

Contemplating and computing

OPEN DAY 11/08

Thinking

- The Turing machine and the Turing test
- Leibnitz and Boole's "Laws of Thought"
- Rodin's "The Thinker" - not just *computing*?

Contemplating

- ... a different emphasis, not so goal-directed and clearly focused
- ... but why is it important for computing?

Why contemplating is essential ...

- challenging to model complex systems and users formally
- creative use of computers in design, arts and humanities
- new modes of interaction e.g. where agents are semi-automatic

How can computing support contemplating?

- Computer technologies as an adjunct to human reasoning and reflection
- not the separation of human and computer in the "batch job" outlook
- interactive computing is essential, but yet more significant is

*making interpretations **through** interaction with computers*

- in an ongoing manner, always being open to revision and extension.

Not calculations but constructions

- not targeting results but tracing states-of-mind
- spreadsheet rather than program
- not action **a:=b+c** but relationship **a is b+c**

... illustrate with a model to support human Sudoku solving ...

A final comment ...

- The world of human contemplation is intensely rich and messy
- The world of calculating computers is exceptionally precise and orderly
- There is a danger of trying to adapt humans to the world of computers

... it is more important to adapt computers to the human world

If you would like to explore the Sudoku model yourself, you can access it at:

<http://www.dcs.warwick.ac.uk/~wmb/webeden/OpenDayNov2008.html>

The presentation of the model you will find there is intended to support the relatively knowledgeable user.

For best results, you should first copy and paste the fix to the EDDI parser on page 11 of the Workshop Information mini-book into the input window. For other variants of the Sudoku model intended for less specialised use, consult:

<http://www.dcs.warwick.ac.uk/~wmb/sudokuExperience/workshops/>

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Public - HTML/
webden/open Day /
opendaytext.html .

Thinking

- The Turing machine and the Turing test
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Contemplating

- ... a different emphasis, not so goal-directed and clearly focused
- ... but why is it important for computing?

Why contemplating is essential ...

- software engineering - user doesn't know what they want
- creative use of computers in design, arts and humanities
- new modes of interaction e.g. where agents are semi-automatic

How can computing support contemplating?

- Computer technologies as an adjunct to human reasoning and reflection
- not the separation of human and computer in the "batch job" outlook
- interaction is essential, but more so is *interpretation made through interaction*

Not calculations but constructions

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... illustrate with a model to support human Sudoku solving ...

Contemplating a square

location

Size

background color

digit

digit color

What possible digits might go in it
is it fixed in the puzzle?

Call these observables

Examples:

e4 - fixed

e5 - fixed

Whole model composed of several thousand
observables... some particular, some general.

A human solving process - -

- mediating possibilities by color
- % eden
cur digit: the digit I have in mind
- % eddi
diffcountable: how removal of another digit
affects possibilities for all
squares.

[noe % eden
cur digit = 9;
cur digit = 4;
? cur digit

* % eddi
? diffcountable;]