moravec's paradox

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Moravec's paradox is the finding by artificial intelligence and robotics researches that, according to standard notions, cognition requires very little processing, yet sensory skills require huge computational resources.

Moravec process evolution as one possible solution for the contraction. All human abilities are executed organically, with natural selection-designed equipment. Natural selection has tended to preserve design enhancements and optimizations over the course of their evolution. Natural selection has had more time to refine the design of an older skill. Because abstract cognition is a relatively new concept, we should not expect it to be very efficient in its implementation.

This argument could be expressed succinctly as follows: 1. The difficulty of reverse-engineering any human skill should be roughly proportionate to the length of time the skill has evolved in animals. 2. Because the first human talents are mostly unconscious, they appear to us to be simple. 3. As a result, we should expect talents that appear to be simple to reverse-engineer to be difficult to reverse-engineer, whereas skills that involve effort may not be difficult to reverse-engineer at all.

Leading researchers in the early days of artificial intelligence research frequently anticipated that they will be able to develop thinking robots in a few of decades (see history of artificial intelligence). Their optimism arose in part from their success in building logic-based programmes, solving mathematics and geometry problems and playing games such as checkers and chess. People find logic and algebra difficult, and they are thought to be a sign of intelligence. Many renowned researches anticipated that once the hard problems were solved, the simple ones of vision and commonsense reasoning would follow.

Early AI research, according to Rodney Brooks, "better descrined intelligence as the activities that highly educated male scientists found tough", such as chess, symbolic integration, proving mathematics theorems, and tackling complex word algebra problems. "Things that children as young as four or five years old could do with ease, such as visually discriminating between a coffee cup and a chair walking around on two legs, or making their way from their bedroom to the living room, were not considered intelligence-requiring activities."

Brooks would then take a new approach in artificial intelligence and robotics research as a result of this. He made the decision to create intelligent machines "There is no awareness. It's only a matter of perceiving and acting.