animal and human bodies is thus, in actuality, between animals-in-experimental-systems and humans-in-clinical-systems' (p. 53). Yet the comparative dimensions implied by this, and the further complexities of the alignment of clinical systems, remain to be mapped out.

The transformative transaction between animals and technologies is also evident in suggestions that visual technologies are reshaping contemporary sensibilities around animals. Kramer aligns a global trade in commercial images and changes in the 'emotional configuration of contemporary subjectivity' (in Daston and Mitman, p. 139). Yet this is not a positive assessment. She identifies a growing uniformity and lack of the authentic animal in this work, which seeks sophisticated techniques and affective registers to move viewers as a replacement for meaningful emotional exchange (p. 167). Such pessimism is also encountered in the closing line of Serpell's often otherwise recuperative chapter on companion animal relations, that we face a future living alongside a less authentic nature, Serpell's 'strange little people in disguise' (in Daston and Mitman, p. 132). Yet, if nothing else, the complex histories of human-animal relations prompt us to read for alternatives and silences here. We might find different sensibilities in Mitman's account of the role of images in elephant conservation, which values intimacy and appears to construe elephants as active participants. The proliferation of image-sharing websites, as opposed to central digital archives, might offer a wider reach and mundane aesthetic of animals, with the potential to challenge contemporary statements about authenticity in the same way Morocco the horse challenges historical interpretations of animal reason.

Writing animal futures

In presenting both the complex histories and complex present of human thinking with animals, the books demonstrate the ongoing and iterative interactions of which these are made. Therefore, in concluding, it makes sense to ask what kind of intervention these books seek to make to these interactions.

Birke *et al.* declare at the outset that their account is unbiased. By this, they mean they leave their personal judgements about the ethics of animal experimentation unspoken. Yet, as they are no doubt aware, the performance of politics is more complex than this. The emphasis in the book on denaturalizing certain kinds of practice, while

leaving others extant, is not just a methodological choice but also a political one. By collecting together insights from work often already published in specialist social science journals, this book is seeking a wider policy, journalist or researcher audience. By thoroughly situating science in its varied sociological contexts, the book emerges as a powerful critique of those who wish to bolster support for the science of animal experimentation only through furthering the authority of science, in regulation, training or science communication. Yet the ethical, emotional or embodied elements of debate over animal research are not subject to the same levels of inquiry.

The impact of Descartes on the ethical oscillations around the 'discourse of reason' remind us that focusing on and retaining complexities may be an ethical act in itself. Yet there is perhaps an opportunity for further work here. As Birke *et al.* themselves identify, the emotional is an increasingly powerful political repertoire. The turbulent history of rationality and emotionality in understanding human and animal minds might indicate why it has taken social sciences scholars a while to consider the use of affective registers in their own work in this area. (Certainly most of the forms of writing here tend to the conventional, though perhaps the practice of writing early modern history allows a greater appreciation for the absurd.) However, it is not a social scientist, but the film-maker Siegel, who talks most eloquently about the moments of enchantment and disenchantment in her work with the rehabilitation of orang-utans in the forests of Borneo, and her ambivalences in channelling these in the practices of film-making (in Daston and Mitman, ch. 9).

Work from natural scientists is moving social scientists to reconsider the corporeal and affective capacities of the human animal. Nigel Thrift suggests 'the questions now being raised by biology press on that knot of interests formerly known as social' (2007: 226). There are hints at this in these chapters. Serpell quotes Steven Mithen, an archaeologist, who suggests anthropomorphism may be one of the defining characteristics of anatomically modern humans (in Daston and Mitman, p. 123). According to Serpell, the productive transformative qualities of anthropomorphism are central to processes of animal domestication and so to human cultural evolution. Challenges to the standardization of laboratory animals include growing knowledge of the richly affective

worlds of these animals, some of which we share. The limits to the mechanization of these animals, when acknowledged to share these capacities with humans, quickly become evident. To standardize fully the experiences of the laboratory animal would require the standardization of their human caretakers, including pets kept at home, hormonal cycles, food consumption and personal hygiene products.

