

**Simplifying MATCH WORD: Evidence from English function words**

In work on the syntax-prosody interface, there is a prevalent idea that while lexical categories are preferentially mapped to prosodic words ( $\omega$ ), no such pressure exists for functional categories (Selkirk 1984, 1995, 2011, Selkirk & Shen 1990, Truckenbrodt 1999, Elfner 2012). Under Match Theory (Selkirk 2011), in which syntax-prosody isomorphism is enforced by a series of violable constraints, this supposed pressure is built into the system with the claim that MATCH WORD in some sense ‘ignores’ functional categories. I argue that this idea is misguided, and that MATCH WORD does not discriminate between lexical and functional heads. The pervasive phonological reduction of function words, rather than being a consequence of Match Theory, is instead ascribed to idiosyncratic prosodic properties of function words specified in the lexicon. In particular, I adopt the model of prosodic *subcategorization frames* (Inkelas 1990, Zec 2005). This approach explains particular interactions that would be unexpected if MATCH WORD were genuinely indifferent to functional categories, and fits in with a large body of evidence suggesting that functional elements can behave in prosodically idiosyncratic ways (Nespor & Vogel 1986, Zec 2005, Bennett, Henderson & Harizanov, to appear). The evidence comes from the behavior of several classes of English function words: prepositions, auxiliaries, weak object pronouns and clitic negation *-n't*.

**Prepositions and auxiliaries.** Selkirk (1996) shows that prepositions and auxiliaries are typically reduced:

- (1) a. Súe tálked [tə] Máry.
- b. Jóhn [kən] wálk.

Ito & Mester (2009), following Selkirk’s similar proposal, argue that they form a prosodic word ( $\omega$ ) with the phonological material to their right (I ignore higher-level prosodic phrasing for now):

- (2) a. ( $\omega$  Sue) ( $\omega$  talked) ( $\omega$  to ( $\omega$  Mary))
- b. ( $\omega$  John) ( $\omega$  can ( $\omega$  walk))

This behavior can be accounted for by assuming that *to* and *can* have the prosodic subcategorization frame in (3). It states that the element (Fnc) must combine with something to its right, and be dominated by a category  $\omega$ .

- (3) [ $\omega$  Fnc [...]]

Adherence to this frame is then enforced by a high-ranked constraint SUBCAT (Bennett et al. to appear):

- (4) SUBCAT >> {MATCH WORD, MATCH PHRASE}

[ <sub>PP</sub> to Andy]	SUBCAT	MATCH WORD	MATCH PHRASE
→ ( $\omega$ to ( $\omega$ Andy))		**	*
( $\varphi$ ( $\omega$ to)( $\omega$ Andy))	*		

In contrast, prepositions and auxiliaries in phrase-final position are stressed and unreduced:

- (5) a. Who was Mary talking [tu]/\*[tə]?
- b. I won’t help you, but John [kæn]/\*[kən].

The ranking in (4) derives this behavior: SUBCAT is *necessarily* violated, as there is no (phrasemate) phonological material to the right of the function word, and so the Match constraints break the tie:

- (6) Functional categories without complements

Who was Mary [ <sub>VP</sub> talking [ <sub>PP</sub> to]]	SUBCAT	MATCH WORD	MATCH PHRASE
→ ( $\varphi$ ( $\omega$ talking)( $\omega$ to))	*		
( $\omega$ ( $\omega$ talking) to)	*	**	*

We can also account for the behavior of certain high-register English prepositions which *do* form  $\omega$ s: they simply lack a subcategorization frame (another possible candidate would be determiner/pronoun *that*):

- (7) Functional categories which lack subcategorization frames

[ <sub>PP</sub> via Andy’s]	SUBCAT	MATCH WORD	MATCH PHRASE
→ ( $\varphi$ ( $\omega$ via)( $\omega$ [ <sub>I</sub> ]Andy’s))			
( $\omega$ via ( $\omega$ Andy))		**	*

Note that the presence of linking *r* after *via* in non-rhotic dialects is, according to the diagnostic in Ito & Mester (2009), evidence that its complement forms a maximal  $\omega$  (compare with \*[tə <sub>I</sub>]Andy’).

