ELECTRONIC NEWSLETTER ON REASONING ABOUT ACTIONS AND CHANGE

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Today

Today, Michael Thielscher fills in additional details about what cases are correctly handled in his approach. The discussion between Wolfgang Bibel and Erik Sandewall proceeds on the topic of citation principles. Although this is a meta-issue which is important within all research areas, it has a particular relevance for the present Newsletter because our on-line discussions offer novel ways of dealing with citation updates. See the discussion contribution below.

Debates

Ontologies for actions and change

From: Michael Thielscher

Dear Erik,

On 26.1., you wrote:

> *What happens in the approach of your KR-96 paper for the case of "backwards in time", such as the stolen car scenario?*
>
> *Re the potato in tailpipe scenario, see also my question number 2 to Wolfgang Bibel in yesterday's newsletter.*

The approach is not restricted to projection, so observations may very well give cause to revising one's belief about the qualifications of an action in the past. As for the stolen car scenario: The only abnormality I consider in the paper is that of being unable to perform an action, in which case none of its effects materializes. Your Stolen Car scenario requires to consider abnormalities as to the surprising production of a single effect (or the failure of producing an expected effect). However, I can give you a straightforward formalization of your example in the Fluent Calculus, including default rules, along the lines of my KR-paper. The resulting axiomatization supports precisely the intended conclusions which you mentioned. My approach also works with non-deterministic action, so if an action has the (nondeterministic) effect that the tail pipe of either of two cars A and B gets clogged, then two preferred models result, one of which denies that we can start car B–as intended.

Michael

Discussion with Wolfgang Bibel about his IJCAI lecture

From: Erik Sandewall

Dear Wolfgang,

A question can serve as a means of obtaining information, but it can also be the syntactic form that's used for questioning a proposition. For those of my questions that were of the former kind, you have provided valuable answers - thank you. However, for those that are of the latter kind, I want to pursue our discussion a bit further on two specific issues: methodology of research in our area, and citation principles. Both of them have a general interest, I believe, and for simplicity let's address them one at a time.

I'll start with the citation principles. The following are two cases containing a quotation from your article, my question or comment, and your answer:

1. Concerning the answer literals or state predicate:

> *For that purpose, [Bibel, 1986a] introduced state literals,* S(x), *which keep trace of the states passed through while executing a plan. ... By unification the variable denoting the goal situation will then ... always provide a term which expresses the linearized sequence of actions.*

> Yes, but how is this different from the use of the Answer predicate which was proposed by Cordell Green in the late 1960's?

> *The technique is of course the same and well established in logic. So what is the point?*

2. Concerning the combination of differential equations and logic:

> *Modelling continuous processes within a logic has become an active area of research though. ... [Herrmann and Thielscher, 1996]. Another issue concerns the integration of differential equations and their computation within a logic such as TL.*

> When you write "another issue concerns the integration of differential equations and their computation within a logic such as TL", the uninformed reader will not easily guess that the integration occurred nine years ago, although not for TL.

> *Your other point concerning differential equations does not tell me anything new and my remark in the paper remains anyway correct.*

I must say that I find your reactions exceptional. It is true that it's always difficult to produce correct and complete references to earlier work; it is difficult for example to give adequate coverage of, and comparisons with approaches different from one's own. In the beginning of your answer, you gave an eloquent description of the problem that we all encounter: you are frustrated by a lack of reference to your own work (even in a case where it was not relevant, actually), and you don't have the space to give an adequate presentation of the work of others.

There is no easy solution to this problem, but would it be possible to agree on a few elementary principles, such as:

- Don't quote a well established result as your own innovation
- Don't try to make earlier work invisible, for example by quoting a topic as a current area of investigation and entirely omitting references to earlier work on that topic that you do know about

- Most importantly, if by accident you get out of line wrt principles such as these, agree to make a correction.

These points are fairly obvious, I would think, although I'm afraid they're not always practiced. There may be a number of other principles that ought to be added as well; the present ones resulted from reflecting on the two concrete cases that I quoted above.

Besides a clarification of policy, I think we need additional mechanisms for feedback and correction of citations. The traditional mechanism, namely, the confidential peer reviews, is clearly not sufficient. One obvious way of proceeding is to use ETAI's review mechanism using public discussion, which allows anyone to contribute questions or suggestions to the author in a transparent but undramatical way. This may be used for pointing out additional references that are relevant for the article.

Using a public forum for this feedback to the author has the additional advantage that it can help to resolve disagreements. If an author is unwilling to accept a suggestion for additional citations, it becomes possible for others to listen to the arguments and to form their own opinion. Then at least, if there is a citation fault it's less likely to propagate to later articles written by others.

I am sure that you have also thought about these issues, in particular as the Research Notes Editor of the Artificial Intelligence Journal, and I look forward to your comments on this important topic.

- Erik

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