▶ MARCELLO D'AGOSTINO, AND COSTANZA LARESE, *Hintikka on the informativeness of logical deduction. A depth-bounded approach to classical first-order logic.*

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In the Sixties and the Seventies [3], Jaakko Hintikka attacks the thesis that logic is analytical and tautological. On the one hand, Hintikka argues that a class of polyadic first-order inferences are synthetic in the sense that it is necessary to introduce new individuals into the argument to derive their conclusion from the premises. On the other hand, Hintikka devises a new notion of information, which he calls *surface information*, that might be increased by logical deduction. In this talk, we individuate some conceptual and technical difficulties affecting Hintikka's work, and propose a different approach, called *Depth-Bounded First-Order Logics* (DBFOLs) [2]. The latter, which extends the propositional natural deduction system of Depth-Bounded Boolean Logics [1], is structured as an infinite hierarchy of logics representing increasing levels of syntheticity or informativeness of classical first-order logic. In particular, we claim that DBFOLs provides: i) a measure of the maximal number of individuals that must be considered together in a certain formula, which improves upon Hintikka's notion of *degree of a formula*; ii) a natural characterization of the intuitive *surface* meaning of the quantifiers, namely, of what it means for an agent to *actually possessing* the information that a quantified formula is true or false; iii) a clear distinction between analytic and synthetic deduction rules, where only the latter introduce new individuals into the argument.

[1] M. D'AGOSTINO, D.M. GABBAY, AND S. MODGIL, *Normality, Non-Contamination and Logical Depth in Classical Natural Deduction*, **Studia Logica**, vol. 108, pp. 291–357.

[2] M. D'AGOSTINO, C. LARESE, AND S. MODGIL, *Towards Depth Bounded First-Order Logics*, **IfCoLoG Journal of Logics and their Applications**, vol. 8 (2), pp. 423-451.

[3] J. HINTIKKA, **Logic, Language-Games and Information. Kantian Themes in the Philosophy of Logic**, Clarendon Press, 1973.