Epistemological consequences of the problem of theory-ladenness of experience

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The general worry with so-called problems of "theory-ladenness" (of experience, perception, observation) is that they seem to threaten the major epistemic role that one would like to assign to experience.

I will consider these notions in their epistemic sense, assuming that experience (resp. perception, observation) yields a judgment.

My first point will be that Hanson, Kuhn and other post-positivist philosophers are right (against classical or logical empiricism) in saying that any experiential report is theory-laden.

I accept that there is an interdependence between experiential judgments and background knowledge, theoretical and language commitments, etc. This package has various names and slightly different meaning in different authors: Gupta (2006) would call it a 'view', Kuhn (1963) a 'paradigm' - I shall ignore those differences.

In this talk, I will then explore the consequences of such interdependence and I will argue that it does not result in relativism.

I will point out two major problems that follow from the theory-ladenness of experience: the *rigidity* and the *multiplicity of outcomes* of experience.

My thesis is that these problems do not seriously cast doubt on the strong epistemological role of experience. I suggest that they disappear when considering that an empirical enquiry essentially works in two phases, which I propose to call 'experimentation' and 'observation'.

Outline

1. Theory-ladenness of observation
2. Epistemological consequences of these problems
3. Experiment and observation

1. Problems of theory-ladenness

Against the notion of observation advocated by classical empiricism (neutral, objective, non-inferential, autonomous), post-positivist philosophers claim that any report on experience relies on some commitments regarding aspects of the world, language and even theories.

Ex. Hanson (1958): "observation of X is shaped by prior knowledge of X"

As such, the problem is not new: Carnap has tried to respond to it in his 1932 'The elimination of metaphysics through logical analysis of language'

1. Problems of theory-ladenness

For instance, Carnap suggested that the word 'arthropod' should be analyzed so as to obtain a description of it in observation terms.

Unfortunately, no solution can work to separate observation terms from theoretical terms.

Keeping the description in physical language:

"x is an arthropod":"*x* is an animal", "*x* has a segmented body", "*x* has jointed legs", "x has an exoskeleton of chitin"

arbitrariness of the theory/observation line.

Sense-data language:

Report on sensation with no commitment to some external cause of this sensation.

huge loss concerning *explanations* in science.

1. Problems of theory-ladenness

Heidelberger (2003) about Hanson: The use of sense-datum is devoid of any causal meaning. The only way science fulfills its major goal, explanation, is by invoking causality. For Hanson, any injection of causality into the mere registration of facts is bound to render them theoretical.

Shapere (1985): classical empiricism, identifying observation with perception and the latter with immediate, uninterpreted awareness, not only failed to explain why observation constitutes good reason - evidence - for or against beliefs, but also, through the very poverty it demanded of what was to count as the observational base of knowledge, divorced itself from any possibility of accounting for the knowledge we do have.

1. Problems of theory-ladenness

Hanson's argument has no response from empiricism.

Wide acceptance that a *view* is indispensable to report on an experience.

The concept of 'observation' is now associated with both the desiderata of empiricist philosophers and the theory-ladenness.

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2. Epistemological consequences of these problems

That a *view* must be available to the subject in order to report on an experience has at least two consequences that question the epistemic role of experience.

2. Epistemological consequences of these problems

i - rigidity of some experiential reports.

Ex: Bruner & Postman. Anomalous cards are not detected by subjects because they don't fit into any of the available categories. Subjects can only account for what they are already equipped to describe.

Our beliefs are much less constrained by experience than we could expect.

In particular, it is hard to account for the possibility of discovering through experience. We are stuck with the interpretive scheme of a given *view*.

2. Epistemological consequences of these problems

ii - multiplicity of contradictory reports, when subjects adhere to different, incompatible, *views*.

Ex. Priestley and Lavoisier reporting on the gas obtained when heating the red oxide of mercury.

Inter-subjectivity is lost.

Experience cannot serve as a neutral arbiter between, for example, competing theories.

Experience alone will not speak, and together with a *view*, it will speak in many different directions.

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3. Experiment and observation

These two problems (rigidity and multiplicity of outcomes) do work against the proper acquisition and testing of knowledge by experience.

If we are left with a rigid *view* which provides us with an equally rigid interpretive framework for our stimuli, then we are in a bad epistemic situation.

3. Experiment and observation

This interpretive framework (this *view*, this paradigm) does work like a theory. In particular, it leads a subject to have expectations because one essential function of a theory is to draw predictions.

And it so happens that sometimes, the predictions are wrong. They conflict with the actual outcome (the judgment) of the experience.

3. Experiment and observation

Sometimes, a conflict reveals itself to an individual or a team of individuals who already share the same *view*. The experiential judgment conflicts with the expectation, pointing out an anomaly.

The lack of inter-subjective agreement is also revealing of the fact that *experimentation* should be performed regarding some aspect(s) of the empirical inquiry.

3. Experiment and observation

Those aspects could be:

i - the categories, as with the card experiment;

ii - a theoretical framework (phlogiston vs oxygen);

iii - the knowledge regarding our observation capacities (our perception or some instrument and its proper conditions of use)

3. Experiment and observation

This experimental phase leads to some (possibly radical) change in the interpretive framework. When what is expected and the outcome of the experience do not conflict anymore, at the individual and, when applicable, at the collective levels, then we reach observational conditions.

An empirical enquiry generally takes place in two phases. One first deals with the *interpretive framework* through **experimentation** and then turns to a knowledge seeking enterprise concerning the *object of investigation* through **observation**.

Conclusion

Observation and experiment are then two phases of an empirical enquiry, that are characteristic of a periodic change of focus between the object of investigation and the means (conceptual, technical, epistemic) by which we investigate this object.

Authority of experience: observation judgments can be built upon and won't be questioned without a dramatic change in *view*. In non observation conditions, the conflict between a subject's expectations and the experience outcome is taken seriously enough that it generates a need to experiment.