

Inherent Polysemy of Action Nominals

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The event/result meaning contrast displayed by most deverbal action nouns (e.g. *construction*, *development*, etc.) has been the subject of several theoretical investigations, especially because of the challenging syntactic corollaries related to the semantic ambiguity of these nouns (cf. Grimshaw 1990, Alexiadou 2002, among others). Much less, however, has been the attention paid to the phenomenon from a lexical-semantic perspective. Among others, Asher (1993) and Pustejovsky (1995) tackled this issue focusing on the syntactic and semantic structures of the base verbs, and pointing to different formal solutions. Based on the achievements of previous works on polysemy (cf., in particular, Copestake and Briscoe 1995), the overall aim of our presentation is to show that the event/result polysemy of deverbal nominals is a special case of inherent polysemy (i.e. *complex type* or *dot object*, cf. Pustejovsky 1995), since it is dependent on the semantics of the base verb (its semantic structure but also more idiosyncratic meaning aspects) and on the specific properties of the suffixes involved in the nominalization process. Also, we intend to contribute to the representation of the event/result polysemy by investigating the distributional behaviour of deverbal nominals in text, in particular by looking at the selectional properties of their verbal and adjectival collocates (following a methodology first proposed in Rumshisky et al. 2007 and later adopted in Ježek 2008 in the analysis of English and Italian dot object polysemy respectively) (see 1 below):

(1) *construction* (event•result)

Selecting verbs

(a) Event: *finance, complete, supervise, authorize, allow, start, oppose*

(b) Result: *examine, build*

Adjectival modifiers

(a) Event: *possible, widespread, careful*

(b) Result: *wooden, solid, robust, impressive*

The starting point of our presentation is a review of Pustejovsky's 1995 account, which is based on a categorization of the polysemy of deverbal nominals as event•event or, more specifically, as process•(result-)state. In particular, Pustejovsky claims that for *ion*-nominalizations in English, three interpretations are available, i.e. process, result or process•result respectively. Also, he claims that for nominalizations which are derived from verbs of creation (e.g. *building, construction* etc.) the result interpretation may correspond either to the individual which is created as a result of the initial process, or to the state itself (Pustejovsky 1995, 172; similar remarks in Osswald 2005, 260).

The study of nominals in text confirms that the (result-)state interpretation is available in some cases (e.g. *isolation*, expressing the process and the state) but points out that, with some exceptions, it is generally excluded to nominals ambiguous between an event and a result-object reading (e.g. *translation* can not refer to the state of being translated). Therefore, we argue that for these nominals the notion of result hinges primarily on the concept of abstract or physical object yielded by a corresponding event (e.g., *construction* as the event and as the abstract or concrete object resulting from it). On these grounds, we propose that the event/result polysemy of these nominals should be classified primarily as event•(result-)object, where the 'object' type is the hyperonymic category of 'results' intended as the causal by-product of an event.

This definition of the intuitive notion of result leads to a second important generalization: since causality is tied to the notion of (complex) Event Structure, crucially restricted to the V category (cf. Grimshaw 1990, Pustejovsky 1991, Levin & Rappaport Hovav 1998, a.o.), we derive that only nominals obtained from verbs are potential bearers of this special pattern of polysemy. This explains why – notwithstanding the general consensus on the similarity of polysemy patterns in the morphologically simplex and complex lexicon (cf. Apresjan 1973) – only can deverbal nominals, hence morphologically complex nouns, refer to the abstract or concrete result of an event (a few counterexamples are quoted in Pustejovsky 2005).

From a theoretical viewpoint, the special nature of these dot objects lies in the asymmetry – at the ontological level – between the types making up the complex type. Not only are events and objects

radically distinct ontological categories, but the result-object type is temporally and causally dependent on the event type since the performance of the event is the pre-condition for the (coming into) existence of the result. In this respect, it is worth stressing that, while there are events that do not yield results, and accordingly there are unambiguous event-denoting nominals (cf. *annihilation*), the reverse situation does not hold (there are no results without a causing event, and unambiguous result-denoting nominals are idiomatized/lexicalized). Such asymmetry is missing in standard cases of dot objects, even in event•object dot types, such as *lunch*, where the senses in the complex type are mutually interdependent: the food is a ‘shadow argument’ of the *eating* event specified in the Qualia Structure of the head noun (corresponding to what is consumed during the event) and no result is at stake.

