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Publication Trail and Update Rules

The Electronic News Journals (ENJ) are a medium for exchange of scientific information and debate. In particular, they serve as the forum where articles received by the ETAI (Electronic Transactions on Artificial Intelligence) are discussed publicly for review, in separate News Journals for each ETAI area.

The Electronic News Journal on Reasoning about Actions and Change (ENRAC), in particular, uses a publication trail where contributed information is first distributed on a daily basis as *Newsletters* using electronic mail and web pages in HTML. Then, contributions during the same month are compiled into an HTML version of the monthly *News Journal*. Finally, the same information is converted via Latex to a postscript version that is suitable for printing on paper and reading off-line. It is formally published and archived by the Linköping University Electronic Press in both its electronic and its paper form, as described on page (iv).

Offprints of individual segments. Each News Journal issue consists of a sequence of *segments* relating to specific topics. "Offprints" of these can be obtained from the URL:s indicated at the head of the first page of each segment. It is intended to maintain these URL:s and their contents for the foreseeable future. Misprints of minor significance are corrected in these offprints (but not in the E-Press version since it is considered archival).

Corresponding HTML edition with dynamic links. The HTML edition contains considerable numbers of links to other pages and structures on the net: articles that are available on-line, home pages of conferences and of individual researchers, links to other part of the ETAI structure, and so on. Due to the natural limitations of the paper medium, only some of the WWW links have been retained here as footnotes. In order to retrieve articles and other information that are referenced in the present issue, it is recommended to look up the corresponding issue in HTML and to use its link. The HTML issues of the News Journals on Reasoning about Actions and Change can be found at the following URL:

`http://www.ida.liu.se/ext/etai/actions/njl/`

It is intended that the HTML issues will by updated continously to the largest extent possible, for example by replacing URL links to the home pages of authors that have changed to another site.

Table of Contents

Dates of Publication

Since the date of publication may be understood either as the date of first public appearance, or as the day of reproduction on paper in many copies, and since both of these definitions may be difficult to apply in the case of electronic publication, we make the following clarifying statement.

The contents of the present issue were put on-line in their original, versions as Newsletters in plaintext, HTML, and latex/postscript during the month of April, 1998. Then the contents were edited and formatted, resulting in the present, formatted version which was published on July 29, 1998, in two concurrent editions: an on-line edition and a paper edition. The on-line edition was timestamped electronically and put on-line by Linköping University Electronic Press at the URL specified on page (i). The paper edition was obtained by printing the on-line edition on a standard computer printer. It was reproduced in 200 copies, legally archived, and made available for distribution.

Vol. 2: *141-141*, 30.4.1998
http://www.ida.liu.se/ext/etai/actions/nj/9804/

The Month of April

Summary of News Journal Contents

The Newsletter activity during April was dominated by the continuing discussion about the ontology of time.

There was one question to Erik Sandewall regarding his ETAI submitted article. The question and the answer are in this News Journal issue.

The review discussion about the article by Tony Kakas and Rob Miller continued with questions from two anonymous referees. Since the authors' answers to those questions were given in May, we prefer to include both questions and answers in the forthcoming May issue of the News Journal.

Electronic News Journal on Reasoning about Actions and Change 142
Vol. 2: *142-143*, 30.4.1998
http://www.ida.liu.se/ext/etai/received/actions/006/

Protocol of on-line discussion during April, 1998
about the following research article:

Erik Sandewall

Logic-Based Modelling of Goal-Directed Behavior

Q1. **Rob Miller** (13.4)

Dear Erik,

I'm confused about axioms S4, S5 and S8 involving the action *test*(p) on page 7 of your paper:

S4 seems to state that it is always possible to perform a test to see if a given property is true. But I would have thought that the opposite is nearly always the case - that in most commonsense or robot environments we could almost assume by default that the agent is not in a position to directly test the truth of a given property of the environment. (This is certainly true for me as I type this question at home. I can't check the condition of anything in my office, in the other rooms in my house, etc. without first performing some other actions.) So what is the rationale behind axiom S4? Is the agent perhaps "testing" it's own knowledge, rather than the real environment?

S5 states that test actions are always instantaneous. Why should this be so, at least in a framework where other actions are not instantaneous?

S8 says that, once executed, a test action fails if and only if the corresponding property is false. But this seems to go against the commonsense notion of "testing". For example, when I test to see if I have any new emails (actually by clicking on the "?" button on Netscape) I count this action as successful if the system reports "no new messages on server". I count the action as failed if (as frequently happens with my faulty modem here at home), clicking on "?" crashes my computer. I'm then left with no information as to whether I have new emails or not. So is this not a test action in the sense that you intended?

Regards,
Rob

A1. **Erik Sandewall** (13.4)

Dear Rob,

The "action" *test*(p) is classified as an action in the formal sense that it can be combined with other actions using, for example, the sequential operator. In those cases that you describe, where the actual performance of the test takes a nontrivial amount of time compared to other events, I imagine that one would use $test(p)$ merely for the internal decision within the robot and using knowledge that it has already acquired. The corresponding, external action of finding out what is the case and *then* succeeding or failing would then be represented with something along the lines of $findout(p)$; $test(p)$, where $findout(p)$ is non-instantaneous.

Will $test(p)$ always be immediately preceded by $findout(p)$ in practice? I think of at least two kinds of situations where this will not be the case. When some fluent is being monitored continuously by a lower software level, then the current value of p can safely be assumed to always be available. Also, in those cases where the agent has to plan ahead and make sure *in advance* that it acquires important information, so that it is there without delay when needed, then again $test(p)$ will not be *directly* preceded by and tied to $findout(p)$.

The axioms assume that the argument of $test(p)$ is either true or false. The case where incomplete knowledge is allowed may be handled by any of the well-known methods, for example by having a pair of two propositional fluents p and p', and where lack of information is represented by making both of them false.

The mnemonic "test" was inspired by an opcode in an assembly language that I learned a long time ago.

Regards, Erik