Our biological, as well as our social, histories are inextricably bound up with our animal relations, so I will leave the last word on future work to an historian:

In writing histories without animals, we continue to make natural the ways of thinking that efface those animals, and we hide the fact that the production of meaning and order is the work of many, and not always, human agents. In this way, as well as ignoring animals, we not only mispresent ourselves and our pasts but limit our possible futures too. (Fudge, 2006: 192)

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Fabled Animals

Review of Michel Serres, *The parasite*, translated by Lawrence R. Schehr, introduction by Cary Wolfe. Minneapolis, University of Minnesota Press, 2007, pp. xxviii + 255. (All page references are to the French edition of *Le parasite*. Paris: Hachette, 1997.)

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In the case of any new publication of Michel Serres' classic fable, *Le parasite*, it is appropriate—indeed

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properly ironic—to begin with the cover. How is the work presented on this particular occasion? What kind of multiplicity is traced out by the (anticipated) circulation of this edition of the book as a species of quasi-object? The cover of any book indexes the composite nature of printed works as media of communication. Although the book is one of the oldest and most persistent of technological inventions—compare the evolution of media for the performance or distribution of music—it has become the vector of more than one mode of communication; books articulate money, knowledge, reputation and aesthetic form. And the specific aesthetic of a cover points to this multiplicity. Recto, a cover expresses a commercial aesthetic: colours, figures and images are tuned to the pitch of an imagined market, and are calculated to make a work stand out on a bookshop table or a merchant's webpage. None of this is a matter of indifference, even for those academic authors who do not aspire to the potential circulation of a trade book, and the prospect of good cover (that is, the right publisher, series, title, binding and marketing strategy) is liable to influence what is contained in the cover. Verso, a cover switches the book from a commercial economy to what Mario Biagioli would call an economy of academic credit. The eulogistic epigrams solicited from distinguished peers are addressed to the prospective buyer as warrants of quality and inducements to join those in the know (which prompts one to ask how many synonyms there can be for 'original' and 'significant'). At the same time, however, they are one of the currencies in which academic authors negotiate their positioning in the relations of prestation and counter-prestation that sustain an economy of credit and reputation.

The cover of this version of the English translation of *Le parasite*, which was originally published a quarter of a century ago, shows a somewhat sinister coil of nematode worm, fixed in medium whose graininess suggests laboratory lighting and optical magnification. According to Serres, the interesting thing about internal parasites is that they turn interiority into environment: 'L'exterieur, pour lui, est l'interieur d'un autre' (p. 350). In this image the worm is turned out of its environment and fixed in a medium that makes it observable *ex situ*, outside its host of choice. Here, the irony of parasitic economies becomes almost too easy. In representing the contingency of any distinction—or folding—between interior and exterior, the worm image both represents and performs the basic relation that holds together the diffracted form of the book.

Each of the economies of the book is, in relation to each of the others, 'beside the grain' (*para sitos*). In another sense, however, the image is less apt; and, with the theme of animality in mind, it is worth explaining why. The currently available paperback edition of the French text has a nineteenth-century engraving of a scene from La Fontaine's fable of the ant and grasshopper: scaled up, and dressed in bonnet, shawl and bustle, both arthropods appear as metallic, mechanical and uncannily humanoid creatures. Instead of a laboratory specimen we have a scene from a fable. A different imagined market, perhaps, and certainly a different sense of why animals concern us. So what kind of animal emblem is the parasite?

