

Light Switches

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ABSTRACT

English *-ify* and Telugu *-inc* have highly similar distributional profiles, both instantiating the ‘little light verb’ v of Chomsky (1995, 2000, 2001). But while *-ify* is heavily exploited as an intermediary between a Telugu verbal root and English verbal inflection in English/Telugu code switching, performing a switch at the light v level, ‘light switches’ in the opposite direction, employing Telugu *-inc* as an intermediary between an English verbal root and Telugu verbal morphology, are out of the question. The central question that this paper seeks to answer is why there should be such an asymmetry in English/Telugu code switching. Our analysis capitalizes on an independently establishable difference between English *-ify* and Telugu *-inc*: while occupying the same structural position in the tree (v), the two morphemes differ in that *-inc* is an *incorporator*, creating a complex X^0 category which, in code-switching cases in which the verbal root is English, is not ‘language uniform’. This violates a general ban on head-internal code switching. We will show (following up on MacSwan 1997 but deviating from it in one important respect) that this ban on head-internal switches is a phonological constraint on code switching — specifically, a constraint (which we will show falls out straightforwardly from the theory) that rules out switching inside phonological words that are morpho-syntactic heads (X^0 s). When ‘light switches’ featuring the ‘little light verb’ v are blocked by this constraint, switching with the aid of a ‘lexical light verb’ V (such as ‘do’ or ‘make’) is available as a last resort; when ‘light switches’ employing v are successful, economy considerations block the structurally more complex alternative of switching at the ‘lexical light verb’ level.

1 The background: Telugu causatives

Classical Telugu (a South-Central Dravidian language) makes its causatives with the aid of the free-standing lexical verb *cees* ‘do/make’, which takes an infinitival complement (ending in *-a(n)*, the infinitival suffix) whose subject is marked accusative by the matrix verb (ECM) and whose object is ACC-marked by the infinitive (cf. (1b)). Informal modern Telugu instead employs the suffix *-inc*, which we will gloss as ‘DO’ (cf. Murti 1973, Krishnamurti & Gwynn 1985:202 for discussion of Telugu causatives). This suffix attaches to the transitive verb stem and gives rise to a *faire-par* type causative, with the causee marked with *ceeta* ‘INST, by means of’ (cf. (2b)).

- (1) a. paapa pustakamu-nu caduwu-nu
child book-ACC read-AGR
‘a child reads a book’
- b. siita paapa-nu pustakamu(-nu)caduw-a ceeyu-nu
Sita child-ACC book-ACC read-INFIN make-AGR
‘Sita makes a child read a book’
- (2) a. kamala niiLLu kaacindi
Kamala water boil-PST-AGR
‘Kamala boiled the water’
- b. raamu kamala-ceeta niiLLu kaay-inc-EEDu
Ramu Kamala-INST water boil-DO-PST-AGR
‘Ramu made Kamala boil the water’

We have glossed neither *cees* nor *-inc* as causative elements because neither is in fact intrinsically causative: both *cees* and *-inc* can be used, alongside their causativizing uses, as light verbs serving as hosts for inflection in Sanskrit loans, as illustrated in (3a,b).¹

- (3) a. pooja ‘worship’ → pooj *cees* ‘to worship’
 b. preema ‘love’ → preem-*inc* ‘to love’

Both *cees* and *-inc* are multi-purpose light verbs, therefore — the former differing from the latter in taking an infinitivally inflected complement. Selection of a full-fledged infinitival complement is a property of lexical verbs — *cees*, therefore, is a V, with both ‘heavy’ and ‘light’ incarnations. In its ‘heavy’ guise, *cees* behaves like garden-variety transitive verbs and is capable of taking a nominal complement (as in *Siita vankai palyam cees-indi* ‘Siita eggplant dish make-3PST’); as a ‘light’ verb, it behaves essentially like the types of verbs discussed by Grimshaw & Mester (1988), such as English *make*, *give* and *do* (cf. *Siita pani cees-indi* ‘Siita work make-3PST’, where *pani* is a Telugu noun, not a Sanskrit loan).

By contrast, *-inc* selects a stem — either a bare stem or a transitive stem. Whenever *-inc* is attached to a transitive stem, the output is causative. But when the stem hosting *-inc* is not a transitive stem, the result of *-inc* affixation is not causative; it may be transitive, but it does not have to be: (4a) is an unaccusative inchoative construction with *-inc*, itself eligible as input to causativization with the aid of *cees*, as shown in (4b).

- (4) a. nadi prawah-*incu-nu*
 river flow-DO-AGR
 ‘a river flows’
 b. Ganga devi nadi-ni prawah-*inc-a* ceeyu-nu
 Ganges goddess river-ACC flow-DO-INFIN make-AGR
 ‘the Goddess Ganges makes the river flow’

What (4) shows very clearly, then, is that *-inc* is not itself a causativizer. As a matter of fact, its sole function in the example in (4a) is to serve as a bridge between the Sanskrit loan *prawah* ‘flow’ and the subject agreement inflection *-nu*. Similarly, in (4b) *-inc* attaches to *prawah* to mediate between it and the infinitival inflection, *-a*. This makes *-inc* a ‘light verb’ in the sense of Chomsky (1995, 2000, 2001) — a connective *v* between the predicative root and the inflectional structure of the clause.²

1 The form *pooj* preceding *cees* in (3a) is seemingly a bare stem. In actual fact, however, what we are dealing with here is a *phonological* reduction of *pooja cees* to *pooj cees*; in syntax, therefore, we do in fact have an infinitive in the complement of *cees*. Three things support this interpretation of the facts. First, when adverbial material follows the lefthand verb, as in (i), we see the infinitival suffix *-a* showing up overtly. Secondly, those (few) consonant-final words that serve as input to the *cees* construction, such as *bajan* ‘religious chant’, do indeed show up in their infinitival form (cf. (ii)). And thirdly, in Kannada the phonological reduction of the counterpart of Telugu *pooja* to *pooj* does not take place in the context at hand: cf. *pooje* ‘worship’ and *poojemaDide* ‘to worship’ (not **poojmaDide*).

