CS405 Introduction to Empirical Modelling

Topic 3.3 - Making Construals and WEB-EM 10

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Making Construals

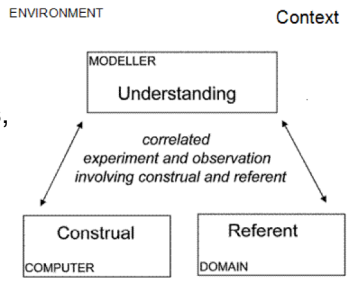
- You should understand something of EM concepts
- The purpose of this lecture is to consolidate your views, consider the process of construal, and to launch WEB-EM 10

Central thesis of EM

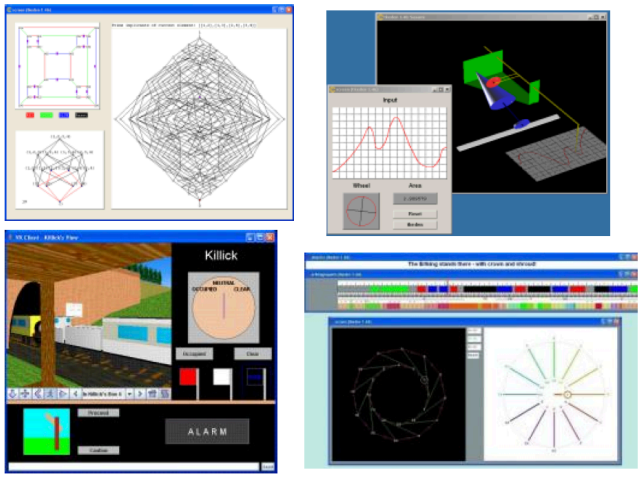
- **Connections** between things we can experience independently can also be given in experience
- This idea is the basic tenet of William James's philosophy of **radical empiricism**

Central thesis of EM

- Such connections are of their nature highly personal and subjective, but can be the foundation for what appear to be (and can be treated as) objective relationships
- Connections between experiences can be engineered by establishing a correspondence between configurations of **observables**, **dependencies** and **agency**.



Sense-making and EM



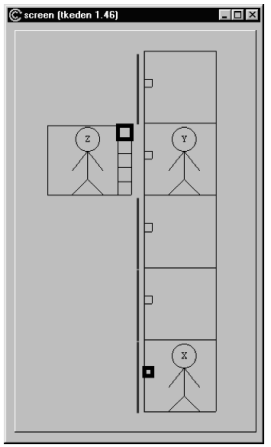
Construals

- EM proposes a new conceptual framework for computing based on principles and tools for making 'construals'
- The process of construal is fundamentally personal

Construals

- Construals are interactive digital artefacts that embody configurations of observables, dependencies and agency encountered in the situations to which they refer
  - Embody counterparts of patterns of observation, dependency and agency that are experienced in the application domain
- Computer technology enables essential **perceptualisation** and **interaction**

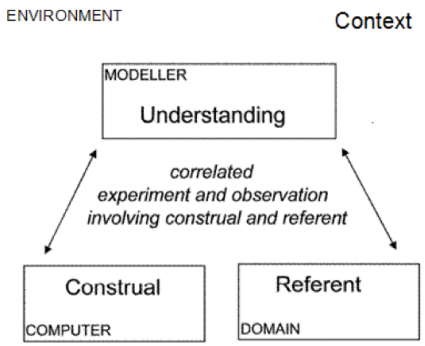
Comprehending Construals



Observables for the lift

```
_button1 = 1;
locX = 1;
locY = 4;
locZ = 0;
_open4 = 1;
_liftfloor = 4;
_car5 = 1;
```

Comprehending Construals



WEB-EM 10

- Two objectives of the coursework assignment:
  - Assess understanding of EM through a written and modelling exercise relating to a common theme of your choice
  - Acquaint you with the process of submitting a research paper
- **Worth 50% module credit**

WEB-EM 10 - Requirements

- Produce a paper and an associated modelling study for the 10th Warwick Electronic Bulletin on Empirical Modelling (WEB-EM 10)
- **Your paper and modelling study should relate to a specific area of potential application for Empirical Modelling (listed in call for papers)**
- The term 'modelling study' is deliberately broad
  - Might refer to the construction of a new EM model and/or the extension, comprehension or documentation of an existing EM model.
  - **To give you flexibility in deciding how much emphasis to give to the written and modelling components, you will be allowed to nominate relative weightings within the range 30%:70% to 70%:30%.**

