House and Holmes: A Guide to Deductive and Inductive Reasoning

Teacher Handout 2: Teacher's Guide to the Clinic Scenes from *House, M.D.*

Breakdown of the Argument
First patient:
1. Patient has been waiting for 30 minutes.
2. Patient has remained standing the entire time.
3. Therefore the patient is probably experiencing pain when he sits.
4. Patient has not explained why he is not sitting.
5. Patients who do not explain their problem right away are usually embarrassed by their problem.
6. Therefore the patient is probably embarrassed by his problem.
7. Patient has a tattoo of a cartoon bird on his arm.
8. Therefore the patient is not easily embarrassed.
9. Hemorrhoids are not a particularly embarrassing medical problem.
10. Therefore the patient has a foreign object in his rectum.

The creators of House, M.D. have freely acknowledged that the cranky Dr. House is modeled on Sherlock Holmes. House's address is 221B, like Holmes'; he's a gifted musician (House plays the piano while Holmes plays the violin), he's addicted to the narcotic Vicodin (Holmes was a morphine and cocaine addict), and at the end of season 2, House is shot by a man named Jack Moriarty (criminal mastermind James Moriarty was Holmes' nemesis). Interestingly, Holmes himself was based upon a physician, Dr. Joseph Bell, whom Arthur Conan Doyle met as a young man. Most importantly for our purposes, House, like Holmes is extraordinarily gifted at inductive reasoning. (Holmes talks frequently about deduction, but in reality, he's using induction.)

In the second scene in this clip, House makes a number of inductive inferences. Most of these follow from House's ability to notice details that many of us might miss and to then formulate explanations based upon these small clues. Consider the observations that House makes regarding the patient:

1. He has been standing for 30 minutes.
2. He hasn't explained why he is not sitting.
3. He has a cartoon bird tattooed on his arm.

From these observations, House makes the following inferences:

1. He is experiencing pain when he sits.
2. He is embarrassed by his medical problem.
3. He is not easily embarrassed.

House then has only to add two bits of somewhat specialized knowledge to reach his conclusion. First, he makes the assumption – presumably justified by his long experience as a physician – that patients who do not disclose their medical problems are typically embarrassed by those problems. And second he makes the judgment that hemorrhoids are not a particularly embarrassing medical condition. At that point, he is able to render his diagnosis.

Notice that House's reasoning is inductive. It's entirely possible that even if all of House's premises are correct, his conclusion could still be false (and anyone who has watched the show will know that this sort of thing happens frequently). Inductive arguments make conclusions likely rather than certain. Medicine is largely inductive (as is police work – *CSI* and *Law & Order* are also founts of good inductive arguments.)

The third scene is similarly filled with a series of inductions.

1. Patient is not from Princeton.
2. Patient has no family in Princeton.
3. Patient is not in Princeton for work.
4. Patient's home is 70 miles from Princeton.
5. There are two hospitals between the patient's home and Princeton.
6. Therefore the patient had some reason for not going to a doctor nearer his home.
7. One reason a patient might not go to a doctor near his home is that the doctors near his home refuse to treat him.
8. Patients who sue doctors regularly have a difficult time getting access to medical care.
9. Therefore the patient has probably sued several doctors near his home.
10. Thus the patient will probably also sue me.

Here, again, House makes a number of inductive inferences based on just two questions.

1. Do you have family here?
2. Are you here for work?