

Practice Identifying Virtuous/Vicious Actions and Motivations:

Group Work for Students (and faculty!)

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House, M.D. “Occam’s Razor” (2004), Scene 2, clip. 2:50-4:50

House, FOX television’s award-winning medical drama is a superb source of examples of intellectual actions. Each episode dedicates several scenes to the process of diagnosis itself. Dr. House and his medical team are tasked with diagnosing patients whom nobody else can diagnose. In the Season 1 Episode “Occam’s Razor”, House and his team take the case of Brandon, a college student who has low blood pressure, abdominal pain, fever, nausea, a cough, and a rash. In Scene 2, House and his team begin their diagnosis.

What intellectual actions did House and his team perform in this scene? What might their intellectual motivations be? What intellectual actions do you think a virtuous person would perform in this situation and why? What intellectual motivations would a virtuous person have in this situation and why?

James D. Watson’s *The Double Helix* (1968)

In Spring 1953, James Watson and Francis Crick discovered the molecular structure of DNA, for which they were later awarded the Nobel Prize in Medicine and Physiology. At the time, Watson and Crick’s lab at Cambridge was one of several labs working on the problem. Rosalind Franklin and Maurice Wilkins (King’s College, London) and Linus Pauling (Cal Tech) were also very close to discovering the structure of DNA. *The Double Helix* is Watson’s account of the “race” to discover its structure and win the Nobel Prize (p 184). It is a rich source of examples of intellectual motivations. Watson’s own motivations range from “the desire to learn what the gene was” (p 21) to the desire to win the race and become famous. While at their lab, Watson and Crick shared an office with Peter Pauling, Linus Pauling’s son. In the winter of 1953 Peter received an advanced copy of his father’s soon to be published model of the structure of DNA. In the excerpts, Watson describes his reactions to reading Linus Pauling’s paper:

At once I felt something was not right. I could not pinpoint the mistake...until I looked at the illustrations for several minutes. Then I realized that the phosphate groups in Linus’ model were not ionized.... Pauling’s nucleic acid in a sense was not an acid at all.

When Francis was amazed equally by Pauling’s unorthodox chemistry, I began to breathe slower. By then I knew we were still in the game.

The blooper was too unbelievable to keep secret for more than a few minutes. I dashed over to Roy Markham’s lab to spurt out the news and to receive further reassurance that Linus’ chemistry was screwy. Markham predictably expressed pleasure that a giant had forgotten elementary college chemistry.... Next I hopped over to the organic chemists’, where again I heard the soothing words that DNA was an acid.

Back in the Cavendish...Francis was explaining...that no further time must be lost on this side of the Atlantic. When his mistake became known, Linus would not stop until he had captured the right structure.... Since the manuscript had already been dispatched to the *Proceedings of the National Academy*, by mid-March at the latest Linus’ paper would be spread around the world.

Then it would be only a matter of days before the error would be discovered. We had anywhere up to six weeks before Linus again was in full-time pursuit of DNA (Watson 1968: 160-162).

What intellectual actions do Watson and others perform? What intellectual actions do you think a virtuous person would perform in this situation and why? What emotions does Watson report? What might Watson's and Crick's intellectual motivations be? What intellectual motivations would a virtuous person have in this situation and why?

Anna Ziegler's Photograph 51

Photograph 51 is a play about Rosalind Franklin's role in the discovery of the structure of DNA. Franklin was an expert at crystallography (taking photos of molecules). She was working at King's College London at the same time that Watson and Crick were working at Cambridge. She was trying to figure out the structure of DNA. Watson and Crick used one of Franklin's photos (photograph 51) of the structure of DNA to make their discovery that the structure was a double-helix. They used her photo without her knowledge or permission, and without acknowledging her. The opening scene of Ziegler's play begins with Franklin's arrival at King's College, in January 1951, where she was awarded a fellowship in Maurice Wilkins's crystallography lab.

Maurice Wilkins: You see, I recently took X-ray photos of DNA that came out remarkably well, showing that it is unmistakably crystalline in shape. Therefore, it now seems evident that King's needs to push forward in determining, through crystallography, at which you are quite expert---

Rosalind Franklin: Thank you. I am.

Wilkins: (thrown for a moment)...Yes. No one will argue with that. (Beat.) At any rate, we need to push forward in determining why it is that in the chromosomes the number of purines and pyrimidines come in pairs. So that we can then determine who replication works. So that we can then determine---

Rosalind: I know what you're talking about.

Wilkins: Yes. I suppose you do. Then, I'll leap straight to the point. You will be assisting me in my study of the Singer DNA from Switzerland...

Rosalind: (Icy) I don't think I hear you right.

Wilkins: You did! We have the Singer stock. Quite a coup really.

Rosalind: But did you say *I'd* be assisting *you*? (Ziegler: 12-13)

What intellectual actions do Franklin and Wilkins perform in this scene? Are these actions that an intellectually virtuous person would perform in this situation? Why or why not? How are Franklin's actions perceived by Wilkins? Why might Wilkins perceive them this way?

Dr. Richard A. Muller's "The Conversion of a Climate Change Skeptic" (2012)

Dr. Richard A. Muller is a physicist at the University of California, Berkeley. Before 2012, he was critical of arguments for global warming, and doubted that global warming existed. On July 28, 2012, he published an opinion piece, "The Conversion of a Climate Change Skeptic," in the *New York Times*, explaining why he had changed his mind. Below are excerpts from that piece.

