P^0-stranding vs. p^0-stranding: Phasehood and antilocality in the adpositional phrase

1. Variable structure for *p*P: There is strong evidence that adpositional phrases can have at least two layers (Van Riemsdijk 1990, and much subsequent work). In English this is transparent from forms where both layers are overtly headed, as in *from behind the shed*. The higher layer, *p*P, is part of the θ-system (L-selected prepositions like *on* in *rely on* are exempt from this generalization). Under this conception, p^0 plays the same role as argument-introducers like $Voice^0$ and $Appl^0$, but with a different semantic type-alignment (Wood & Marantz 2017). Examples of p^0 in English include *to*, *from*, *with*, etc. The lower layer, PP, is connected to space and time, converting individuals (type *e*) into spatio-temporal types. Examples of P^0 in English include *behind*, *before*, etc. The example given above [$_{pP}$ *from* [$_{PP}$ *behind* the shed]] thus has *from* in p^0 and *behind* in P^0. (I do not accept further divisions, e.g. of P^0 *in front of* into [$_{PlaceP}$ *in* [$_{AxPartP}$ *front* [$_{KP}$ *of* …]]], cf. Svenonius 2010.)

There is strong evidence that the higher layer *p*P is syntactically present even when not overt. One argument involves the behavior of *p*P-internal modifiers, like *right*. With a *p*P like *from behind the shed*, the particle *right* can appear before *from* or before *behind*, with two different readings, illustrated in (1). In (1a), *right* means, roughly, 'directly', but in (1b), it makes a spatial contribution, meaning something like 'precisely'. The former reading results from *right*'s composition with the full *p*P, and the latter from its composition with PP only.

(1) a. It came right from behind the shed. b. It came from right behind the shed.

Crucially, when p^0 is covert, *right* is ambiguous. The *p*P *right behind the shed* can mean either 'directly behind the shed' (the *p*P-reading of *right*) *or* it can mean 'precisely behind the shed' (the PP-reading of *right*). This is expected if both layers are syntactically present, with p^0 covert.

However, there is no evidence that the PP layer is syntactically present when not overt. In fact, there is positive evidence to the contrary. The behavior of *right* and other *p*P-internal modifiers is again relevant. If a PP layer were syntactically present but covert, then *right* should be able to modify it. However, when P^0 is absent, *right* can only contribute its directional reading: the *p*P *right from the shed* can mean only 'directly behind the shed', and *from right the shed* is ungrammatical. Therefore, although *p*P is syntactically present when unpronounced, PP is actually absent when unpronounced. The *p*P *behind the shed* thus has the structure [$_p$ p^0 [$_{PP}$ *behind* the shed]], while the *p*P *from the shed* has the structure [$_p$ *from* [$_{DP}$ the shed]].

2. Problem for Abels's analysis of p-stranding: These conclusions pose a problem for Abels's (2012) analysis of p-stranding in English. According to Abels, p-stranding is blocked in many languages because, assuming adpositions are phase-heads, p-stranding requires a "too-local" movement (violating anti-locality). However, English's more articulated *p*P-structure subverts the too-local move. (2) from Abels (p258) illustrates the general idea (his labels are 'P' and 'X'; I substitute 'p^0' and 'P^0' respectively).

(2) a. Stranding: [p^0 [$_{PP}$ P^0 DP]] b. Non-stranding: [p^0 DP]

What I argued above is that structure (2a) is appropriate for English *p*Ps with overt P^0 (like *(from) behind the shed*), but not for *p*Ps without overt P^0 (like simply *from the shed*), for which structure (2b) is instead appropriate. As such, Abels's analysis would lead us to expect p-stranding to be possible in English only in the former case, and not in the latter case. In fact, though, stranding is perfect in both cases (cf. *The shed you went [$_{pP}$ p [$_{PP}$ behind __]]*; *The shed you went [$_{pP}$ to __]*).

There is moreover evidence that non-p-stranding languages have both layers (*p*P and PP) as well. Spanish for example allows *p*Ps like *desde bajo los asientos* 'from under the seats'. Mandarin also clearly has bi-layered *p*Ps (Djamouri et al. 2013). Abels's analysis would predict such structures to facilitate p-stranding, but neither language in fact allows this.

Further, if p^0 is phasal, then even with the structure (2a), anti-locality should block extraction of the lower PP layer. Yet when this structure is instantiated in Gungbe, with both p^0 and P^0 overt, p^0-stranding is possible (Aboh 2010):

(3) [$_{PP}$ **gbó jí**] wɛ̀ kpònɔ̀n lɛ̀ nyì àgbàn cè [xlán __].
trash P^0 Foc police NUM throw luggage POSS p^0
'The policemen threw my luggage ON/TO THE DUMPSTER.'

These English, Spanish, Mandarin, and Gungbe facts are all problematic for Abels's proposal (2).

