

### *Thought Experiments*

Consider each of the following thought experiments. For each one, determine

- a) what conclusion each is designed to lead us to make,
- b) if there is there a way to redescribe the experiment which might lead some to make the opposite conclusion, and
- c) if the thought experiment asks us to make contradictory assumptions.

1. Question:

How heavy of a helicopter can an infinitely long rotor lift, if it is revolving at 0 rpm ?

Thought Experiment:

Suppose that a 20 foot rotor must turn at 200 rpm to provide enough lift to keep a 1000 lb. helicopter up in the air. Suppose also that if the length of the rotor is doubled, then its speed can be halved, to provide the same lift. Then a 40 foot rotor only needs to turn at 100 rpm to lift the copter. An 80foot rotor would need to turn at 50 rpm, a 160 foot rotor would need to turn at 25 rpm, ... Following this line of thought, an infinitely long rotor could turn at 0 rpm and keep a 1000 lb. helicopter in the air.

2. Question:

Should Tanya confess or remain silent?

Thought Experiment:

Tanya and her accomplice have been arrested for robbing the Hibernia Savings Bank and placed in separate isolation cells. Each cares much more about her own personal freedom than about the welfare of the other. A clever prosecutor makes the following offer to each. "You may choose to confess or remain silent. If you confess and your accomplice remains silent I will drop all charges against you and use your testimony to ensure that your accomplice does serious time. Likewise, if your accomplice confesses while you remain silent, she will go free while you do the time. If you both confess I get two convictions, but I'll see to it that you both get early parole. If you both remain silent, I'll have to settle for token sentences on firearms possession charges. If you wish to confess, you must leave a note with the jailer before my return tomorrow morning."

3. Question:

Should you give \$100 dollars to save a starving village in Africa?

Thought Experiment:

You have just spent \$200 on a brand new outfit to wear at the prom. While strolling through the park, you come across a young child crying out for help and struggling to stay afloat in the pond. You race to dive into the muddy pond, new outfit and all, but a life guard in swimming trunks stops you and says "I'll save the kid," and jumps into the pond, rescuing the drowning child. You thank him, and he says, "If you really want to thank me, you could donate \$100 to OXFAM to help the people starving in Africa."