Finally, the prosodic subcategorization account explains the behavior of function words when they take  $\varphi$  complements. According to Ito & Mester's diagnostic (presence vs. absence of intrusive  $r$ ) we should assume that function words form a recursive  $\omega$  with adjacent material, rather than a recursive  $\varphi$ . Yet the recursive- $\omega$  candidate gets more MATCH WORD violations than the recursive- $\varphi$  candidate, and so we require some higher-ranked constraint to rule out the recursive- $\varphi$  candidate. SUBCAT does just this:

(8) Multi-word complements to functional categories

[ <sub>PP</sub> to [ <sub>DP</sub> Andy's house]]	SUBCAT	MATCH WORD	MATCH PHRASE
$\rightarrow$ ( $\varphi$ ( $\omega$ to ( $\omega$ Andy's))( $\omega$ house))		*	(*?)
( $\varphi$ to ( $\varphi$ ( $\omega$ [ <sub>I</sub> ]Andy's)( $\omega$ house)))	*		

Note that if we assumed that MATCH WORD ignored functional categories, we would *still* require some lexical information to tell us that the recursive- $\omega$  candidate is preferred to the recursive- $\varphi$  candidate (in the talk, I present evidence that EXHAUSTIVITY (Selkirk 1995) would be insufficient for ruling out the  $\varphi$ -adjoined candidate more generally). Therefore it is unclear how much work a lexical-only MATCH WORD constraint would do in explaining the prosodic behavior even just of auxiliaries and prepositions.

In the second part of the talk, I present further evidence for the importance of lexically-specified prosodic subcategorization frames in explaining the behavior of a second type of English functional element – those that cliticize to their *left*.

**Weak object pronouns and clitic negation -n't.** A corollary of the idea that MATCH WORD ignores function words is the idea that function words should all behave alike – in the absence of any specific lexical information, functional categories should be integrated into prosodic structure in whatever way is *least marked* for the language. However, this is not the case, as different function words within one language display idiosyncratic prosodic behavior. Within English, Selkirk (1996) shows that weak object pronouns, unlike auxiliaries and prepositions, encliticize onto material to their left:

- (9) a. Sarah wants [əm]. (=them)  
 b. I need [ə]. (=her)

This behavior can be simply captured by assuming they have the subcategorization frame in (10):

- (10) [ $\omega$  [...] Pro]

Furthermore, if we assign the same frame to clitic negation -n't (*pace* Zwicky & Pullum 1983), we can derive the interaction between auxiliaries and -n't in (11a-b), where the addition of -n't forces the use of the non-reduced auxiliary. This behavior contrasts with strings of reduced auxiliaries, as in (11c).

- (11) a. Émily [əd] léft.  
 b. Émily \*[ədnt]/[ 'hædnt] léft.  
 c. Émily [əd bɪn] léaving.

In (11b), *hadn't* forms its own  $\omega$ , satisfying the prosodic subcategorization frames of *had* ([ $\omega$  had [...]]) and -n't ([ $\omega$  [...] -n't]). We see therefore that reduced function words do not behave uniformly, even within one language, and that their behavior can be accounted for with prosodic subcategorization frames. In this landscape, it is unclear what work is even being done by restricting MATCH WORD to lexical categories.

**Conclusions.** Function words map to prosodic words some of the time (e.g. phrase-final prepositions), and some function words map to prosodic words all of the time (e.g. *via*, determiner *that*). The model here assumes that these cases are the rule, rather than the exception. The underlying reasoning is that all cases where function words do *not* map to prosodic words can be accounted for with a fairly restricted view of how prosodic information projects from the lexicon – prosodic subcategorization – leaving essentially no work for a lexical-only formulation of MATCH WORD to do. Consequently, we end up in the happy position of being able to maximally simplify our formulation of the MATCH WORD constraint, to one which gives lexical and functional categories equal treatment.

**Selected References.** Ito, E. & A. Mester 2009. The extended prosodic word. In *Phonological Domains* 135-194. • Truckenbrodt, H. 1999. On the relation between syntactic phrases and phonological phrases. *LI* 30(2): 219-255. • Selkirk, E. 1996. The prosodic structure of function words. In *Signal to Syntax*, 187-214. • Selkirk, E. 2011. The syntax-phonology interface. In *The Handbook of Phonological Theory*, 435-483. • Zec, D. 2005. Prosodic differences among function words. *Phonology* 22(1): 77-112.