**Instructions**: From the paper entitled *Expanding evolutionary neuroscience: insights from comparing variation in behavior* read the section entitled *﻿a brief history of study systems in neuroscience: why the time is right to consider clades* and answer the following questions.

**Questions**:

In your own words:

1. Describe what Krough’s principle and how biologists may use this principle when designing experiments.
2. Do the author’s think that current neurobiologists are applying Krough’s principle? Why or why not? What limits or facilitates a biologist’s decision to apply Krough’s principle?
3. Aside from Krough’s principle, why do the author’s encourage researchers to “diversify the species [used] in neuroscience research”?
4. One common misconception of evolution is that it always results in progress (i.e., organisms are always getting better through evolution; to see more common misconceptions check out: <https://evolution.berkeley.edu/teach-evolution/misconceptions-about-evolution/#a3>). In this paper, the authors state researchers should use an evolutionary framework when considering neurobiology questions because:

“﻿evolution has had far longer than any laboratory experiment to ‘‘sample’’ cellular and molecular solutions for regulating behavior in different contexts, studying the diversity of solutions it permits can address the extent to which behavioral repertoires are promoted or constrained by the underlying features of their nervous systems, a fundamental question in neuroscience.”

Do you think this statement perpetuates the misconception of evolution? Why or why not?

1. Describe why the authors suggest using clades to study questions in neurobiology?