# Guide to the Reading
## *How We Learn:* Chapter 9

### CSC131 The Beauty & Joy of Computing

### 06 September 2018

1. In major league play, how much long does it take for a pitch to reach the batter? How much time does the batter need to make the decision to swing or not swing?

2. Benedict Carey compares the performance of human chess players to chess-playing computers in what way? Does this comparison surprise you?

3. How are chess masters and novices alike? How do they differ?

4. Benedict Carey refers to the work of Herbert Simon in *How We Learn*. Professor Simon taught at Carnegie Mellon University. He was a remarkable person. Learn a little more about him by reading on the Web.

5. "S-R" is an abbreviation for what?

6. Eleanor Gibson encountered discrimination of one kind and studied discrimination of another kind. Explain.

7. Classification is one of the principal applications of machine learning. Read the quotation by Eleanor Gibson that appears at the bottom of page 183 and the top of page 184 in *How We Learn*. Although we are just beginning our study of machine learning, can you see a connection between what Gibson wrote about 50 years ago and what computer scientists are building today?

8. Philip Kellman built a PLM ("Perceptual Learning Module," a term that he invented) to help pilots develop which skill?

9. Philip Kellman collaborated with with NASA's Mary K. Kaiser in an experiment with Kellman's PLM. They found that that pilots could develop their skills faster with the PLM than without. How much faster?

   Also, where is NASA's Ames Research Center?

10. Other experiments have demonstrated that physicians can also improve their skills through the use of PLMs. Give two examples.

11. Benedict Carey's daughter built a PLM for him. The book does not describe exactly how she did this, but it looks like a little knowledge of HTML and JavaScript is enough to get the job done.

    What skill did Benedict Carey develop with his PLM?

12. Benedict Carey borrowed ideas from more than one psychological experiment when he and his daughter built their PLM. What other research (in addition to Kellman's) inspired him?