

- ▶ A. V. RAVISHANKAR SARMA, *Belief revision based on abductive reasoning*.  
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Belief revision is concerned with the adjustment of currently held beliefs in the light of new information, particularly when the old belief are contradicting the new information[3]. This paper discusses the role of abductive reasoning- that is, reasoning in which explanatory hypotheses are formed and evaluated, in the change of beliefs. Recent work in artificial intelligence and Philosophical logic recognizes the importance of abductive reasoning within the process of belief revision, discovery, creativity. The central idea of the paper is that agent seek explanations together with its justification into the agent's current epistemic state before integrating the new information. In the process, an agent given various potential explanations, need to chose the best possible explanation amongst the other competing explanations. We propose an ordering explanations based on the heirarchies of ordering of beliefs called abductive entrenchment ordering of beliefs. This is modification of Pagnucco, Nayak and Foo's model[2], in two different ways. First it proposes abductive entrenchment based on causal explanation and second, it takes care of some of the semantic propertoes such as causal properties, causal explanation, causal relevance, with the belief revision process. The presence or lack of these semantic properties leads to the better understanding of ordering of explanations. We also insights from Kuhn's[1] exhaustive virtues for the theory choice, including accuracy, consistency, scope, simplicity and fruitfulness.

[1] KUHN, THOMAS, **Objectivity, Value Judgment, and Theory Choice, in The Essential Tension: Selected Studies in Scientific Tradition and Change**, Chicago and London: University of Chicago Press, 1977

[2] PAGNUCCO, MAURICE, ABHAYA C. NAYAK, AND NORMAN Y. FOO, *Abductive reasoning, belief expansion and nonmonotonic consequence*, **Proceedings of the ICLP'95 Joint Workshop on Deductive Databases and Logic Programming and Abduction in Deductive Databases and Knowledge-based Systems**, 1995.

[3] GÄRDENFORS, PETER, AND DAVID MAKINSON, *Revisions of knowledge systems using epistemic entrenchment*, **Proceedings of the 2nd conference on Theoretical aspects of reasoning about knowledge**, Morgan Kaufmann Publishers Inc., 1988.