A feature calculus for Silverstein hierarchies

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Harvard University, September 2007

(1) **The Silverstein Hierarchy and split ergativity**

a. Pronouns and other nouns form a hierarchy of semantic ilks (see top line of table below).

b. If, in a language L, a given semantic ilk receives **ergative** marking, then all hierarchically **lower** ilks do too.

c. If, in a language L, a given semantic ilk receives **accusative** marking, then all hierarchically **higher** ilks do too.

	1/2 pron > 3 pron > proper > human > animate > other
A	⊢——— ERG ———→
O	←——— ACC ———⊣

(2) **Core ideas**

a. The hierarchy proper derives from φ-specification ordered by inclusion ($\subset$).

b. The implication of the hierarchy proper for case marking arises because φ-features encode both semantic properties of noun phrases and selectional properties of argument introducing heads. These interact via Merge and can result in an incomplete φ-set being augmented. Such φ-features, when pronounced, are what we taxonomically call ergative and accusative (in Silverstein-type languages).

c. 'Inherent' versus 'inherited' φ-features.

(3) **Subtext** Hierarchies (like geometries) are things to be explained. They are not explanations.

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(4) **Silverstein's terminology**

a. *simplex* ∼ *complex* The split is defined only with respect to person *versus* with respect to person and number.

b. *local* ∼ *global* Case marking depends on the inherent φ-specification of each argument individually *versus* both arguments jointly.

c. *ternary* ∼ *binary* Three distinct points in the hierarchical exhibit the contrasts AS/O, A/S/O, A/SO. If one of these is absent, the system is binary.

d. 2-2 ∼ 2-3 ∼ 2-3-2 ∼ 3-2
   (i) 2-2 = AS/O at the top of the hierarchy, A/SO at the bottom
   (ii) 2-3 = AS/O at the top, A/S/O at the bottom
   (iii) 2-3-2 = AS/O at the top, A/S/O in the middle, A/SO at the bottom
   (iv) 3-2 = A/S/O at the top, A/SO at the bottom

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(5) **Some ideas from Adger and Harbour 2007**

a. Not all arguments need to be specified for every φ-feature that is active in a language. For instance, third person arguments may be specified for number only. Such arguments are not φ-incomplete in the Chomsky's sense. Rather, what counts as a complete φ-set is smaller for some arguments than for others.

b. Selectional restrictions (such as the capacity to be affected for applicatives, or being volitional for agents) are encoded via φ-features. That is, selectional restrictions of heads that introduce arguments are imposed on the specifier as requirements that the specifier be specified for a given (set of) φ-feature(s).

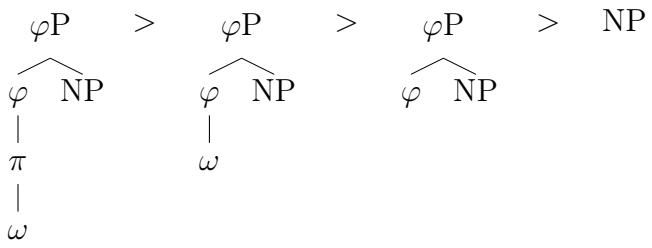
(6) **Inherent φ-specification of arguments**

a. Déchaine and Wiltschko 2003: What we taxonomically call 'pronouns' can be pro-DPs, pro-φPs or pro-NPs (assuming the functional sequence [D [φ [N]]]). Not enough structural distinctions to capture the Silverstein Hierarchy...

b. Local pronouns (first/second person) differ from third person pronouns: the former must be specified for whatever the language's person features are (some subset of {[±participant], [±author], [hearer]}); the latter need be specified only for number. Therefore, [φ-π-ω] and [φ-ω] are both legitimate φ-sets.

c. Person (π) and number (ω) features are implemented semantically as things that operate on lattices. That lattice must come from somewhere. Assumption: the lattice is the denotation of the root φ-node.

d. This induces a four-grade hierarchy:



(7) **The slack, or $4 \neq 6$**

a. An idea (from Grimshaw 2005?): The same semantic structures do not always receive the same semantic content lexical representation in all languages.

b. E.g.: Proper names (in contrast, say, to animates) are treated bear root φ-specifications in some languages and not in others. In such a language, proper names are differentiated from animates and other nouns (which are lumped together). Alternatively, a language might classify both proper names and animates as bearing root φ-nodes, thus differentiating them from common nouns.

c. It will become clear below that this conflation is permissible so long as no language has ergative marking for animates and common nouns, and accusative marking for proper names and animates. Silverstein and Dixon lead me to think that that is so.

