

Une inférence lexicographique à partir de bases de croyances partiellement préordonnées ?

Safa Yahi*, Mariette Sérayet⁺,
Sylvain Lagrue*, Odile Papini⁺

* Université Lille-Nord de France,
Faculté des Sciences Jean-Perrin
CRIL, CNRS UMR 8188, F-62307 Lens
{yahi,lagrue}@cril.fr

⁺ LSIS-CNRS UMR 6168,
Université de la Méditerranée, ESIL,
163 av. de Luminy - 13288 Marseille Cedex 09.
{serayet,papini}@esil.univmed.fr

Abstract

Coherence-based approaches are quite popular to reason under inconsistency. Most of them are defined with respect to totally preordered belief bases such as the lexicographic inference which is known to have desirable properties from theoretical, practical and psychological points of view. However, partially pre-ordered belief bases offer much more flexibility to represent efficiently incomplete knowledge and to avoid comparing unrelated pieces of information. In this paper, we propose a lexicographic inference for partially pre-ordered belief bases that extends the classical one. On the one hand, we define a natural inference relation which consists in applying classical lexicographic inference from all compatible totally pre-ordered belief bases. On the other hand, we propose a novel cardinality-based pre-order between consistent subbases. Then, applying classical inference on the preferred consistent subbases, according to this pre-order, provides another lexicographic inference relation for partially pre-ordered belief bases. Moreover, a semantic characterization of the proposed inference is provided. We show that this inference satisfies the rational postulates of System P and is more productive than the possibilistic and the inclusion-preference inferences.

Key-words: Reasoning under inconsistency, partially pre-ordered belief bases, lexicographic inference.