- (i) pooja baaga ceesiri
 worship well make-3PL-PST
 ‘they worshiped well’
 (ii) bajanceesiri
 chant-make-3PL-PST
 ‘they chanted’

2 On *-is*, the Kannada counterpart of Telugu *-inc*, as the spell-out of the Chomskyan light verb *v*, see Lidz (1998).

That *-ify* does not add any causative or inchoative semantics here is particularly clear from (7c), where *-ify* attaches to a Telugu unaccusative inchoative and delivers an unaccusative inchoative output, as well as from (7d,e), where the English causative verb *make* and Telugu *-inc*, respectively, bring in the semantics of causation, entirely independently of *-ify*, which appears to be semantically vacuous.⁵ All that *-ify* does in these English/Telugu code-switching cases is ensure that the inflectional heads can get their uninterpretable features checked. In this regard, *-ify* is directly similar to Telugu *-inc*. We are thus led to postulate the same analysis for *-ify* that we set up for Telugu *-inc*, as an instance of the generalized Chomskyan ‘light *v*’. The use, within English, of *-ify* as an intermediary between a noun or adjective and verbal inflection seen in (6) is a facilitator for its use as a ‘little light verb’ in code-switching contexts — but arguably, the English-internal *-ify* in (6) and its incarnation in the code-switching examples in (7) are not exactly identical. Thus, note the fact that the vacuous *-ify* of (7) does not behave as a stress shifter, unlike the Level I suffix *-ify*, which on standard assumptions attaches to its host in the lexical morphological component. This can perhaps be seen particularly clearly in the context of the vacuous use of *-ify* found in varieties of English spoken in the Southern United States. Thus, for Smoky Mountain English (spoken in the Tennessee/North Carolina border region), Montgomery & Hall (2004) note the use of ‘*-ify* on verbs redundantly to form verbs’ in such cases as *argufy* (cf. *argue*) and *blamify* (cf. *blame*). This vacuous *-ify* seems to have precisely the same profile as the *-ify* seen in our code-switching examples. Now notice that in the pair *árgue/árgufy*, stress remains on the initial syllable, while in *héro/heróify*, where *-ify* changes category and is standardly taken to be attached in the lexicon, we see the stress shifting rightward.⁶

In not triggering stress shift, vacuous *-ify* behaves like a phrasal affix and quite unlike the Level I suffix familiar from Standard English. The fact that *-ify* qua pivot behaves like a phrasal affix confirms, it seems to us, that this *-ify* is a ‘little light verb’ (*v*) mediating between the lexical root and the inflectional system.⁷ For Standard English Level-I *-ify*, we would not want to claim that it should be reanalyzed as a ‘little light verb’. But the very fact that Standard English *-ify* can be used in contexts such as (6), where it seems to be a mere intermediary between the lexical root and the verbal inflection, makes *-ify* an ideal model from which to *create* a pivot for code switches at the juncture of the root and the verbal inflection. Thus, *-ify* is being recruited, from the vocabulary of Standard English, to perform a function, absent from Standard English, that is essential in the context of code switching: that of a pivot between the lexical and functional domains, a juncture where the two ‘codes’ would otherwise clash head-on. Simply put, therefore, *-ify* is called upon in (7) to avoid a collision between the Telugu verb and the English Infl. We call these kinds of switches ‘**light switches**’ — switches made at the ‘light *v*’-stage, for inflectional purposes.

5 The fact that *-inc* and *-ify* co-occur in (7e) may *prima facie* seem to compromise an analysis of these elements as lexicalizations of the ‘little light verb’ *v* (as Rakesh Bhatt, personal communication, points out): in a simplex clause, there would appear to be but a single *v* present in the structure. Two possible replies suggest themselves. One would be to deny that there is at most one *v* in a simplex clause — a possibility which seriously presents itself once one abandons the idea that *v* necessarily introduces an external thematic role (cf. Chomsky 2000, 2001). Alternatively, on the assumption that there is indeed at most one *v* per simplex clause, the co-occurrence of *-inc* and *-ify* in (7e) may be accommodated by assigning this sentence a biclausal structure. We will not address the choice between these two options here, noting merely that the co-occurrence of *-inc* and *-ify* in (7e) does not necessarily threaten the text approach to these formatives.

6 The obligatory elision of the *i* of *-ify* in *argufy*, seen also in the Filmi English examples mentioned in fn. 3, above (cf. *maskofy* ‘joke with’) is another respect in which *-ify* qua *v* differs from *-ify* qua Level I suffix (cf. *heroify* ~**herofy*).

7 The claim that *-ify* qua pivot is a spell-out of *v* and not a lexical Level I suffix does not make it ineligible for Level I affixation — *-ify* qua light verb is itself a lexical item that is a possible host for Level I affixes. Thus it is not a problem for our analysis that in Southern U.S. English we find words like *twistification* or *argufication* (cf. e.g. *Vent yer spleen here, but expect some serious argufication!*, at: <http://groups.yahoo.com/group/WPSNmailingList/message/11177?source=1>, provided by Dan Finer, p.c.) and in Telugu/English code switching we find *kalpification*. We thank Dan Finer for instrumental discussion of the issues raised in this paragraph.

