Grammatical functions: a problematic fundamental concept of LFG?

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Grammatical functions

What are (or are not) **grammatical functions** (GFs)?

- **fundamental notion** in LFG
- **primitive notion** – not derived from:
  - tree configuration
  - syntactic category
  - semantics

Problems:

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- no cross-linguistically valid definitions of GFs (perhaps except subj)

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- we will show why
- we will offer an alternative
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Dalrymple 2001: p. 9: “LFG assumes a universally available inventory of grammatical functions”:

- **SUBJECT**
- **OBJECT**
- **OBJ\(_\theta\)**
- **COMP**
- **XCOMP**
- **OBLique\(_\theta\)**
- **ADJunct**
- **XADJunct**
Typical tests:

- drives S-V agreement
- the argument available cross-clausally (for control and raising)
- anaphor binder

Fairly robust cross-linguistic definition, but some issues:

- control and binding may yield conflicting results
- agreement only with nominative subjects...
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Dalrymple and Nikolaeva 2011: p. 24: “**diagnostics** targeting nonsubject grammatical functions, specifically objects, also **vary from language to language**”

- **passivisation**: most common, but not commonly agreed upon
- **object agreement**: only in some languages
- **accusative case**: very weak (and uninteresting) diagnostic
OBJ$_\theta$ and OBL$_\theta$ are not single GFs like SUBJ or OBJ:

- They “represent families of relations indexed by semantic roles, with the $\theta$ subscript representing the semantic role associated with the argument” (Dalrymple 2001: p. 9)

- OBJ$_\theta$: thematic objects
- OBL$_\theta$: thematic obliques

The $\theta$ index is also used for non-semantic prepositions and case:

- Since the preposition form serves as the $\theta$ index, indices are language-specific
- As a result, there is no “repertoire of universally available grammatical functions”
**Families of GFs: \( \text{obj}_\theta, \text{obl}_\theta \)**

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Two types of clausal complements:

- **COMP**:
  - sentential (CP)
  - closed (has its own subject)
- **XCOMP**
  - infinitival (InfP)
  - open (its subject must be controlled)

But CPs and InfPs may also be:

- SUBJ
- OBJ
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- also other functions, including \( \text{OBL}_\theta \)?

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Are GFs really primitive?

**Truly primitive GFs:**
- **SUBJ** (as defined above) – in particular, it does not depend on category (may be clausal, etc.)
- **OBJ** (if defined via passivisation)

Other GFs are **not really primitive** – a mixture of syntactic (categorial) and semantic (thematic) properties:
- Some GFs **double** the category information in c-structure; so once **SUBJ** and **OBJ** are excluded:
  
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John washes his car *in the garage.*
John polishes his car *in the garage.*
John keeps his car *in the garage.*

Hall 1965: p. 66:
- John washes and polishes his car *in the garage.*
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Dalrymple 2001: p. 366:
- “two verbs can only be coordinated if they share the same syntactic argument structure”
- the shared dependent “must bear the same grammatical function in both conjuncts”

This would be a good test for the sameness of GFs, but it does not work...
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Prime Minister Sir Winston Churchill...

- resided in Number 28 on the street called Hyde Park Gate.
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Problem:

- DIE does not take a locative argument (it is an ADJunct)
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(WASH and KEEP) vs. (RESIDE and DIE)

Whence the contrast:
- somebody resided and died somewhere
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Key observation:
- the locative bears the same semantic relation to RESIDE and DIE
- but different semantic relations to WASH and KEEP

The semantic distinction:
- event location vs. participant location (Koenig et al. 2003)
- event-external vs. event-internal modification (Maienborn and Schäfer 2011 and references to Maienborn’s work therein)

So, for sharing a dependent what counts is:
- the sameness of semantic relation of the dependent to the head
- not the sameness of grammatical function


**Intro**

**GF definitions**

**Dependent sharing**

**Unlikes**

**Consequences**


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- I will devour **the carrot cake my mother baked yesterday**.
  - **CAKE** is **OBJ**

- I will give Mary **the carrot cake my mother baked yesterday**.
  - **MARY** is **OBJ** (it passivises: Mary will be given the cake…)
  - **SO CAKE** is **OBJθ** – the result of dative shift

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- Marysia lubi ale też boi się Marka. Marysia.nom likes but also be afraid refl Marek.acc/gen ‘Marysia likes but at the same time is afraid of Marek.’

If obj is defined via passivisation (reasonable):
- the shared argument is an obj of only the first verb of each pair (manipuluje and lubi, respectively).

If obj is defined as the accusative dependent (not reasonable, but it has been done):
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Again, the shared dependent bears **two different GFs. Etc.**
Problem #3: Polish obj

- Marek manipuluje i występuje się Marysią. Marek.nom manipulates and lackey refl Marysia.inst ‘Marek manipulates and lackeys Marysia.’

