
To my mind, the most compelling recurrent theme in *Star Trek: The Next Generation* is the Borg collective, a conglomeration of part humanoid-part cybernetic life-forms united by a single consciousness. The malevolent force of the Borg is bent on either destroying humans and other life forms it encounters, or absorbing them into its collective by a process called ‘assimilation’. In his book *Natural Born Cyborgs*, Andy Clark makes the improbable argument that a cyborg race is not a frightening futuristic science fiction, but an everyday reality: We are the Borg, and have been for some time. Although our reliance on technology has accelerated dramatically over the last century, the technological advances we have recently witnessed and those we anticipate are changes only of degree, not of kind. Humans have been machine-biological complexes since the dawn of our species. However, in marked contrast to the doomsday tenor of the Borg portrayed by the Star Trek series, Clark paints a sunny Disney picture of our cyborg nature, where the continually deepening intertwining of human life with technology is a fulfillment of our destiny, something to be embraced and celebrated rather than feared.

Andy Clark is a long-time exponent of embodied cognition, the idea that cognition should be understood as a property of situated physical systems, whose presence in and interaction with the surrounding environment plays a critical role in how cognition occurs. *Natural Born Cyborgs* picks up themes from Clark’s earlier work, applying them specifically to questions of the nature of the human mind, body, self, and society, and how best to understand our relationship with our technologies. Clark maintains that only by understanding ourselves as essentially integrated with our technologies will
we properly understand philosophical questions about our nature, or will we properly appreciate the brave new wired world we stand on the brink of. To facilitate our adoption of his view, Clark’s tries to debunk what he views as the real fiction, our common-sense view of ourselves as individual, purely biological, organisms. He urges us to embrace a paradigm shift in which we relinquish our view of the mind as pure intellect, and of skull and skin as delimiting us as organisms, in favor of an embodied view of mind and a notion of boundary that privileges the limits of information exchange over physical boundary.

The idea that we are cyborgs is not a new one, nor does Clark pretend that it is. He is straightforward about his debt to other thinkers, viewing the book as a reshaping of ideas already present in the literature. Clark’s unique contribution is to bring those ideas to life with vivid illustrations from real and imagined experiments, and to extend them by exploring the implications of recent technological developments for longstanding philosophical questions about human nature and identity. He pushes our intuitions further than those before him have, arguing that the claim that we are organic/technological hybrids is not metaphorical, not just a colorful and suggestive way of talking, but rather, the literal, scientific truth. In trying to convince us of this, Clark takes us on a journey from the beginnings of thought and language through a wide variety of cutting-edge technologies, drawing examples from arenas as disparate as animal studies and performance art. This whirlwind tour of science, sociology and speculation can leave a reader breathless, but thanks to Clark’s playful, wondering tone, it is the intellectual equivalent of a ride in the fun house, full of surprises, odd side-shows, and new discoveries.

Natural-Born Cyborgs is easily accessible to the layperson, and will be of interest to anyone fascinated by technology and the effects of technological advances on our daily lives. Clark’s writing is engaging and creative, and at its best when he draws surprising parallels between the natural world and the cyber world. For example, in explaining how companies like Amazon.com use records of our past histories to predict and influence our choices, he likens the information trails we leave in cyberspace to the behavior-influencing trails of mucus he notices left behind by the slugs in his mother’s garden. The book’s rhetorical force is due largely to such clever analogies, picturesque suggestions, anecdotes, and the laying out of a vision, rather than to explicit argument and careful elaboration of terms. For this reason, the book may be somewhat frustrating for the professional philosopher. One senses that Clark wants to convert us to, more than convince of, his worldview. Nonetheless, under all the fun, there is a serious kernel of philosophical argumentation.

As I see it, Clark’s main argument is the following. Humans naturally use tools, both manual and cognitive. Our tools, or technologies (Clark uses these
terms interchangeably), have been misunderstood as being separate from, and inessential to, who we are. Instead, they have been part of our ‘minds’ all along. Furthermore, all that being a cyborg involves is such mind-technology hybridization. We are, therefore, cyborgs by nature.