On the other hand, while the necessary condition for a result interpretation is the existence of an event, the result does not necessarily correspond to a syntactic position in the argument structure of the base verb. With the exception of nominals derived from creation verbs (e.g. *build*, *construct*, *create*, etc.), most result nominals do not introduce reference to an entity which corresponds to a syntactic argument of the base verb. Let us consider *translation*: the result of the event (i.e. *translation* as an informational object), although temporally and causally dependent on its accomplishment, is not expressed by a dedicated DP in the syntax. However, this piece of information, we claim, must be codified somehow in the Qualia Structure of the nominal. We propose that it is codified in the form of a semantic participant (or “hidden argument”, cf. Badia and Saurí 2001) of the predicate corresponding to the value of the Agentive Quale of the result nominalization (see Melloni 2006, 2007 and Ježek 2009 for proposals along these lines).

A second important issue concerns the difficulty of co-predication generally attested with this class of nominals. In fact, while standard dot objects usually appear in co-predication contexts (see 3), event/result nominals tend to avoid co-predication or to accept it only at specific syntactic conditions, including temporal disjunction, omission of arguments, insertion of a relative pronoun, etc. (see 4; cf. Jacquey 2001 for a detailed analysis of French nominals in co-predication contexts).

- (3) The lunch was delicious but took forever.
- (4) The translation of this book is perfect now but took forever.
- (5) #The construction of this house is huge but took forever.

We claim that (partial) failure of co-predication primarily depends on the *syntactic* incompatibility between the senses in context because, whilst event nominals usually require the projection of an argument (generally, the internal one), result nominals can block its projection (see 5). Also, along with Copestake and Briscoe 1995, we claim that while acceptable co-predications imply the existence of a single structure, it does not follow that the converse is true, since a semantic/pragmatic principle of cohesion may be at play, which restricts the acceptability of certain sense combinations in context. Concerning this point, the Sketch Engine query tool that we use in our corpus analysis (cf. Kilgarriff et al. 2004) turns out to be particularly useful for the identification of the syntactic and semantic contexts where felicitous co-predications obtain. Further, it allows us to develop a fine-grained taxonomy of dot nominals (see 6), where a distinction is made between nominals for which the state and object constituent types are brought about by the corresponding causing act (“true” event•result nominalizations) from nominals for which the state and object constituents hold independently of the event that may bring them about, and therefore cannot be classified as actual results (on the notion of state-related result, cf. Naumann 2001, 60). Consider *isolation* (6a): the state of being isolated is not necessarily caused by the corresponding event. The same holds for *obstruction* (6c): as argued in Kratzer (2000, 9) “a blood vessel may be obstructed due to a malformation without there ever having been an event of obstruction.”

- (6) a. event•(result) state: *isolation*
- b. event•result object: *building, translation, construction*
- c. event•result state•result object: *obstruction, connection*
- d. event•(phys/abstract) object: *lunch, concert*

Summing up, this research clarifies the nature of an intriguing pattern of inherent polysemy, widely attested in deverbal action nominals, but peculiar with respect to standard cases of dot objects. The event/result polysemy is formally codified at the level of Event and Qualia Structures of the base verbs

and corresponding nominals, while the relation between the senses is identified as 'causal'. However, event/result nouns are crucially different from standard complex types, since there is no mutual interdependence between the types but the event sense is primary with respect to the result sense. Troubles with co-predication are the direct indication of such asymmetry and can be explained in relation to different syntactic and semantic requirements of the event and result types.

