

Objects, events, qualities: an introduction to formal ontological distinctions in DOLCE

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1 Slides

The slides will be available some days before the first lecture of the course at www.loa-cnr.it.

2 Main material about DOLCE

The web page <http://www.loa-cnr.it/DOLCE.html> collects the main documents about DOLCE.

We will refer mainly to the FOL version of DOLCE 2.1 described in the WonderWeb Deliverable D17 downloadable at:

<http://www.loa-cnr.it/Papers/WonderWebD17V2.0.pdf>

A preliminary discussion about different ontological choices and a comparison between DOLCE and two different foundational ontologies (namely OCHRE and BFO) are addressed in the WonderWeb Deliverable D18 downloadable at:

<http://www.loa-cnr.it/Papers/D18.pdf>

DOLCE-CORE, an evolution of the core fragment of DOLCE with additional categories (e.g. *concept*) and a generalization of some primitive relations, is presented in “Foundational choices in DOLCE” downloadable at:

<http://www.loa-cnr.it/Papers/IOShandDOLCEv16.pdf>

2.1 Extensions of DOLCE (★ = recommended)

– Roles, qua-individuals, and reification of properties:

- ★ “Social Roles and their Descriptions” is the main reference about the extension of DOLCE with the *reification of properties* (in particular *roles*).

<http://www.loa-cnr.it/Papers/KR04MasoloC.pdf>

- ★ “Artefacts and Roles: Modelling Strategies in a Multiplicative Ontology” is a methodological paper that uses the examples of roles and artefacts to illustrate two *multiplicative* modelling strategies: *entity stacking* and *property reification*.

<http://www.loa-cnr.it/Papers/VieuBorgoMasoloFOIS08.pdf>

- “Relational Roles and Qua-individuals” compares two alternative solutions to the ‘counting problem’ one based on *qua-individuals* the other one on *relational-tropes*.

<http://www.loa-cnr.it/Papers/FS805MasoloC.pdf>

– Properties and qualities:

- ★ “Qualities in Formal Ontology” characterizes and compares four different ways of representing qualities discussing their ontological commitment. The presented frameworks are also compared with *trope theory*, *conceptual spaces* and the *International System of Units*.

[http://www.loa-cnr.it/Papers/Qualities\(Font05\).pdf](http://www.loa-cnr.it/Papers/Qualities(Font05).pdf)

- “Founding Properties on Measurement” discusses how it is possible to give an epistemic/empirical foundation to the theory of qualities of DOLCE by using a ‘new’ theory of measurement.

<http://www.loa-cnr.it/Papers/fois2010qualV0.5.pdf>

– **Persistence, dependence, and levels:**

- ★ “Understanding Ontological Levels” develops a theory of levels that accounts for more specific relations like *constitution*, *inherence*, and *abstraction*.

<http://www.loa-cnr.it/Papers/fois2010qualV0.5.pdf>

- “Parthood Simpliciter vs. Temporary Parthood” compares the 3d and 4d theories of persistence through time.

<http://www.loa-cnr.it/Papers/commsense09v0.3.pdf>

3 Other useful material

3.1 Introduction

- [1] N. Guarino. Formal ontology in information systems. In N. Guarino, editor, *Formal Ontology in Information Systems (FOIS'98)*, pages 3–15, Trento, Italy, 1998. IOS Press.
- [2] N. Guarino. The ontological level: Revisiting 30 years of knowledge representation. In A. Borgida, V. Chaudhri, P. Giorgini, and E. Yu, editors, *Conceptual Modelling: Foundations and Applications*, pages 52–67. Springer Verlag, 2009.
- [3] N. Guarino, D. Oberle, and S. Staab. What is an ontology? In S. Staab and R. Studer, editors, *Handbook on Ontologies, Second Edition*, International handbooks on information systems, pages 201–221. Springer Verlag, 2009.

3.2 Properties

- [4] D. M. Armstrong. *Universals: An Opinionated Introduction*. Westview Press, 1989.
- [5] D. H. Mellor and A. Oliver, editors. *Properties*. Oxford University Press, Oxford, 1997.
- [6] M. J. Loux and D. W. Zimmerman, editors. *The Oxford Handbook of Metaphysics*. Oxford University Press, Oxford, 2005.
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- [8] G. Rodriguez-Pereyra. *Resemblance Nominalism. A Solution to the Problem of Universals*. Clarendon Press, Oxford, 2002.
- [9] P. Gärdenfors. *Conceptual Spaces: the Geometry of Thought*. MIT Press, Cambridge, Massachusetts, 2000.

- [10] I. Johansson. Determinables as universals. *The Monist*, 83(1):101–121, 2000.

3.3 Change, persistence, and constitution

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- [12] T. Sider. *Four-Dimensionalism. An Ontology of Persistence and Time*. Clarendon Press, Oxford, 2001.
- [13] L. R. Baker. *The Metaphysics of Everyday Life*. Cambridge University Press, Cambridge, 2007.
- [14] P. Simons. *Parts: a Study in Ontology*. Clarendon Press, Oxford, 1987.
- [15] M. Heller. *The Ontology of Physical Objects. Four Dimensional Hunks of Matter*. Cambridge University Press, Cambridge, 1990.
- [16] D. Wiggins. *Sameness and Substance Renewed*. Cambridge University Press, Cambridge, 2001.
- [17] M. J. Loux and D. W. Zimmerman, editors. *The Oxford Handbook of Metaphysics*. Oxford University Press, 2005.

3.4 Events

- [18] R. Casati and A. Varzi. *Events*. Dartmund, Aldershot, 1996.
- [19] J. Higginbotham, F. Pianesi, and A. V. Varzi. *Speaking of events*. Oxford University Press, New York, 2000.
- [20] D. Davidson. *Essays on Actions and Events*. Clarendon Press, Oxford, 1980.
- [21] J. Bennet. *Events and Their Names*. Clarendon Press, Oxford, 1988.
- [22] L. B. Lombard. *Events. A Metaphysical Study*. International Library of Philosophy. London, Routledge and Kegan Paul, 1986.
- [23] M. J. Loux and D. W. Zimmerman, editors. *The Oxford Handbook of Metaphysics*. Oxford University Press, Oxford, 2005.