Belief Revision systems are logical frameworks for modeling the dynamics of knowledge. That is, how an agent changes its beliefs when it receives new information. The main problem arises when that information is inconsistent with the beliefs that represent its epistemic state. Clearly, explanations supporting new beliefs are a major instrument for producing rational belief changes, therefore they should be representable in belief revision theory. In this research a new kind of non-prioritized revision operator based on the use of explanations is introduced. The idea is that an agent, before incorporating information which is inconsistent with its knowledge, requests an explanation supporting it. The agent beliefs are represented in a Knowledge Base using the language of Defeasible Logic Programming. The combination of both frameworks results in a formalism for knowledge representation and reasoning about beliefs and
intentions. Here we are exploring the properties of this operator and developing multi-agent applications. Part of this research has involved collaboration with Prof. Dr. Gabriele Kern-Isberner from the University of Dortmund, Germany.

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