2.2 The asymmetry

While the use of *-ify* to facilitate a switch at the juncture of English inflection and a Telugu root, as illustrated in (7), is now straightforward, with *-ify* analyzed as a ‘light *v*’, what is entirely unexpected in this light is that *-inc*, the Telugu ‘light *v*’, *cannot* help out in code switches in the opposite direction, at the juncture of Telugu inflection and an English root. Thus, (8a) is entirely impossible; instead, to make the switch, a token of the ‘light *V*’ *cees* must be used, as in (8b).

(8)	a.	*vaaDu	nanni	love-<i>inc</i> -EEDu
		he-NOM	me-ACC	love-DO-PST-AGR
	b.	vaaDu	nanni	love <i>cees</i> -EEDu
		he-NOM	me-ACC	love do-PST-AGR
		‘he loved me’		

There are two ways in which these examples are significant. First of all, (8a) highlights a striking difference between code switching and borrowing: in our earlier examples in (3b) and (4), *-inc* attaches to a Sanskrit loan (*preem*, *prawah*) perfectly grammatically, showing that what we have on our hands in (8a) is *not* an instance of borrowing. Secondly, the contrast between (7) and (8a) presents a *prima facie* surprising *asymmetry* in English/Telugu code switching — ‘light switches’ with *-ify* of the type in (7) are extremely common; but ‘light switches’ in the opposite direction, with *-inc* (cf. (8a)), are out of the question.

This, then, is the conundrum that this paper seeks to shed ‘light’ on: why is it that English *-ify* can serve as an intermediary in code switching at the inflectional juncture while what appears to be its direct counterpart in Telugu cannot do the same.

3 The light: How and when the twain shall meet

3.1 The ban on word-internal switches: A quick review of the literature

The contrast between (8a), with affixal *-inc*, and (8b), with free-standing *cees*, recalls the familiar ban on word-internal switches, well-documented in the literature in works as early as Poplack (1980) for English/Spanish code switching:

(9)	*estoy	eat-<i>iendo</i>	(Poplack 1980:586)
	I-am	eat-ing	

Poplack’s (1980) account of the ungrammaticality of switches of the type in (9) was in terms of what she called the ‘Free Morpheme Constraint’, reproduced in (10):

(10)	<i>Free Morpheme Constraint</i>	(Poplack 1980)
	a switch may occur at any point in the discourse at which it is possible to make a surface constituent cut and still retain a free morpheme	

It should be plain that this constraint readily captures the Telugu facts in (8) as well: in (8b), nothing goes wrong since *cees* is a free morpheme, but (8a) is problematic because *-inc* is a bound morpheme, and we are not allowed to make the cut between two languages at a bound-morpheme juncture. By the same token, English/Telugu switches of the type in (11) are ungrammatical as well:

We will argue that (14) stands the best chance of making sense of the English/Telugu code-switching facts in (7) and (8). But while the discussion in the remainder of this section will thus lend support to (a modified version of) the constraint in (14), we will also argue (in section 4) that MacSwan's particular way of arriving at the conclusion on (14) is not correct, and provide an alternative rationale for it.

3.2 The key difference between *-inc* and *-ify*: To incorporate or not to incorporate

The key question to ask is why there should be a difference between (7a) on the one hand, and (8a) on the other.⁹

- | | | | | |
|------|-----------|----------------------------|-----------------------|--------------------|
| (7a) | my sister | kalp - <i>ified</i> | the curry | <i>kalp</i> 'stir' |
| (8a) | *vaaDu | nanni | love-inc -EEDu | |
| | he-NOM | me-ACC | love-DO-PST-AGR | |

What these examples share is that they both instantiate a switch at the *v*-VP juncture: *-ify* and *-inc* both represent the 'little light verb' *v*. But where they differ, we would like to argue, is that, while *-inc* incorporates the verbal head of its complement and forms a complex X^0 with it, *-ify* qua *v* does not:

- (15) a. Telugu *-inc=v* is an incorporator
 b. English *-ify=v* is NOT an incorporator

That is, we analyze Telugu constructions featuring *-inc* as incorporation constructions in which the lexical verb *V* is raised to the 'little light verb' *v*, while for English constructions with *-ify* we reject a head-incorporation analysis. If we can motivate this distinction between English *-ify* and Telugu *-inc* (which is something to which the rest of this section will be devoted), it will be immediately clear that the contrast between (7) and (8a) follows from (14) as a matter of course: in the derivation of (8a), a complex X^0 is formed via incorporation of *love* into *-inc*, and this complex X^0 contravenes (14); in (7), by contrast, no X^0 complex including *kalp* and *-ify* is formed at any point in the derivation, and (14) is respected.

Let us now proceed to motivating (15). The background for our key distinction between *-inc* and *-ify* lies in the fact that, as is well known, English entirely rules out all incorporation into verbal heads. While languages such as Mohawk, which feature incorporation profusely, allow nouns and other dependents of *V* to incorporate into the verb, forming things like (16a) and (16b) (with the appropriate language-specific lexical items, of course; cf. Baker 1988), English systematically rejects such constructions, producing (17a,b) instead.

