The shape of paradigms

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1. The Superset Principle: I argue for a particular implementation of a condition on lexical insertion in a theory where lexicon comes after syntax: the Superset Principle (1) (Starke 2006). I compare it with an alternative condition, the Subset Principle (2), proposed in the literature (Halle 1997). I show that there are empirical and theoretical reasons why (1) should be preferred over (2).

(1) The Superset Principle: The phonological exponent of a Vocabulary item is inserted into a node if the item matches all or a superset of the grammatical features specified in the node. Where several Vocabulary items meet the conditions for insertion, the item containing less features unspecified in the node must be chosen.

(2) The Subset Principle (Halle 1997): "The phonological exponent of a Vocabulary item is inserted into a morpheme [...] if the item matches all or a subset of the grammatical features specified in the [...] morpheme. Insertion does not take place if the Vocabulary item contains features not present in the morpheme. Where several Vocabulary items meet the conditions for insertion, the item matching the greatest number of features specified in the [...] morpheme must be chosen."

2. Empirical reasons: (1) and (2) give different predictions regarding syncretism. The different predictions are depicted in Tables I and II. The reasoning is as follows. Suppose we have a paradigm with three cells where consecutive cells are marked wrt the preceding one by addition of a feature (Table I). Assume further that there is a default affix D in one paradigm (Paradigm 1 in Tables I,II). Given (1), D's entry is construed as overspecified wrt the nodes where it appears (3a). (1) thus predicts that if there is another paradigm in which D appears in only two of the cells (Paradigm 2, Table I), it is going to disappear in the unmarked cell. See the rules in (3) that generate the paradigms in Table I (C in (3b,4b) is the context of insertion). If insertion is driven by (2), D is underspecified wrt cells in which it appears (4a). Hence (2) predicts that D disappears first in the marked cases. See Table II and the rules in (4).

Table I: The Superset Principle Prediction

Features	Paradigm 1	Paradigm 2
X	D	A
X,Y	D	D
X,Y,Z	D	D

Table II: The Subset Principle Prediction

Features	Paradigm 1	Paradigm 2
X	D	D
X,Y	D	D
X,Y,Z	D	A

(3a) /D-SUPERSET/ ↔ [X,Y,Z]
(3b) /A/ ↔ [X] / C_

(4a) /D-SUBSET/ ↔ [X]
(4b) /A/ ↔ [X,Y,Z] / C_

I discuss two cases where the predictions of (1) are borne out. The first example is Czech nominal declension. I show morphological and syntactic evidence for accusative (ACC) being marked wrt nominative (NOM) and instrumental (INS) wrt ACC (5a-c).

(5a) NOM = [X [DP]] (5b) ACC = [Y [X [DP]]] (5c) INS = [Z [Y [X [DP]]]]

The morphological evidence is based on morphological subset and superset relations (ACC marker contained inside the INS one, see Table III) and on the lack of the *A-B-A pattern (see Bobaljik 2006): if NOM and INS have the form A, ACC has to have the form A as well.

Table III: Morphological subset relations of cases in Colloquial Czech

	muž 'man', pl.	*kuře* 'chicken', pl.	*myš* 'mouse', pl.	*stavení* 'building', pl.
NOM	muž-i	kuřat-a	myš-i	staven-í
ACC	muž-e	kuřat-a	myš-i	staven-í
INSTR	muž-e-ma	kuřat-a-ma	myš-i-ma	staven-í-ma

The syntactic evidence is taken from case-shifting patterns that occur in Czech. So in (6a-c) I show distinct case-realizations of a DP *Karel* 'Charles' which is an external argument of the verb *malovat* 'paint'. The DP surfaces as INS in the passive (6a), as ACC in the ECM structure (6b) and as NOM in the active (6c). In abstraction, the more prominent the position, the less marked the case. I show more examples of this (DIR/LOC PPs, spray/load alternation). Provided the reasoning is correct, Table IV confirms the prediction of (1) and disqualifies (2).

(6a) *Ten obraz byl malován Karl-em.* (6b) *Petr viděl Karl-a malovat ten obraz.*
the picture was painted Charles-INS Peter saw Charles-ACC paint the picture

(6c) *Karel-Ø byl viděn malovat ten obraz*
Charles-NOM was seen paint the picture.

Table IV: Declension of standard Czech

	hrad 'castle', pl	*pán* ‚lord', pl	*kuře* ‚chicken', pl
NOM	hrad-**y**	pán-i	kuřat-a
ACC	hrad-**y**	pán-**y**	kuřat-a
INSTR	hrad-**y**	pán-**y**	kuřat-**y**

Table V: The distribution of -ed

	close	bless	swell
STATIVE	clos-**ed**	bless-èd	swoll-en
PERFECT	clos-**ed**	bless-**ed**	swoll-en
PAST	clos-**ed**	bless-**ed**	swell-**ed**

The same distribution (the default form disappearing in the unmarked cases first) can be shown on the affix *-ed*. There are at least three distinct functions that the *-ed* suffix can spell out: stative, perfect and past. I argue that the stative form is unmarked (7a), the perfect is marked wrt the stative at least by *v* (7b) and Past is the most marked form containing the T node in addition (7c). If this is correct, then Table V confirms the predictions of (1) and rules out (2).

(7a) [STATE ROOT] (7b) [*v* [STATE ROOT]] (7c) [T[*v* [STATE ROOT]]]

3. Theoretical reasons: If (1) is adopted, non-terminal nodes can be spelled out. If (2) is adopted, spell out of non-terminals is not an option. If non-terminals can be spelled out, we can get rid of certain unnecessary theoretical tools. Hence, (1) should be preferred over (2).

Consider the non-terminal (8). If (2) is adopted, (8) can be spelled out by the Vocabulary item (9), contrary to what is the case. If (1) is adopted, the entry (9) is not a superset of the non-terminal (8) and hence (9) cannot spell out the node in question. This is the correct result.

(8) [WALK PAST] (9) /did/ ↔ [PAST]

Therefore, spell out of non-terminals is not an option in Distributed Morphology (DM) (Embick & Marantz 2006), because it uses (2). However, DM uses at least three distinct tools (a,b,c below) to mimic the empirical effects of the spell out of non-terminals.

(a) Fusion - an operation that brings two separate nodes together solely for the purpose of spell out. Fusion can be avoided if non-terminal nodes can be spelled out.

(b) Abundant zero exponence. If certain forms spell out non-terminals (e.g. *gave,* spelling out at least ROOT, *v* and PAST), certain positions are expected to remain empty (*v* and PAST). DM uses zero exponents to fill these positions. Redundant zero exponence can be avoided if non-terminals spell out. Also, Readjustment rules (RR) are often invoked in (as with *gave*). RR can be avoided if *gave* is a separate form in the lexicon that spells out a non-terminal.

(c) Pre-syntactic bundling. In DM, syntactic terminals contain feature bundles that undergo spell out. This is unnecessary if non-terminals can be spelled out. Moreover, features contained in the bundles are sometimes spelled out separately, which is encoded by Fission - operation that undoes what bundling had created. Given that there is no need for bundling if (1) is adopted, there is also no need for Fission.

4. Summary: I argue that (1) is empirically correct and theoretically desirable interface condition. If (1) is adopted, Fusion, Fission and RRs can be dispensed with. This opens a new view on the interface between syntax and PF: a view without a separate Morphology module interfering.

References:

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