Semantic roles & grammatical relations

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The problem

Identifying functions cross-linguistically

Are there good cross-linguistic definitions of subject and object? Are there good definitions of other grammatical functions?

<table>
<thead>
<tr>
<th>Syntactic</th>
<th>Subject</th>
<th>Agreed with by verb</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Nominative case</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Controlled in nonfinite clauses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Precedes Object in canonical word order</td>
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<tr>
<td></td>
<td></td>
<td>Inverts in YNQ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>re-appears in tag questions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Object</th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Semantic</th>
<th>AGENT</th>
<th>Animate instigator or cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>THEME</td>
<td></td>
<td>Undergoer, changes state or location</td>
</tr>
</tbody>
</table>
Subject test examples

**Syntactic subject tests vary cross-linguistically**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement</td>
<td>The boys run/ *runs.</td>
</tr>
<tr>
<td>Nominative case</td>
<td>I run./ *Me run.</td>
</tr>
<tr>
<td>Control</td>
<td>John; wants [s PROi to see Sue]</td>
</tr>
<tr>
<td></td>
<td>* John; wants [s Sue to like PROi]</td>
</tr>
<tr>
<td>YNQ inversion</td>
<td>Did John go?</td>
</tr>
<tr>
<td>Tag questions</td>
<td>John; saw Suej, didn’t hei?</td>
</tr>
<tr>
<td></td>
<td>* John; saw Suej, didn’t shej?</td>
</tr>
<tr>
<td></td>
<td>* John; saw Suej, wasn’t shej?</td>
</tr>
<tr>
<td></td>
<td>Suei was seen by Johni, wasn’t shej?</td>
</tr>
</tbody>
</table>
Perhaps we can characterize subjects semantically...

### Roles and grammatical relations

<table>
<thead>
<tr>
<th>Roles</th>
<th>AGENT, INSTRUMENT, EXPERIENCER, THEME, SOURCE, PATH, GOAL, STIMULUS, BENEFICIARY, RECIPIENT, ACCOMPANIMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relations</td>
<td>subject, object, indirect (secondary) object, oblique, adjunct SUBJ, OBJ, OBJ2, OBL, ADJ</td>
</tr>
<tr>
<td>Direct</td>
<td>SUBJ, OBJ</td>
</tr>
<tr>
<td>Terms</td>
<td>SUBJ, OBJ, OBJ2</td>
</tr>
</tbody>
</table>
Can we characterize subjects semantically?

**Hypothesis I**

Subjects are agents.

- a. Hiram fried an egg.
- b. Bill rolled the stone down the hill.
- c. Bilbo gave a ring to Frodo.
- d. The storm frightened Alan.
- e. Alan was frightened by the storm.
- f. The stone rolled down the hill.
- g. The obelisk occupied the top of the hill.
- h. The fog extends from London to Oxford.
**Definition**

**Topic:** The topic of a sentence is *what it’s about*. Often this can be identified with an NP in the sentence.

Maybe subjects are topics. But, here are three sentences about Bill.

a. *Bill is a very crafty fellow.*  
   **Subject**

b. Jack is a pretty reliable fellow, but *Bill I don’t trust*  
   **Object**

c. As for Bill, *I wouldn’t take his promises very seriously.*  
   **Neither**
Role examples

a. Hiram fried an egg.
b. Johan baked a cake for Wilhemina.
   Johan baked Wilhemina a cake.
c. Bilbo gave a ring to Frodo.
   Bilbo gave Frodo a ring.
d. The storm frightened Alan.
   Alan was afraid of the storm.
e. Yolanda broke the egg with a spoon.
   The egg broke with a spoon.
   The spoon broke the egg.
   The door opened with a key.
Role examples

a. Hiram fried an egg.
   AGENT                  PATIENT  

b. Johan baked a cake for Wilhemina.
   Johan baked Wilhemina a cake.

c. Bilbo gave a ring to Frodo.
   Bilbo gave Frodo a ring.

d. The storm frightened Alan.
   The storm was afraid of the storm.

e. Yolanda broke the egg with a spoon.
   The egg broke with a spoon.

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Role examples

a. Hiram fried an egg.

b. Johan baked a cake for Wilhemina.

  agent patient beneficiary

Johan baked Wilhemina a cake.

AGENT PATIENT

D. Bilbo gave a ring to Frodo.

  agent beneficiary patient

Bilbo gave Frodo a ring.

AGENT BENEFICIARY PATIENT

c. The storm frightened Alan.

  agent beneficiary patient

The storm was afraid of the storm.