Le parasite can be read as an extended reconstructive commentary on the *Fables* of La Fontaine, interleaved with readings from the Bible, the works of Rousseau (who figures here as a set of variations on the personage of Jean-Jacques: refugee, *domestique*, contractarian) and Molière's *Tartuffe*. Crudely, the book is a retelling of a set of classic fables. The form of the fable is interesting for two reasons, both of which have to do with the sense in which animals concern us. First, fables are timeless. In the *Rhetoric*, Aristotle observed that fables were useful as rhetorical examples because they were readier to hand than any actual historical event, and because, even if they had not actually happened, they still got at the truth of things. Fables are timeless in the sense that they represent an origin—origin in the sense of emergence (*Entstehung*) rather than origin in the sense of foundation (*Ursprung*). Indeed, in his essay on 'L'invention de l'autre', Derrida suggests that the fable—represented in the specific form of an eponymous poem by Gaspard Ponge—is a kind of origination machine: a text that writes its own beginning and whose other-reference is primarily self-reference. In that sense, fables are what they are for Serres—forms in which human beings as communicative actants (re) invent their origins as beings that exist both in themselves and for themselves. Second, all of the classic fables concern animal characters. In the usual interpretation of the classic form these animals figure as ciphers for human qualities. The specific truth of each character—foxes are cunning, tortoises are slow, ants are industrious—is a human attribute predicated of an animal. Again, the fable is an exemplum that holds a moral truth about human conduct. Serres suggests that we read things the other way around: 'I would propose that we retrace our steps, that we go from animal habits to human manners, that we reverse our anthropomorphism' (p. 23). As

he puts it in a later work, *Hominescence*, fables are really about animals as such: ‘far from representing our human societies, the *Fables* take up and permanently mimic animal groups’ (2001: 116).

Reflecting on the question of biotechnology, *Hominescence* takes up the theoretical doublets of *Le parasite*: energy and information, economy and communication, animal and machine. In doing so, it returns to the form of the fable as a vector of origin, and there are reasons for suggesting that this form holds the most apposite lesson of *Le parasite*. Fables are also a kind of writing: parasitism in action. Stories are unceasingly told and retold, one story parasitizes another, information is re-animated by new communicative transactions: ‘Divines fables, plus l’auteur en écrit, plus encore il en reste à écrire. La production ne saurait tarir’ (p. 182). True to the genre, Cary Wolfe’s introduction to this new edition relates Serres’ reading of parasitism to other texts in which the fable has been relayed, translated, and diffracted: Gilles Deleuze, Jacques Derrida and, in particular, Niklas Luhmann. Crudely, one might say that the best stories in *Le parasite* have been ‘lifted’ by other contributions to the theory of parasitism. For Serres, a set of transactions that the Old European tradition theorized as modes of binary division—contract, exchange, communication, contest, appropriation, decision—always implicate a third term: for each binary term, ‘il existe un troisième avant le deuxième. Il existe un tiers avant l’autre’ (p. 116). Binary divisions are always triangulated by a term that makes their relation, and divisions can be made or observed from a multiplicity of positions. If we read the logic of parasitism as the logic of the excluded third—the blind spot of any observation or operation or the irritant that is metabolized into any seemingly binary transaction, order from disorder—then we might say that this ternary scheme is more thoroughly formalized in Luhmann’s theory of functional differentiation. And if we take the logic in broader and less formalized terms, as a theorization of social and communicative action in terms of *occasio* rather than *causa*, then the most popularized version of the fable is probably Bruno Latour’s story of actants and networks. In particular, much of what was concentrated in Serres’ richly imagined figure of the quasi-object—that is, the ‘thing’ whose circulation calls subjects into being by predicating specific attributes of them—is narrated anew in Latour’s account of Gabriel Tarde as the forefather of Deleuzian *machinisme*. In his foreword to the current French edition,

written some twenty years after the publication of the first edition of *Le parasite*, Serres observes that he was tempted ‘to rewrite the book in a quite different style, if only to be understood’ (p. 12).

Rather than renegotiate the relation of Serres as precursor, foil or mediator to any of the other proper nouns through which the fable of the parasite is articulated, it might be more interesting here to focus attention on the recurrent form of the animal parable. The basic question of *Le parasite* and *Hominescence* is that of origins: in the former, the question is how communicative intersubjectivity begins, and that question is developed in the latter book, which is introduced as ‘une reconstruction de nos cultures et de nos philosophies’ (2001: 16). The logic of parasitism is such that origin is never straightforward, always in the making: parasites precede, they make the relation, but paradoxically they do so only because the relation grants them this founding role. For Serres, man is what he was for Nietzsche—the animal who learned to make contracts—but contract is taken in the broad sense of any kind of triangulated transaction. For present purposes, what is interesting is that this reconstruction of the origins of human sociality is both a performative effect of the fable and a moment that implicates the relation of humans to animals.

