

# Cognate Objects in English

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# Outline

- 1 Introduction
- 2 The Syntactic Status of Cognate Objects
- 3 The Interpretation of Cognate Objects
- 4 Analysis
  - Lexical Resource Semantics (LRS)
  - Concrete Event COs
  - Other Types of COs
- 5 Summary and Outlook

# Terminology

- Cognate objects construction (COC): verb cognate object (CO)
  - (1)
    - a. fight a good fight
    - b. sleep the sleep of the just
  - Morphological-semantic criterion: Sweet (1891): The noun repeats the meaning of the verb and has the same stem.
  - Verb class: unergative, intransitive verbs (+ *die*)
  - Selectional restriction: Jones (1988): The verb is normally intransitive; little variation in what could occur as an accusative
    - (2)
      - a. Sam lived a happy life/ \*something happy.
      - b. Sam died a gruesome death/ \*a murder.
      - c. Sam danced a dance/ a jig/ a piece from Swan Lake.
      - d. Sam dreamed a nice dream/ something funny.

# Problems

- syntactic status of the cognate object (complement/ adjunct)
- interpretation of the cognate object (event/ object)
- “cognateness” of verb and head noun

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# Properties from Jones (1988)

- passivization: \*[A silly smile] was smiled.
- topicalization: \*[A silly smile], nobody smiled.
- pronominalization:  
\*Maggie smiled [a silly smile]<sub>i</sub> and then her brother smiled it<sub>i</sub>.
- definiteness restriction:  
\*He smiled [the smile for which he was famous].
- questioning: \*What did he die?
- obligatory modification: ?He died [a death].
- required cognateness: \*He died [a suicide]/ [a murder].
- manner paraphrase:  
Bill sighed [a weary sigh] = Bill sighed wearily.

# COs as Adjuncts (Jones, 1988; Moltmann, 1989)

- passivization (ok): \*[A silly smile] was smiled.
- definiteness restriction (unclear):  
\*He smiled [the smile for which he was famous].
- obligatory modification (unclear): ?He died [a death].
- required cognateness (unclear): \*He died [a suicide]/ [a murder].
- manner paraphrase (ok):  
Billed sighed [a weary smile] = Bill sighed wearily.



# Problems for the Adjunct Analysis

Massam (1990); Macfarland (1995); Kuno and Takami (2004)

- passivization: [A **smile**] was **smiled** somewhere.
- definiteness restriction: Pat **slept** [the **sleep** of the just].
- obligatory modification: You've got to **live** [your **life**], too. (BNC)
- required cognateness:  
Van Aldin **laughed** [a quiet little **cackle** of amusement].
- manner paraphrase:  
She **laughed** [a little **laugh**] in her throat, but didn't answer.
- restriction to intransitive verbs:  
(3) They **fought** [a heroic **fight**].  
They **fought** the enemy heroically/ \*[a heroic **fight**].

In English: Cognate objects are complements.

# Different Syntactic Patterns

- 3 prototypical patterns:
  - ▶ indefinite pattern: **verb** [a/an Adj **CO**]  
Pat **lived** [a happy **life**].
  - ▶ definite pattern: **verb** [the (Adj) **CO** PP]  
Pat **lived** [the tranquil **life** of a Buddhist monk].  
Pat **smiled** [the **smile** of reassurance].
  - ▶ possessive pattern: **verb** [Poss (Adj) **CO**]  
Pat **lived** [his secret **life**].
- indefinite pattern: shows the Jones properties
- other patterns: syntactically more flexible

# Empirical Justification for the Patterns

- Höche (2009): usage data  
British National Corpus (BNC); 400 verbs; over 3,000 sentences with a potential COC.
- indefinite vs. other patterns: 33.4% of the COCs without modifier; 64% thereof definite (Höche, 2009, p. 209ff)
- Type of modifier (Höche, p.c.)  
indefinite vs. definite pattern:  
PP : Adjektiv  
COs with *the*: 164 : 174  
COs with *a/an*: 137 : 788 (significant preference for Adj)
- passive:  
almost all examples in Höche (2009) definite;  
all examples in Kuno and Takami (2004) without modifier.