- (16) a. John meat-eats
 b. John up-looked the number
 (17) a. John eats meat
 b. John looked up the number

This is not because English does not have head movement — nor even because English lacks head *incorporation*. Arguably, English and Mohawk (and all other languages of the world) treat constructions in which there is a bare noun phrase or a bare particle in the complement of the verb in precisely the same way in syntax, forcing the bare noun or particle to incorporate into the verb in order to get licensed. That is, in *all* languages, the head of a bare noun phrase complement like *meat* in *John eats meat* must incorporate into the

⁹ We leave (8b) aside for now: it does not present any particular trouble from the perspective of (14). We return to it in section 5.

verb because it cannot be licensed in any other way. It is impossible to license the nominal head within its own extended projection: the quintessential property of a bare noun phrase is precisely the *absence* of an extended projection to the noun; the noun projects up to NP and is not associated with functional projections of its own. The absence of functional heads in the noun's extended projection makes it impossible for the noun to be licensed within the verb's complement unless it incorporates into V, being licensed by what Baker (1988) calls 'morphological licensing'. This is a universal fact about bare NP complements (cf. esp. Van Geenhoven 1998, Dayal 1999 for detailed discussion from a semantic point of view). But languages differ with respect to whether or not the output of incorporation is morphophonologically realized — there is a morphological Well-formedness Condition (19) at work that determines whether the incorporated head is spelled out inside the complex verb (as in (18a)) or outside it (i.e., in the head position of its syntactic phrase, as in (18b)).¹⁰

- (18) a. $[_{VP} [_V N_i V] [_{NP} N_i]]$
 b. $[_{VP} [_V N_i V] [_{NP} N_i]]$

- (19) $*[_V L_i V]$ where $L \in \{A, N, P, V\}$

Since English does not incorporate anything 'physically' into something of category V (i.e., in English, constructions of the type in (16) are systematically impossible), we are led to conclude — on the standard assumption that *v* has the same category as V — that material that surfaces to the left of the English bound morpheme *-ify*, when base-generated in *v*, *does not form a complex head with it*. That is to say, there is no X^0 that contains both *-ify* and its host in cases where *-ify* lexicalizes *v*. To be sure, there *is* always something physically to the left of *-ify* which provides a host for the bound morpheme — we obviously are not contesting that *-ify* is a bound morpheme. But our point is that the host of *-ify* qua *v* does not amalgamate with *-ify* via morphosyntactic incorporation. Instead (although little depends on the details of this for the remainder of the discussion), we will assume that the (remnant) syntactic *projection* of the host of *-ify* is maneuvered into a specifier position local to *v*.¹¹ The 'little light verb' *-ify* and its host come together to form a phonological unit only in the phonological component.

So the essence of our account of the difference between (7) and (8a) is the way in which, and the point at which, 'the twain shall meet' — i.e., how and when the root and the affix come together. While (8a) is bad because of a violation of the ban on head-internal switches (14) (since *-inc* amalgamates with its host via incorporation), the switches in (7), with *-ify* attached to a Telugu root, come out well-formed because English *-ify*, in perfect agreement with all other English verbal morphology, is not an incorporator. In (7), therefore, the Telugu root and English *-ify=v* do *not* form a complex word — i.e., **kalp-ify** in (7a) is not formed via V-to-*v* raising, nor in the lexicon; the vacuous *-ify* seen in these code-switching cases is a syntactically autonomous, free-standing head, coming together with its host only in the phonological component.

Our discussion of the way that (7) is reconciled with a constraint of the type in (14) resembles the brief discussion in MacSwan (2003:7) of Treffers-Daller's (1994:152) Brussels-Dutch/French code-switching case in (20).

10 Note that the WFC in (19) refers specifically to complexes of category V — complex heads of other categories may behave differently: thus, in English, while N-incorporation into *verbs* is impossible (cf. (16a)), N-incorporation into *nouns* is fine (cf. *John is a meat-eater*). Note also that different languages pick out different subsets of the set {L}: thus, in Dutch, while nouns will not incorporate, particles do, under specific circumstances. See Den Dikken (2003) for detailed discussion, irrelevant here.

11 A remnant movement account is readily devised, with all non-verbal material vacating the VP (raising to specifier positions below *v*) prior to movement of the remnant VP to a specifier position immediately above *v*. Adjacency of V and *v* then follows as a matter of course. Execution of the remnant movement analysis is not necessarily trivial, but we will not pursue this here since it is essentially orthogonal to our concerns in this paper.

- (20) da's ne **sympathiqu-e**
 that's a sympathetic-AGR (one)

The thing to look at here is the italicized *-e* (pronounced as schwa), an agreement morpheme from Dutch, attached to the French host *sympathique* (whose final orthographic *-e* is mute). MacSwan capitalizes on Zwart's (1996) claim that the schwa of Dutch adjectival agreement is a phrasal affix, triggering *phrasal* movement (not *head* movement) across it, thus avoiding a collision with (14). This is directly in line with what we said about (7).

But notice that for both (7) and (20) it is undeniably the case that the suffix does form a phonological (PF) unit with its host. Thus, MacSwan's (2003:7) assertion that the phrasal affix approach to *-e* in (20) makes this example meet his PF Disjunction Theorem (13) is actually false — something which leads us to a discussion of the role of phonology in the licensing of apparent word-internal switches, and the roots of (14).

4 **The phonology: Where are the roots of the ban on head-internal switches?**

MacSwan (1997) takes (14) to follow from (13iv), the ban on code switching within PF. Clearly, *-ify* does end up forming a phonological unit with its host, eventually, in the phonological component. It just does not happen 'under one and the same X^0 '. But whether or not a complex X^0 is created is a matter of morpho-syntax, not of phonology (on the assumption that there is no syntactic movement at all in the PF-component¹²). So it cannot be the phonology *per se* that is responsible for the ban on word-internal code switching.

Nonetheless, the phonology does have a key role to play. To appreciate this, it will be advantageous to return to our earlier point about bare noun phrase complements. We said, in the discussion of (16a) and (17a), that the head of a bare noun phrase complement *must* incorporate into V in order to be licensed: it would not be able to survive on its own. We also pointed out that there may be no PF-reflex to N-incorporation: in languages in which there is a morphological Well-formedness Condition banning the verb-internal realization of nouns (a specimen of (19)), the noun will be lexicalized outside the complex verb. But the complex verb is *always* formed, whenever there is a bare noun phrase in V's complement. Now suppose that we perform a code switch between the lexical verb and its bare noun phrase complement, for instance between Spanish and English, or between English and Telugu. The result will be (21a,b), which are well-formed, just as good as any switch between V and its object.¹³

12 This is not an entirely uncontroversial issue — in fact, in Chomsky's (2000, 2001) recent work, it is suggested that head movement, to the extent that it exists, occurs exclusively in the PF-component. We do not follow Chomsky on this point, firmly believing that (i) there is robust evidence for syntactic head movement (all the evidence originally advanced by Travis 1984, Baker 1988, Pollock 1989, among many others), and (ii) there is no convincing evidence for the existence of head movement at PF.

