

**I am knowledge. Get me out of here!
On localism and the universality of science**

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Overview

Universality of
Science

Globality of
Science

The Validity
Problem

Defining Localism

Weak Localism: the nature of science and its products are *influenced* by locally existing factors

Strong Localism: the nature of science and its products are *determined* by locally existing factors

Defining Localism

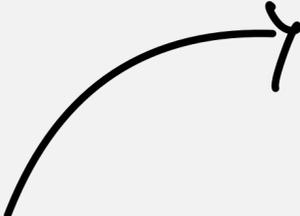
Kuukkanen's target



Strong Localism: the nature of science and its products are *determined* by locally existing factors

Localism denies **universality** but explains the **globalism** of science

*Abstract:
placelessness,
non-locatedness*



Universality
Inclusion without
exception

Globality
Geographical and
situational filling of
space



Universality

Is science actually universal?

Localism explains rooted universality due to the standardization of methods; science attempts to make universality appear self-evident

Standardization

Standardization establishes a stable collective: units, techniques

The standards of science are 'just one way of knowing'

Standardization is a way of knowing —→ a material way of reaching a sense of universality



Globality

How can science travel?

Problem of delocalization of knowledge (Galison)

Problem of construction of knowledge (Golinski)

Problem of movement of local knowledge (Secord)

Theoretical decontextualization (Rouse)

The imposition of knowledge

Latour: transportation of one and the same knowledge and methods
from a center to a periphery.

To suit the knowledge extended to it, the periphery is modified.

Schaffer: “networks are constructed to distribute instruments and values which make the world fit for science” (Schaffer 1991, 23).

... or cultural interaction?

Contact points: multiple points of local contact (Roberts)

Trading zones: coordination of cultural knowledge (Galison)

Decontextualization: adaptation of locally situated practices to new local contexts (Rouse)

Dynamic delocalization

Interaction models **complement** the impositional models.
Delocalization is not a one-dimensional diffusion of knowledge!

Mechanisms for Delocalization

Social negotiation: debate + consensus

Material interaction and resistance

“... the seeming universality is an achievement of these negotiations that has resulted in the standardization of science. The upshot is that the products that seem universal are **creations of the negotiation processes** and that ‘universality’ is an outcome of these products situated in the networks that have been extended globally” (596).



The Validity Problem

The Validity Problem

Instruments, like microscopes, can be delocalized: but instruments do not refer.

Knowledge components, expressions of scientific laws and theories, contain a propensity for external reference.

... but the material world is culture-dependent!

Is external reference really external if the material world itself is culturally dependent? Maybe external reference is local reference?
(Latour)

Is existence relative to social networks? Do objects have a 'relative existence'? Can't we assume a uniform world with a stable ontology?
(Tosh)

Slow your roll, metaphysicians!

What about the actual practices of science? How is this helpful for studying the historiography of science?

... so, is one allowed to make an extra-local inference to the object world that is not or not yet in the reach of a scientific network? And if so, when?

The Boundary Problem

A reason one might hesitate to accept strong localism: scientists seem to expect that knowledge produced in a locality is valid outside of that location.

Scientists **do** make inferences to extra-local validity

If scientists do make extra-local inferences...

1. Strong localism as a description of scientific practice is partially correct, at best. It is historiographically and philosophically untenable.
2. If the practice of science on the basis of assuming extra-local validity seems to be successful, then let's look at the validity of the assumption itself!

When can we justify assumptions of extra-local validity?

This is contextual!

Can the successful practice of scientists justify the inductive type of extra-local inference - transcending the boundary of scientific networks? → It's contextual. Certainly can't infer universal validity of scientific knowledge.

Gems



Emphasizes the practice of science



Some interesting H&P questions (coming up next)



Buried the lead!

Integrated HPS

Is it integrated
HPS?

What can
historiography tell
us about
philosophy of
science?

Integrated HPS

Offers a clarification of some philosophy of science *for* historiography of science.

Looking at the practice of science (and its history) might offer a new way to argue for the uniformity of nature.

Discussion

Is justification based on the practices of science warranted?

Why does science try to make universality look self-evident? Is this beneficial?

If justifying the assumption of extra-local validity is a contextual issue, can we find some sort of guide?