Philosophy 2101 - Introduction to Symbolic Logic Lory Lemke

**Logic and Skepticism**

Logic helps us in the aim of acquiring truths and rejecting falsehoods. This aim is also a goal of epistemology (the study of knowledge). The pursuit of knowledge can be described as simply the pursuit of truths and avoidance of falsehoods. In light of this, it is not surprising that there is an interesting connection between logic and epistemology.

Let's begin by looking at beliefs and sentences in a very general way. All beliefs have <u>content</u> which can be expressed in terms of a sentence. Typically sentences which are either true or false are called <u>declarative sentences</u> (p.1). (Technically, we say that each declarative sentence has a <u>truth value</u> (p.2) which is either true or false.) Consider all of our beliefs about the world, regardless of whether they are true or false. Let's form a set of declarative sentences which individually express the content of each of our beliefs.

1. Consider a set A of these sentences: {p1, p2, …, pn}, we know that for every pi (where i=1 to n) is either true or false.

As we have constructed this set, we know that 1. is true. However, if all we know is 1., then we know very little.[1] We can call this position prima facie skepticism: for all you know about any individual claim to knowledge p, p may be false. This does not preclude any member of A from being true, it just leaves us in the dark as to whether it is true. Non-skeptics can certainly accept 1. and then go on to argue that we know various members of A.

As each member of A could be false individually, it is also possible that all members of A are false simultaneously. More robust skeptics can begin with 1. and then go on to argue that this is actually the case with all of our beliefs. In other words, all members of A are false; consequently, any search for truths among our beliefs is absolutely futile.

However, the use of a little logic can show us that a version of such a robust skeptical theory may well be false. To see how, let's preface every pi with a sentence operator "It is not the case that," the result is another set of sentences equal in number with the first set.

2. Consider a set B of these sentences: {q1, q2, … qn}, where qi is the result of negating pi from set A.

The sentences in A and B will differ only with respect to their <u>form</u>. Since you know that for any sentence p and its negation not-p (or q), one must be true and the other must be false, then you can conclude the following:

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[1] Skeptics need to be careful not to claim both that on the basis of 1.nothing can be known and also that 1. itself is known. But as we have set up the issue, this "self-referential fallacy" can be avoided easily by claiming that set A is limited to empirical claims about the world, whereas 1., itself, is not an empirical claim; rather, it is a theoretical claim about knowledge.

3. In the above sets A and B, there are exactly n true sentences and n false sentences.

In other words, if we combine the members of sets A and B, then by how we have constructed the two sets and on the basis of logic, we know that half of these sentences are true and the other half false.  While we still may be prima facie skeptics in that we do not know of any sentence p or q whether it is true or false, we do know the following: 50% of these beliefs are true and 50% are false!

If  we can "supplement" a set A of beliefs, with B as constructed above, then the more robust skepticism, as defined above, is false.  In other words, the search for truth is not absolutely futile, indeed, in terms of these above sets, we have a 50/50 chance of believing a truth no matter what we believe!

Of course this "refutation" of robust skepticism depends on a very tricky condition: supplementing our set of beliefs with the negations of each one of them.  Certainly none of us can manipulate our actual beliefs in this manner.  However, if we consider what we believe to be a matter of choice such that we first consider all the possibilities for belief and their negations and we then randomly pick from this set, then we do have a 50 percent chance of believing what is true.  It is very surprising that such a random way of acquiring beliefs will result in such a high percentage of true beliefs.

Logic allows us to make this reply to the robust skeptic.  Can it go further and tell us which sentences are true?  No. While it does show us that a view like robust skepticism is false, it does so only by showing how sentences are connected in terms of their truth value.  This connection is a result of the form of the sentences involved, e.g., any sentence pi and its negation not-pi (qi).  For example, you know that if one is true, then the other is false.  This is a valid inference.  However, if we also know that one is true, then on the basis of this same valid inference, you also know that the other is false.  This would be a sound inference.  It is not surprising that logic alone allows the valid inference, but not the sound inference.