PROSODY – AN INTERVIEW WITH MARINA NESPOR

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REVEL – When was Prosody included in the "Linguistics agenda"? Who were the first researchers to study Prosody? Why were they interested in it?

NESPOR – The first researcher interested in prosody in the generative tradition of grammar was Lisa Selkirk who wrote her PhD thesis (1972), entitled *The phrase phonology of English and French,* among other topics on *liaison* in French. But first a question of clarification: What do we mean by prosody? While the term prosody is generally meant to refer to rhythm and intonation, within phonological theory, it is meant to include all phonological phenomena that account for the regular sound shape of utterances, i.e. not only rhythm and intonation, but also segmental phenomena that may apply also across words.

The interest in prosody, I believe – since it was mine soon after – was that the classical book of generative phonology (*The Sound Pattern of English* by Chomsky and Halle 1968), was devoted uniquely to the sound shape of words. Both regular and irregular phenomena, i.e. phenomena that must refer to non-phonological information, were treated similarly. Phrasal phonology was instead considered a matter of performance, rather than competence. In subsequent years, it became clear instead that phonology, i.e. the study of the competence of the sounds of natural languages had to include phrasal phenomena as well.

The theory of prosodic phonology thus crucially includes also phrasal phonology. It is in fact clear that all regular phenomena, whether regarding rhythm, intonation or

regular phonological phenomena that affect the segmental material, such as for example *liaison* in French or linking *r* in British English form part of the competence of native speakers. It is in fact not a question of performance to retract to the first syllable the stress of *thirteen* in *thirteen men* in connected speech. This, as well as many other phrasal phenomena apply invariably and account for the relative cohesion of the elements of a string.

Speech would not be readily comprehensible without phrasal phonological phenomena. Prosody, in fact, disambiguates sentences with an identical sequence of words but with different meanings, as in English *John gave her cat food*, which means either that 'John gave some food to her cat', or that 'John gave some female person cat-food'. Or in Italian *Quando Luca chiama Martina è sempre felice*, which means either 'When Luca calls, Martina is always happy', or 'When Luca calls Martina, she is always happy'. Thus in one case *Martina* is the direct object of the first verb and in the other case it is the subject of the second verb. It is because of juncture phenomena, phrasal stress and lengthening in different locations that sentences such as these are disambiguated. Thus a theory of prosodic competence, including both universal properties and properties that vary systematically across languages became necessary.

ReVEL – Most of your research has focused on the phonological interpretation of syntax. What are some interesting points regarding the interface between Syntax and Prosody?

NESPOR – Indeed most of my research has focused on that. The interest of the syntax – prosody interaction lies in the fact that we could not understand each others when speaking without prosody. As I said above, there are in fact potentially ambiguous sentences, in that they have the same sequence of words. When uttered, however, they are not ambiguous because their prosody is different. And even if sentences are not potentially ambiguous, aprosodic sequences of words are hard to understand. To say the least, communication would not be effective without prosody.

For this reason, I believe, prosody attracted the attention not only of theoretical linguists, but also of psycholinguists and of scholars investigating language acquisition. It is by now known that infants are sensitive to different aspects of prosody from very early on. For example, 3-days-olds discriminate two languages if they belong to different rhythmic classes, but not if they belong to the same rhythmic class (Ramus, Nespor and Mehler 1999). Recently it has been shown that newborns' cries are influenced by the prosody of the maternal language (Mampe, Friederici, Christophe, and Wermke 2009). As it is one of the first aspects of language learned, prosody is possibly the hardest part of grammar to learn in second language acquisition in adulthood, as most adults who have learned a second language well know.

Similarly, the syntax–prosody interaction is interesting for first language acquisition. That is, prosody helps listeners parse the syntax of incoming messages, and helps infants bootstrap (or get initialized) into their language of exposure. When infants come into the world they have their genetic endowment and the sounds (or signs) of the surrounds. What do these sounds (and signs) reveal about the syntactic structure of language? That is, what can infants learn about syntax before they acquire the meaning of words? We have proposed that prosody gives a cue to the order of words (Nespor, Guasti and Christophe 1996; Nespor, Shukla et al. 2008). In *Prosodic Phonology*, we had proposed that the main prominence at the level of the Phonological Phrase is on the leftmost word in languages in which the object precedes the verb (complement – head), and on the righmost word in languages in which the object follows the verb (head – complement). Languages of the first type include Turkish, Basque and Japanese; languages of the second type include English, Greek and Arabic. And in Nespor, Guasti and Christophe (1996), we proposed that the difference location of stress might help infants bootstrap the word order of their native language. A signal about beginning and ends of grouping, however, is also necessary. The different location of Phonological Phrase prominence is essential, however not enough, to understand if a language is head initial or final. In fact if we hear a sequence of strong (or stressed) words alternating with weak words, we cannot decide if a group strats with a strong or a weak word. The proposal in Nespor, Shukla et al. solves the grouping problem: it is in fact proposed that Phonological Phrase stress is mainly realized through increased pitch and intensity if initial and mainly

