First Faculty of Communication Postgraduate Research Symposium 2008

Title: Squares of opposition and dual inferences

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Abstract

Quantification is an important area of study in modern formal semantics. Yet the origin of its study can date back to the very beginning of classical logic in the form of the Classical Square of Opposition (CSO). Given the limited scope of quantifiers studied in classical logic, the study on CSO and its associated inferential patterns had been stagnant for centuries. However, the advent of the modern Generalized Quantifier Theory has opened up the possibility of constructing new CSOs with a whole range of non-classical quantifiers. Moreover, by reinterpreting the relation on CSO, modern researchers have also transformed CSO to the Modern Square of Opposition (MSO) and discovered new inferential patterns, which I call "Dual Inferences". This paper extends the results of studies on SOs in two directions. First, I unravel the underlying principle of CSO and propose the General Pattern of the Squares of Opposition (GPSO), which is then used to generate new CSOs unknown to the classical logicians. Second, I extend the concepts and certain results related to MSO and the Dual Inferences. By so doing, a number of inferential patterns which involve less studied lexical items or complicated sentence structures are discovered and explained.