In order to convince us of this counterintuitive conclusion, Clark must do several things. First, he has to convince us that the type of technological integration required to be a cyborg is not implantation inside the skin – that a less physically intimate integration is adequate. Second, he must convince us that we are sufficiently integrated with our technologies to count as human/technology hybrids. These two things alone should be enough to prove his point. However, Clark goes further, trying to convince us that our boundaries, physical and mental alike, are not really where we think they are. By arguing that the boundaries of mind, body, and self are plastic, Clark makes a case that our technologies are literally internal to us, because a proper understanding of the boundaries of self shows them to be much broader than we naively think they are. Thus, it seems, Clark tries to hedge his bets, both deflating our concept of a cyborg, and inflating the boundaries of the self, where either strategy alone could suffice to make his point.

The popular image of the cyborg is one of machine parts integrated into living tissue. From the first actual cybernetic organism, a rat with an implanted osmotic pump, to the cyborgs of our imagination, such as the Terminator and Hugh (a member of the aforementioned Borg collective featured on the book’s cover), cyborgs have always been characterized as organisms with direct machine-neural interfaces that smoothly control and effect the system’s behavior. But if we adhere to such a concrete view of the cyborg, then, pace the small contingent of humans with pacemakers, cochlear implants, etc., how are we to understand the claim that humans are (let alone have always been), cyborgs?

Clark contends that by focusing upon the degree to which the machine parts are internal to our skin, we are bound too literally to our science fiction images of cyborgs, and mistake the essential features of cyborghood. What is essential is not implantation, but integration. Clark argues that despite the fact that his cat has an implanted identification chip, she is not a cyborg, while Clark himself, with his reliance on computer and cell phone technology, really is one. This is so because the cat’s implanted chip is functionally inert in the life of the cat (on the assumption that the cat never gets lost), whereas the cellular and computer technology profoundly shapes the life of the user. The take home message is that the degree to which a technology is physically internal to us is inessential to being a cyborg; what is essential is the depth of integration of a technology, where depth is measured by the degree to which a technology has the potential to transform our lives.
Clark’s example of the cat is well taken, as is his argument that the type of integration important for being a cyborg is not physical implantation, but functional integration. The rest of his book is devoted to showing that we are such functional hybrids, in mind and body. Clark goes about this by dispelling what he identifies as popular ‘myths’ about the nature of our minds and physical boundaries. Most notably, he disputes the notion that thinking happens in the head, and the idea that our bodies are bounded by our skin. He tries make plausible the idea that our concepts of mind, body, location, and autonomy are notions much more fluid than commonly thought. I think Clark views these myths as impediments to understanding our cyborg nature, and their dissolution as important steps in coming to grasp his main thesis. However, in my assessment the intellectual value of the book lies not in its promotion of the view as humans as cyborgs, but in its challenge to these core beliefs that in many ways shape the way we view ourselves as agents.

Let us consider the main myths Clark attacks. The first is the notion that our minds are our brains, and that thinking, therefore, happens in the head. Clark argues that we mistakenly identify mind with brain. As many psychological experiments have shown, the cognitive capacities that our bare brains have are really quite limited. However, humans externalize their thinking by using tools as cognitive scaffolding, and thereby extend their powers of mind. For instance, we can keep track of more information than our brain can keep in working memory by counting on our fingers, or by writing things down. Using concrete objects or symbols to stand for abstract information is one way in which we offload the cognitive burdens of problem solving onto things in the world. The human brain’s unique ability to use and design objects as tools, to mold itself to the available tools, and to mold tools to fit its needs, explains how our minds can accomplish so much more than our brains alone could. The old Cartesian view of mind as pure intellect doesn’t stand up to scrutiny. Thinking, Clark argues, is not just in the head. It is also in the world.

It is revealing that Clark does not view the hand axes of the stone age as the paradigmatic early tool, but language. The reader may balk at this initially: after all, tools are tangible objects, not abstract ones. Sticks and stones, wrenches and pulleys, wheels, computers, and machines are tools. Numerals and words are not. For instance, one might argue that counting is not a tool, but a cognitive system. Clark will both agree and disagree. According to Clark, tools just are, by and large, cognitive systems, and cognitive systems are tools. In fact, he contends that there is no clear distinction to be made between user and tool. As he says, we are “just tools all the way down” (p. 136).

