

## Turkle and Papert 1

**Epistemological pluralism** (1991) in Harel & Papert (Eds), *Constructionism*, 161-191

A key slogan:

*The computer is an expressive medium  
that different people can make their own  
in their own way.*

## Turkle and Papert 2

Challenges to the hegemony of the abstract, formal, and logical as the privileged canon in scientific thought, from:

- feminist scholarship
- social scientists who have undermined the privileged status of canonical ways of knowing
- within computation ... the practice of computing provides support for a pluralism that is denied by its social construction.

## Credo

- I too believe in epistemological pluralism
- I too want to challenge the hegemony of the abstract, formal, and logical as the privileged canon in scientific thought
- I identify closely with Turkle and Papert's account of experience of teaching students to exploit computers through programming, BUT:

## Orientation for this talk

"... the practice of computing provides support for a pluralism *that is denied by its social construction*" is not enough:

... the practice of computing provides support for a pluralism *that lacks any credible form of conceptual support from our established conception of computer science*

## Denied by social construction?

... in so far as computer science is socially constructed, I entirely agree

...but there has to be more to computer science than how it is socially constructed

... supporting epistemological pluralism requires a science yet to be developed

## More from Turkle and Papert ...

Lisa wants to manipulate computer language the way she works with words as she writes a poem.

Alex ... turns the Lego wheels on their sides to make flat "shoes" for his robot ...he [uses] the motor to make ... his robot (greatly stabilized by its flat "wheel shoes") vibrate and thus "travel."

Metaphorically, matters arising in examples:

- can you drive a car off road?
- can you make your home in a car?
- can you build roads as you drive?
- can you birdwatch from a car?

Perhaps a qualified yes to all these, but the primary obstacle is not to a matter of social construction, but of conceptual mismatch

## Primary obstacle?

- would it work ... ?
- would it be rewarding to do ... ?

... of course, there's nothing to stop you trying it, but I wouldn't consider it rewarding to write poems in Java or program a robot to move by vibration

## Proposal for computing 1

The principles and tools of computing should be conceived within an epistemological framework in which

- the direct experience a computer affords can take precedence over abstractly defined functionality and meaning
- any mode of interaction and interpretation of this experience is potentially open to consideration