(8) **Selection by Appl**

a. Applicatives must be capable of being affected (hence the oddness of ?*We sent the conference the abstract*).

b. There is no feature [±affectable] or [±affected]. The semantic notion of affectedness must be represented syntactically by some means of a different feature with that is semantically near enough.

c. Adger and Harbour 2007: The specifier of Appl be specified for [±participant].

d. Rationale: the speaker and hearer (the [+participant] entities) are the benchmark for affectable entities. If a third person entity

is to be recognized as affectable, it must be made featurally commensurate with the benchmark, i.e., specified for [±participant].

(9) **Selection by v**

a. Agents are volitional controllers of events. (Causers are initiators of events, possibly with volition, possibly without.)

b. The speaker is the benchmark for agenthood, i.e., for having volition and control.

c. Consequently (pace Reinhart's mental state feature), the specifier of v must bear the full complement of features for which the author is specified (modulo some complications: [±author] and [±participant]).

(10) **Selection by V**

a. The selectional restrictions on objects are scant (cf, Levin's *-ee* observation).

b. Merely a categorial (cheerleader?) demand: Give me an N.

(11) **Important consequence**

a. If the inherent φ-specification of v's argument is humble, it will inherit.

b. If the inherit φ-specification of V's argument is great, it will bequeath.

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(12) **Dyirbal**

a. This is 'Dyirbal Light' following Dixon. He cites Kuku-Yalanji and Ngiyambaa as languages that display the pattern.

	1/2 pron >	3 pron >	proper >	other
A	∅	*-ŋgu*	*-ŋgu*	*-ŋgu*
O	*-na*	∅	∅	∅

b. *-ŋgu* ⇔ [−participant] / v ____
-na ⇔ [+participant] / V ____

(13) **Cashinawa**

a. The case endings can be sensitive to just how much φ-structure is added.

b. Moreover, accusative marking need not begin exactly where ergative marking ceases.

	1/2 pron >	3 pron >	other
A	∅	*-habũ*	*nasal*
O	*-a*	*-haa*	∅

c. *-habũ* ⇔ [−participant] / v ____
nasal ⇔ [−participant φ] / v ____
-haa ⇔ [φ ω] / V ____
-a ⇔ [φ π ω] / V ____

(14) **Dhirari**

a. The split depends not only on person, but on number too. Ergative marking does not extended to non-singular local pronouns. It is, however, used for singular local persons (and all hierarchically lower positions).

	1/2DL/PL >	1/2SG >	3 pron >	other
A		ERG	ERG	ERG
O	ACC	ACC	ACC	

b. Explanatory idea: underspecification of (semantically unnecessary) number. Redundant features (like redundant categories) need not be inherent.

singular	[+singular −augmented]
dual	[−singular −augmented]
plural	[−singular +augmented]

Note: [+singular] ⊨ [−augmented]

c. ERG ⇔ [φ −singular] / v ____
ACC ⇔ [φ] / V ____

(15) **Outstanding points**

a. The Burzio-Perlmutter Generalization: The mechanism above divorces accusative marking from the transitivity of the verb. This is apparently desirable in cases of fluid S systems. However, in other languages, it is necessary to tie accusative marking to the head responsible for syntactic Case licensing (rather than the thematic licensor). This will impinge on the treatment of (anti)passive constructions.

b. Nothing forces all parts of the hierarchy to receive either ergative or accusative marking. However, both Silverstein and Dixon observe that the following system is unattested.

	1/2 pron > 3 pron > proper > human > anim > other			
A	ACC	ACC		
O			ERG	ERG

Selected References

Adger, David and Daniel Harbour. 2007. Syntax and syncretisms of the Person Case Constraint. *Syntax* 10:2–37.

Dixon, R.M.W. 1994. *Ergativity.* Cambridge: Cambridge University Press.

Silverstein, Michael. 1986. Hierarchy of features and ergativity. In Pieter Muysken and Henk van Riemsdijk (eds) *Features and Projections*, 163–232. Dordrecht: Foris. Originally published in R.M.W. Dixon (ed.), 1976, *Grammatical Categories in Australian Languages*, Canberra: Australian Institutes of Aboriginal Studies.