Logic

Tutorial 2 - Logical consequence

17 October 2019

Exercises

Determine for all the following texts if the conclusion really is a logical consequence of the facts.

1. Whoever says that I am a man says true. Whoever says that I am stupid says that I am a man. Therefore whoever says that I am stupid says true.

2. If he does not tell her, she will never discover it. If she does not ask him, he will not tell her about it. She discovered it. Therefore she asked about it.

3. If John hasn't met Peter the other night, this means that Peter is the murderer or that John is a liar. If Peter isn't the murderer, then John hasn't met Peter the other night and the crime happened after midnight. If the crime happened after midnight, then Peter is the murderer or John isn't a liar. Therefore Peter is the murderer.

4. Brown, Jones and Smith are three Irish salesmen in New York. They are on trial for the fabrication and sale of alcohol (during prohibition). They swore on the Bible and declared:

   - Brown: "Jones is guilty, and Smith est innocent."
   - Jones: "If Brown is guilty then Smith is guilty as well."
   - Smith: "I am innocent, but at least one of the two others is guilty."

   Let b, j, s be the tree propositions "Brown is innocent", "Jones is innocent", "Smith is innocent".

   (a) Give a logical formula for each of the statements.
   (b) Is this set of statements consistent?

(c) One statement is a logical consequence of another one. Which one?

(d) If everyone is innocent, who made a false declaration?

(e) As the Irish are very religious people, one could assume that they tell the truth. In this case, who is guilty?

(f) If the innocent tell the truth and the guilty lie, who is guilty?

5. Logic is intriguing me. Everything that is comprehensible never intrigues me. Therefore logic is incomprehensible.

6. He said that he would come if it does not rain. It rains. Therefore he does not come.

7. If Jordan or Algeria joins the union then, if Syria or Kuwait boycott the union then, even though Iraq does not boycott the union, Yemen does. If Iraq or Morocco do not boycott the union, Egypt will join the union. Therefore, if Jordan joins the union then, if Syria boycotts the union, Egypt will join the union.

8. If one considers that the people that study extrasensory perceptions are honest, then one must admit the existence of such perceptions. Further, if one puts to test extrasensory perceptions, one needs to seriously consider clairvoyance. To admit the existence of extrasensory perceptions will push us to put them to test and to explain them.

Clairvoyance needs to be seriously considered if one is willing to consider seriously occult phenomena. And if one is willing to consider seriously those phenomena, one need to respect psychic media. Further, if we respect these people, we also need to take seriously their ability to talk to the deceased. Finally, if we take seriously their ability to talk to the deceased, we must believe in ghosts.

Therefore, considering that the people who study extrasensory perceptions are honest forces us to believe in ghosts.