OBSERVATION IN SCIENCE?

Who knows what a [illegible]?

PART I: Nagel's defense of observation.

Nagel defends observation in science using a number of [illegible] to [illegible] the [illegible] of observation statements. We agree with the [illegible] in that:

1) The content of an observation statement is [illegible] sensory experience. (pp. 18, 20)
2) The content of an observation statement is determined by the [illegible] laws and [illegible] which its terms enter. (p. 19)
3) An observation statement is corrigible. (p. 20)

However, we [illegible] at two other conclusions about observation statements, and [illegible] the role of observation in science. They are:

4) The content of an observation statement "is not [illegible] determined by the [illegible] of laws and rules [illegible] to the [illegible] a science [illegible]" (p. 20)
5) Many observation statements do not, in fact, need correction. (p. 20)

Nagel is contending in (4) that although (2) the meaning of an observation statement, p, is determined by the set, T, of general laws or rules into which its terms enter, the core of content, C(p), of p [illegible] is determined by a proper subset, S_p, of T. As a result, although there may be a continual change in the set, $\bar{S}_p \cap T$, of laws and rules in T but not in S_p, the core of content, C(p), of p will not change as the laws and rules in S_p which determine C(p) will not have changed.

If Nagel can maintain (4), then (5) is explained by it. An observation statement made assuming only S_p will not need correction when a change in $\bar{S}_p \cap T$ is made. So any observation statement p will never need correction if S_p is never altered.

Nagel's argument for (4) consists in two factors, a [illegible] determination. First, he asserts that, in the practice of science, observation statements have a core of content unaltered by changes in theory. Second, he asserts that the stability of this core of content of observation statements is "genuine and important," and [illegible] it is an "accident of the way the world is." (p.34)

The first assertion is supported by the example of Newton's experiment on light, where the theoretical notions so distinctive of Newton's explanation

were not assumed by him [illegible] the observation [illegible] his experiments." (p.23) Nagel [illegible] there is no reason to [illegible] in Newton's [illegible] would [illegible] a diff[illegible] Newton had suggested a different explanation. (p.25) [illegible] seems weak [illegible]. One is that physics [illegible] more [illegible] Newton's [illegible] do a [illegible] magnetic [illegible] might alter the [illegible] of any [illegible]. Electromagnetic laws are [illegible] near the [illegible] of atoms [illegible] [illegible]. The other [illegible] Nagel [illegible] what laws determine the [illegible] of a [illegible]. [illegible] intends that [illegible] supported [illegible] [illegible] (p.26) If this is the case, the [illegible] would have a [illegible] [illegible]. Newton's laws of [illegible] compared [illegible] terms [illegible] it.

The [illegible] is hardly [illegible] points out that the [illegible] of the [illegible] not [illegible] (p[illegible]

PART II: The content of observation sentences

It seems to me [illegible] there are three kinds of content of observation sentences as need [illegible] in comparing theories. The three kinds of content are:

1) stimulus content;
2) stimulus content [illegible] determined [illegible] (in particular [illegible]) theory;
3) stimulus content [illegible] determined by the theory as a whole.

[illegible] case (3) first. Suppose observers O_1 and O_2 hold theories T_1 and T_2 respectively. It is impossible that any observation statement will have the same total content for O_1 and O_2 as long as T_1 and T_2 differ in any way with respect to the terms in the observation sentence. Any observation statement which could be used to make differing predictions would have a different total content, so if agreement [illegible] total content of an observation statement is required to compare theories, then no comparison between them is possible.

Now I will consider case (1). First I will make a definition. [illegible] triple (S, T_1, T_2) is critical for O_1 and O_2 is defined as:

a) S is a set of observation statements having the same stimulus [illegible] for O_1 and O_2
b) There is a consistent set of observation statements A, such that there exists some statement p such that $p \in S$ and T_1 predicts p on the basis of A and T_2 predicts $\sim p$ on the basis of A. (A set of statements such as A will be called a critical set of observations.)

Suppose O_1 and O_2 make a critical set of observations. O_1 [illegible] p and O_2 [illegible] predicts $\sim p$ on the basis of the observations and the theories T_1 and T_2 respectively. Later both [illegible] observe that $\sim p$. Clearly O_1 would be lead to suppose [illegible] needs some sort of [illegible] of the [illegible] and [illegible]. However, is there any reason to believe [illegible] will adopt T_2? Certainly not. Even though, in fact, the [illegible] statements in S have the same stimulus content for O_1 and O_2, O_1 may on the basis of [illegible] conclude [illegible] different stimulus content. (Who [illegible] may say?) [illegible] O_1 [illegible] lead to adopt T_2. [illegible] (S, T_1, T_2) is critical for O_1 and O_2, and O_1 and O_2 make [illegible] the basis of a critical set of [illegible] neither would need to be lead to

adopt [illegible] theory [illegible] every fails.

Although the above attempt fails, I think [illegible] using the [illegible] Fund I will [illegible] of content described above [illegible] ordered triple (S, T_1, T_2) is compatible for O_1 and O_2 [illegible] as

a) (S, T_1, T_2) is critical for O_1 and O_2

b) On the [illegible] of T_1, O_1 would [illegible] the [illegible] of all sentences in S [illegible] O_2 [illegible] O_1

c) On [illegible] T_2, O_2 would [illegible] the [illegible] in S in the [illegible] O_2.

Suppose that (S, T_1, T_2) is compatible for O_1 and O_2. If [illegible] O_2 [illegible] critical [illegible] would [illegible] what will O_1 do? [illegible] another theory T_2 [illegible] in this area (as he would [illegible] O_2's [illegible] as his own), everything else [illegible] equal, O_1 [illegible] be lead to adopt T_2 [illegible]. Of course not everything [illegible] equal. The [illegible] of [illegible] T_2 [illegible] formidable, or [illegible] T_1. Then O_1 may [illegible] attempt to revise T_1. If he succeeds [illegible] have [illegible] T_2. But if [illegible] the ordered triple

(S, T_1, T_2) will no longer be crucial for O_1 and O_2, if condition b fails. If b does fail, and both theories have equal predictive power, then the theories can be considered equivalent. If b does not fail further comparison of the theories can be made upon additional observation.

As there are [illegible] conflicting [illegible] theories are comparable [illegible]. Certain [illegible] theories are comparable as I have [illegible], it is an accurate [illegible] of the [illegible], and then it is not [illegible] may be [illegible]. On the other hand it may be in a special sense [illegible] (?) [illegible]. By [illegible] that, [illegible] fact, any attempt to communicate presupposes that we somehow [illegible] and that [illegible] to do so! Hence [illegible] possibility of communication [illegible].

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