# Summary: Syntactic Status

- All COs are complements
- We can identify prototypical syntactic patterns for COCs, in particular the indefinite pattern.
- The cluster of properties from Jones (1988) is real, but restricted to a subclass of COCs.

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# Events or Objects

- previous approaches
  - ▶ COs are interpreted as events, coreferent with the event of the main verb.  
Jones (1988); Moltmann (1989); Massam (1990); Huddleston and Pullum (2002)
  - ▶ COs are interpreted as resultant/ effected objects.  
Quirk et al. (1985); Macfarland (1995); Kuno and Takami (2004)
- extended synthesis of the approaches:
  - ▶ Both approaches are needed, but with different prototypical patterns
  - ▶ additional dimension:  
concrete/particular vs. abstract/generic readings

## Events or Objects

	event	effected object
concrete/ particular	indefinite pattern direct object	def. or indef. pattern direct object
abstract/ generic	definite pattern direct object	def. or possessive pattern direct object

### (4) Event readings:

#### a. concrete/particular:

But the **smile lasted** less than a heartbeat. (BNC)

#### b. abstract/generic:

I couldn't **stop** [the silly **smile** of surprise] (www)

### (5) Object readings:

#### a. concrete/particular:

[A **smile**] **appeared** on his face. (BNC)

#### b. abstract/generic:

No wonder Button **wore** [the **smile** of a lucky man]. (www)

	event	object
concrete	!	
abstract		

(6) Harry **lived** [a happy **life**]. = Harry lived happily.

- Jones' properties:
  - ▶ manner paraphrase
  - ▶ indefinite NP
  - ▶ no passive
  - ▶ obligatory modification
- Analysis (Moltmann, 1989; Mittwoch, 1998):
  - ▶ CO and verb refer to the same eventuality.
  - ▶ bound by the same existential quantifier → indefinite
- Potential problems for a complement analysis:
  - ▶ passive
  - ▶ obligatory modification



# The Other CO Types I

	event	object
concrete	!	!
abstract	!	!

- (7)
- [The last laugh] has now been laughed. (concrete object)
  - Sachs smiled [his irresistible smile] (abstract object)
  - I slept [the sleep of the just]. (abstract event)

- none of Jones' properties:

- ▶ manner paraphrase not obvious
- ▶ typically not an indefinite NP
- ▶ passive possible
- ▶ modification not necessary

- Analysis

- ▶ CO introduces its own index
- ▶ relation between the verb and the CO as effected object (Kuno and Takami, 2004) or instantiation
- ▶ passivizability and optionality of modifier follow directly

# The Other CO Types II

	event	object
concrete	!	!
abstract	!	!

- (8)
- [The last laugh] has now been laughed. (concrete object)
  - Sachs smiled [his irresistible smile] (abstract object)
  - I slept [the sleep of the just]. (abstract event)
- concrete object: CO refers to an independent entity that is brought into existence by the verb.
  - abstract object: The event has an effected object which is an instantiation of the kind expressed in the CO.
  - abstract event: The event is an instance of the abstract event (event type) expressed in the CO.

# Summary: Interpretation of COs

- four different interpretations of the CO
- interpretations independently attested in other constructions
- only the concrete event reading has special syntactic properties

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# Underspecified Combinatorial Semantics

- Underspecified semantics (Reyle, 1993; Pinkal, 1996; Egg, 2002; Kallmeyer and Romero, 2008)
  - ▶ scope relations are left underspecified
  - ▶ meaning contribution: lists of partially specified expressions of a semantic representation language
- in HPSG: Frank and Reyle (1995); Egg (1998); Copestake et al. (1995, 2005)
- *Lexical Resource Semantics* (LRS)  
Richter and Sailer (2004)
- readings: semantic representations that contain exactly the meaning contributions of the elements in the sentence.
- constraints restrict possible readings

