

much as they tolerate little dissent, except over minor matters of detail. One of the most articulate of these thinkers is MIT psychologist Steven Pinker, who has appropriated large chunks of modern psychology for his agenda. He has argued that human nature, including the intellect itself, is fixed in genetic concrete. Thinking, social behavior, emotions, and language are predetermined in their development, form, and usage, down to a startling level of detail. For Pinker, we don't just have emotions. We have them for very specific reasons, and they play themselves out in predictable scenarios that are culturally universal. We don't just see. We parse the visual world in a very particular manner. He also claims that we have a specialized social intelligence, with built-in cognitive tools, such as cheater detectors, built into our brains, which can quickly recognize people who do not give a good return on emotional investments. These capacities are wired in, complex, and completely unconscious and automatic. They have to be, to work so efficiently. (W. W. Norton)

To Hardliners, the innateness principle extends even to the highest games of the intellect. We supposedly carry around a whole armamentarium of unconscious cognitive weapons that come into play, automatically and unreflectively, whenever we engage with society. These weapons include analytic thought and language, which originated in what they call the "cognitive arms race" that started with our ancestors' first great brain expansion, two million years ago. Hardliners don't deny consciousness, but they trivialize it. They reduce its role to that of a facilitator, like those that run executive training seminars. Facilitators don't say anything substantive themselves. They just grease the machine and keep things going smoothly. But the real work is done by others. If we are to take this idea seriously, it follows that our human mentality has been shaped in great detail by unconscious forces, and we are powerless to do anything about it. According to their scheme of things, all that prating religious nonsense about moral self-discipline, denying the flesh, turning the other cheek, gaining control over one's base desires, not coveting thy neighbor's wife, and so on is bound to fail because it contradicts our biology.

Of course, this is exactly what Darwin feared might happen to his ideas. Victorian gentleman that he was, he delayed the publication of his first book on evolution for two decades, and his ideas on human origins were held back for another fifteen years, because he feared where they might lead. But most modern neo-Darwinians do not worry about any of this. They have seized what they perceive as the moral high ground. It is irrelevant, they claim, whether Darwin would have approved their agenda. He was a man of the nineteenth century, and here we are in the twenty-first. In the past many scientists were frightened of the places to which their observations

# A MIND SO RARE

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could lead. Galileo, like Darwin, was one of a long line. But ultimately the truth wins out. We cannot put off facing reality forever, even if we fear our own creations.

These and countless other examples clearly illustrate the vast difference between what we can achieve with and without conscious deliberation. The evidence for the importance of consciousness seems undeniable. At the very least we must draw upon our limited conscious capacity to carry out virtually any complex mental activity, including most forms of learning. Several generations of scientists have tried to prove that we can learn without consciousness, and this is possible, but only to a very limited degree. For example, we can learn not to fall out of bed. In this case, learning must occur unconsciously since we usually wake up only after we have fallen out. We must have registered the negative reinforcer (the shock and pain of hitting a hard floor) while still asleep and somehow modified the way we move in bed the next time we are sleeping, to avoid falling out again. But this kind of unconscious learning occurs only in light sleep and is extremely limited in its application. Most learning requires the concentration of all our conscious resources on the task at hand.

Another area of debate has been the question of subliminal, or unconscious, perception. On the one hand, there are those who do not accept the evidence for subliminal perception. On the other, there are those who believe that it exists, like Tony Marcel, a British psychologist who has had to go to exotic lengths to come up with any data that can pass scientific muster. Ariën Mack and the late Irvin Rock have recently argued that we cannot learn to perceive even the simplest object without dedicating conscious attention to that end. Even Marcel will concede that most of the time, perception demands considerable conscious involvement on the part of the observer. Moreover, if unconscious recognition is a marginal phenomenon, unconscious thought is even more marginal. Conscious engagement seems vital to any complex or fast-moving cognitive activity. The claim that children usually learn language unconsciously (an idea well loved by Chomskians and neo-Darwinians alike) is patently absurd. Infants cannot even learn to perceive vowels and consonants without directing their conscious attention toward the relevant aspects of the world. Once these sound patterns have been learned, their perceptions of them will become automatic, but the learning of new sounds and new words is never easy. Infants must deal with these challenges consciously. Indeed, this is the methodological assumption underlying most modern infancy research on language. Peter Juszyck has used the child's shifting patterns of attention to demonstrate that infants learn much more about language and at a much younger age than was previously believed. By tracking how they allocate their conscious attention, Juszyck found that infants scaffold their language learning on a chain of learned attentional linkages that are acquired very early. While they may not yet have the representational tools to reflect on what they are doing, they are already fully conscious, deliberate, self-assembling knowers.

In fact, the apparatus of speech seems to operate outside the reach of consciousness, and this principle extends to grammar as well. We are not aware of the grammatical processing of speech when we listen to it or when we produce it. Grammar usually does its work unconsciously, and we are generally not aware of its action, either when we construct sentences or when we parse the sentences of others. Moreover, when children acquire language, they master grammar very rapidly, without specific instruction on many points, and at a faster rate than the growth of their other skills or general knowledge. This suggests that grammar is embedded in a special module, designed to optimize language acquisition, rather than identified with general awareness.

But if language, including grammar, is indeed modular, then it follows from Fodor's own principles that anything understood in terms of language must be essentially unconscious in origin. To say the least, this has major implications for those who wish to believe that consciousness is entirely mediated by language. Fodor realized this and left himself an escape hatch. He relegated the most abstract aspects of language to cognitive limbo, allocating them to both the central processor and the language module. However, most neo-Chomskyan theorists of language do not like this messy solution and have not availed themselves of it.

Let me repeat that statement for emphasis: Fodor's proposal implies that *language is not conscious in its generation* because it originates in a mental module. It also follows that we only become conscious of incoming language after the fact; that is, after our modules have decoded it. This includes even our own inner voices. But how can this be? How can language be simultaneously a precondition of consciousness yet unconscious in its own generation? Indeed, this is a bit of a problem, and here is where some further logical gymnastics come in handy. The solution offered is roughly as follows. The contents of awareness are manufactured exclusively and indirectly by inaccessible modules in the brain, whose activity must always remain unconscious. They are responsible for determining every aspect of conscious experience, whether sensory or linguistic. If we combine this idea with the notion that language provides the material of fully fledged consciousness, it follows that awareness is epiphenomenal and cannot play an active role in anything important in cognition.

In other words, for these theorists, consciousness is an epiphenomenon, and most of our cognitions, including those mediated by language, are unconscious in origin. As soon as they concede that language should be filed away in a Fodorian module, the Romantics among the language-as-consciousness gang are in deep trouble. If language is unconsciously generated, and if the conscious mind gets to view the action only after it has already unfolded in the specialized modules of the brain (and even then only selectively and occasionally), it follows that we (our conscious selves) do not really play much of a role in generating language. So when I talk to you, and you talk to me, my unconscious is addressing your unconscious. Our unconscious modules are engaged deeply in conversation. Our conscious selves are occasionally allowed to peek over the transom but never permitted to join in. This has oddly Jungian resonances, and given the widespread contempt for psychoanalysis in these circles, it makes for a delicious irony indeed.