We can begin with a quite familiar story of origin. *Le parasite* weaves a narration of Hegel’s philosophical parable of lord and bondsman (*maître et esclave*) into its retelling of La Fontaine’s fables. Serres observes that the dialectic is not a relation between individuals or singularities, but a relation of one to a multiplicity. To begin with, masters are few and slaves are many, and the few extract and direct the value created by the many. But masters do not act in person; having acquired a sense of their own mortality they retire behind a host of representative agents (*lieutenants*). Symmetrically, slaves acquire their own delegates—revolutionary leaders or class representatives—who are themselves masters in a relation of one to many: ‘this particular slave becomes a master, but far from becoming the master of the master he becomes another master of the slaves’ (pp. 111–112). By multiplying mastery, or the relation of one to a multiplicity, this reading reveals the parasitic logic of mastery. Masters are not only multiple, they are permutable. According to the logic of parasitism all relations are ternary, and the configuration of the triangle—host, parasite, interceptor—is mutable depending on how it is made or observed. The ‘office’ of the master is the

face of a quasi-subject, a subject whose substance is an effect of the attributes that are predicated of it by relations of irritation and observation: 'There are no punctual points [*instances*]. Or rather instances, systems, or divides [*rives*], can themselves be analyzed as exchangers, vectors [*parcours*], translations, and so on' (p. 134). So what Hegel figures as rivalry is actually an effect of ongoing derivation: 'the logic of the battle is that of the excluded third' (p. 394). Mastery, if that is still the right word, is an attribute of the parasitic (or rhizomatic) relation that permutes the offices of mastery and servitude, or of subjective 'offices' in general. Indeed, one might say that 'mastery' is always outside, as an attribute of the excluded third or of the environment from which any binary form is precipitated. And only a fable—'seule la fable et sa mêtèmpsychose' (p. 117)—can reveal this mode of ongoing permutation, provided one knows how to read it: 'You might fail to recognize the parasite, precisely because it runs through the fable and courses through the system, magically transforming itself' (p. 117). One of the recurrent themes in Serres' tale of parasitism is that, in the absence of a good theory of the relation, 'we remain in the thrall of poles and stations, substances and substantives', whereas the point is always to be between, or 'to bracket off centers': 'hence this book of metamorphoses: fox, lion, philosopher, imposter, no matter which. What we call subjects. That is the advantage of the fable' (p. 389).

Why should metamorphosis pass through animals as exemplary relays? What do animals have to do with Hegelian dialectic or with questions about the origins of self-consciousness? Serres' use of the fable complicates the fold by colouring it with the difference between the human sciences and the natural sciences. According to Serres, the fight for mastery and prestige that is represented in Hegel's dialectic of lord and bondsman reduces the relation between human subjects to an 'eternal return of musical chairs' (2001: 126) and it reduces human evolution to the logic of horde, hierarchy, and a crude drama of adaptation and survival. Humans reproduce the old dance of baboons and dingoes, and 'the dominator remains as dumb [*bête*] as the beasts he dominates' (2001: 126). This might not be the most interesting interpretation of Hegel—by way of contrast, Jean-Luc Nancy's Hegel is a philosopher of 'the risk of relation' and for Gillian Rose the dialectic is the process of 'seeing oneself being seen' by another—but for Serres the point is that communication transacts predicates

rather than beings, and it presumes 'modesty' (2001: 127) rather than mastery.

Fables re-inject the social into the biological in a move that echoes Foucault's formulation of biopolitics as the folding of life into history; biological beginnings are an effect of social thematization. In *Hominescence* Serres develops his account of biosociality by making a contrast between two human dwellings: 'our old dwelling in which life [*le vivant*] was more technological than we believe, and our new dwelling, in which technology is more alive than we recognize' (2001: 106). In Serres' version, our original dwelling was the farm as a highly local but intensely variegated collectivity; humans shared their lives with animals that were recognized not just in terms of their species attributes but also as individual characters. Humans engaged with the diversity of expressions that Darwin treated as animal emotions, and which Serres calls 'le pur cosmétique émotif' (2001: 108): the bodily semiotics of colour, gesture, stance and voice, each of these semiotic forms being intensely variable and modulable within and between species. This is the repertoire of the fable, and because fables are unscientific they get away from sociobiological interpretations of animal communication and develop a hybrid story of the origins of self-consciousness and communication. Animal characteristics are predicates rather than substances, so that what is in play has to do with 'cosmetics' rather than 'essences'.

