Light Switches: On *v* as a Pivot in Codeswitching, and the Nature of the Ban on Word-Internal Switches

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7.1 The Background: Telugu Causatives

Classical Telugu (a South-Central Dravidian language) makes its causatives with the aid of the freestanding 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 and 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)). (Note that South Asian languages have been transcribed in several ways by linguists; since there is no standard approach, we utilize one commonly used in linguistic literature.)

- (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). 'they chanted'

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(3) a. pooja 'worship' → pooj cees 'to worship' b. preema 'love' → preem-inc 'to love'
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Both *cees* and *-inc* are multipurpose 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 and 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).

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(4) a. nadi prawah-incu-nu.
river flow-DO-AGR
'A river flows.'
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b. gangadevi 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

Thus, we have identified two types of "light verb" in Telugu, a *lexical* "light V" (*cees* 'do/make') and a nonlexical "light v" (*-inc*), the former selecting a full-fledged infinitival complement, and the latter a projection of the lexical verb, yielding a verbal but not necessarily transitive output. This is summarized in (5).

(5) a. "Light V" (cees): takes a full infinitival complementb. "Light v" (-inc): takes a projection of the lexical verb as its complement

7.2 The Problem: A Codeswitching Asymmetry

7.2.1 The Use of -ify as a Pivot in Codeswitching

English -*ify* is a close match for Telugu -*inc* as far as syntactic distribution is concerned (cf. (6a–b)): it likewise functions as a go-between for lexical roots and inflectional morphology, producing an output that is verbal but not necessarily transitive.

- (6) a. They are trying to diversify/gentrify/pacify/ ... the neighborhood.
 - b. This neighborhood has diversified/gentrified/pacified/ ... dramatically over the past few years.

It is precisely the fact that *-ify* connects things that could not otherwise host verbal inflectional morphology—such as the adjective *diverse* or the noun *gentry*—that makes *-ify* an ideal "pivot" in codeswitching. From this perspective, it does not come as a surprise that it is *-ify* that helps out in codeswitches at the juncture between English verbal inflection and a Telugu root.³ Indeed, the apparently completely vacuous use of *-ify* is extremely common in this context. Some illustrative examples are provided in (7).⁴

(7)	a. My sister kal(i)p -ified the curry.	kalp 'stir'
	b. You have to kar(i)g -ify the butter.	karg 'melt _{TRANS} '
	c. The butter that I left outside kar(i)g-ified.	karg 'melt _{INTRANS} '
	d. The teacher made the child Ed(i)c -ify in school.	Edc 'cry'
	e. I kaTT-inc-kon-ified this house.	katti 'build'+-inc
		'DO'+-kon 'REFL'

'I had the house built for myself.'

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 codeswitching 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 codeswitching contexts—but arguably, the English-internal -ify in (6) and its incarnation in the codeswitching 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 and 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 codeswitching 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. 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 codeswitches 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 codeswitching: 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.

7.2.2 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 codeswitches 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**-inc-EEDu he-NOM me-ACC love-DO-PST-AGR
b. vaaDu nanni **love** cees-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 codeswitching 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. Second, the contrast between (7) and (8a) presents a prima facie surprising asymmetry in English/Telugu codeswitching—"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 chapter seeks to shed "light" on: why is it that English -ify can serve as an intermediary in codeswitching at the inflectional juncture while what appears to be its direct counterpart in Telugu cannot do the same.

7.3 The Light: How and When the Twain Shall Meet

7.3.1 The Ban on Word-Internal Switches: A Quick Review of the Literature

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

(9) *estoy **eat**-iendo (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) Free Morpheme Constraint (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:

(11) a. *vaaDu nanni **love-D**-u
he-NOM me-ACC love-PST-AGR
b. *vaaDu nanni **love-**EEDu
he-NOM me-ACC love-PST-AGR
c. *My sister **kalp**-ed the curry.