13 Jeff MacSwan (p.c.) asks what accounts for the OV/VO contrast in (21a,b), and in particular, how a bare NP object comes to surface to the left of the verb, as in (21b). The text discussion below (17) argued (in line with the literature) that the head noun of bare NP objects cannot be licensed in its own extended projection, because it has none; and the fact that it has no extended projection makes it ineligible for EPP-driven raising — if, as seems plausible, the EPP is recastable as a D-feature of the probe (Chomsky 1995); the fact that bare NPs cannot be preverbal subjects in e.g. Spanish while in other languages (such as Dutch) they get a 'strong', DP-type interpretation strongly suggests a link between the EPP and D. These two things combined entail that preverbal placement of bare NP objects cannot be the result of EPP-driven movement; nor can it be the result of overt incorporation (which would contravene (14)). We are thus led to assume, by logical elimination, that OV order is *base-generated*: *contra* Kayne (1994) but following e.g. Haider 1997 and Barbiers 2000, we assume that VP is underlyingly head-final, with VO order resulting from movement of the verb around its object (cf. Pesetsky 1989, Johnson 1991, Costa 1996 and Haider 1997, among others, for evidence that the lexical verb can indeed be shown to move leftward in English; and see Haider 1997 and Barbiers 2000 for a detailed plea for an

- (21) a. **comio** *meat*
 eat-1SG.PST
- b. *meat/chicken* **tinTini**
 eat-1SG-PST

Now, if we were to *categorically* block switches within X^0 , we would wrongly rule out examples of the type in (21). After all, complex V^0 s are formed in the course of the derivation of these examples, for the simple reason that the nominal head of the bare noun phrase complement *meat* must incorporate into V in order to be licensed. Plainly, the reason why the complex X^0 s formed in (21) do not contravene the ban on head-internal switches must be that the incorporated noun *is not actually spelled out inside the complex head*.

So phonology plays a role and it doesn't — it accepts head-internal switches which do not give rise, in the PF-component, to 'schizophrenic' phonological words; but it does not reject 'schizophrenic' phonological words which were never a complex X^0 in the morphosyntax. The conclusion that presents itself, then, is that it is not bad, in and of itself, to have a phonological word featuring components from different languages: this is bad if and only if those components are subparts of a morphosyntactic X^0 -complex. So (14) is correct *and* it applies in the PF-component (i.e., it rejects complex X^0 s of the type in (18a) but has nothing to say about (18b), where the morphosyntactically incorporated element is not spelled out at PF inside the complex V). But (14) is *not a consequence* of a general ban on code switching within a PF component (13iv), as MacSwan (1997) would have it. That is all for the better: it would be quite absurd, when one comes to think about it, to take (13iv) literally and ban all code switching at PF, for that would *de facto* rule out code switching categorically. Let us show why.

MacSwan arrives at (13iv) by way of the observed ordering/ranking of rules/constraints in the phonology (13i). But as is well known, phonological rules do not just operate *within* words: there are phonological rules that apply *between* words as well — many postlexical rules, such as English *wanna*-contraction or Italian *raddoppiamento sintattico*, are of this type. Now, if one were to literally prevent code switching from applying in *domains* in which phonological rules apply, then, given that phonological rules apply not only within words but across words as well, we would be led to conclude that code switching is prohibited, period.

Notice that this critique of MacSwan's (1997) proposed way of deriving (13iv) and, concomitantly, (14) is entirely independent of the question of what counts as a 'phonological unit'. All that is needed is the realization that phonological rules/constraints that plainly belong to the phonological component can apply across word boundaries, which leads one to define the domain of phonological rules as something substantially *larger* than the word. If it is the fact that the PF component consists of rules/constraints that must be ordered/ranked *vis-à-vis* each other (13i) that ultimately is responsible for (13iv), as MacSwan argues it is, then what follows (in light of the well-established fact that phonological constraints are at work not only below X^0 but at the juncture of different X^0 s as well) is not actually (14) but the much broader conclusion that code switching is altogether ruled out. Since, clearly, code switching does exist, it seems unlikely that we would be able to profitably exploit MacSwan's (1997) line of reasoning based on (13) to arrive at the conclusion in (14).

We therefore reject MacSwan's *rationale* for (14), but we do not reject (14) *per se* — on the contrary, we have *supported* (14) and made it more specific by confirming in an interesting way that switches within X^0 are indeed ill-formed (as shown by the contrast between (7) and (8a)), as long as X^0 is *physically* (i.e., *phonologically*) 'schizophrenic' (recall the discussion of (21)). So to summarize, our conclusion is that (22) is a descriptively adequate restriction on code switching:

underlyingly head-final VP in Dutch and German). The combination of (i) the absence of an extended projection for the bare noun, (ii) the standard hypothesis that phrasal movement is EPP-driven and (iii) the empirically supported assumption that the EPP is linked to D inevitably leads to the conclusion that (bare-object) OV orders must be base-generated, entirely independently of (21b).

(22) code switching within phonological words that are morphosyntactic heads (X^0 s) is illicit¹⁴

But of course, we would like to elevate our analysis beyond the level of descriptive adequacy to level the playing field with MacSwan (1997). So it is incumbent on us to ask why there should be a constraint like (22).

