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## Criteria for words and inverses

MARTIN HASPELMATH

*Max Planck Institute for Evolutionary Anthropology (Leipzig)*

### Preamble

My thinking about words and inverses has been significantly shaped by works such as Zúñiga (2006; 2007; 2014a), Bickel & Zúñiga (2017), van Gijn & Zúñiga (2014), Zúñiga (2014b; 2023).

### 1. Defining the word, defining the inverse

I am proposing the following definitions:

(1) **word** (word-form)

A word is (i) a free morph, or (ii) a clitic, or (iii) a root or a compound possibly augmented by nonrequired affixes and augmented by required affixes if there are any. (Haspelmath 2023)

(2) **inverse** (inverse indexing system)

A language has an inverse indexing system if its set of agent-patient person scenario forms include a special marker in some or all upstream scenarios that does not occur in any of the downstream scenarios. (Haspelmath 2025)

Some points concerning the philosophy behind these definitions:

- Widely known grammatical terms should have **precise definitions** that work across languages and across methodological orientations (Haspelmath 2021b).
- General definitions are **comparative concepts** and as such independent of particular insights – they are methodological tools, not theoretical claims.
- Usage of traditional terms is in practice fuzzy (and we often feel that we can identify **prototypes**), but this does not mean that the reality is fuzzy, let alone that our terms should be fuzzy.
- Precise definitions of traditional terms **never make everyone happy**, and it is unclear whether or how terminological convergence can be achieved; but it seems worth advancing such convergence at least as a distant goal.

## 2. Criteria for words

### (1) **word** (word-form)

A word is (i) a free morph, or (ii) a clitic, or (iii) a root or a compound possibly augmented by nonrequired affixes and augmented by required affixes if there are any. (Haspelmath 2023)

### 2.1. Not criterial: Phonological considerations

Phonological domains are very diverse, and need not coincide across criteria (Schiering et al. 2010; Tallman et al. 2024).

Moreover: phonologists rely on morphosyntacticians for the identification of “p-words” – there are no independent wordhood criteria from phonology (Nespor & Vogel 2007; Newell et al. 2017).

### 2.2. Free morphs are words (= “minimal free forms”, in a literal sense)

E.g. *hello, fire, good*

NOTE: free vs. bound status is **not** a phonological criterion  
– there are many bound forms which are not phonologically deficient in any way

### 2.3. Clitics are words

“A clitic is a bound morph that is neither a root nor an affix” (Haspelmath 2024a)

Clitics are almost always thought of as being words – the normal view is that a bound morph is either part of a word (= an affix) or part of a phrase (= a word).

*Tertium non datur.*

Arkadiev: *tertium datur!* (p.c., August 2022)

+ free:

– minimal: phrases  
+ minimal: words

– free (=bound):

– anchored to words: clitics  
+ anchored to words/stems/roots: affixes

But it seems that this way of dividing the phenomena is even less traditional than my proposal, and thus preserves less continuity with the earlier literature.

### 2.4. Clitics are non-affixes, i.e. they are not class-selective

This is the best-known syntactic criterion, usually formulated in terms of “phrases” – but what is a phrase? This is often unclear, and my proposed definition avoids reference to “phrases”.

## 2.5. Clitics are not defined phonologically

Clitics not defined as “g-words that are parts of p-words”  
(and anticlitics, i.e. “p-words that are parts of g-words” (Zúñiga 2014), play no role).

The notion of “p-word” (= phonological/prosodic word) is unclear to me, and it seems difficult to build a definition of *clitic* on it.

one consequence:

*enclitic* and *proclitic* cannot be defined with respect to a (prosodic) “host”

***enclitic***: a clitic that can occur at the end of a free form (but not at the end)

***proclitic***: a clitic that can occur at the beginning of a free form (but not at the beginning)

***ambiclitic***: a clitic that can occur at the end or the beginning of a free form

***interclitic***: a clitic that must occur between two forms in a free form (e.g. English *'ll*)

## 2.6. “Lexical affixes” are not roots because they must occur with another root

Affixes and clitics are defined negatively, as non-roots. But what is a root?

### (1) root

A root is a contentful morph (i.e., a morph denoting an action, an object or a property) that can occur as part of a free form without another contentful morph. (Haspelmath 2023: 287)

“Lexical affixes” seem to be contradictory: They are affixes and thus “grammatical” items, but they are also “lexical”. They are discussed by Zúñiga (2019: §5.4; 2023: §8.4.1), e.g.

- (12) a. Yup'ik (Mithun 1999: 49)  
*Nayircurtuq.*  
*nayir-cur-tuq*  
 seal-hunt-3SG.IND  
 ‘He is seal-hunting.’
- (13) Musqueam (Salishan; Gerds 1998: 95)  
*Ni cən k<sup>w</sup>əscəs.*  
*ni cən k<sup>w</sup>əs-cəs*  
 AUX 1SG.SBJ burn-hand  
 ‘I burned my hand.’

Solution: Such affixes have **contentful** meanings (denoting an action, an object or a property), but they are not roots because they cannot occur as part of a free form without another root.