WEB-EM 10 - Provisional Submission

- By noon on **Wednesday 20th November 2013**, you should submit:

  (a) a provisional title for your paper
  (b) a brief abstract (300-500 words)
  (c) a breif description of your modelling study (300-500 words)
  (d) a list of references to be consulted in addressing your topic
  (e) a provisional indication of the weightings to be applied
- You should submit items (a)-(e) using the Tabula system
- The submissions will be reviewed prior to Wednesday 4th December 2013
  - Feedback given on problematic issues (if any) identified by editorial board

WEB-EM 10 - Final Submission

- By noon on **Tuesday 28th January 2014**, you should submit:

  (1) your final paper on the theme introduced in its abstract
  (2) a practical study in Empirical Modelling relating to your topic
  (3) the weighting to be applied

- The weightings to be given to your work should be specified as one of:

  A. Paper 70%, Model 30% - with paper not to exceed 7 pages
  B. Paper 60%, Model 40% - with paper not to exceed 6 pages
  C. Paper 50%, Model 50% - with paper not to exceed 5 pages
  D. Paper 40%, Model 60% - with paper not to exceed 4 pages
  E. Paper 30%, Model 70% - with paper not to exceed 3 pages

- Your submission should be made electronically via the Tabula system

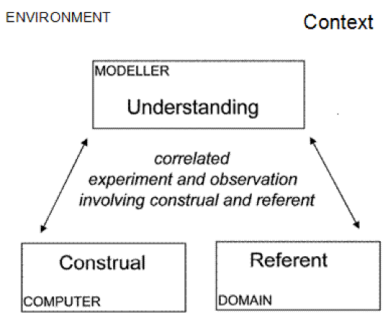
WEB-EM 10 - Prizes and Publication

- Subject to submissions of sufficiently high standard being received, prizes will be awarded for the best paper, best modelling study and most original submission.
- Contributions are subject to an anonymous marking but will be published with the author's name attached
  - If you would prefer your submission to remain anonymous then please indicate this at the time of submission

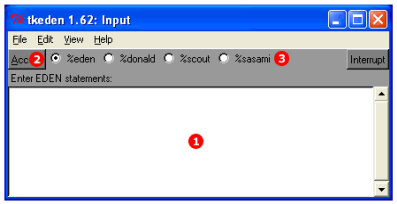
WEB-EM 10 - Topic Areas

- Interactive Graphics and Design
- Concurrent Systems Modelling
- Concurrent Engineering
- Human Computing
- Artificial Intelligence
- Educational Technology
- Software Development
- Humanities Computing

Approaching Construal



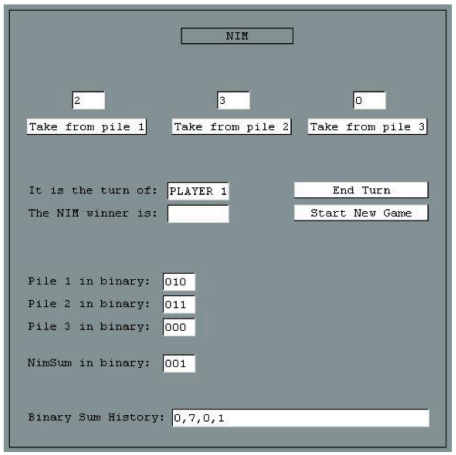
Approaching Construal



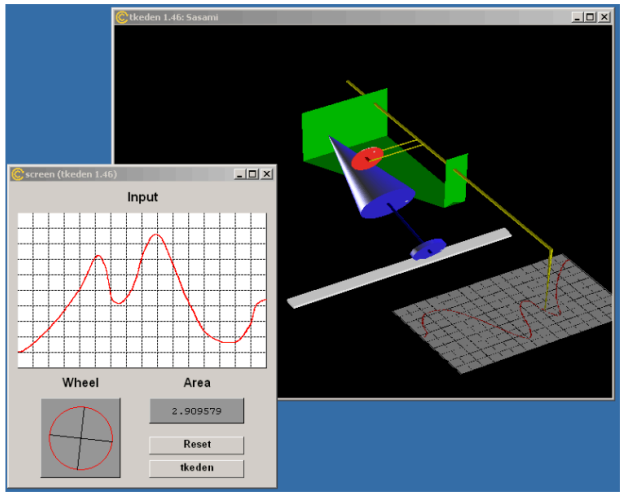
Projects Archive - Inspiration!