What we would like to suggest is that a ‘late spell-out’ analysis of type championed by Distributed Morphology (Halle & Marantz 1993, Marantz 1997) and espoused in recent minimalism (Chomsky 2000, 2001) may allow us to derive (22). The syntactic derivation proceeds solely on the basis of bundles of morphosyntactic features, which lead to the projection of syntactic structures in which these features can be checked. The result of syntax is handed over to the interpretive components at spell-out, at which point, on the PF wing of the grammar, the structure gets its phonological shape. The phonology then ‘forgets’ (as Chomsky 2001:13 puts it) the earlier stages of the derivation: the result is a morphosyntactic monolith.¹⁵ For complex categories of type X^0 , such as those in (18a) and (19), this means that, after spell-out, they become *single, simple words* for the purposes of the phonology. So when it comes to providing such X^0 s with a phonetic form, it follows that we have to recruit that form *in its entirety* from a *single* language: by the time at which X^0 is spelled out, it has become a single unanalyzed unit, hence it cannot be realized as a mix of morpholexical material from two different languages. A switch inside a morphologically complex X^0 , viewed from this perspective, is entirely on a par with a situation in which, for some simplex head, we recruit some syllables or individual segments from one language and the other syllables or segments from another. Such situations are not instances of code switching; code switching within phonological words, regardless of whether they are morphologically simple or complex, is systematically ruled out. The constraint in (22) may thus be derived from a theory that adopts the ‘late spell-out’ perspective on the phonological realization of morphosyntactic constructs; and the fact that nothing bans code switching in situations of the type in (18b), where we *are* dealing with a morphologically complex X^0 but the incorporated element and its host, recruited from different languages, are *not* both spelled out inside that X^0 , follows as well.

14 Note that (22) will allow code switching to obey Myers-Scotton’s (1993:83) System Morpheme Principle (which says that all grammatical morphemes come from the dominant/matrix language) only for those grammatical morphemes that do not form morphosyntactic (X^0) units with their hosts from the embedded language. For morphosyntactically affixal grammatical morphemes, the SMP is false — and as a consequence, Myers-Scotton’s (1993:82) Matrix Language Hypothesis (which says that ‘the matrix language provides the morphosyntactic frame’ for code switches) is refuted as well. For relevant critical discussion of the Matrix Language Hypothesis, see also Bhatia & Ritchie (1996), with reference to English/Hindi code-switching data, and MacSwan (2004a,b).

Though we will not have the opportunity here to explore them in detail, it should be clear that (22) makes predictions well beyond the specific case of code switching with *-ify/-inc*. One interesting domain to investigate is the switch between determiners and nouns, especially for a language pair of which both members have postnominal determiners but one of them (‘L1’) derives those by raising the noun to an affixal D, adjoins it to the left of the determiner (thus forming a complex D^0 overtly), and the other (‘L2’) makes them by raising the NP (or some extended projection of N) into SpecDP. For such a pair, we would expect a switch at the D/NP juncture to be legitimate if the determiner is from L2 but not if it is from L1. We thank Jeff MacSwan for suggesting that switches at the D/NP juncture would be a fruitful testing ground for (22); we have to leave the actual verification for future research.

15 The recent phase-based cyclic spell-out approach to the interface between syntax and the interpretive components (cf. Chomsky 2001) has potentially interesting consequences for code switching between morphosyntactically autonomous elements as well: if, at spell-out, all morphosyntactic structure inside (the domain of) the spelled-out phase literally gets erased, with a monolithic chunk as the result, one might expect code switching between, say, V and its complement to be impossible if both stay inside the root–VP, which would make both of them subparts of an unstructured VP ‘chunk’ when the vP is handed over to PF. If this is correct, code switching between V and its complement is expected to be possible only if either V or the complement (or both) leave the root–VP prior to spell-out of vP. For the *kalpify* cases in (7), a phase-based cyclic spell-out perspective would have no adverse consequences: the Telugu lexical verb is in VP, in the domain of the vP phase, while *-ify* is in v, not ‘frozen’ upon spell-out of vP; V and v can hence be lexicalized by material recruited from different languages, as desired. The broader consequences of the tentative remarks in this footnote are open to further exploration.

5 The economy: On switching with *cees* and *do*

In the examples in (8), the switch at the juncture of Telugu inflection and an English root could be successfully made only with the aid of the free-standing ‘light V’ *cees*, not with the affixal ‘light v’ *-inc*. We have just supplied an account for why switching from English to Telugu with *-inc* is impossible, while switching in the other direction, with *-ify*, is perfect (as we saw in (7)). It is incumbent on us now to cast some light on another asymmetry in English/Telugu code switching: the fact that, while the ‘light V’ *cees* ‘do/make’ is perfectly happy to help out in (8b), English *do* will not serve as a go-between.

To see this, contrast the examples in (23a) (which repeats our earlier (8b)) and (23b,b’).

- (23) a. vaadu nanni **love** *cees*-EEDu (= (8b))
 he-NOM me-ACC love do-PST-AGR
 b. *my sister {**kalp** did/did **kalp**} the curry *kalp* ‘stir’
 b’. *my sister {**kalp-edi** did/did **kalp-edi**} the curry *kalp-edi* ‘stir-INF’

Regardless of whether we place English *did* to the left or to the right of the Telugu root (i.e., regardless of whether we follow English or Telugu word order rules), (23b) is impossible, whether we construe *do* as a main verb or as the dummy support morpheme. (23b’), which differs from (23b) in featuring infinitival morphology on the verb, is likewise ungrammatical — it does not matter, therefore, whether what combines with *do* is a bare root or a full-fledged infinitive.

