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Compositionality

Nordic Logic Summer School 2017, Stockholm, August 7 – 11

Plan

The course gives an introduction to the main idea of the principle of semantic compositionality, some of its formal properties, some variants of the idea, and some interesting applications. The applications come from both logic and natural language semantics. The following classes are planned; the program may be detailed further at a later stage.

1. **The general idea of compositionality**

   [PP] Historical background. Formal definitions. Stronger and weaker versions. Some standard arguments for and against compositionality.

   Reading: Pagin and Westerståhl 2010a; Pagin and Westerståhl 2010b (*preprint1*, *preprint2*)

2. **Compositionality and context dependence**

   [DW] Extensionality and intensionality. Extra-linguistic context dependence. Linguistic context-dependence and general compositionality.

   Reading: Westerståhl 2012 (*preprint*)

3. **Applications 1:**

   [PP] (a) Quotation: non-compositional but general compositional. (b) The problem of compositional accounts of the semantics of belief-sentences. [DW] (c) Compositionality helps solving Carnap's problem: Do the laws of classical first-order logic fix the meaning of the usual logical constants?

   Reading: Pagin and Westerståhl 2010c (*preprint*), Bonnay and Westerståhl 2016 (*postprint*)

4. **Applications 2:**

   [DW] Questions of compositionality in logic: Logics for dependence and independence; IF-logic and Dependence logic. Compositional translation and expressive power. Locality and compositionality.

   Reading: Sandu 2012 (*here*), Kontinen 2013 (*here*)

5. **Compositionality and the computational complexity of interpretation:**

   [PP] Is compositional interpretation the most efficient kind of interpretation?

   Reading: Pagin 2017 (*manuscript*)

References

Bonnay, Denis and Dag Westerståhl (2016). "Compositionality solves Carnap's Problem". In: *Erkenntnis* 81.4, pp. 721–739.

Kontinen, Juha (2013). "Dependence Logic: a survey of some recent work". In: *Philosophy Compass* 8.10, pp. 950–963.

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Pagin, Peter and Dag Westerståhl (2010a). "Compositionality I: Definitions and Variants". In: *Philosophy Compass* 5(3), pp. 250–264.

— (2010b). "Compositionality II: Arguments and Problems". In: *Philosophy Compass* 5(3), pp. 265–282.

— (2010c). "Pure quotation and general compositionality". In: *Linguistics & Philosophy* 33.5, pp. 381–415.

Sandu, Gabriel (2012). "Independence-Friendly Logic: dependence and independence of quantifiers in logic". In: *Philosophy Compass* 7.10, pp. 691–711.

Westerståhl, Dag (2012). "Compositionality in Kaplan style semantics". In: *The Oxford Handbook of Compositionality*. Ed. by Wolfram Hinzen, Edouard Machery, and Markus Werning. Oxford: Oxford University Press, pp. 192–219.