Selected references

- Alexiadou, A. 2001. *Functional Structure in Nominals*. Amsterdam: Benjamins.
- Apresjan, J. 1973. "Regular polysemy". *Linguistics* 12: 5-32.
- Asher, N. 1993. *Abstract Objects in Discourse*. Dordrecht: Kluwer.
- Badia, T. and Sauri, R. 2001. "A note on redescription predicates". In P. Bouillon – K. Kanzaky (eds) *Proceedings of the 1st International Workshop on Generative Approaches to the Lexicon* (April 26-28, 2001). Geneva. Switzerland.
- Copestake, A. and T. Briscoe, 1995. "Semi-productive polysemy and sense extension". *Journal of Semantics* 12 (1): 15-67.
- Grimshaw, J. 1990. *Argument Structure*. Cambridge (MA): MIT Press.
- Jacquey, E. 2001. *Ambiguïtés Lexicales et Traitement Automatique des Langues: Modélisation des la Polysémie Logique et Application aux déverbaux d'action ambigus en Français*. Ph.D. Dissertation, Université de Nancy 2.
- Ježek, E. 2008. "Polysemy of Italian event nominals". In *Faits des Langues* 30. Special issue on *Nominalisations*: 251-264.
- Ježek, E. 2009. "Argument structure binding and event nominal polysemy". In *Proceeding of CIL 18*. Seoul, Korea, July 21-26, 2008 (in press). Also available at: http://host.uniroma3.it/laboratori/triple/Pubblicazioni_Publications.html
- Kilgarriff, A., P. Rychlý, P. Smrž, and D. Tugwell, 2004. "The Sketch Engine". In *Proceeding of Euralex 2004*, Lorient, France. Also available at: <http://www.sketchengine.co.uk/>
- Kratzer, A. 2000. "Building stative". *Berkeley Linguistic Society* 26: 385-399.
- Melloni, C. 2006. "Logical polysemy in word formation: E and R suffixes". *Lingue e Linguaggio* vol. 2: 281-308.
- Melloni, C. 2007. *Polysemy in Word Formation: The Case of Deverbal Nominals*. PhD dissertation, Verona University.
- Osswald, R. 2005. "On result nominalization in German". In E. Maier et al. (ed) *Proceedings of Sinn und Bedeutung 9*, 256–270. Also available at <http://www.ru.nl/ncs/sub9/sub9osswald.pdf>
- Naumann, R. 2001. "Aspects of change: A dynamic event semantics". *Journal of Semantics* 18: 27-81.
- Pustejovsky, J. 1995. *The Generative Lexicon*. Cambridge (MA): MIT Press.
- Pustejovsky, J. 1998. "The semantics of lexical underspecification". *Folia Linguistica* 32 (3-4): 323-347. Also available at <http://www.cs.brandeis.edu/~jamesp/articles/fovia-linguistica-1998.pdf>
- Pustejovsky, J. 2001. "Type construction and the logic of concepts". In *The Syntax of Word Meaning*, P. Bouillon and F. Busa (eds), 91-123. Cambridge (MA): Cambridge University Press. Also available at: <http://courses.media.mit.edu/2002fall/mas962/MAS962/Pustejovsky.pdf>
- Pustejovsky, J. 2005. "A survey of dot objects", ms., Brandeis University. <http://www.cs.brandeis.edu/~jamesp/dots.pdf>
- Rappaport Hovav, M. and B. Levin, 1998. "Building verb meanings". In *The Projection of Arguments: Lexical and Compositional Factors*, M. Butt and W. Geuder (eds), 97-134. Stanford (CA): CSLI Publications.
- Rumshisky, A., V. Grinberg and J. Pustejovsky 2007. "Detecting selectional behaviour of complex types in text". In P. Bouillon, L. Danlos and K. Kanzaky (eds) *Proceedings of the 4th International workshop on Generative Approaches to the Lexicon* (May 10-11, 2007). Paris, France. Also available at: <http://www.cs.brandeis.edu/~arum/publications/RumshiskyGL2007.pdf>