# Combinatorial Semantics of LRS

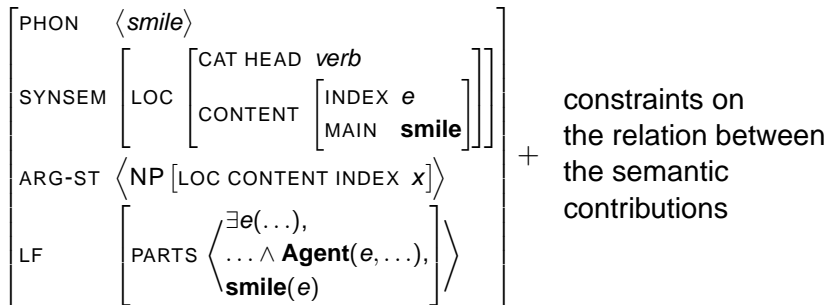
- Use of a standard semantic representation language
- Different words may contribute identical parts to the overall reading.
- Identity of operators: question, negation, tense

(9) Who had bought which book? (question)  
?-someone had bought ?-some book (Richter and Sailer, 1999)

- (10) Afrikaans:
- Niemand het niks gesê nie. (negation)  
**nobody** has **nothing** said **not** (Richter and Sailer, 2006)  
(‘**Nobody** said anything.’)
  - Jan kon die boek geles het. (tense)  
Jan could.**Past** the book read have.**Past** (Sailer, 2004b)  
(‘Jan **could** read the book.’)

# Lexical Semantics in LRS

- Lexical-semantic properties (Sailer, 2004a):
  - ▶ referential index (INDEX)
  - ▶ core lexical contribution (MAIN)
- Sketch of the lexical entry of the verb *smile*:



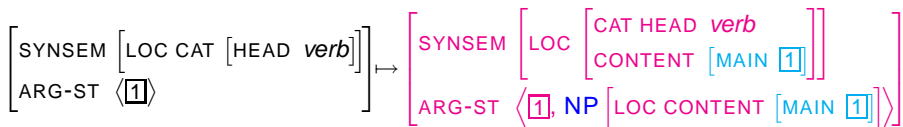
- COC: identical lexical semantic contributions:

(11) Pat **smiled** [a happy **smile**]. (COC)  
(‘Pat **smiled** happily.’)

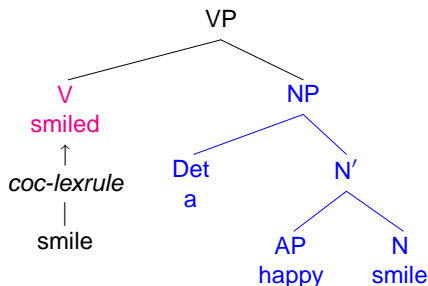


# Syntactic Analysis of the COC

- All COs are direct objects
- COC Lexical Rule: intransitive verb  $\mapsto$  transitive verb (general version)
- Cognateness: identity of core lexical contributions (MAIN value)



- syntactic structure:



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# Concrete Event COs

- event semantics (Parsons, 1990) applied to COs (Moltmann, 1989):

(12) semantics

a. She smiled.

$\exists e(\mathbf{smile}(e) \wedge \mathbf{Agent}(e, x))$

b. Pat **smiled** [a happy **smile**].

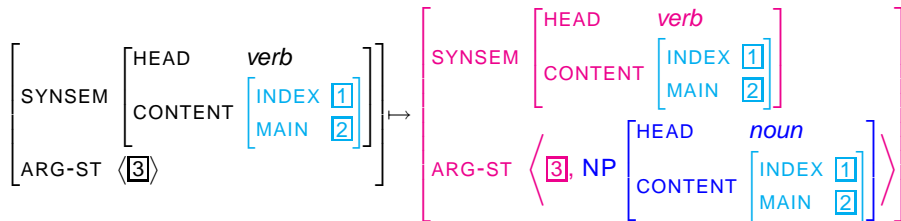
= Pat smiled happily.

$\exists e(\mathbf{smile}(e) \wedge \mathbf{happy}(e) \wedge \mathbf{Agent}(e, x))$

- verb and cognate object:
  - ▶ identical referential index (INDEX):  $e$
  - ▶ identical core lexical semantic contribution (MAIN): **smile**

# Lexical Rule

## Concrete Event COC Lexical Rule:



- More specific version of the COC Lexical Rule
- Input: intransitive, (atelic) verb
- Output:
  - ▶ additional NP complement
  - ▶ Verb and NP complement have identical INDEX and MAIN values.