Apprehended through the medium of predicates, the interlocutor figures not as the holder of a desired role but as an irritation or invitation to adjust one's own sense of self to what is revealed by another's sense of self. What interests us is not a first-order relation of mastery but a second-order relation to the world as we see it mastered by another—'la conscience double de l'autre et des choses dominées par lui' (Serres, 2001: 127). So what is learned through dealing with animals is the art of communication as a mode of reciprocal contingency. Here the classic fable divides in two. Read anthropomorphically, the fable ascribes to animals human qualities and competences that belong to the classical or pre-parasitical conception of subjects, objects and relations. La Fontaine's parables can be read as analogues of Hegel's story of lord and bondsman: animals represent humans as animals. Read counter-anthropomorphically, the fable is a story of the emergence of a communicative competence that sublimates human existence into '*sur-vivance*' (Serres,

2001: 155). In a sense, this is another take on the basic operation of *Le parasite*: 'the transubstantiation of being into relation' (p. 408), or the analogous operation of sublimating environment into communications, noise into information, or 'materiality into code' [*le matériel en logiciel*] (p. 381): communication is the medium of human existence. Biotechnology takes up this project of constituting attributes (quasi-objects and quasi-subjects) through communication. Adopting one of the narrative themes that accompanied the generalization of recombinant DNA technology, Serres suggests that biotechnology has given us the capacity to compile and recombine a full array of animal communicative competences: 'nous les "pouvons" presque toutes et d'autres encores, disparues et virtuelles' (2001: 156).

The point is not just that humans can endow themselves with animal competences, but that these competences are identified, appreciated and circulated within a network of parasitic relations of observation and communication, and, crucially, they are understood in terms of their animal origin. If the logic of *Le parasite* is essentially the logic by which materiality is sublimated into communicative codes and transactions, then biotechnology redoubles that logic by 'folding materiality', and by figuring biological 'signals' as a medium for the evolution of a 'diversity of ways of apprehending the world and communicating with it' (Serres, 2001: 153). Technically, biotechnology recruits the communicative competences of animals as enhancements of human competences; thematically, these competences become resources for the self-description of

human societies. But biotechnologically combined competences—reproductive, sensory, communicative, nutritive—are still understood in biological or animal terms. To paraphrase Marilyn Strathern, one might say that biotechnological enhancement gives us more humanity and more animality at the same time, more technology and more biology. So, far from being denaturing or dehumanizing in its effects, biotechnology actually completes the old program of 'co-domestication' (Serres, 2001: 153); indeed, by compiling animal characters 'science realizes the old program of the *Fables*, which knew how to metamorphose us into any species' (2001: 146). This may be only one strand in the fable of the parasite, but it suggests a specific approach to the question of how animals figure in the biosocial imaginary. So if we ask what kind of animal emblem the parasite might be, the answer is just the question in reverse form. Animal characters, as they are narrated in the form of the fable, emblemize the figure of the parasite as the being of any communicative relation: '[L]e parasite est une relation élémentaire, il est même l'élément de la relation' (p. 327).

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Now he has written a book, "The Social Animal," in order to assemble the evidence for a certain conception of the human mind, the wellsprings of action and the causes of success and failure in life, and to draw implications for social policy. The book is really a moral. Erica commits adultery once, and is overcome by shame, which provides a handle for theories of moral psychology. Harold's infant relations with his mother are used to illustrate theories of innateness and mental development; and so on. But the meat of the book is in its general claims about human nature and society. The main idea is that there are two levels of the mind, one unconscious and the other conscious, and that the first is much more important than the second in determining what we do.

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