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], and then her brother smiled it.
- 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.
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


- 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:
  \[ \text{PP} : \text{Adjektiv} \]
  COs with \textit{the}: 164 : 174
  COs with \textit{a/an}: 137 : 788 (significant preference for Adj)
- passive:
  almost all examples in Höche (2009) definite;
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

<table>
<thead>
<tr>
<th></th>
<th>event</th>
<th>effected object</th>
</tr>
</thead>
<tbody>
<tr>
<td>concrete/particular</td>
<td>indefinite pattern</td>
<td>def. or indef. pattern</td>
</tr>
<tr>
<td></td>
<td>direct object</td>
<td>direct object</td>
</tr>
<tr>
<td>abstract/generic</td>
<td>definite pattern</td>
<td>def. or possessive pattern</td>
</tr>
<tr>
<td></td>
<td>direct object</td>
<td>direct object</td>
</tr>
</tbody>
</table>

(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)
(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

(7) a. [The last laugh] has now been laughed. (concrete object)
b. Sachs smiled [his irresistible smile] (abstract object)
c. 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
(8) a. [The last laugh] has now been laughed. (concrete object)
b. Sachs smiled [his irresistible smile] (abstract object)
c. 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

- Unterspecified 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


- 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:
    a. Niemand het niks gesê nie. (negation)
        nobody has nothing said not  (Richter and Sailer, 2006)
        (‘Nobody said anything.’)
    b. Jan kon die boek gelees 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*:

  \[
  \begin{align*}
  \text{PHON} & \quad \langle \text{smile} \rangle \\
  \text{SYNSEM} & \quad \begin{cases} 
  \text{LOC} & \quad \begin{cases} 
  \text{CONTENT} & \quad \begin{cases} 
  \text{INDEX} & \quad e \\
  \text{MAIN} & \quad \text{smile}
  \end{cases}
  \end{cases}
  \end{cases}
  \end{align*}
  \]

- Constraints on the relation between the semantic contributions:

- COC: identical lexical semantic contributions:

\[
\begin{align*}
\exists e (\ldots), \\
\ldots \land \text{Agent}(e, \ldots), \\
\text{smile}(e)
\end{align*}
\]

(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)

\[
\text{SYNSEM} \left[ \text{LOC CAT} \left[ \text{HEAD } \text{verb} \right] \right] \xrightarrow{\text{ARG-ST } \langle 1 \rangle} \text{SYNSEM} \left[ \text{LOC} \left[ \text{CAT HEAD } \text{verb} \right] \right] \left[ \text{CONTENT } \langle 1 \rangle, \text{NP } \text{LOC CONTENT} \left[ \text{MAIN } 1 \right] \right]
\]

- syntactic structure:
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Concrete Event COs

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

(12) semantics
   a. She smiled.
      \[ \exists e (\text{smile}(e) \land \text{Agent}(e, x)) \]
   b. Pat smiled [a happy smile].
      \[ = \exists e (\text{smile}(e) \land \text{happy}(e) \land \text{Agent}(e, x)) \]

- 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:

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

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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 [VP₂ [VP₁ smiled happily₁] happily₂].
\[ \not\equiv \exists e (\text{smile}(e) \land \text{Agent}(e, x) \land \text{happy}(e)) \]

<table>
<thead>
<tr>
<th>smiled:</th>
<th>[ \exists e (\text{smile}(e) \land \text{Ag}(e, x)) ]</th>
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<td>happily₁:</td>
<td>[ \text{VP₁}: \exists e (\text{smile}(e) \land \text{Ag}(e, x) \land \text{happy}(e)) ]</td>
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<td>[ \text{VP₂}: \exists e (\text{smile}(e) \land \text{Ag}(e, x) \land \text{happy}(e)) ]</td>
</tr>
<tr>
<td>*VP₂:</td>
<td>[ \text{She}: \exists e (\text{smile}(e) \land \text{Ag}(e, x) \land \text{happy}(e)) ]</td>
</tr>
<tr>
<td>She:</td>
<td>[ \exists e (\text{smile}(e) \land \text{Ag}(e, x) \land \text{happy}(e)) ]</td>
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</table>
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].

\[
\begin{array}{c|c|c|c}

\text{smiled:} & \exists e( \text{smile}(e) ) & \land & \text{Ag}(e, \ ) \\
\hline
\text{a smile:} & \exists e( \text{smile}(e) ) & & \\
\hline
* \text{VP:} & \exists e( \text{smile}(e) ) & \land & \text{Ag}(e, \ ) \\
\hline
\text{She:} & & & \times \\
\hline
\end{array}
\]

- She smiled a happy smile.

\[
\begin{array}{c|c|c|c|c}

\text{smiled:} & \exists e( \text{smile}(e) ) & \land & \text{Ag}(e, \ ) \\
\hline
\text{a happy smile:} & \exists e( \text{smile}(e) ) & \land & \text{happy}(e) & \land & \text{Ag}(e, \ ) \\
\hline
\text{She:} & & & & \times \\
\hline
\end{array}
\]
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].

\[ \exists e (\text{laugh}(e) \land \text{Ag}(e, \text{pat}) \land \text{CAUSE}(e, \exists x (\text{laugh}(x) \land \text{little}(x)))) \]

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

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

\[ \exists e (\text{smile}(e) \land \text{Ag}(e, \text{pat}) \land \text{R}(e, \nu e'_k : \lambda e'' . [\exists x (\text{winner}(x) \land \text{smile}(e'') \land \text{Ag}(e'', x)])]) \]

(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.
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
References


cslipublications.stanford.edu/HPSG/7/richter-sailer.pdf.