The fact that (23b), with *do* construed as the dummy, is ungrammatical would seem to suggest that switching between T (occupied by the dummy *do*) and *vP* is impossible. That would of course be a straightforward consequence of Belazi, Rubin & Toribio’s (1994) Functional Head Constraint in (12), above. But we have already discarded (12) as a descriptively and explanatorily adequate constraint, so we cannot resort to it here. Nor can we get any mileage this time out of the ban on X^0 -internal switches: there are no such switches anywhere in (23). But there is nonetheless an entirely straightforward way of understanding the ban on switching between T and *vP* in (23b), one focused on morphology.

As a result of making the switch between T and *vP* in (23b), and having the only inflectional features present in the clause borne by the dummy *do*, we end up with a naked Telugu stem in the complement of T. Naked stems cannot surface, however: a Telugu stem always needs to be adorned with some appropriate morphology, whether inflectional or derivational. Since there is nothing to adorn the stem with in (23b), however, the resulting code-switching construction is ill-formed — this time not as a result of a ban on switching within X^0 (nor of a ban on switching between T and *vP* *per se*) but because of a general morphophonological restriction:

- (24) bare stems cannot surface on their own

This morphophonological restriction has nothing to do with code switching at all: it is an entirely general fact holding for ‘pure’ Telugu as well (and not just for Telugu but presumably universally). It automatically rules out (23b) as a viable code switch,¹⁶ but it is not violated in the legitimate code switches in (7): *kalp* in (7a) serves as host to *-ify*, a phrasal affix that, in the PF component, comes to form a phonological word (though *not* a morphosyntactic word, X^0) with *kalp*.

16 Notice that the ungrammaticality of (23b), as well as that of (11c) (**my sister kalp-ed the curry*), is another indication that the root *kalp* has not simply been borrowed into English: if it had been borrowed and hence adopted into the English lexicon of Telugu speakers, it ought to have been perfectly eligible for suffixation with *-ed*, as in (11c), or for surfacing on its own (given that English makes no bare root/infinitive distinction), as in (23b) (or its negative or emphatically affirmative counterparts).

The fact that (23b'), with *do* construed as a lexical light verb (as in *to do a dance*) with a full-fledged Telugu infinitive in its complement, is also ungrammatical indicates that 'light switches', whenever available, are cheaper than switches which call upon the projection of an additional lexical verb (main verb *do*). The fact that 'light switches' are apparently cheaper than switches which call upon an additional lexical verb (main verb *do* in the case at hand, in (23b')) can be thought of in terms of *economy* (or 'blocking', in some extended sense of this Aronovian notion; cf. Aronoff 1976).¹⁷ Faced, at the point in the derivation at which the root VP is complete, with the choice of merging a 'little light verb' *v* or a 'lexical light verb' V, one will take the former tack if one can get away with it — i.e., if merging a 'little light verb' *v* will lead to a converging derivation.

(25) merging the 'little light verb' *v* is cheaper than merging the 'lexical light verb' V

As we have seen, merging the English 'little light verb' *-ify* with the projection of Telugu *kalp* 'stir' leads to a perfectly well-formed output — thanks to the fact that no violation of (22) presents itself. The grammaticality of merging the 'little light verb' *-ify* then effectively blocks (essentially in the Aronovian sense of the term, applied here beyond the confines of morphology proper) the merger of the 'lexical light verb' *do* (the *do* of *do a dance*), so that (23b') will never arise.¹⁸ It is all a matter of economy: merging the 'lexical light verb' V with the projection of *kalp* 'stir' still requires the merger of *v* on top of the 'light' VP; so the 'lexical light verb' route takes two applications of Merge while the 'little light verb' route gets to its destination via just one instance of Merge, that of *v* with the VP of *kalp*.

Note that this line of thought with respect to (23b') leaves (23a) entirely unaffected. For when it comes to a switch from an English lexical verb to a Telugu continuation of the clause structure, there simply is no choice. While in the opposite case, a switch with the aid of *-ify* yields a grammatical output, in the case at hand it is impossible to resort to the Telugu 'little light verb' *-inc* to make the switch: Telugu *-inc* is an overt incorporator, that is, it attracts the V-head of its complement up to it and thus creates a complex X⁰ which is not 'language uniform', in violation of (22). And the very fact that (23a) has no 'cheaper' competitor then makes a switch with the aid of a 'lexical light verb', Telugu *cees*, perfectly legitimate. This is exactly what an approach in terms of economy leads one to expect.

17 We added the reference to 'blocking' because, although there is an intuitive sense in which economy considerations adjudicate between using a 'little light verb' and a 'lexical light verb' to make a switch, it may be best to conceive of this in blocking terms. Note that economy in minimalism (Chomsky 1995 and more recent work) compares only derivations built on the same *numeration* (array of elements from the lexicon); obviously, in the cases at hand, the numerations involved are different (*-ify* vs. *do*, *-inc* vs. *cees*).

18 The question of why *to dance* and *to do a dance* do in fact alternate freely is relevant in this context. Two lines of thought present themselves here. The first would capitalize on Hale & Keyser's (1993) claim that unergative verbs like *to dance* are in fact transitive, taking a 'cognate object' as their complement — i.e., *to dance* would effectively be represented underlyingly as *to dance a dance*, or (if the verb is not underlyingly specified) as *to do a dance*. If this is the right way of looking at unergative *to dance*, then there is no structural alternation between *to dance* and *to do a dance* at all: the two actually have exactly the same structures, both featuring a 'light lexical verb' (which in *to dance* receives no phonological matrix). Looked at this way, then, the alternation between *to dance* and *to do a dance* does not bear on the text discussion in any way. Alternatively, one may assume (in line with the tradition but in disagreement with Marantz 1997 and subsequent work in Distributed Morphology that espouses the point of view that lexical roots are underlyingly unspecified for category) that *dance* in *to dance* and *dance* in *to do a dance* are categorially distinct: the latter is a noun. That very fact will then prevent it from merging directly with *v* (with *v* combining only with VPs). By the logic of the text discussion, we may then understand why the inclusion of a 'lexical light verb' is forced whenever nominal *dance* is selected as the predicate head: there is no 'cheaper' option; merger of the 'little light verb' *v* is illicit in the context at hand, so merger of the 'lexical light verb' V is the only possibility. We will not make a choice between the two approaches to the alternation between *to dance* and *to do a dance* here; for us it will suffice to simply note that this alternation in no way compromises the text discussion.

