Putting Theory-Ladenness to the Test

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Main question

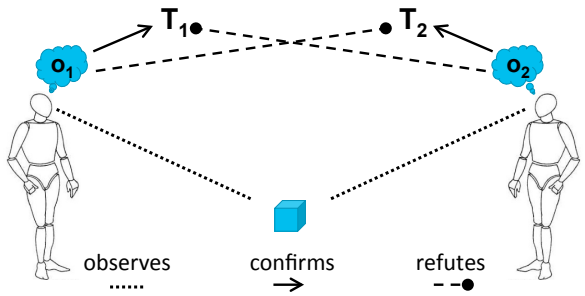
Can we experimentally test the thesis that observation is theory-laden?

Two experiment designs are compared:
- the ostensive learnability criterion – see Schurz (2015)
- the stimulus exchange procedure – see Votsis (2015)

The theory-ladenness thesis

Simply put, any observation report or judgment is distorted by background theory and hence cannot:

(a) act as a neutral adjudicator between rival theories
(b) truthfully represent things about the world.



The theory-ladenness thesis *predicts* that the observation judgments of individuals with distinct theories diverge.

Cognitive penetrability

The cognitive penetrability of perception thesis claims that cognitive states, e.g. beliefs, affect perceptual states.

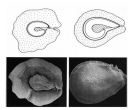
The thesis is closely related to the theory-ladenness of observation thesis – see Zeimbekis & Raftopoulos (2015).

Design 1: Ostensive learnability criterion

Training phase				
Visual stimulus				....
Verbal stimulus	This is a t_a!	This is not a t_a!	This is a t_a!	....

Test phase				
Visual stimulus				....
Is this is a t_a?	Yes/No	Yes/No	Yes/No	....

Design 2: Stimulus exchange procedure

Phase 1	Phase 2	Phase 3	Phase 4
			
Expert test subjects collectively select *N* images from their field	Expert and non-expert test subjects independently draw versions of the images	Drawings are scanned and presented to test subjects in random order	All test subjects independently match drawings to images

Feature comparison

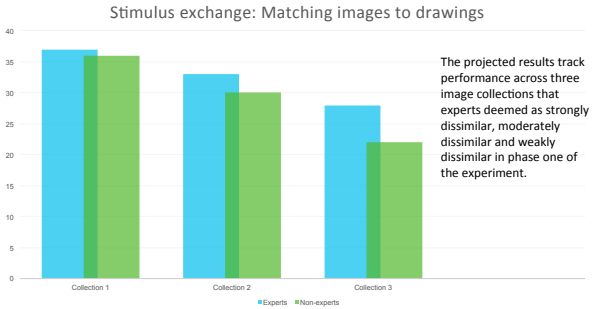
Feature	Ostensive Learnability	Stimulus Exchange
Concept-dependence	Y	N
Correctness-supposition	Y	N
Scope	wide	wide
Stimuli	visual and verbal	visual
Response	verbal assent/dissent	matching images/drawings
Reaction time measured	Y	N
Skill required	visual similarity judgment & concept-extraction	visual similarity judgment

Potential difficulties

Ostensive learnability:
* experimenter bias via concept choice
* excessive slack in how test subjects fix reference

Stimulus Exchange:
* assessing decent drawing skills to select test subjects
* excessive slack in how test subjects fathom similarity

Conjectured results



Conclusion

Both designs look promising as ways to decide the extent to which, if at all, observation can be theory-neutral.

Works Cited

- Schurz, G. (2015) 'Ostensive learnability as a test criterion for theory-neutral observation concepts', *Journal for General Philosophy of Science*, vol. 46: 139-153.
- Votsis, I. (2015) 'Perception and observation unladened', *Philosophical Studies*, vol. 172(3): 563-585.
- Zeimbekis, J., & Raftopoulos, A. (eds.) (2015) *The cognitive penetrability of perception: New philosophical perspectives*, Oxford: Oxford University Press.