# Output of the Concrete Event COC Lex Rule:

PHON	$\langle \textit{smiled} \rangle$
SYNSEM	$\left[ \text{LOC} \left[ \begin{array}{l} \text{CAT HEAD } \textit{verb} \\ \text{CONTENT} \left[ \begin{array}{l} \text{INDEX } \boxed{1} \textit{e} \\ \text{MAIN } \boxed{2} \textit{smile} \end{array} \right] \end{array} \right] \right]$
ARG-ST	$\left\langle \text{NP}[\text{SYNS LOC CONT INDEX } x], \text{NP} \left[ \begin{array}{l} \text{HEAD } \textit{noun} \\ \text{CONTENT} \left[ \begin{array}{l} \text{INDEX } \boxed{1} \\ \text{MAIN } \boxed{2} \end{array} \right] \end{array} \right] \right\rangle$
LF	$\left[ \text{PARTS} \left\langle \begin{array}{l} \exists e(\dots), \\ \dots \wedge \mathbf{Agent}(e, \dots), \\ \mathbf{smile}(e) \end{array} \right\rangle \right]$

- concrete event reading of the CO: INDEX identity
- cognateness of verb and complement noun: MAIN identity
- obligatory modification?
- no passive?

# Obligatory Modification I

PRINCIPLE OF SEMANTIC DISCERNIBILITY:

In a phrase, the meaning contributions of one daughter may not be a non-empty subset of the meaning contributions of another daughter.

- (13) She [VP<sub>2</sub> [VP<sub>1</sub> smiled happily<sub>1</sub>] happily<sub>2</sub>].  
 $\neq \exists e(\text{smile}(e) \wedge \text{Agent}(e, x) \wedge \text{happy}(e))$

<i>smiled:</i>	$\exists e($	<b>smile</b> (e)	$\wedge$	<b>Ag</b> (e,		)		)
<i>happily<sub>1</sub>:</i>							$\wedge$ <b>happy</b> (e)	
VP <sub>1</sub> :	$\exists e($	<b>smile</b> (e)	$\wedge$	<b>Ag</b> (e,		)	$\wedge$ <b>happy</b> (e)	)
<i>happily<sub>2</sub>:</i>							$\wedge$ <b>happy</b> (e)	
* VP <sub>2</sub> :	$\exists e($	<b>smile</b> (e)	$\wedge$	<b>Ag</b> (e,		)	$\wedge$ <b>happy</b> (e)	)
<i>She:</i>					x			
	$\exists e($	<b>smile</b> (e)	$\wedge$	<b>Ag</b> (e,	x	)	$\wedge$ <b>happy</b> (e)	)

## Obligatory Modification II

PRINCIPLE OF SEMANTIC DISCERNIBILITY:

In a phrase, the meaning contributions of one daughter may not be a non-empty subset of the meaning contributions of another daughter.

- \* She [VP: **smiled** a **smile**].

<i>smiled:</i>	$\exists e$ (	<b>smile</b> ( <i>e</i> )	$\wedge$	<b>Ag</b> ( <i>e</i> ,		)
<i>a smile:</i>	$\exists e$ (	<b>smile</b> ( <i>e</i> )				)
* <b>VP:</b>	$\exists e$ (	<b>smile</b> ( <i>e</i> )	$\wedge$	<b>Ag</b> ( <i>e</i> ,		)
<i>She:</i>					<i>x</i>	
	$\exists e$ (	<b>smile</b> ( <i>e</i> )	$\wedge$	<b>Ag</b> ( <i>e</i> ,	<i>x</i>	)

- She **smiled** a happy **smile**.

<i>smiled:</i>	$\exists e$ (	<b>smile</b> ( <i>e</i> )		$\wedge$	<b>Ag</b> ( <i>e</i> ,		)
<i>a happy smile:</i>	$\exists e$ (	<b>smile</b> ( <i>e</i> )	$\wedge$ <b>happy</b> ( <i>e</i> )				)
<i>She:</i>						<i>x</i>	
	$\exists e$ (	<b>smile</b> ( <i>e</i> )	$\wedge$ <b>happy</b> ( <i>e</i> )	$\wedge$	<b>Ag</b> ( <i>e</i> ,	<i>x</i>	)

# Passivization

- Massam's generalization (Massam, 1990):  
If the direct object contains a bound variable, passive is impossible.
- (14)
- a. \*[His way] was moaned out of the door by Alfred.
  - b. \*[Her thanks] were smiled by Rilla.
  - c. \*[A toe] was stubbed by Philip.
- Definition of “bound variable”:  
A direct object contains a bound variable iff a variable that is introduced inside the direct object is bound by a quantifier that is introduced by a word which is not part of the NP.
  - In our case: The existential quantifier over the event is introduced by the verb.



