1106-03-462 **Gianluca Paolini*** (gianluca.paolini@helsinki.fi) and **Tapani Hyttinen**. *Reduction of Embedded Multivalued Dependence to Dividing in Atomless Boolean Algebras.*

Given a logic L and an independence calculus I for L, we say that a notion of independence is reducible to I if there exists a theory T in the logic L, such that the notion of independence is computable using the independence calculus I with respect to T. The most common forms of independence which occur in nature are probably the following four: i) linear independence, ii) algebraic independence, iii) stochastic independence and iv) embedded multivalued dependence. As known, linear and algebraic independence are reducible to Shelah's forking calculus. Recently, Ben-Yaacov showed that stochastic independence is reducible to the continuous forking calculus in the theory of atomless probability algebras. It comes then natural to ask: what about embedded multivalued dependence? In this talk we show that embedded multivalued dependence is reducible to the first-order dividing calculus in the theory of atomless boolean algebras. A part from its mathematical significance, this result establishes strong connections between independence in database theory and stochastic independence. As indeed, in light of the aforementioned reduction, the latter case of independence can be seen as the measure-theoretic version of the former. (Received August 29, 2014)