

Inclusive Teaching Intermediate Badge Project **Kimberly Chiew, Spring Quarter 2023**

Class: Affective Neuroscience (PSYC3262/4262) – 18 students, split between upper-level undergraduate psychology majors and psychology graduate students (mostly from CAHSS Psychology PhD program but also from Graduate School of Professional Psychology)

Goal: Have students better understand emotion processes in the brain and how these processes might vary by contextual parameters, including age, sex and gender, past experiences, culture, and stress. Human neuroscience has historically been limited in its consideration of such contextual variation, but improved characterization and understanding of such variation is essential for full understanding of mental and brain processes in diverse individuals as well as informing appropriately tailored interventions for neurological and psychiatric conditions.

Approach: I found it challenging to consider how to better incorporate inclusive themes into the present material. *Affective Neuroscience* is a course where students must master complex anatomical and highly technical neuroimaging methods knowledge, learn to read primary sources that draw on both of these domains, and integrate this with psychological and emotional theory. I wanted to maintain a class structure where students could develop this knowledge foundation as well as incorporating consideration of contextual variation without getting overwhelmed. This is particularly relevant given the nature of the course as an undergraduate/graduate split course with wide variation in students' prior neuroscience knowledge. I spoke to Dr. Becca Ciancanelli, who also teaches highly technical courses with a lot of foundational knowledge (in chemistry), for advice and elected to add a relatively-constrained, additional dimension to the existing major written assignment for the course.

The default option for this assignment is a literature review and synthesis of a topic in Affective Neuroscience (students also have the option of developing a customized assignment format). The additional dimension I added required students to include a section considering their topic or phenomenon and how associated neural mechanisms might potentially vary with at least one *population- or context-level* factor (age, gender, early-life adversity, cross-cultural variation, psychopathology, etc.) and discuss relevant scientific evidence *or the lack thereof in current literature*. When discussing this assignment and this required dimension in class, I introduced recent literature that has highlighted the lack of diversity in human neuroscience work (i.e., Dotson & Duarte, 2020, Ricard et al., 2023) and the important variation that is obscured as a result.

Assessment: Students were assessed on their exploration of the dimension of contextual variation as one of multiple elements of their written assignments. Students explored a wide range of topics in affective neuroscience and sources of variation in their assignments, including:

- Prosocial behavior and cultural variation
- Alterations in dopaminergic systems and reward prediction in ADHD
- Punishment-motivated cognitive control in younger vs. older adulthood
- Neural basis of music processing and music therapy benefits in emerging adulthood
- Brain circuits underlying laughter and their development in infancy
- Emotional considerations in UX design and how they might vary in individuals with ADHD

- Neural representations of guilt and shame in psychopathology
- The neuroscience of romantic love and variation by sex and gender
- Perceptual bias to threat in developmental psychopathology
- Cultural variation in affective processing and affective changes in Alzheimer's Disease
- Emotion prediction errors in depression and schizophrenia
- Opioid and dopaminergic systems underlying positive affect in Parkinson's Disease
- Manifestations of generational stress and trauma in diverse global populations

I did not ask students to complete a formal reflection specifically evaluating this dimension of the final paper assignment. However, student feedback on the overall course was highly positive, with many students remarking on how much they learned about affective neuroscience as well as the relevance of the content ("This course should be required for the Counseling Psychology program!").

Many students also commented that the final paper assignment (which takes an iterative structure, where they submit drafts, receive feedback, and revise for the next iteration) helped them to become better scientific thinkers and writers:

- "I really liked the staggered assignments system. It made it much easier to complete the essay project and overall it was a fun class that made me more comfortable with reading research papers."
- "I think the practice with scientific literature and scientific writing was helpful and important. I also think Dr. Chiew provided really good feedback and helped make me a better scientific writer."

Assessment Summary: Students successfully identified a wide range of different contextual and population-level sources of variation relevant to the affective phenomena that they explored in their final paper and incorporated relevant evidence from the research literature. I think incorporation of the contextual dimension enriched students' learning experiences and allowed them to connect the affective neuroscience material to interests in psychopathology, developmental psychology, and more.

Reflection and future consideration: I think that this incorporation was a valuable and manageable addition to the course. To get students to more deeply engage with questions of diversity and inclusion in human neuroscience content, I think I'd like to assign either the Dotson or Ricard paper during our methodology unit and explicitly invite the students to consider inclusivity issues when considering approaches to the field as a whole, and then perhaps circle back to this issue after they've had the opportunity to identify and explore sources of contextual variation in their literature review assignments. I think this would help the students engage more with these considerations and their implications, as well as learn more from each other.

Otherwise, I am not completely sure what I would change moving forward. The students in the course ranged widely (from a second-year undergraduate to a third-year PhD student) and varied drastically in their prior neuroscience background, which made it challenging to appropriately calibrate the difficulty of the material. I would be interested in learning more from other instructors with similar class situations, where students vary widely in their prior content background and expertise, how they successfully incorporate inclusive perspectives and themes into their courses.