Clark thinks that the machine-nature of our current computers is inessential to their status as technologies, and it is partly because we overestimate the
importance of concreteness that we are led to think that cyborgs must have implanted machine parts. By pointing to language as the first cyborg technology, Clark underscores the potential abstractness of tools, the importance of using external items to represent aspects of problems in approaches to problem solving, and the transformative potential of information-processing technologies. He makes a case for how language has endowed us with a means of objectifying our cognitive processes. By associating concepts with labels, we extend our own computational power. Clark illustrates this claim with a fascinating study done with chimpanzees, in which chimpanzees were taught to make sameness/difference judgments of pairs of objects. Chimps that were taught to associate the two judgments with specific concrete tokens (two types of plastic chip) were able to make second-order sameness/difference judgments about pairs of pairs (two ‘same’ pairs, or two ‘different’ pairs requires a second-order sameness judgment; a ‘same’ pair and ‘different’ pair requires a difference judgment), whereas chimps that were not taught to use the symbols for the sameness/difference judgments were unable to make any second-order judgments. Clark suggests that the real importance of language is not communication, but cognitive bootstrapping. Just as associating judgments with tokens enabled the chimps to make metajudgments, associating our concepts with words, and thus objectifying our thoughts, has enabled us to think about thinking. Clark makes a good case that our capacity for second-order thought is what sets us apart from other animals, extending our cognitive powers, allowing us to critically assess our thought processes, and enabling us to design better tools to help us approach problem-solving in still more effective ways. For Clark, then, language is the über-technology: it has enormous transformative power, it affects human information processing capabilities, and being a language user is, in a very real sense, part of what it is to be human.

Part of what is doing work in Clark’s picture is the view that we are not merely tool users, unchanged by our actions, but that in using tools we are ourselves transformed. This seems very plausible in the case of language, for instance. Some have speculated that the dramatic increase in brain size both enabled and was a result of evolutionary pressure generated by the demands and benefits of language use. Clark, however, argues that artificial tools also have shaped who we are. For example, the miniaturization and widespread availability of timepieces marks a profound moment of hybridization for our species: we do not merely make use of our ability to tell time, our society is driven and controlled by it. Drawing a parallel with the Borg here is irresistible: our obedience to the demands of time can be viewed as a synchronization in response to some common but distributed organizing force. But one has to question whether Clark is being too cavalier with his
examples – is the undeniable fact that our tools affect culture or social structure license to infer that they affect who we are as organisms? A positive answer to the question is warranted only on certain understandings of how to individuate cognitive agents. This question has parallels in philosophy of biology, in the debate about units of selection, and in the question of whether and to what extent the organism can be understood as independent of his environment.

Even Clark is clear that not every technology is equally incorporated by its user, and he has something to say about when a technology is to be considered part of an organism. Clark distinguishes between ‘transparent’ and ‘opaque’ technologies. Transparency, and its opposite, opacity, are relational properties that characterize the naturalness of use of a tool (including our senses and our limbs) or technology. Transparent technologies are those that, due to good design or training, are so natural for us to use that we don’t have to really think about them: they don’t get in the way of our goals and intentions. Clark argues that the more transparent the technology, the more seamless its integration with our intentions and actions, the more it can be considered part of us. He predicts that as the new frontiers in technological innovation create tools that are easier to use and more responsive to our needs and desires, the apparent line between tool and user will disappear. Our tools, in effect, will increasingly become part of who we are.

Clark tries other tactics to explode the myth that thinking is in the head, and in so doing, provides a fresh look at several timeless philosophical questions, such as what it is to know or to see. We typically think that what we know is information stored in our brains. However, Clark points out that when asked whether we know the time, we typically say that we do, even before we look at our watches. Instead of viewing this as an idiosyncrasy of our language, Clark takes this to be deeply reflective of a fact about how our knowledge and our cognition is externalized (or alternatively, of how our technologies have been internalized). What it means to ‘know’ something, Clark argues, is for us to have the answer readily available, perhaps embodied in some easily accessible technology. Just as we have externalized our cognitive boundaries (or internalized our tools) in the case of the wristwatch, so will we alter our boundaries with other technologies, when they become sufficiently transparent. I must admit, while clever, this example seems facile and not easily extendable, as much as I would love to claim that I know everything filed away in my hard drive. Rather than illuminating the nature of knowledge, this example seems to be merely an accident of how we talk.

More surprising still, yet more believable, is the assertion that seeing is also not in the head. Clark cites psychological studies of change blindness
and inattentional blindness that have been interpreted to show that we are not aware of the environment we find ourselves in in all its complexity, but that our seemingly rich perceptual world is rather a grand illusion, generated on the one hand by the limited capacity of our working memory stores, and, on the other, by the ready availability of information from the environment. Here the external world acts as a scaffolding for our perception, and literally becomes part of our experience.

