I continually impress upon my students that the most crucial element of critical thinking -- and, not coincidentally, the most difficult -- is the self-reflective interrogation of one's own assumptions. The act of discovering and evaluating cognitive biases is an ongoing one, and the critical thinker never reaches a place of skeptical enlightenment. (We inevitably believe that we have, which makes opportunities for metacognitive analysis all the more essential.)

Creating and seizing such opportunities is a major focus of my teaching, particularly in my "Critical Thinking, Reading and Writing" freshman English course -- or, as one of my students once dubbed it, "Skepticism 101." (This student later announced he would henceforth be known as "Confirmation Baez," which I will confess still gives me no end of pleasure.) The course gives students what is usually their first explicit exposure to such topics as logical fallacies, burden of proof, cognitive dissonance, cherry picking, pseudoscience, inattention and change blindness, source credibility, hypothesis and theory, hoaxes, urban legends, the Forer Effect, Occam's Razor, and other fundamentals of the skeptical approach to constructing knowledge.

In keeping with Robert H. Ennis's characterization of the critical thinker as "open-minded and mindful of alternatives," I try to guide my students through the informed sharing of their perspectives on topics and ideas, encouraging them to view the class population as a skeptical community of respectful but outspoken peers whose primary aim is to figure out together just how to do this seemingly impossible but obviously necessary thing.

I say "obviously," but the buy-in isn't always that immediate. Last semester, one student found the continual emphasis on evidence and logic a bit much.

"I mean, there are things we all believe in that there's no evidence for," she said.

"Like what?" I asked.

"Like ghosts," she continued confidently. "Everyone believes in ghosts but we don't have evidence for them."

Seconds later, she was disabused of the notion that everyone believes in ghosts, as various students weighed in on the subject. She seemed frankly astonished, as though it had simply never occurred to her that there might be people who didn't share this particular belief. She asked a couple of clarifying questions to be absolutely sure she was understanding the situation correctly, then sneered and dismissed the "no-ghost" contingent as not counting because "that's ridiculous."

"And which fallacy is that?" I asked the class.

"No True Scotsman," several students replied, reassuring me that my life had, after all, been worth living.

The ensuing side discussion about paranormal experiences didn't change the young lady's mind to any degree that I could see, but it did demonstrate the sorts of biased assumptions that can distort our thinking, and it paved the way for a more nuanced exploration of evidence and interpretation. Here I was able to share my own "ghost sighting," which if nothing else illustrated the possibility of maintaining a skeptical perspective in the face of emotionally persuasive visual stimuli. A week later, our investigation into pareidolia provided the perfect entry point for a collection of classic "ghost photographs," which further challenged the notion that even those who do believe in ghosts necessarily do so without evidence. (The student in question was not impressed by the quality of this evidence, incidentally.)

Weeks later, the students examined a low-resolution black-and-white reproduction of a painting, and jotted down their thoughts about what they "saw" (in both literal and metaphorical senses) when they looked at it. The class was now primed not merely to discuss the image in terms of pattern-making and visual alternatives, but to listen to one another's differing interpretations and "try on" some of these to see how they fit. This sharing of perspectives, combined with evidence in the form of both increasingly clearer versions of the image and contextual information about the painting's mythological references, enabled the class community to construct and refine a plausible interpretation that stood up to scrutiny.

"Assuming you're not lying to us the whole time," added one student, threatening to run to the library to fact-check the information I had provided.

Huzzah.

Marc David Barnhill teaches critical thinking, reading and writing at New York University and The City University of New York. He has presented at SkeptiCamp NYC and the Northeast Conference on Science and Skepticism (NECSS), and currently serves on the NECSS Organizing Committee, on Center For Inquiry-NYC's Volunteer Advisory Board, and as Faculty Advisor to the Bronx Community College Secular Humanist Club. He blogs intermittently, tweets frequently, and is currently writing a book titled **The Promise of Critical Thinking: Language, Logic and Social Justice**
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The JREF 's ongoing series on randi.org features articles by skeptical teachers exploring critical thinking in the classroom, using the investigation of the paranormal, fringe science, and pseudoscience to teach methods of science and reason. We welcome feedback, discussion, and further suggestions from educators and parents in the comments section. If you would like to be involved in this project, please contact Bob Blaskiewicz.