AGENT BENEFICIARY

d. Yolanda broke the egg with a spoon.

  agent patient beneficiary

The egg broke with a spoon.

AGENT PATIENT BENEFICIARY

e. The door opened with a key.

  agent

The door opened.

AGENT

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Role examples

a. Hiram  fried  an egg.
   Johan  baked  a cake  for Wilhemina.
   Johan  baked  Wilhemina  a cake.

c. Bilbo  gave  a ring  to Frodo.
   Bilbo  gave  Frodo  a ring.
   Bilbo  gave  Frodo  a ring.

   Agent  Theme  Goal

   Agent  Theme  Goal

   Agent  Theme  Goal

   Agent  Theme  Goal

   Agent  Theme  Goal


d. The storm  frightened  Alan.
   Alan  was afraid  of the storm.


e. Yolanda  broke  the egg.
   The egg  broke  with a spoon.
   The spoon  broke  the egg.
   The door  opened  with a key.

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| a. Hiram | fried | an egg. |
| b. Johan | baked | a cake |
|          | baked | Wilhemina a cake. |
| c. Bilbo | gave  | a ring |
|          | gave  | Frodo a ring. |
| d. The storm | frightened | Alan. |
|           | EXPERIENCER of the storm |
|           | STIMULUS  |
| e. Yolanda | broke | the egg |
| The egg   | broke  | ? with a spoon. |
| The spoon | broke  | the egg. |
| The door  | opened | with a key. |
### Role examples

<table>
<thead>
<tr>
<th>Example</th>
<th>Agent</th>
<th>Verb</th>
<th>Patient</th>
<th>Additional Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Hiram</td>
<td>fried</td>
<td>an egg.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Johan baked a cake for Wilhemina.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Johan baked Wilhemina a cake.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Bilbo gave a ring to Frodo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bilbo gave Frodo a ring.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. The storm frightened Alan.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alan was afraid of the storm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Yolanda broke the egg with a spoon.</td>
<td></td>
<td></td>
<td></td>
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   The egg broke with a spoon.
   The spoon broke the egg.
   The door opened with a key.

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Can we characterize subjects semantically?

Hypothesis II

When an agent is available, it’s a subject. When an agent is unavailable, something with agentlike properties becomes subject (a causer, force or instrument).

- a. Hiram fried an egg.
- b. Bill rolled the stone down the hill.
- c. Bilbo gave a ring to Frodo.
- d. The storm frightened Alan.
- e. The storm broke the window.
- f. The spoon broke the egg.
- g. The egg broke.
Terms and Obliques

- **Arguments**
  - **Term**
    - **Direct**
      - **Subject**
      - **Object**
    - **SecondaryObject**
  - **Oblique**
Oblique arguments

In English oblique arguments are Prepositional phrases. Cross linguistically obliques will be non subjects/nonobjects, usually marked in some way that makes them more peripheral (adposition, marked [oblique] case)

Examples

1. Aragorn gave his heart to an elf.
2. The king responded to her arrival with an angry cry.
3. He inserted the key into the lock.

A variety of roles, including instrument, goal, beneficiary.
Peripheral clausal constituents

Adjuncts are optional peripheral syntactic constituents, often marked like obliques, with a wide syntactic distribution. (They occur with many verbs, not just a syntactically select few). They are never agents, patients, or themes, which are canonical direct arguments.
Location and time

Locations and times go with (almost) every verb. They are optional, and syntactically peripheral. They tend not to be subjects or objects.

The rising water overflowed the levy on the east side of the canyon.
The sun rose at 3’o’clock.
The children were running on the east side of the canyon.
Manner

Manner modifiers go with a large class of verbs. They are optional, and syntactically peripheral. They tend to be adverbs, but do not have to be.

The rising water overflowed the levy \{ rapidly. in an unusual way. \}

The sun rose
The wolf was hunting \{ the way it always did. \}
Duration, Frame adverbials

The rising water overflowed the levy
The sun rose
The wolf was hunting

\{for three hours.
in ten minutes.
in the morning.
last night.\}
Four diagnostics for arguments

1. Terms (Subjects, Objects, secondary objects) are always arguments.
2. Obligatoriness
3. Can become term with same meaning
4. Restricted to verbs of a particular type
Obligatoriness: Revisiting location & manner

a. He worded the letter carefully.
   * He worded the letter.

b. He put the candle in the box.
   * He put the candle.
Becoming a term

a. John baked a cake for Mary.  
   John baked Mary a cake.  
   **Beneficiary**

b. The cut the fish with a knife.  
   The knife cut the fish.  
   **Instrument**

c. John hit the fence with a stick.  
   John hit the stick against the fence.  
   **Instrument**

d. He drained the blood from the skull.  
   He drained the skull of blood.  
   **Source**

e. He made the log into a canoe.  
   He the canoe out of a log.  
   **Source/Goal**
Instruments

Instruments have a semantically restricted distribution. They are often treated as adjuncts, but with verbs with the right kind of meaning, may sometimes be oblique arguments and even direct arguments.