- Marysia lubi ale też boi się Marka. Marysia.nom likes but also be afraid refl Marek.acc/gen ‘Marysia likes but at the same time is afraid of Marek.’

If obj is defined via **passivisation** (reasonable):
- the shared argument is an obj of only the first verb of each pair (manipuluje and lubi, respectively).

If obj is defined as the **accusative** dependent (not reasonable, but it has been done):
- the shared argument of the second example is an obj of only the first verb (lubi).

Again, the shared dependent bears two different GFs. Etc.
Wrapping up

Maintaining the claim that the shared dependent must have the same GF with respect to coordinated predicates only at the cost of:
- manipulating the list of arguments (adding/reducing) in coordination
- abandoning the standard dative shift analysis
- abandoning passive as the criterion for obj in Polish
- etc.

So, this claim should be rejected:
- allow shared dependents with distinct GFs
- not a technical problem in LFG / XLE;
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Coordination of unlikes: **COMP vs. SUBJ or OBJ**

**Subjects** may be sentential, cf. unlike category coordination:
- That Himmler appointed Heydrich frightened many observers.
- The implications frightened many observers.
- That Himmler appointed Heydrich and the implications thereof frightened many observers. (Sag *et al.* 1985)

Similarly for **objects**:
- Pat remembered the appointment.
- Pat remembered that it was important to be on time.
- Pat remembered the appointment and that it was important to be on time. (Sag *et al.* 1985)

**Approaches to COMP** in the LFG literature:
- leave **COMP** but treat it as an *elsewhere* GF (i.e. only when not **SUBJ** or **OBJ**; Dalrymple and Lødrup 2000, Lødrup 2012) – but why exclude **OBL**?
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But the problem is much more general:

- it arises for every combination of categories
- it may be possible to coordinate 2, 3 or more different categories
- for example:

Gola dedykuję dla rodziców i sympatii Iwone.

‘I dedicate this goal to my parents and my girlfriend Iwona.’

- the problem:
  - which GF to choose e.g. in case of coordination of an (apparent) \( \text{OBJ}_\theta \) with an (apparent) \( \text{OBL}_\theta \)?
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## Coordination of unlikes: closed vs. open GF

- **Nie chciał kanapki.**
  NEG wanted sandwich.GEN
  ‘He didn’t want a sandwich.’

- **Nie chciał pić.**
  NEG wanted drink.INF
  ‘He didn’t want to drink.’

- **Nie chciał pić ani kanapki.**
  NEG wanted drink.INF nor sandwich.GEN
  ‘He didn’t want to drink nor (did he want) a sandwich.’

*(Kallas 1993)*

The **closed/open GF distinction is problematic:**

- **obj** as the common GF seems more sensible here *(control is doable; Patejuk and Przępiołkowski 2014)*

- another argument against **xCOMP** *(redundant)*
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Other examples of the same problem:

- Chce skakać i żeby było głośniejsiej.
  wants jump.INF and that is louder
  ‘(S)he wants to jump and that it is louder.’

- Musimy to zmienić, jeśli chcemy być konkurencyjni na tamtejszych rynkach i aby rósł nasz eksport.
  must this change if want be competitive on those markets and that grow our export
  ‘We must change this if we to want be competitive on those markets and that our export grows.’NKJP
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Problems with GFs:

- **no cross-linguistic definitions** – apart from **SUBJ**?
- few GFs are really primitive – only **SUBJ** and **OBJ**?
- instead, many GFs are redundant (repeat information provided elsewhere)
- the assumption of the **same GF for the shared dependent in coordination** cannot be maintained
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Instead:

- **abandon** the assumption that GFs are universal
- explicitly mention only those GFs which are worth mentioning in a given language:
  - **SUBJ** (agreement), or perhaps some version thereof:
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  - perhaps **OBJ** (passivisation)…
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Sample f-structure

(Prime Minister Sir Winston) Churchill resided and died in Number 28 (on the street called Hyde Park Gate).
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```
PRED 'RESIDE'
TENSE PAST
SUBJ 1
ARG-ST <
  PRED 'CHURCHILL'
  CASE NOM
>,
  PRED 'IN'
  ARG-ST <
    PRED 'NUMBER 28'
  >
>
PRED 'DIE'
TENSE PAST
SUBJ 1
ARG-ST <
  [1]
ADJUNCT {2}
COORD-FORM AND
```
(Prime Minister Sir Winston) Churchill resided and died in Number 28 (on the street called Hyde Park Gate).

```
PRED 'RESIDE'
TENSE PAST
SUBJ 1
ARG-ST <1 [PRED 'CHURCHILL'] , 2 [PRED 'IN'
  ARG-ST <2 [PRED 'NUMBER 28'] ] ] >

PRED 'DIE'
TENSE PAST
SUBJ 1
ARG-ST <1
ADJUNCT {2}
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