Clark’s case for embodied cognition is easily the best part of his book. The importance of the external world in our thinking processes is often underappreciated, and recognizing this importance marks a significant methodological advance in the mind sciences. While he does a good job of motivating the view that being a cyborg doesn’t require physical integration, and that our minds are closely functionally integrated with our technologies, I still have some worries about his main thesis that we are cyborgs, where that is supposed to be true in some interesting sense. The worries stem from the lack of clarity in some of the central concepts adverted to in the arguments.

The distinction Clark makes between physical incorporation and transformative potential is an interesting and important one, but without further elaboration, the criterion of transformative potential is perhaps too broad to be appropriate for determining what is and is not a cyborg. For instance, one can imagine a medical development that would, with one treatment, reverse the course of Huntington’s disease. Despite the fact that such a treatment would have enormous transformative potential for people afflicted with the disease, I would still not be inclined to consider the users of that technology as biological-technological hybrids. Conversely, I might be open to thinking of people with hearing aids as cyborgs, even though in some flatfooted sense, the transformative potential is arguably much less in the latter case than the former. A better way to characterize what matters for cyborghood (and one to which Clark would likely agree) is one that stresses the ongoing functional role a technology plays in the life of an agent. While I suspect this is what Clark really means by depth of integration, the lack of clarity reflects Clark’s often impressionistic style.

Yet even this is not sufficiently precise. What sorts of functional roles must technology play in the life of an organism for it to be a cyborg? From the focus of the book one might think that technologies that play functional roles in cognition enjoy a privileged position, because of their transformative potential. This raises the possibility that many, if not all animals, are also cyborgs. For example, my dog affects his environment by marking his territory, a way of leaving information traces in his environment. He is likewise sensitive to traces left by other animals, and this affects his cognitive life and his behavior. Isn’t this territorial marking a type of cognitive and social tool, like a type of
‘language’, deeply integrated into the ecological lives of dogs, an intentional altering of the environment and sensitivity toward its alteration by others? If so, how far down the cognitive ladder does cyborghood extend? Are beavers cyborgs too? Ants? One suspects that if all animals are cyborgs on Clark’s view, then instead of telling us something about our nature that we didn’t previously realize, he has changed the meaning of ‘cyborg’. It is my impression that Clark does not mean his arguments for cyborghood to be extended so far – he suggests that humans are special among the species in being cyborgs, and stresses the highly plastic nature of our brains, and our unique capacity for symbolic manipulation. However, one wonders exactly what it is that sets us apart from other creatures that also manifest embodied cognition. By construing tools as broadly as he does, and by blurring the distinction between the cognitive operations on objects and the objects themselves, the uniqueness of human cognitive abilities in positioning us to make and interact with our tools seems to play an inessential role in Clark’s argument.

Cognitive integration may be an important subspecies of cyborghood, but certainly not the only one. Criteria for cyborghood should not exclude technologies that play noncognitive roles in our lives, such as pacemakers or mechanized limbs, for this type of biological/technological synthesis is paradigmatic for cyborgs. Still, not everything that plays a causal or even interactive role in the life of an organism should be sufficient to ground an argument for cyborghood. Clark suggests that we have hybridized with the time-keeping devices we have created. Now consider the natural parallel: the sun rises and sets each day, and deeply affects my cognitive and biological life, yet surely I am not a cyborg in virtue of how the sun influences my circadian rhythm, nor is it plausible to assert that we are human-sun hybrids.¹ So perhaps we need to sharpen what counts as a technology, in order to limit the extent to which the argument for cyborghood is extendable. For instance, we could stipulate that technologies must be artifacts. This leads to tensions with other of Clark’s examples, for language is arguably only a borderline case of an artifact, and many arguments for embodied cognition rely upon examples of how we use objects in the natural world as scaffolding for our cognitive operations. Clearly more needs to be said about criteria for cyborghood, both in terms of the type of functional integration required, and in terms of what counts as a candidate technology.