Call me a converted skeptic. Three years ago, I identified problems in previous climate studies that, in my mind, threw doubt on the very existence of global warming. Last year, following an intensive research effort by a dozen scientists, I concluded that global warming was real and that prior estimates of the rate of warming were correct....

My total turnaround...is the result of careful and objective analysis by the Berkeley Earth Surface Temperature project....Our results show that the average temperature of the earth's land has risen by two and a half degrees Fahrenheit over the past 250 years, including an increase of one and a half degrees over the most recent 50 years....

Our Berkeley Earth approach used sophisticated statistical methods developed largely by our lead scientist, Robert Rohde, which allowed us to determine earth land temperature...further back in time. We carefully studied issues raised by skeptics: biases from urban heating (we duplicated our results using rural data alone), from data selection...from poor station quality (we separately analyzed good stations and poor ones), and from human intervention and data adjustment.... We demonstrate that none of these potentially troublesome effects unduly biased our conclusions.

What intellectual actions did Muller, and his team of scientists, perform? What might their intellectual motivations have been? What intellectual actions do you think a virtuous person would have performed in this situation and why? What intellectual motivations would a virtuous person have had in this situation and why? Would an intellectually virtuous person have been in this situation to begin with? Does that matter?

Excerpt from *Daily Rituals* by Mason Currey on Gustave Flaubert

Currey's *Daily Rituals: How Artists Work* (2013) describes the habits of hundreds of artists, philosophers, and thinkers (from Descartes, to Woody Allen, to Twyla Tharp). Currey draws from autobiographies and biographies in compiling their habits. On Gustave Flaubert's (1821-1880) writing of his novel *Madame Bovary*, Currey says the following. Flaubert began writing *Bovary* in 1851.

Hunched over his table, while the rest of the household slept, [Flaubert] struggled to form a new prose style, one stripped of all unnecessary ornament and excessive emotion in favor of merciless realism rendered in precisely the right words. This word-by-word and sentence-by-sentence labor proved almost unbearably difficult (Currey: 31)

[Quoting from Flaubert himself] Sometimes I don't understand why my arms don't drop from my body with fatigue, why my brain doesn't melt away. I...am sustained only by a kind of permanent frenzy...I love my work with a love that is frantic and perverted. Sometimes when I am empty, when words don't come, when I haven't written a single sentence after scribbling whole pages, I collapse on my couch and lie there dazed...hating myself and blaming myself. A quarter of an hour later, everything has changed; my heart is pounding with joy.

[Back to Currey: 32] On Sunday's his friend...would visit, and Flaubert would read aloud his week's progress. Together, they would go over sentences dozens, even hundreds, of times until they were just right.... This monotonous daily struggle continued...until June 1856, when, after nearly five years of labor Flaubert finally mailed the manuscript to his publisher.

What actions does Flaubert perform? Are these actions that a virtuous person would perform in this situation? If so, which virtue might they fit? What are Flaubert's motivations? Are these motivations that a virtuous person would have? Why or why not?

Practice Performing Virtuous Actions: Group Work

Thought-Experiment

Imagine that you are the only surgeon in a small, remote hospital in a country that is undergoing civil war. The leader of the country has ordered the systematic extermination of all citizens who are members of a particular ethnic minority. Thousands have already been killed. The leader has just been wounded in a hunting accident, while on vacation. He is brought to your hospital—the only one in the region. He is your patient. If you perform surgery on the leader, you will save his life. If you don't, he will die. Nobody else can perform the surgery, there are no other facilities nearby, and there is no other way to save him. What should you do? Should you perform the surgery?

Discuss this example, defend your answers to the group, and respond to other student's answers; and in so doing, to try to perform an act that an open-minded person would perform. Once the discussion is completed, answer the following questions in writing:

- (I) List the intellectual actions you performed during the discussion.
- (II) Did you succeed in performing an act that an open-minded person would have performed? What were your motivations?
- (III) At any point during the discussion, did you perform an act, or have motivations that fell short?

Native American Boarding Schools

Discuss whether Native American Boarding Schools, like Sherman Indian High School in Riverside CA, should exist today. Use the resources on <http://upstanderproject.org/firstlight/pratt>, and both reports from NPR <http://www.npr.org/templates/story/story.php?storyId=16516865>

We know that a “policy of forced assimilation through education was upheld by removing Native children from their families and communities and sending them to off-reservation boarding schools” (upstanderproject/org). We also know that conditions at the boarding schools in the 1900's were often brutal, and that learning about and practicing Native culture was forbidden. NPR reports that some Native Americans would like the current boarding schools (e.g. Sherman Indian High School) to continue, and to be better funded. An officer from the Bureau of Indian Affairs states: “You can talk to 20 people in our organization, and 10 people will say we shouldn't have off-reservation boarding schools, and 10 other people will say there's a need for these kinds of schools because of the at-risk students,” (<http://www.npr.org/templates/story/story.php?storyId=17645287>)

What do you think? Should Native American Boarding Schools like Sherman Indian High School continue to exist?

Discuss this in your group. You can ask questions, formulate hypotheses, and respond to other student's answers. And/or you can try to figure out what it would take to answer the question above. In your discussion, try to perform at least one action that either an open-minded person would perform, **or** that an intellectually humble person would perform. Once the discussion is completed, answer the following questions in writing:

- (I) List the intellectual actions you performed during the discussion.
- (II) Did you perform an act that an open-minded person would have performed? What were your motivations?
- (III) Did you perform an act that an intellectually humble person would have performed? What were your motivations?
- (IV) At any point during the discussion, did you perform an act, or have motivations that fell short?