Resumen

La teoría de cambio de creencias estudia la forma en que un agente cambia sus creencias cuando adquiere nueva información. Así, el propósito principal de las investigaciones en el campo de la lógica de la teoría de cambio resulta en analizar cómo se producen tales cambios en el estado de creencias de un agente. Dos clases de cambios son principalmente estudiados, denominados *contracción y revisión*, para la eliminación de antiguas creencias y para la incorporación de nuevas creencias respectivamente.

Dentro del terreno de cambio de creencias la teoría dominante es el marco AGM, donde las creencias son representadas como fórmulas lógicas, y asume una lógica subyacente que es al menos tan expresivo como la lógica proposicional. Debido a esta suposición, el marco AGM no se puede aplicar a sistemas con lógicas subyacentes que son menos expresivos que la lógica proposicional clásica tales como la lógica de Horn.

El objetivo de esta tesis es ampliar la utilidad del marco AGM mediante la investigación de las contracciones de estilo AGM pero bajo lógica Horn y al que denominamos como *contracciones Horn*. Nuestras investigaciones se centraron, por un lado, en los principales métodos de construcción de contracción AGM. Algunas de estas construcciones básicas ya fueron adaptados bajo lógica Horn, siempre con respecto a *una sola sentencia*, sin embargo, su ampliación con respecto a *conjunto de sentencias* aún no habían sido abordados. Unas de nuestras contribuciones presentadas en esta tesis fue el de ampliar y adaptar estas construcciones a la lógica Horn.

Las contracciones adaptadas de sentencias *simples* a sentencias *múltiples* son los modelos basados en *contracción Horn*: *partial meet Horn p-contraction, maxichoice y full meet Horn p-contraction y infra Horn p-contraction*. Además, se presentan una caracterización axiomática para las nuevas clases de funciones de contracción múltiples bajo lógica Horn.

Las contracciones Horn múltiples se restringen a fórmulas Horn, por lo que es válido decir que una contracción Horn múltiple funciona tan racionalmente como lo hace una contracción múltiple AGM. Es decir, una contracción Horn múltiple es *equivalente Horn* a su equivalente original AGM si se comporta de manera idéntica en términos de fórmulas Horn.

Por otro lado (y siguiendo con los tópicos de investigación de esta tesis), se propone mejorar la comprensión y operabilidad de una de las funciones de contracción formalizada bajo lógica Horn, nos referimos a la *epistemic entrenchment Horn contraction* y su condición $(HC\div)$, obteniendo como resultado, una forma aún más restringida a la ya existente para *epistemic entrenchment Horn contraction*, y con el objetivo de que la nueva operación de contracción Horn (modificada) satisfaga los postulados básicos y complementarios que caracterizan las operaciones de contracción Horn basados en *epistemic entrenchment*. Se logra con esto, una forma más apropiada de una operación de contracción Horn basado en importancia epistémica.

Abstract

The theory of belief change studies how an agent changes its beliefs when it acquires new information. Thus, the primary purpose of research in the field of logic of theory change is to analyze how such changes occur in the state of belief of an agent. Two kinds of changes are mainly studied, *contraction and revision* called for the removal of old beliefs and to incorporate new beliefs respectively.

Inside the field of belief change is the dominant theory AGM framework, where beliefs are represented as logical formulas, and assumes an underlying logic that is at least as expressive as propositional logic. Because of this assumption, the AGM framework can not be applied to systems with underlying logics that are less expressive than classical propositional logic such as Horn logic.

The objective of this thesis is to extend the usefulness of the AGM framework by investigating contractions AGM style but under Horn logic and we call such *Horn contractions*. Our investigations concentrated on one side, in the main AGM contraction construction methods. Some of these basic constructions already been adapted under Horn logic, always with respect to *a single sentence*, however, regarding its expansion *set of sentences* not yet been addressed. One of our contributions presented in this thesis was to extend and adapt these buildings to Horn logic.

Contractions *simple* sentences adapted to *multiple* sentences are based models *Horn contraction*: *partial meet Horn p-contraction, and full meet maxichoice Horn p-contraction and infra Horn p-contraction*. Moreover, an axiomatic characterization for new classes of functions of multiple contraction in Horn logic are presented.

Horn multiple contractions restricted to Horn formulas, so it is valid to say that a Horn multiple contraction operates as rationally as does a AGM multiple contraction. Therefore, one Horn multiple contraction is *Horn equivalent* to the original equivalent AGM if behaves identically in terms of Horn formulas.

On the other hand (and continuing with the research topics of this thesis), aims to improve understanding and operability of the functions of contraction formalized in Horn logic, we refer to the *epistemic entrenchment Horn contraction* and their $(HC\div)$ condition, resulting in an even more restricted to the existing *epistemic entrenchment Horn contraction*, and in order that the new Horn contraction operation (modified) satisfies basic and complementary postulates that characterize operations *epistemic entrenchment* based Horn contraction. This is achieved with a more appropriate form of a Horn contraction operation based on epistemic importance.

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