PHIL 220: Introduction to Logic

Week 5 Discussion (09/26/2025)

Note:

If you have any late submissions of assignments, please email me so that I can upload the grades on Brightspace in time.

Goals for today

Become a fluent translator.

1. **Consider the following translation key**:

p: God is a perfect being.

q: God exists.

Determine whether the following statements are true or false:

> 1. '$p \rightarrow q$' is the correct translation of the statement 'God is a perfect being only if God exists.'
>
> 2. '$p \rightarrow q$' is the correct translation of the statement 'If God exists, then God is a perfect being.'
>
> 3. '$\neg q \rightarrow p$' is the correct translation of the statement 'God is not a perfect being unless God exists.'
>
> 4. '$\neg p \rightarrow \neg q$' is the correct translation of the statement 'God is a perfect being if and only if God exists.'

2. **Given the translation keys, translate the following sentences into propositional logic.**

> 1.
>
> p: You will become rich.
>
> q: You buy a lottery ticket from me.
>
> r: The lottery is rigged
>
> **Sentence to translate**:
>
> You will neither become rich nor buy a ticket from me; otherwise, the lottery is rigged.

2.*(How many possible translations can you get? Are they equivalent?)*

p: You will get an A in this class.

q: You study hard.

r: You are just chilling.

Sentence to translate:

You will get an A in this class only if you study hard or you are just chilling.

3**. Translate the following arguments into propositional logic and check if they are valid:**

1. If the JTB account of knowledge is true, then if you are justified in believing that p and p is true, then you know that p. You can find a case where you are justified in believing that p and p is true, but you do not know that p. Therefore, the JTB account of knowledge is false.

2. Harry Potter exists unless I can truthfully say 'Harry Potter does not exist'. But if I can truthfully say 'Harry Potter does not exist', then I can say of an object that it has the property of not existing. And I cannot say of an object that it has the property of not existing. So, Harry Potter exists.

3. The system update will not be considered successful. For the system update will be considered successful if and only if the new security patch is compatible. The new security patch is compatible provided that all legacy drivers are removed; otherwise, it is not considered compatible. But the legacy drivers were not removed.