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## Example Representations

(15) Effected object: Pat **laughed** [a little laugh].

$$\exists e(\mathbf{laugh}(e) \wedge \mathbf{Ag}(e, \mathbf{pat}) \\ \wedge \mathbf{CAUSE}(e, \exists x(\mathbf{laugh}(x) \wedge \mathbf{little}(x))))$$

(Pat laughed and this gave rise to the existence of a little laugh.)

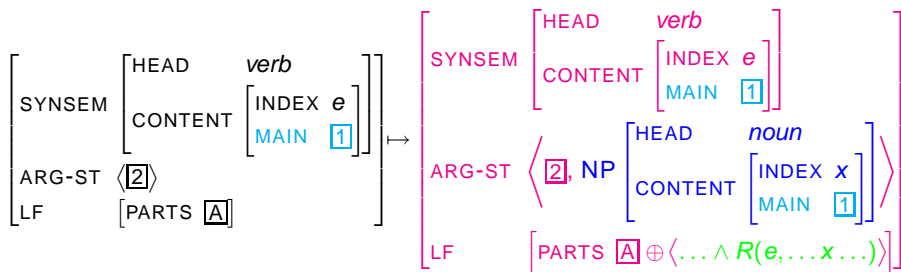
(16) Abstract event: Pat **smiled** [the smile of a winner]

$$\exists e(\mathbf{smile}(e) \wedge \mathbf{Ag}(e, \mathbf{pat}) \\ \wedge \mathbf{R}(e, \lambda e' : \lambda e'' . [\exists x(\mathbf{winner}(x) \wedge \mathbf{smile}(e'') \wedge \mathbf{Ag}(e'', x))]))$$

(Pat smiled and this smiling was a realization of the event type “smile of a winner”).)

- NP receives one of its possible interpretations. (Carlson, 1977; Wilkinson, 1995)
- CO introduces its own index.
- The COC contributes the relation between the verbal event and the referent of the CO.

# Sketch of the Lexical Rule for the Other COC Types



- cognateness: MAIN identity
- referentiality of the CO: own index,  $x$ .
- different readings: various possibilities for Relation that relates  $e$  and  $x$ .
- no obligatory modification: Since the CO has its own index, semantic discernibility is guaranteed.
- passive possible: The CO's index is not a bound variable.

# Summary of the Analysis

- COs have independently attested meaning.
- all COCs: identical core lexical semantic contribution (**MAIN**).
- concrete event COC: identical index (**INDEX**).
- other COCs:
  - ▶ **verbal index** different from **CO index**.
  - ▶ Verb contributes **special relation** to integrate the semantics of the CO.
- Obligatory modification and ban on passivization follow from general principles.

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# Summary

- Combination of corpus data and introspective intuition: recognition of different types of COCs.
- Syntax:
  - ▶ uniform syntactic analysis as complements
  - ▶ lexical rule to restrict verb class
  - ▶ general principles to account for modification and passive data
- Semantics:
  - ▶ independently required readings for the COs
  - ▶ Lexical rule introduces special relations to integrate the CO semantics.
- Lexical Resource Semantics:
  - ▶ classical analysis for particular and generic readings of the CO
  - ▶ identity of lexical semantic contributions: empirical motivation for semantic identities

# Outlook

- Extension to other languages
  - ▶ syntactically different types of COC in Hebrew and Russian (Pereltsvaig, 1999b,a, 2002)
  - ▶ restricted availability in Romance languages (Real-Puigdollars, 2008)

- Related constructions: Focus fronting

(17) a. Sing sal hy sing. (Afrikaans)  
sing will he sing

b. visn vilt er es visn. (Yiddish)  
know wants he it to know

- More support for Massam's restriction on passivization and for the Principle of Semantic Discernibility.
- Contribution to a better understanding of incidental and enforced structure sharing

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