These considerations suggest, furthermore, that we recognize that arguments for embodied cognition are orthogonal to those for cyborghood. Embodied cognitive agents may or may not be cyborgs; cyborgs may be cyborgs in virtue of embodied cognition, or in virtue of noncognitive characteristics. Clark makes a strong case for embodied cognition; the case for humans as natural cyborgs is a harder sell.
Perhaps Clark recognizes this. The second half of *Natural Born Cyborgs* is devoted to showing that just as our minds extend beyond our skulls, our physical presence extends beyond our bodies, and ‘we’ need not be at the physical location as our bodies at all. In other words, Clark sets out to methodically destroy the commonsense notion of the self. I confess that I am not certain what the dialectical aim of this section is. Is it meant to bolster the argument for functional integration? Is it a vehicle for introducing intriguing new areas of technology to the reader? Or is it a novel way of arguing for his main thesis? I surmise it is the latter. Supposing we are unmoved by his arguments that physical incorporation is unnecessary for cyborghood, this part of the book aims to show that our own physical boundaries can expand to incorporate technologies. This is another avenue to argue for the claim that we are, quite literally, cyborgs.

With regards to our physical extension, Clark thinks we are in the grip of another myth (entertainingly labeled ‘The Myth of the Skinbag’), the idea that our physical extent is delimited by our skin. Just as our minds are not in our brains, we are not delimited by our bodies. Our bodies are just another example of a tool: they are transparent to us, because over time we have learned to use them without consciously thinking about it. We notice that our bodies aren’t always transparent to us when we watch an infant taking his first few steps, or when we try to develop a new skill. One of the reasons that we think of our physical bodies ending at our skin is because of the noticeable difference in transparency between our bodies and our technologies. However, Clark walks us through cutting edge research on wearable computing, ubiquitous computing, tangible computing, and virtual and augmented reality, to argue that it is only a matter of time until these technologies develop to the point that they will be transparent to us, and in becoming so, we will fulfill the vision of seamless integration with technology that is the staple of cyborghood.

Clark argues that our body image is as much a flexible construct as is our view of our minds. He gives as examples several experiments by way of which, with appropriate feedback, one can trick one’s brain into revising its body image in such a way that one thinks one’s nose has grown longer, or that one’s hand can move through solid objects. In the experiments in which body map is altered, it is crucial that we get a certain kind of systematic feedback from the environment, the sort of feedback that depends upon our actions in our world, the sort we would get if our body were otherwise. It is this feedback that explains how we come to use our tools in ways that seem natural and unthinking, as if they were part of ourselves. Through practice, and visual and kinesthetic feedback, the skilled among us come to ‘know’ where the end of their golf club is, or feel as if their skis are extensions of
their feet. Some technologies become ‘transparent’ to us, because they are designed in such a way that their use meshes with our goals and intentions.

Now surely we do have body maps, and our body maps exhibit some plasticity. We also have some conception of effective physical extension in the world, which may or may not rely upon similar mechanisms. Good drivers experience this every day, in that they are aware of and sensitive to the car’s boundaries. Clark seems to want to push this fact to the extreme, to convince us that, in effect, we become one with the car. You see where he is going: If there is no principled way to delineate the boundaries of our bodies, if our bodies can be extended beyond our “skinbag” to include mechanisms external to (the canonical) ‘us’, then we can be true to the image of the cyborg as part-man, part-machine, without insisting that the machine parts go inside our skin. Instead, the limits of the body can extend outward, to incorporate the machine parts with which we interact.

It is just a short jump from viewing our bodies as in principle extendable, to viewing our location as such. If we can integrate with technology that is not embedded in our skin, why should it have to be proximal to us? Clark sketches out scenarios of telepresence in which our physical presence extends over space to other places, even other planets. As Clark says, “we are essentially embodied agents, but the form that embodiment takes is not fixed.” He sketches scenarios where, with appropriate feedback, we can manipulate other people’s bodies, effectively ‘sharing’ a limb with someone else. Though futuristic, given Clark’s worldview, it is not impossible. If we accept Clark’s argument that our personal boundaries are really plastic, ought we conclude that there are no personal boundaries at all? What does it mean to telemmanipulate someone else’s arm, if by doing so we extend outer personal boundary to incorporate them? Much like Dennett, Clark deconstructs the common-sense notion of the self, writing: “The notion of a real, central, yet wafer-thin self is a profound mistake. It is a mistake that blinds us to our real nature and leads us to radically undervalue and misconceive the roles of context, culture, environment, and technology in the constitution of individual human persons. To face up to our true nature (soft selves, distributed decentralized coalitions) is to recognize the inextricable intimacy of self, mind, and world” (p. 139). Clark’s argument seems to lead us down a path, at the end of which there is no such thing as a self or person, only one single macroorganism, with more or less differentiated parts. If we really accept his argument in the spirit it is offered, we are more like the Star Trek Borg than anyone – including perhaps Clark himself – has supposed. By participating in the World Wide Web, for instance, we become one information processing node in a hive of interconnected processors. Only at times semi-autonomous, we are important links in the back-and-forth flow of information that constitutes
the entire wired system, one huge, widely dispersed cybernetic organism. But surely that is not the truth about human nature, is it?