3. Proposal: In response to these problems, I propose to narrow the application of Abels's antilocality-based analysis to stranding of P^0 (i.e. antilocality blocks P^0-stranding but not p^0-stranding). Consider the configuration [$_{pP}$ p^0 [$_{PP}$ P^0 *wh*]]. Suppose this is the configuration of some non-stranding language. Antilocality will block extraction of *wh* if P^0 (not p^0) is phasal. Following Abels's (2003) original argument for antilocality, I assume exactly that: P^0 is a phase head. So, for *wh* to escape *p*P, it will have to first move to Spec-PP, which violates antilocality. Stranding of P^0 is thus predicted to be ungrammatical.

How can we then account for languages like English that *do* allow P^0 to be stranded? To answer that question, first consider two systematic exceptions to P^0-strandability in English. One exception involves postpositions like *ago*; these can never be stranded. The second exception involves simultaneous realization of both p^0 and P^0; Huddleston & Pullum (2002, p630) report that such *p*Ps are also resistant to p-stranding. Both these patterns are exemplified in (4).

(4) a. * How long did you leave ago? b. * Which painting did you take it from behind?

I unify these exceptions under the hypothesis that P^0-stranding depends on head-raising of P^0 to p^0. Assuming P^0 is the phase head, raising it to p^0 induces *phase-extension* (Den Dikken 2007; or *phase sliding*, Gallego 2006), shifting the phase-boundary to *p*P, meaning P^0-stranding movement to the phase edge will no longer violate antilocality. The *p*Ps in (4) are correctly predicted *not* to allow P^0-stranding, precisely because they do not contain P^0-to-p^0 raising: in (4a), if P^0 raised to p^0, then *ago* would be *pre*positional, not *post*positional, and in (4b), P^0 cannot raise to p^0 because p^0 is already filled by *from*.

The availability of P^0-stranding thus depends on the availability of P^0-to-p^0 movement. This generalization is supported crosslinguistically. In Hungarian, for instance, while most postpositions resist stranding, those that have a *pre*positional variant can generally be stranded (with a few exceptions; see Dékány & Hegedűs 2014). This follows if prepositional order in Hungarian involves raising a postposition from (head-final) P^0 to (head-initial) p^0.

4. Two types of p-stranding: The above analysis predicts that P^0-stranding and p^0-stranding are dissociable. There is strong crosslinguistic support for this. As is well-known, some languages allow both types of p-stranding (e.g. English), and others allow neither type (e.g. Mandarin). But there are also languages that allow p^0-stranding and not P^0-stranding, and vice versa. For a language allowing p^0-stranding but not P^0-stranding, consider Gungbe, as described by Aboh (2010):

(5) a. **Àsíbá** wὲ Kòfí zé kwé [xlán __] b. * **Távò lɔ́** wὲ Asíbá xé [__ jí]
Asiba FOC Kofi take money p^0 table DET FOC Asiba climb P^0
'Kofi sent money to ASIBA.' 'Asiba climbed on top of THE TABLE.'

For a language allowing P^0-stranding but not p^0-stranding, consider Hausa, as described by Newman (2000) and Jaggar (2001) (*a* is from Newman, *b* from Jaggar):

(6) a. * **mὲ** ya cikà bùhū [dà __] b. **mὲ** zā kà sakà kāyā [ciki __]
what 3m fill sack p^0 what FUT 2m put stuff P^0
'What did he fill the sack with?' 'What will you put the stuff in?'

The analysis outlined above applies to P^0-stranding, i.e. the contrast between (5b) and (6b). Thus, Hausa is predicted to have P^0-to-p^0 raising with concomitant phase-extension, and Gungbe is not.

The immediate next question is, what about (5a) vs. (6a)? In other words, how is p^0-stranding to be analyzed? For the purposes of this talk I can only speculate on this. However, a satisfactory account of p^0-stranding should capture two generalizations: even in non-p^0-stranding languages, (i) p^0-stranding is generally allowed under resumption (if resumption is available, e.g. in Welsh and Arabic), and (ii) p^0-stranding appears to be permitted when covert (Huang 1981, Aoun 1985, Abe & Hoshi 1997; I reject Bayer's 1996 arguments against covert p^0-stranding based on focus particles). I take these generalizations to suggest that the availability of p^0-stranding is a morphophonological property.

Therefore, I tentatively propose that, in non-p^0-stranding languages, p^0 obligatorily undergoes string-vacuous Local Dislocation into its complement, as proposed by Embick & Noyer (2001, p575-576; also Embick 2007) for Latin. (Note that, to capture Merchant's p-stranding generalization, the Local-Dislocation requirement must not be bled by ellipsis.) In prototypical p^0-stranding languages like English, p^0 has unique prosodic properties that obviate the Local-Dislocation requirement; e.g. English p^0s all have a prosodically strong alternant with the form of a full prosodic word (Selkirk 1996; see also Philippova 2014).