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REASONING ABOUT ACTIONS AND CHANGE

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Today

Today, additional discussion on Peter Grünwald's article at the Commonsense workshop.

Discussions

Discussions about Articles at Commonsense workshop

(Ramifications and sufficient causes)
Peter,
You wrote
... 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. ...

Lin's use of the predicate caused has not such a clear interpretation.

But Lin [c-ijcai-95-1985] wrote:

> *The ternary predicate Caused - for any fluent p, any truth value v, and any situation s, $Caused(p, v, s)$ is true if the fluent p is caused (by something unspecified) to have the truth value v in the situation s.*

What is the difference?
Erik

As far as I have understood your approach, you do not use a causality predicate (or connective), but rather you define a causality relationship or causal implication by means of material implication as $Do(p, b) \rightarrow Do(q, b')$ or $a \rightarrow Do(p, b)$ as in example 3 (6) $Do(Alive(t), false) \rightarrow Do(Walking(t), false)$ and (3) $Shoot \rightarrow Do(Alive(1), FALSE)$

But then you can derive classically, $A \wedge Do(p, b) \rightarrow Do(q, b')$, for any formula A. In other words, your causality relation appears to be **monotonic**. I think however that causal implication should be **non-monotonic**. For example, from you axiom (3), you can derive $Shoot \wedge \neg - loaded \rightarrow Do(Alive(1), False)$

Does you approach behave in this way and do you think that causality should rather be non-monotonic?

Hi Erik,

> *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.*

Can you please explain this?
Regards, Vladimir

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