To avoid this conclusion, we ought to recognize a major flaw in this part of the book: To make his argument work Clark needs to argue that our boundaries are plastic and extendable, but he really only argues that our conception of those boundaries is plastic. He makes a convincing case that our self-concept is plastic: my concept of the limits of my body’s physical extension is malleable, my concept of my location can be affected by the spatial extent of my causal reach, certainly my concept of mind is malleable enough to include objects outside my head, and my concept of self is elusive at best. But showing that my self-concept is plastic is not the same as showing that I, as an organism, lack distinct boundaries, at least not without other substantive metaphysical commitments. So perhaps Clark is not giving us the literal truth after all, but a just one of a number of ways of thinking of our place in the world.

The weakest part of the book is in the final chapter, where Clark considers some of the dangers that attend the infiltration of technology in all aspects of life. Having sketched out the promise of future technological developments, when wearable computers obviate the need for remembering things, when web agents track our preferences from early childhood, predicting our future desires, interests, and needs on the basis of statistical data, when being somewhere is just a phone call away, and when the line between biological and artificial intelligence becomes fuzzy, Clark takes a moment to reflect upon the wisdom of our current trajectory.

Clark considers the following very real problems that will face a world that embraces its technological future wholeheartedly: (1) the world will be increasingly stratified into the technological ‘haves’ and ‘have-nots’; (2) because so much personal information will be tracked, we will face an overwhelming loss of privacy; (3) by displacing decision-making upon our technologies, we will lose control over our lives and our environment; (4) increasing use of information-processing technologies will lead to information overload; (5) increasing interaction with technological cognitive agents will result in alienation from our fellows; (6) technology-directed focusing of interest will result in a detrimental and artificial narrowing of our interests; (7) the system will be increasingly vulnerable to deceit and misuse; (8) there will be a lack of quality control; and (9) people will suffer from a sense of disembodiment or isolation.

Some of these issues, I think, are real worries. Clark paints some very disturbing pictures, suggesting that he too is well aware of them. Nonetheless, in his characteristic upbeat manner he dismisses them all with the Pollyannish confidence that in foreseeing the danger, we can avoid, or at the very
least, deal adequately, with the problems. Because of our unique brains we can, after all, design our world as we see fit. In dismissing these problems so lightly, one has to wonder whether he adequately appreciates their significance and potential destructiveness, and if he has properly weighed the benefits of his envisioned future with its costs. At his worst, Clark seems beholden to the following thin-sounding mantra: “We are natural-born cyborgs; therefore the spread of technology and its ever-deepening effects on our lives is merely the fulfillment of our true nature.”

It is simplistic and naive to identify the natural with the good. It is true that as a society, we have embarked upon a road of technological progress. It is not so clear, however, that we need to embrace all the avenues this progress might take, or that we ought to be so sanguine about the course we are now on. I am sorry to sound a sour note in the face of Clark’s ebullient enthusiasm, but in championing the cyborg aspects of human nature he seems to have forgotten some of its more unsavory characteristics. It is these, coupled with the power novel technologies can afford, that color our cyborg dreams darkly, and whether we are or are not natural-born cyborgs, they give us reason to worry.

Clark’s book provides plenty of food for thought, and has influenced my views on how technologies shape our minds and our worlds. However, I remain with the intuition that cyborgs really need to have machine parts, or they are not cyborgs. That my body really is bounded by my skin, though I can have deep and important functional interactions with other objects and agents in my environment. Perhaps this reader suffers from a failure of imagination, but sadly I remain much in the grip of the common myths with which I started. Ultimately, however, whether or not we accept Clark’s thesis that we are cyborgs is almost beside the point. The value in the book lies not in the conclusion, but in the journey. I, for one, could not help but be impressed by appeal of embodied cognition, and the wealth of information and compelling examples that Clark brings to bear in the course of the book. My prediction: You will be assimilated.

**Acknowledgements**

Many thanks to Bernard Nickel and Jim Moor for helpful comments and clarifying discussions.

**Note**

1 This example is due to Bernard Nickel.