So basically, (23a) is good because (8a) is bad (i.e., there is no competition, no ‘cheaper’ option, in the case of a switch from an English lexical root to a Telugu environment), and conversely, (23b’) is bad because things like (7) are well-formed. Economy will force the code switcher to make the switch at the ‘little light verb’ (v) level *unless* such a ‘light switch’ is excluded for independent reasons (in particular, by (22)).

While this takes care of the English/Telugu code-switching facts discussed in this paper, let us add a little postlude here to show that the economy approach also allows us to understand the facts of English/Hindi code switching reported in Bhatia & Ritchie (1996), which are highly germane to the foregoing discussion since they involve the use of a ‘lexical light verb’, *kar* ‘do’. Bhatia & Ritchie show that the light verb *kar* is called upon in two contexts by Hindi speakers: (i) in monolingual Hindi (26a) as well as in the English/Hindi code-switching case in (26b), *kar* serves as an intermediary between verbal morphology (*-egii* in (26)) and an adjectival or nominal root (*pasand* and *choice* in our examples); in addition, (ii) in English/Hindi code switching but *not* in monolingual Hindi, *kar* also mediates between (English) *verbal* roots (*choose* in (26b)) and (Hindi) verbal morphology.

(26)	a.	merii	patnii	saaRii	{kii	pasand/	*cun(-naa)}	<i>kar-egii</i>
		my	wife	saree	of	liking _N	choose _V -INF	do-FUT.3SG.FEM
		‘my wife will take a liking to/*choose a saree’						
	b.	merii	patnii	saaRii	{kii	choice/	choose}	<i>kar-egii</i>
		my	wife	saree	of	choice _N	choose _V	do-FUT.3SG.FEM
		‘my wife will choose a saree’						

Bhatia & Ritchie (1996:58) take an approach to these facts which is congruent with ours, arguing that ‘grammatical theory within the economy framework and the Minimalist Program provide natural answers’ to the questions posed by (26) (but recall our fn. 17). The upshot of their approach is that *kar* will be called upon only if its presence is necessary for convergence. In both the monolingual and the code-switching context, *kar* is needed in the examples featuring a *non-verbal* lexical root to provide a verbal host for the inflectional morphology.¹⁹ In the code-switching case with an English *verbal* root, *kar* will still be required despite the fact that the lexical root is now verbal, because that lexical root, taken from English, is unable to form a morphosyntactic (X^0) complex with the Hindi inflectional morpheme *-egii*. But in the *monolingual* example in which the lexical root is *verbal*, there is no need for *kar*, and consequently no *kar* can be inserted.

This approach to (26) strikes us as an entirely reasonable one. And if it is correct, it further underscores the importance of economy considerations in the use of ‘light’ elements — both in monolingual and in code-switching contexts.

6 The wrap: Concluding remarks

In this paper we have endeavored to show that English *-ify*, in its capacity as a ‘little light verb’ v that does not (in fact, cannot) incorporate the head of its complement, is an ideal ‘pivot’ in code switching. It serves as an intermediary between the root and the inflectional domain of the clause, connecting things which could not otherwise host verbal inflectional morphology. The Telugu suffix *-inc*, while occupying the same structural

19 Recall from the brief discussion in fn. 3 that according to Bhatia (1989), in Filmi English, *-ify* serves basically the same purpose, in the other direction, as Hindi *kar* does in the variants of (26) in which the root is non-verbal: in Filmi English, *-ify* is used *only* when the Hindi root is non-verbal. We have made a point of showing that the distribution of *-ify* in English/Telugu code switching cannot be understood in quite the same terms: category does not play the key role here (since the Telugu root to which *-ify* is attached may very well be verbal itself). But mediation between the lexical and the inflectional domains is what underlies all cases, throughout.

position in the tree (*v*), does not manage to play the same pivotal role — it incorporates the V-head, thus creating a complex X^0 category which is not ‘language uniform’, in violation of the ban on head-internal code switching. We have shown, in agreement with MacSwan, that this ban on head-internal switches is a phonological constraint on code switching — there is no general ban on head-incorporation in switching contexts; but the incorporated element from L1 must not be spelled out under the same X^0 as the incorporator from L2. We have also shown, in disagreement with MacSwan, that switching within a phonological word is not disallowed: switches of the type in (7) instantiate precisely this. What makes these cases different from ungrammatical cases of word-internal switches is that the subparts of the phonological words in (7) do not form a morphosyntactic X^0 unit. Thus, there is no ban on switching inside phonological words *per se* (cf. (7)); nor is there a ban on switching inside morphosyntactic X^0 s *per se* (cf. (21)). What *is* disallowed, however, is switching inside phonological words that are morphosyntactic heads (X^0 s). As we have shown, the restriction in (22) follows straightforwardly from a theory that adopts the ‘late spell-out’ perspective on the phonological realization of morphosyntactic constructs. In the final section of the paper, we showed that economy considerations play an important role in adjudicating between ‘light switching’ options: when a switch at the ‘little light verb’ level is legitimate (as in (7)), it will block the structurally more complex alternative of switching at the ‘lexical light verb’ level.

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