ELECTRONIC NEWSLETTER ON
REASONING ABOUT ACTIONS AND CHANGE

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Today

Today's newsletter contains the answer by Peter Grünwald to a question to him in the Commonsense workshop discussions. Please click the title of the article to get to the article interaction page containing old and new contributions to the discussion.

Discussions

Articles at Commonsense workshop

(Ramifications and sufficient causes)
You mentioned in your talk that Lin's use of the mnemonic "causes" tends to be misleading. I agree with this, and indeed the observation from our group to his work was that it was more or less a reformulation of what had already been done using occlusion. However, I wonder if there isn't a similar problem with your use of the mnemonic "do". When you characterize the Toss event using formulae such as Do(Heads(1),true), then who is it that is doing something?

Yes and no. 'Yes' in the sense that the word 'Do' may be misleading too - - indeed, nobody needs to be doing something when a coin falls on the table. 'No' in the sense that I am very explicit in my article about the 'physics' of Do: I state precisely what has to happen in a domain in order for $Do(X, B)$ to be the case in that domain; no such statement about *Caused* can be found in Lin's work.

Namely, $Do(X, B)$ means that an intervention takes place that sets the value of X to B. A more appropiate term might indeed be $Set(X, B)$ or $Intervention(X, B)$. I used *Do* to stay close to Pearl's notation (see J. Pearl, Causation, Action and Counterfactuals, TARK '96).

Lin's use of the predicate *caused* has not such a clear interpretation. It gets an implicit interpretation by the axioms it is involved in (like $Caused(X, s, True) \rightarrow Holds(X, s)$) but it is not a priori clear what has to be the case in the domain of interest in order for *Caused* to be true.

In other words, we do not really know what we are trying to model by the predicate *Caused* - that's the essential difference with *Do*.

Hope this is clear.

Peter