**Example**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>a.</td>
<td>He</td>
<td>hit</td>
<td>the fence</td>
</tr>
<tr>
<td>b.</td>
<td>He</td>
<td>hit</td>
<td>the stick</td>
</tr>
<tr>
<td>c.</td>
<td>The stick</td>
<td>hit</td>
<td>the fence.</td>
</tr>
<tr>
<td>d.*</td>
<td>He</td>
<td>hit</td>
<td>the stick. (Goal omitted)</td>
</tr>
</tbody>
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C. and D. suggest that the instrument/theme might be more essential to the core meaning of the verb *hit* than the agent *He* in a. and b.
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<tr>
<td></td>
<td>AGENT</td>
<td>GOAL</td>
<td>INSTRUMENT/THEME</td>
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<th>Verb</th>
<th>Instrument/Theme</th>
<th>Goal</th>
</tr>
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<tbody>
<tr>
<td>a</td>
<td>He</td>
<td>hit</td>
<td>the fence</td>
<td>with the stick.</td>
</tr>
<tr>
<td>b</td>
<td>He</td>
<td>hit</td>
<td>the stick</td>
<td>against the fence.</td>
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<tr>
<td></td>
<td>AGENT</td>
<td></td>
<td>INSTRUMENT/THEME</td>
<td>GOAL</td>
</tr>
<tr>
<td>c</td>
<td>The stick</td>
<td>hit</td>
<td>the fence.</td>
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<td>AGENT</td>
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## Verbs of a particular type

### Verbs of surface contact: on/onto/against

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>He bumped the cart against the wall.</td>
<td>The cart bumped against the wall.</td>
</tr>
<tr>
<td>b.</td>
<td>He slapped the fish against the table.</td>
<td>The fish slapped against the table.</td>
</tr>
<tr>
<td>c.</td>
<td>He struck (his fist on/against) the post.</td>
<td>His fist struck (against) the post.</td>
</tr>
<tr>
<td>d.</td>
<td>He smacked the baloney onto/on the bread.</td>
<td>The baloney smacked the bread.</td>
</tr>
</tbody>
</table>

Semantically plausible to call these 2-argument verbs with optional agents. Comparable classes of verbs, again with distinct behavioral patterns, can be identified in other languages, such as Lhasa Tibetan (DeLancey 1995), Berber, Warlpiri, and Winnebago (Guerssel et al. 1985).
Arguments

1. Argumenthood is a semantic notion.
2. The meaning of a verb determines what its arguments are.
3. The meaning constrains how those arguments can be realized (subject/object/oblique [choice of preposition])
4. So we start out with idea of a verb meaning as a relation with a small (1,2,3) number of arguments.
5. The adjuncts are what’s left over.
6. Roughly speaking, verbs with the same meaning in different languages should have the same arguments.
Grammatical Relations

1. No uniform set of tests for SUBJ, OBJ cross-linguistically.
2. We DO find properties that cluster together to identify syntactically prominent arguments. They’re just not the same properties in each language.
3. Some interesting problematic cases: Phillipine language voice systems, ergative languages
4. Semantic generalizations for subjecthood are particularly robust. Agents are syntactically prominent arguments (SUBJ).
5. The distinction between argument and adjunct most strongly supported for direct arguments (SUBJ, OBJ), because language after language we find two arguments systematically made prominent.
Why semantic roles

Beth Levin’s Lexical Semantics Intro (2009 LSA)

1. Semantic generalizations about termhood (SUBJ, OBJ), and about abliques stateable with roles

2. Certain verb groups are treated specially language after language
   Verbs of giving (source/goal) Something like a dative alternation is often found OBJ2 → OBJ
   Experiencer verbs Experiencers are often specially marked, often like an OBJ2, but with subjectlike properties
   Surface contact verbs Less robustly attested group of verbs with special properties

3. Many languages have devices for making certain obliques terms (benefactives, goals, instruments)
Verbal case frames in english and tibetan. 
unpublished ms.

A cross-linguistic study of transitivity alternations. 