Code \/	Title	Author	Date	Type	Funding
!donaldWard2003	!donald	Ashley Ward	11-Dec-2003	software	PhD
3doxoRoe2001	3D OXO	Chris Roe	Jun-2001	model	PhD
agentparserBrown2001	Agent-based parsing system in Eden	Chris Brown	May-2001		3YP
agentparserHarfield2003	Agent-oriented Parser	Antony Harfield	May-2003	model, component	3YP
antnavigationKeer2005	Modelling Navigation and Landmarking in Ants	Daniel Keer	1-Apr-2005	model	3YP
antnavigationKeer2010	Modelling Navigation and Landmarking in Ants	Daniel Keer	8-Jul-2010	model	3YP
arcaBird1991	Arca translator	Stuart Bird	May-1991	software	3YP
arcaWard2002	Arca translator	Ashley Ward	19-Aug-2002	software	PhD
asylumCunningham2004	The Asylum	David Cunningham	Apr-2004	software	3YP
attributeexplorerRoe2000	Attribute Explorer (General Version)	Chris Roe	Feb-2000	model	PhD
attributeexplorernnRoe2000	Attribute Explorer (With Non-numeric types)	Chris Roe	Feb-2000	model	PhD
backroomWard2002	Back room planning	Ashley Ward	21-Jan-2002	model	PhD
beamdetectorRoe2004	Beam Detector	Chris Roe	Feb-2004	model	PhD
beetlesLam1993	Beetles	Nam Sang Benny Lam	Sep-1993	model	3YP
billiardsCarter1999	Billiards with 3d visualisation	Ben Carter	May-1999	model	3YP
billiardsMoissenkov1999	Billiards (Layered)	Alexei Moissenkov	Aug-1999	model	Summer
billiardsYung1996	Billiards	Simon Yung	Jun-1996	model	
blankpresentationWard2002	Blank Presentation	Ashley Ward	21-Aug-2002	model, presentation	PhD
bolzanoBeynon1994	Bolzano Curve	Meurig Beynon	May-1994	model	
bubblesortBeynon1998	Bubblesort	Meurig Beynon	Feb-1998	model	Acad
cabinetdigitBeynon1990	Cabinet digit visual pun	Meurig Beynon	Apr-1990	model	Acad

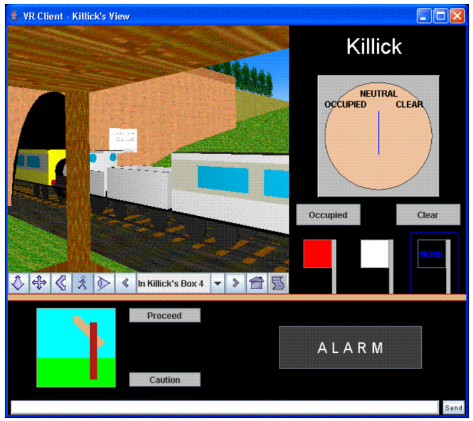
Illustrative Examples - Educational Technology



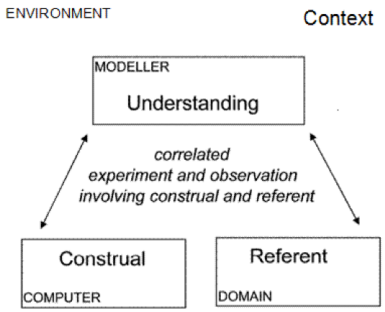
Illustrative Examples - Where Does My Idea Fit?



Illustrative Examples - How Complex?



Illustrative Examples - Where is the Complexity?



A Few Personal Ideas (don't let these constrain!)

- **Concurrent Systems Models**
  - EM, perspectives and multi-agent systems
- **Educational Technology**
  - Exploring the compatibility of EM and the 'traditional' software development lifecycle
  - EM and reuse - Models and engineering
- **Human Computing**
  - EM for physical and digital heritage

Takeaways for WEB-EM 10

- You have considerable freedom but don't be daunted
  - Choice of topic
  - Focus of project / paper
  - Nature of study
  - Assessment weightings
- **Embrace the opportunity to direct your own work**
- **Discussion is best way to generate focus and ideas**