

CSC356: Abstract machinery and Generative Processes

First GEB Reading Assignment

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Ten bits of knowledge from “Introduction: a Musico-Logical Offering”

1. The initial significance of the piano was that it can play notes simultaneously at different volumes.
2. The idea for Charles Babbage’s analytical engine came from a jacquard loom.
3. A canon is set apart from other types of compositions by the rule and constraints that govern it’s creation and make its different parts isomorphic.
4. The canon “Canon per Tonos” repeats a single melodic structure which modulates from one key to another and eventually loops to it’s beginning, but in a higher octave. It can then be repeated over again in the new octave seamlessly.
5. The geometric figure on the top of the tower on the right in “Waterfall” by M. C. Escher is three intersecting octahedrons.
6. The geometric figure on the left is three intersecting cubes.
7. There are much easier way to describe Russell’s paradox than “Does the set of all sets that do not contain themselves contain itself?”
8. In 1997 Deep Blue defeated Gary Kasparov in chess. I thought it was longer ago than that.
9. Hofstadter was conflicted about whether or not to change the gender of some of the book’s all male cast. He decided against it, but in the french edition Mr. Turtle becomes Madame Turtle because the french word for turtle is gendered.
10. The looping nature of M. C. Escher’s “Drawing Hands” mimics the looping nature of the Epimenides paradox.

A brief reaction to “Three part invention”

The “Three-Part Invention” was playful and humorous food for thought that riffs on themes of self reference, paradoxes, and the emergence of ideas in different forms. Zeno’s presentation of a two part invention that mimics achilles, Mr. Turtle, and their environment specifically illustrates the tangled-hierarchy that Hofstadter emphasizes as a central theme.