

Press Release

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A Different Kind of Software

The notion of a 'construal' was introduced by the historian of science David Gooding to describe Faraday's emerging understanding of electromagnetism in the 1820's prior to his invention of the first electric motor in the 1820's. A construal means a personal, provisional idea of something; it can be expressed in words, images and - more recently - in interactive computer visualisations. A group in Computer Science at Warwick have been leading an EU Erasmus+ project, CONSTRUIT!, which has developed an environment for a new practice of 'making construals'. Most software consists of programs which implement algorithms - typically sequences of instructions allowing a machine to follow rules and therefore do useful tasks such as text processing or image recognition. But a pre-requisite for problem solving, in any field, is the understanding that comes from making sense of new phenomena - as Faraday was doing. To give computer support for that process needs a different kind of software.

Our efforts to make sense of new experience are often based neither on following rules nor on numerical relationships but rather on qualitative experiential matters. For example, approaching a familiar city at night, by air, we might try to make connections in experience between patterns of lights we can see and what we expect to see knowing what is there. Our observations range back and forth, while new lights come into view as the plane descends.

This is beyond the usual scope of a program, or even a spreadsheet, to model. But the making construals environment (MCE) affords a radical generalisation of a spreadsheet where we give up the tabular interface, allow arbitrary multi-media elements and independent agents, and introduce time to allow for animations. Making construals is based on the premise that "making connections in experience" is crucial for the human way that we make personal models of new phenomena. It's a way of using computers to support the 'pre-programming' work of making sense before we can even formulate the tasks or problems we want to solve.

Using an up-to-date web browser such as Chrome or Firefox the MCE can be explored by going to <http://jseden.dcs.warwick.ac.uk/construit/>. There will be a conference, CONSTRUIT 2017 at the University of Warwick **13th - 16th July 2017** showcasing the achievements and challenges of the CONSTRUIT! project as well as inviting review and critique from a wide range of approaches in educational technology. All interested in computer support for learning are very welcome to participate.

See <http://edumotiva.eu/construit2017>



Email
info@construit.org



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