(“lexical” here = contentful)

Thus, they are affixes, but affixes are not defined as having “grammatical meaning” – they are defined as bound morphs which are not roots, i.e. negatively.

### 3. Criteria for inverses

#### 3.1. Examples of inverse contrasts

(3) Itonama (Bolivia; Crevels 2023: 518)

a. non-inverse

*E'-kamo'-ke Ihwana.*

2SG-hit.face-PL Juan

'You hit Juan (several times in the face).' (2→3)

b. inverse

*A'-k'i-kamo'-ke Ihwana.*

2SG-INV-hit.face-PL Juan

'Juan hit you (several times in the face).' (3→2)

(4) Southern Tiwa (Tanoan; New Mexico; Rosen 1990: 686; 697)

a. non-inverse

*Seuanide ti-mũ-ban.*

man 1SG-see-PST

'I saw the man.' (1→3)

b. inverse

*Seuanide-ba ti-mũ-che-ban.*

man-INS 1SG-see-INV-PST

'The man saw me = I was seen by the man.' (3→1)

Proposed definition:

(2) **inverse** (inverse indexing system)

A language has an inverse indexing system if its set of agent-patient person scenario forms include a special marker in some or all upstream scenarios that does not occur in any of the downstream scenarios. (Haspelmath 2025)

#### 3.2. Downstream and upstream scenarios

(4) balanced scenarios (both arguments with equal prominence): 3→3

downstream scenarios (agent outranks patient): 1→2, 1→3, 2→3

upstream scenarios (patient outranks agent): 2→1, 3→1, 3→2

	1ST PATIENT	2ND PATIENT	3RD PATIENT
1ST AGENT	–	<i>downstream</i>	<i>downstream</i>
2ND AGENT	<i>upstream</i>	–	<i>downstream</i>
3RD AGENT	<i>upstream</i>	<i>upstream</i>	<i>balanced</i>

Figure 1: Downstream, upstream and balanced person scenarios

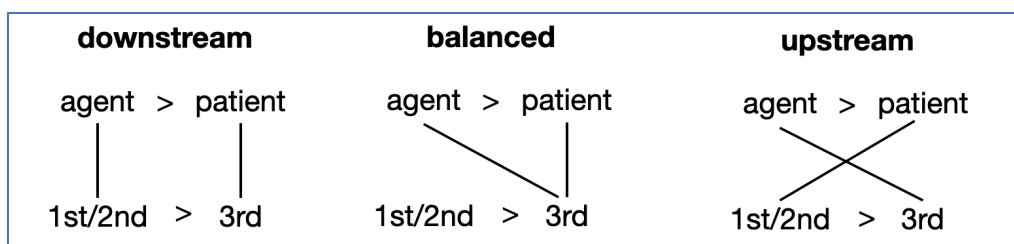


Figure 2: The association between agent/patient roles and the person scale

	LOCUPHORIC PATIENT (1ST/2ND)	3RD PATIENT
LOCUPHORIC AGENT (1ST/2ND)	(locuphoric domain)	mixed domain ( <i>downstream</i> )
3RD AGENT	mixed domain ( <i>upstream</i> )	aliophoric domain ( <i>balanced</i> )

Figure 3: Locuphoric, mixed and aliophoric domains, with downstream, upstream and balanced person scenarios

### 3.3. On the “stream” and “flow” metaphor

“...the inverse is understood in terms of the relationship between the canonical event participants of a transitive clause: the agent and the patient, and is defined by event flow directionality vis-à-vis these participants. The inverse is taken to signal a reversion from the “normal” event flow with respect to a participant hierarchy, most commonly 1>2>3.” (Velázquez-Castillo 2008: 383)

The notion of “flow” seems to originate in DeLancey (1981), though he talked about “attention flow”.

The *upstream/downstream* terminology makes reference not only to a “flow” metaphor, but also to an “**action direction**” metaphor, as formulated by Haude & Zúñiga:

“When the direction of the action goes from a participant that ranks higher in [a prominence] hierarchy towards a lower-ranking participant, the direct construction is chosen (with an unmarked or direct-marked verb); when the action goes in the opposite direction, the inverse construction is chosen (with inverse marking on the verb.” (Haude & Zúñiga 2016: 444)

### 3.4. Is there an inverse voice?

Some linguists have said that there is a “category of direction” (direct/inverse), just as there is a “category of voice” (active/passive).

But what is a “category”? And what is “inflection”? (cf. Haspelmath 2024b)

Proposal for what a *voice alternation* is (Haspelmath 2022):

#### (5) voice alternation

A voice alternation is a valency alternation with coding of the valency by an affix on a verb.

This is a non-traditional meaning of the term *voice*, but it is now widely shared in syntactic typology (e.g. Kulikov 2011; Zúñiga & Kittilä 2019; Bahrt 2021; Creissels 2024).

(Note that Shibatani (2006) and Croft (2022) use *voice* in a rather different way.)

