SUPERVISOR/S: Maryanne Garry and Mevagh Sanson
PROJECT TITLE: A little knowledge is a dangerous thing: Examining mechanisms of illusory expertise
FIELD: Psychology / Cognitive psychology
DIVISION/SCHOOL: ALPSS - School of Psychology
PROJECT LOCATION: Hamilton

PROJECT ABSTRACT:
Illusions of expertise are everywhere. Some are amusing; we all laughed last year at social media posts like “I watched a YouTube video and then cut my partner’s hair during lockdown. It did not go well.” But others have worrying implications for education: the literature suggests that once students learn a little bit, their confidence rapidly outstrips their actual knowledge. Why does a little knowledge lead people to overestimate their expertise? One possibility is that it depends what that first bit of knowledge is like: When it comes to new information or experiences, first impressions “stick.” They exert a disproportionate, ongoing influence on people’s evaluations of a situation, another person, and their own abilities. For instance, in one study, some people took a trivia quiz that started with the easiest questions and progressed to the most difficult, while others did the same quiz but in the opposite order. The order of questions did not affect people’s performance—but it did bias their estimates of their performance. People who started with the easiest questions were markedly more optimistic than people who started with the most difficult ones. In education, a common strategy is to first teach easily-grasped, fundamental concepts before escalating to more difficult concepts. But teaching easy concepts first may create a sticky first impression that leads students to overestimate their expertise. To test this hypothesis, we will teach English speakers Japanese kanji characters. Everyone will get the same kanji and English translations to learn. But for those who get the “easy to hard” version, the first few kanji will look like their English translation (for example, 木 for “tree”), and progress through to kanji that look nothing like their meaning (雲 for “cloud”); the “hard to easy” version will be the same kanji but in the opposite order; the “control” version will be the same kanji but in a randomised order. We expect people who learn from the “easy to hard” version will be more confident when we ask them to predict [a] how well they did on a test we give them; [b] how well they would do on a future test; [c] how well they would understand everyday experiences in Japan, such as reading a Japanese magazine. These results would be evidence of a previously-unexplored mechanism for explaining why students struggle to accurately estimate what they know—and suggest future work for correcting this illusion. This project will accomplish other aims of the Summer Scholarship scheme. My lab has long enjoyed a national and international reputation as a place where emerging scholars have terrific experiences doing excellent publishable work, learning new skills, and forging new relationships. In the past 20 years, I’ve worked with 68 undergraduates, 46 Honours students, and 24 PhD/Masters students. Many of them started out as summer scholars in my lab. In addition, this project will help maintain links with external collaborators. For example, Professor Anne Rasmussen in Denmark and Professor Kazuo Mori in Japan are keenly interested in this project.

STUDENT SKILLS:
- Hardworking, dedicated, focused, careful, responsible
- Decent stats background
- Not afraid of numbers nor learning new analytical techniques
- Comfortable with technology and learning new technology
- Enthusiastic about breaking out of comfort zone
- Enthusiasm for the scientific method
- Skill on a Macintosh desirable
- Good background in cognitive psychology desirable

PROJECT TASKS:
- Working seriously, consistently, and enthusiastically, on an international team
- Helping develop experimental materials and/or data-coding materials
- Helping to collect data, enter data and manage a database
- Helping to analyse and interpret data
- Presenting findings in project meetings
• Conducting literature searches
• Extracting and quantifying methods/data from scientific articles
• Reading scientific literature critically and discussing it at project meetings

EXPECTED OUTCOMES:
• Student’s Research Poster (as per clause 6 of the Scholarship regulations)
• Student learns a bucket of important, transferable skills—many essential for advanced study: finding and critically reviewing scientific papers, data coding, data entry, statistical data analysis, presentation/communication of scientific results, public s
• Groundwork for least one high-impact publication
• Groundwork for external funding (e.g. Marsden)
• Forming new relationships and strengthening existing relationships with external collaborators