

CSC416 Foundations of Artificial Intelligence

Beyond AI Study/Discussion Guide

Chapter Title: The New Synthesis

Top Ten Salient Sentence Blocks

1. “It is ironic that for the better part of the twentieth century, as the physical sciences triumphed and the popular view of the age was as an enlightened and scientific one, that the two main branches of science whose proper study was mankind were in the doldrums of a dark age.” (p. 103)
2. “What happened is that Mead’s respondents, young teenage girls, had indulged in another human universal: telling tall tales to the stranger.” (p. 104)
3. “It was perhaps because the social sciences were so strongly set against the evils of social Darwinism that psychology resisted, for a century, using what had become the central organizing principle and the most powerful tool for the rest of biology: the theory of evolution by natural selection. Even so, it seems a bit absentminded to forget your most powerful tool when tackling your hardest problem.” (p. 106)
4. “If the brain is an adapted organ, then, ignoring its structure for the moment, what is its function? The answer is simple: it’s a computer.” (p. 108)
5. “What computers do, as seen from the outside, is to receive signals—information—and then to produce other signals.” (p. 108)
6. “In between the input and output, the physical form the computation takes doesn’t matter. It can be gears and shafts, wires and relays, thousands of clerks with abacuses handing index cards back and forth, strings, pulleys, and Tinkertoys, silicon microchips—or neurons.” (p. 109)
7. “So if the brain is a computer, what’s the mind? This is one of those vexing philosophical questions that goes back to antiquity. We are finally in a position to give an answer: it’s the computation.” (p. 110)
8. “When I was a schoolboy, my teachers told me that living cells were composed of protoplasm, a substance with mysterious properties. They were slightly behind the times; there was a new understanding of the molecular machinery inside the cell, but it hadn’t filtered down into grammar-school biology textbooks yet.” (p. 110)
9. “Habitat selection: we’ve felled much of North America’s forests and planted grass to make it look more like the African savanna.” (p. 112)
10. “A human, too, is a ‘mere’ machine; there is no more free will to be found in DNA, ribosomes, and mitochondria than in gears, shafts, and pulleys.” (p. 117)