Notation used in Haspelmath (2022):

- |     |              |   |                                       |
|-----|--------------|---|---------------------------------------|
| (6) | labile       | $\langle V, A_x, P_y \rangle$<br>$\approx \langle V, S_y \rangle$                               | ‘X causes Y to change’<br>‘Y changes’ |
| (7) | a. passive   | $\langle V, A_x, P_y \rangle$<br>$\approx \langle V\text{-PASS}, \{\text{obl}\}_x, S_y \rangle$ | ‘(X) acts on Y’                       |
|     | b. causative | $\langle V, S_x \rangle$<br>$\approx \langle V\text{-CAUS}, A_z, P_x \rangle$                   | ‘X acts’<br>‘Z makes X act’           |

According to this way of using the term *voice*, inverse constructions do not fall under the definition of voice, even though one could suggest something like (8):

- |     |                |  |                       |
|-----|----------------|--|-----------------------|
| (8) | direct-inverse | $\langle V\text{-DIR}, A_x, P_y \rangle$<br>$\approx \langle V\text{-INV}, A_y, P_x \rangle$ | (direct)<br>(inverse) |
|-----|----------------|--|-----------------------|

Farrell (2005: 74) suggests such a view of inverse systems, but linguists usually make a distinction between alternations and coding splits:

- |     |                         |  |
|-----|-------------------------|--|
| (9) | a. <b>alternation:</b>  | a set of two closely related constructions that can express roughly the same meaning and between speakers can choose |
|     | b. <b>coding split:</b> | a set of different coding patterns that occur under different conditions   |

On this view, inverse systems are systems with *split coding* (see also Haspelmath 2021), not alternations.

### 3.5. Against fuzzy (or prototypical) definitions

Jacques & Antonov (2014): a canonical inverse has the following properties:

- person indexes are role-neutral
- the conominals keep the same flagging
- the resulting ambiguity is resolved by inverse (or direct) markers

The first two are counterexemplified by Itonama (3) and Southern Tiwa (4b), and there is not necessarily any ambiguity.

It seems that Jacques & Antonov started out from a “prototypical” inverse as described for Algonquian languages, because their definition looks like a description of Cree.

However, why should Cree be a “prototype” for our thinking about kinds of grammatical marking in the world’s languages?

They do not say where the boundaries of the inverse are, and they even mention a “highly non-canonical inverse system” in Khaling (a Kiranti language) which deviates so much from the canon that they say that “it would be misleading to refer to it as an inverse” (2014: 308).

### 3.6. The inverse system universal

The chief purpose of comparative grammar is to identify cross-linguistically general properties, so here is a proposal:

#### (10) The inverse system universal

Anti-inverse systems do not exist.

This has often been implicit, but here it is perhaps fully explicit for the first time. Implicit here:

“When the direction of the action goes from a participant that ranks higher in [a prominence] hierarchy towards a lower-ranking participant, the direct construction is chosen (with an **unmarked or direct-marked verb**); when the action goes in the opposite direction, the inverse construction is chosen (with **inverse marking** on the verb.” (Haude & Zúñiga 2016: 444)

The inverse system universal is a special case of the highly general role-reference association universal:

#### (41) The role-reference association universal (Haspelmath 2021)

Deviations from usual associations of role rank and referential prominence tend to be coded by longer grammatical forms if the coding is asymmetric.

Compare also inverse-like patterns such as the obligatory passives described by Shibatani (2003: 278):

- (43) a. *Boku-wa Ken-o nagut-ta.* (Active)  
 I-TOP Ken-ACC hit-PAST  
 ‘I hit Ken.’
- b. \**Ken-ga boku-o nagut-ta.* (Active)  
 Ken-NOM I-ACC hit-PAST  
 ‘Ken hit me.’
- c. *Boku-wa Ken-ni nagura-re-ta.* (Passive)  
 I-TOP Ken-by hit-PASS-PAST  
 ‘I was hit by Ken.’

This is not an inverse indexing system, because Japanese has no person indexing, but it is of course similar.

The similarities can be described in terms of the “downstream/upstream” terminology, and we do not need to extend the term *inverse*.

Note also: The Japanese example (43a) is completely unambiguous, but Japanese still requires the passive.

This is a more general feature of coding splits motivated by the role-reference association universal: Extra coding is often motivated by unusualness (rarity of occurrence), not by the goal of avoiding ambiguity.

e.g. Portuguese DOM      *eu*    ‘I’  
   *a mim* ‘me’

#### 4. Closing words

Technical terms of linguistics are often “fuzzy” in their use, because linguists tend to acquire their meaning via salient exemplars, not definitions.

But there is no reason for this, and we can retro-define terms in such a way that they have sharp denotations – though these definitions cannot make everyone happy.

Identifying scalar phenomena in grammars (“continua”, “prototypes”) is possible only if we have terms for basic concepts that are clear-cut, and that allow measurement along the relevant scales.

Without clear-cut definitions, there is a danger that we will continue to use our terms on the basis of some salient exemplars, e.g. found in languages like English or Spanish  
(or even Dyirbal or Cree).

For *inverse systems*, the utility of a clear-cut definition is evident from the inverse system universal (§2.6), but for *words*, it may be less clear what the definition is good for.

I see it primarily as having an **awareness-raising function**:  
**‘word’ is not a natural concept**, so we should probably not rely on it too much.

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