

## ELENA DRAGALINA-CHERNAYA

NATIONAL RESEARCH UNIVERSITY HIGHER SCHOOL OF ECONOMICS,  
MOSCOW, RUSSIA  
edragalina@gmail.com

### **The ontology of logical form: formal ontology vs. formal deontology**

The main aim of this paper is to show the advantages of shifting focus from substantial towards dynamic model of formality, i.e. from formal ontology (the domain of higher order formal objects, e.g. hypostases of structurally invariant properties of models) to formal deontology (the domain of rules-governed and goals-directed activity).

Substantial model goes back to the Aristotelian form versus matter dichotomy. Substantial hylomorphism considers logic as a theory of formal relations which takes their general properties and turns them into general laws of reasoning. I am going to systematize the variety of substantial hylomorphism according to different types of formal relations, e.g. transcendental relations (scholasticism); psychological relations (E. Husserl); ideal relations (A. Meinong); relations of ideas in themselves (B. Bolzano); metalogical relations (N. Vasiliev) and logical relations (A. Tarski). For example, Tarski explained the concept of logical notions as exactly those which are invariant under arbitrary permutations of the underlying domain of individuals. He proposed the following general philosophical interpretation of his invariance criterion, “our logic is logic of cardinality”. Because of the *overgeneration* of the criterion (Tarski’s criterion assimilates logic to set theory; see McGee 1996, Feferman 2010) and its *undergeneration* with respect to modal logics (Dutilh Novaes 2014) permutation invariance cannot be considered as necessary and sufficient criterion of logicity. According to C. Dutilh Novaes, “the criterion pertains fundamentally to the numerical identity of objects, i.e. to quantities and numbers” (Dutilh Novaes 2014). In this paper I argue that Tarski’s thesis of ‘our logic’ as ‘logic of cardinality’ is not correct even for the theory of polyadic quantification.

The dynamic model of formality goes back to the scholastic conception of logic as a formal art. Dynamic formality characterizes a special way to following the rule. Thus, its various modifications may be classified into two clusters according to J. Rawls and J. Searle’s dichotomy of constitutive and regulative rules. The explication of the constitutive formality in Wittgenstein’s project of philosophical grammar will be sketched. I am going to compare substantial (model-theoretical) and dynamic (game-theoretical) approaches to the exegesis of Wittgenstein’s thesis that colors possess logical structures, focusing on his ‘puzzle proposition’ that “there can be a bluish green but not a reddish green” (Wittgenstein 1977). What is gained, then, is a new game-theoretical framework for the logic of ‘forbidden’ (e.g., reddish green and bluish yellow) colors.

*Acknowledgments.* This study (research grant No. 14-01-0020) was supported by The National Research University–Higher School of Economics’ Academic Fund Program in 2014/2015.

#### References

- Dutilh Novaes, C. (2014). The Undergeneration of Permutation Invariance as a Criterion for Logicity// *Erkenntnis*, Vol. 79, 1, 81-97.
- Feferman, S. (2010). Set-theoretical invariance criteria for logicity // *Notre Dame Journal of Formal Logic*, 51, 3–20.
- McGee, V. (1996). Logical operations // *Journal of Philosophical Logic*, 25, 567–580.

Tarski, A. (1986). What are logical notions? // *History and Philosophy of Logic*, 7, 143–154.

Wittgenstein, L. (1977). *Remarks on Colour*. Oxford: Blackwell.