

9.14 Homework 1, due before Lecture 6.

Classes 1-5

- 1) What functions could be served by axons with many boutons en passant? Describe two possibilities. (Ch 1)
- 2) Give two examples of behavior patterns that a reflex model of behavior (or, more broadly, an S-R model) cannot adequately explain. (Ch 2)
- 3) What is the axons-of-passage problem one must deal with when using stains for axon degeneration for the tracing of axonal pathways and connections? What axon tracing technique overcomes this problem? (Ch 2)
- 4) Do web searches to find evidence of a very primitive chordate that is more advanced than amphioxus but less advanced than animals resembling lampreys and hagfish. Try searching for “Haikouella.” Fossils of this species were found in China in recent years. Write a one-paragraph description noting similarities to, and differences from, the lancelets (amphioxus). You can find pictures using Google, and scientific reports using Google Scholar. (Ch 3)
- 5) Do web searches for information on the brains of cynodonts (mammal-like reptiles, the group from which the earliest mammals evolved). Write one or two paragraphs on findings of interest, using papers found using Google Scholar. Describe only major points. Start by explaining how a fossil skull can tell us anything about the brain. (Ch 3)
- 6) Describe the three major expansions of the vertebrate forebrain depicted in chapter 4.

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9.14 Brain Structure and Its Origins

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