This book arose from my attempt to understand the true

state of affairs in artificial intelligence—what computers can

do now, and what we can expect from them over the next

decades.

What do we actually mean by “general human” or even

“superhuman” intelligence? Is current AI close to this level,

or even on a trajectory to get there? What are the dangers?

What aspects of our intelligence do we most cherish, and to

what extent would human-level AI challenge how we think

about our own humanness? To use Hofstadter’s terms, how

terrified should we be?

The dream of creating an intelligent machine—one that is as

smart as or smarter than humans—is centuries old but

became part of modern science with the rise of digital

computers.

Most people in artificial intelligence trace the field’s

official founding to a small workshop in 1956 at Dartmouth

College organized by a young mathematician named John

McCarthy

“Because we don’t

deeply understand intelligence or know how to produce

general AI, rather than cutting off any avenues of

exploration, to truly make progress we should embrace AI’s

‘anarchy of methods.’

Symbolic AI:  
General Problem Solver (GPS)  
A symbolic AI program’s

knowledge consists of words or phrases (the “symbols”),

typically understandable to a human, along with rules by

which the program can combine and process these symbols

in order to perform its assigned task.

Subsymbolic AI

A symbolic AI program’s

knowledge consists of words or phrases (the “symbols”),

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which the program can combine and process these symbols

in order to perform its assigned task.

An early example of a subsymbolic, brain-inspired AI

program was the perceptron, invented in the late 1950s by

the psychologist Frank Rosenblatt. influential great-grandparent of

modern AI’s most successful tool, deep neural networks.  
  
His invention of the perceptron algorithm was the founding stone of the current day deep neural networks. Nevertheless, the book published by Minsky and Papert proved that Rosenblatt’s version of perceptron algorithm can solve only those problems that are linearly separable. They went onto provide a remedy for that i.e., by adding an additional layer in between the input and output layer called “multilayer neural network” but they couldn’t come up with a learning algorithm for that multilayer neural network.

Their speculation on “Multilayer neural networks” was in a way, a final nail in the coffin for the Rosenblatt’s perceptron model. This later, led to a brief period of “Winter” in AI famously called “AI Winter” due to lack of a learning algorithm until the late ’70s when backpropagation algorithm was discovered.   
  
Then in the 1990s came the IBM’s Deep-Blue Chess playing system which got a lot of skepticism on its genuity but eventually people accepted it. As John McCarthy lamented, “As soon as it works, no one calls it AI anymore”.

**My running commentary**

He fears that AI might show us that the human

qualities we most value are disappointingly simple to

mechanize. As Hofstadter explained to me after the

meeting, here referring to Chopin, Bach, and other paragons

of humanity, “If such minds of infinite subtlety and

complexity and emotional depth could be trivialized by a

small chip, it would destroy my sense of what humanity is

about.

either very close or no way near and we ourselves have a very limited understanding of humanness

Narrow and general, weak and strong (Page 45)

Singularity (page53)- first para