But though (11c) is ill formed, recall from (7) (of which (7a) is repeated below) that it is not *categorically* impossible to make a switch at a bound-morpheme juncture:

(7a) My sister **kalp**-ified the curry. kalp 'stir'

So although it readily captures (8) and (9), the Free Morpheme Constraint is ultimately empirically untenable.⁸

Belazi, Rubin, and Toribio's (1994) Functional Head Constraint in (12) is an alternative attempt at capturing the ungrammaticality of things like (9): with *-iendo* a representative of Infl and *eat* the lexical V-head, (9) involves a switch between I and VP, disallowed by (12).

(12) Functional Head Constraint (Belazi, Rubin, and Toribio 1994)

The language feature of the complement f-selected by a functional head, like all other relevant features, must match the corresponding feature of that functional head.

Once again, the English/Telugu facts in (8) readily fall into place, as do the ones in (11). But for the same reason that the Free Morpheme Constraint fails for English/Telugu codeswitching, the Functional Head Constraint fails as well: it will not take care of (7). For we have come to the conclusion that -ify in English is a lexicalization of the "light verb" head v, a functional (or "non-substantive") head that takes the lexical VP as its complement. Thus (12) would lead us to expect that switches between functional/nonsubstantive -ify and a Telugu lexical verb should be impossible, which is incorrect, as (7) shows. Therefore, (12) will not do for our purposes. It is also problematic for its conceptually quite awkward outlook on codeswitching couched in terms of "language features," and because of the fact that it makes a variety of incorrect empirical predictions outside the realm of English/Telugu switches as well (radically ruling out, for instance, any switches between D and NP, which turn

out not to be infrequent; see MacSwan 1997 for Nahuatl/Spanish switches at that juncture). This leaves little to recommend (12), which we hereby set aside.

In this chapter, we focus on MacSwan's (2000) claim in (14), which he takes to follow from his PF Disjunction Theorem in (13).

- (13) PF Disjunction Theorem (MacSwan 1997)
 - the PF component consists of rules/constraints which must be (partially) ordered/ranked with respect to each other, and these orders/rankings vary cross-linguistically
 - (ii) code switching entails the union of at least two (lexicallyencoded) grammars
 - (iii) ordering relations are not preserved under union
 - (iv) therefore, code switching within a PF component is not possible
- (14) code switches below X⁰ are ill-formed

We will argue that (14) stands the best chance of making sense of the English/ Telugu codeswitching 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 7.4) that MacSwan's particular way of arriving at the conclusion on (14) is not correct, and provide an alternative rationale for it. (See MacSwan and Colina, chapter 8, this volume, where some of our criticisms are addressed.)

7.3.2 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**-ified the curry kalp '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 in 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 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 (see especially Van Geenhoven 1998 and Dayal 1999 for detailed discussion from a semantic point of view). But languages differ with respect to whether 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

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, 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 that 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. 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"—that is, 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—that is, **kalp**-ify in (7a) is not formed via V-to-v raising, nor in the lexicon; the vacuous -ify seen in these codeswitching cases is a syntactically autonomous, freestanding 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 by MacSwan (2003, 7) of Treffers-Daller's (1994, 152) Brussels-Dutch/French codeswitching case in (20).

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(20) da's ne sympathiqu-e that's a sympathetic-AGR (one)
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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 conform to the criteria of his PF Disjunction Theorem (13) is actually false—something that leads us to a discussion of the role of phonology in the licensing of apparent word-internal switches, and the roots of (14).

7.4 The Phonology: Where Are the Roots of the Ban on Head-Internal Switches?

MacSwan (1997) takes (14) to follow from (13iv), the ban on codeswitching 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 morphosyntax, 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 codeswitching.

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 codeswitch 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

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(21) a. comio meat
eat-ISG.PST
b. meat/chicken tinTini
eat-ISG-PST
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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 that do not give rise, in the PF component, to "schizophrenic" phonological words, but it does not reject "schizophrenic" phonological words that were never a complex X⁰ 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 X⁰ complex. So (14) is correct *and* it applies in the PF component (i.e., it rejects complex X⁰s 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 codeswitching within a PF component (13iv), as MacSwan (1997) would have it. That is all for the better: it would be quite absurd, when one thinks about it, to take (13iv) literally and ban all codeswitching at PF, for that would de facto rule out codeswitching 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 the English *wanna* contraction or the Italian *raddoppiamento sintattico*, are of this type. Now, if one were to literally prevent codeswitching 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 codeswitching 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 the fact that the PF component consists of rules/constraints that must be ordered/ranked vis-à-vis each other (13i) is 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 X⁰ but at the juncture of different X⁰s as well) is not actually (14) but the much broader conclusion that codeswitching is altogether ruled out. Since, clearly, codeswitching 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 X⁰ are indeed ill formed (as shown by the contrast between (7) and (8a)), as long as X⁰ 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 codeswitching:

(22) Codeswitching within phonological words that are morphosyntactic heads (X⁰s) is illicit.¹⁴

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 the type championed by Distributed Morphology (Halle and 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 the 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 X⁰s with a phonetic form, it follows that we have to recruit that form in its entirety from a single language: by the time X⁰ 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 codeswitching; codeswitching 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. The fact that nothing bans codeswitching 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.

7.5 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 freestanding "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 codeswitching: 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').

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(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'
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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, and 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 ν P 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 codeswitching 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 ν P 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 codeswitching 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 codeswitch, ¹⁶ but it is not violated in the legitimate codeswitches 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, X⁰) with *kalp*.

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 that call on the projection of an additional lexical verb (main verb do). The fact that "light switches" are apparently cheaper than switches that call on 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—that is, 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 that 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.

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 codeswitcher 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 codeswitching facts discussed in this chapter, let us add a little postlude here to show that the economy approach also allows us to understand the facts of English/Hindi codeswitching reported in Bhatia and Ritchie 1996, which are highly germane to the foregoing discussion since they involve the use of a "lexical light verb," *kar* 'do'. Bhatia and Ritchie show that the light verb *kar* is called on in two contexts by Hindi speakers: (i) in monolingual Hindi (26a) as well as in the English/Hindi codeswitching 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 codeswitching 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)} *kar*-egii 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**} *kar*-egii my wife saree of choice_N choose_V do-FUT.3SG.FEM 'My wife will choose a saree.'

Bhatia and Ritchie (1996, 58) take an approach to these facts that 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 note 17). The upshot of their approach is that *kar* will be called on only if its presence is necessary for convergence. In both the monolingual and the codeswitching context, *kar* is needed in the examples featuring a *non*verbal lexical root to provide a verbal host for the inflectional morphology. In the codeswitching 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 (X⁰) 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 entirely reasonable. And if it is correct, it further underscores the importance of economy considerations in the use of "light" elements—both in monolingual and in codeswitching contexts.

7.6 The Wrap: Concluding Remarks

In this chapter 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 codeswitching. It serves as an intermediary between the root and the inflectional domain of the clause, connecting things that could not otherwise host verbal inflectional morphology. The Telugu suffix -inc, while occupying the same structural position in the tree (v), does not manage to play the same pivotal role—it incorporates the V-head, thus creating a complex X⁰ category that is not "language uniform," in violation of the ban on head-internal codeswitching. We have shown, in agreement with MacSwan, that this ban on head-internal switches is a phonological constraint on codeswitching—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 X⁰ 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 X⁰ 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 (X⁰s). 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 chapter, 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.

Notes

We would like to thank the audience at the Fourth International Symposium on Bilingualism, Tempe, Arizona, April/May 2003, for their feedback, and especially Dan Finer and Jeff MacSwan for their detailed written comments.

- 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 left-hand verb, as in (i), we see the infinitival suffix -a showing up overtly. Second, 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 third, 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 *poojemaa-Dide* 'to worship' (not **poojmaaDide*).
- (i) pooja baaga ceesiri. worship well make-3PL-PST 'They worshipped 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.
- 3. All the codeswitching data reported in this chapter are based on native speaker judgments collected by the first author. The use of -ify as a "pivot" in codeswitching is by no means peculiar to the English/Telugu case. It is in fact used profusely on the Indian subcontinent—there is evidence of the use of -ify in codeswitching constructions featuring Kannada, Malayalam, and Tamil as well (for their judgments, we thank Sudha Gowda, Prem Panikar, and Latha Narayan, respectively), with -ify being necessary (as in the Telugu case) to link the verb to the English inflection. Bhatia (1989) argues that in "Filmi English," a specific form of English/Hindi codeswitching, English -ify (reduced to -fy and obligatorily separated from the stem by the vowel -o-, which Bhatia (1989, 271) claims is a functional morpheme of sorts) attaches exclusively to nominal stems (cf. e.g. you mask-o-fied him 'you joke_N-o-ify-PST (joked with) him'); when the Hindi stem is verbal, English verbal morphology may be added directly to the

combination of the Hindi stem and the -o- morpheme (cf. I manaa- -o-ed her 'I consoled her'). But for the English/Telugu -ify cases discussed in this chapter, it is entirely clear that the Telugu root is verbal. (In fact, switches between Telugu nouns or adjectives and English -ify+INFL are impossible: the "lexical light verb" cees will always mediate between Telugu N/A and English -ify—something that will follow if (i) -ify is a lexicalization of v (as we are claiming) and (ii) v must have a VP in its complement.)

- 4. The -i- in forms like kal(i)pify is subject to elision, the syncopated forms being particularly common in the spoken language. The fact that, when it does show up, the vowel surfaces as -i- provides an interesting piece of evidence for the claim that the Telugu base verb and the suffix -ify form a phonological unit. Telugu has a vowel harmony process by which a /u/ in the final syllable of the stem changes to /i/ under the influence of a high-vowel suffix (see Babu 1981). Roots like kalupu 'stir' undergo this process not just in the context of an indigenous suffix (cf. kalip-indi 'she stirred') but also under the influence of -ify (cf. (7a–d)).
- 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 that 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 note 3 above (cf. maskofy 'joke with'), is another respect in which -ify qua v differs from -ify qua Level I suffix (cf. $heroify \sim *herofy$).
- 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://www.thesagebrushsaloon.com/forum/, provided by Dan Finer, personal communication) and in Telugu/ English codeswitching we find *kalpification*. We thank Dan Finer for instrumental discussion of the issues raised in this paragraph.
- 8. Further underpinning the empirical inadequacy of (10), MacSwan (1997) notes that there are grammatical Nahuatl/Spanish codeswitches involving Nahuatl bound morphemes attaching to a Spanish verb, in clear breach of (10).
- 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 7.5.
- 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-incorpo-

ration into *verbs* is impossible (cf. (16a)), N-incorporation into *nouns* is fine (cf. *John is a meateater*). 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 nonverbal 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 chapter.
- 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 PFcomponent. 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, and Pollock 1989, among many others), and (ii) there is no convincing evidence for the existence of head movement at PF.
- 13. Jeff MacSwan (personal communication) 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 languages like Spanish, while in others (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, for example, Haider 1997 and Barbiers 2000, we assume that the 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 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 (bareobject) OV orders must be basegenerated, entirely independently of (21b).
- 14. Note that (22) will allow codeswitching 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 (X⁰) units with their hosts from the embedded language. For morphosyntactically affixal grammatical morphemes, the SMP is false—as a consequence, Myers-Scotton's (1993, 82) Matrix Language Hypothesis (which says that "the matrix language provides the morphosyntactic frame" for codeswitches) is refuted as well.

For relevant critical discussion of the Matrix Language Hypothesis, see also Bhatia and Ritchie 1996, with reference to English/Hindi codeswitching data, and MacSwan 2004. 2005.

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 codeswitching with -ifyy-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, adjoining it to the left of the determiner (thus forming a complex D⁰ 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 codeswitching 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 codeswitching 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 ν P is handed over to PF. If this is correct, codeswitching 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 ν P. 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 ν P phase, while -*ify* is in ν , not "frozen" on spell-out of ν P; V and ν can hence be lexicalized by material recruited from different languages, as desired. The broader consequences of the tentative remarks in this note are open to further exploration.
- 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).
- 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 and Keyser's (1993) claim that unergative verbs like *to dance* are in

fact transitive, taking a "cognate object" as their complement—that is, 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 "lexical light 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 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 often 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 of 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.

19. Recall from the brief discussion in note 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 nonverbal: in Filmi English, -ify is used only when the Hindi root is nonverbal. We have made a point of showing that the distribution of -ify in English/Telugu codeswitching 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.

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