through duration if final. Thus the type of prominence an infant is exposed to might allow it to bootstrap the word order of its language. The prelexical acquisition of word order would explain why when children start combining two words, they do not make mistakes in their relative order.

Mampe, B., Friederici, A., Christophe, A. & Wermke, K. (2009). Newborns' cry melody is shaped by their native language. *Current Biology*. *19*. 1994-1997.

Nespor, M., M.T. Guasti and A. Christophe (1996) Selecting word order: the Rhythmic Activation Principle. in U. Kleinhenz (eds.) *Interfaces in Phonology*. Berlin. Akademie Verlag. 1-26.

Nespor, M., M. Shukla, R. van de Vijver, C. Avesani, H. Schraudolf and C. Donati (2008) Different phrasal prominence realization in VO and OV languages. *Lingue e Linguaggio*. 7.2. 1-28.

Ramus, F., M. Nespor and J. Mehler (1999) Correlates of linguistic rhythm in the speech signal. *Cognition*. 73. 265-292.

REVEL – The prosodic hierarchy presented in Nespor & Vogel (1986) is considered one of the hallmarks in Prosodic Phonology. How do you see the ideas presented in Nespor & Vogel (1986) today, almost 25 years after the publication of the first version of your book[1]?

NESPOR – I believe that some of the ideas presented in Nespor and Vogel (1986) – in 2008 in second edition with a new introduction by De Gruyter – still trigger research. So in that sense, they are still worth reading. Personally today, the constituent of that book that is occupying me the most is the Phonological Phrase. I believe that that level of prosodic structure is important for researchers of different disciplines concerning language. I do not mean to say that other ideas presented in the book are not valid today. But: the idea that word order is signaled in cues contained in the

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[1] NESPOR, Marina; VOGEL, Irene. *Prosodic Phonology*. Dordrecht: Foris, 1986. The book is still being published; the latest edition was published in 2008 by Mouton de Gruyter.

speech stream is of importance not only for the theory of grammar, but also for language perception and acquisition. At least the phonological phrase is the level of the prosodic hierarchy on which I have worked the most after the publication of our book.

I also believe that our analysis of the phonology of poetic meter, related to the proposal by Hayes (1989), is worth expanding to more poetic traditions, especially traditions developed within languages with different phonological systems. The basic idea is that syntax does not influence the shape of meters directly, but only through prosodic phonology. In other words, only that part of syntax that is incorporated in prosodic phonology can influence the shape of verses.

REVEL – Many scholars working with Optimality Theory (OT) present arguments in favor of OT using examples from studies in Prosody. Do you think OT provides insights for prosodic theory?

NESPOR – When the first proposals concerning Optimality Theory were circulated, I had gradually moved to investigate how prosodic signals – and which – can be exploited in first language acquisition. In particular I am interested in the steps infants can make into the acquisition of their native language in the first months of life, importantly before the acquisition of the lexicon. At the same time, I became less interested in new theories of phonology. But several scholars have worked on either the syntax – prosody interaction or on prosody within OT, e.g. Selkirk, Yip, Hayes, Kager, Truckenbrodt. Some references are given below.

REVEL – Could you please suggest some essential readings on prosodic theory for our readers?

NESPOR – Besides our book, there is a book by Selkirk (*Phonology and syntax: The relation between sound and structure*), as ours a bit old, since it was published in 1984, but that too worth reading.

Further I would suggest to start from the following and to go on from there:

Hayes, B. & A. Lahiri (1991) Bengali Intonational Phonology. *Natural Language and Linguistic Theory*, Vol. 9.1, 47-96.

Truckenbrodt, H. (1999) On the relation between syntactic phrases and phonological phrases. *Linguistic Inquiry*. 30, 219-255.

Selkirk's work subsequent to her book. She has also worked on some aspects of prosodic phonology within Optimality Theory.

Yip, M. (2002) *Tone*. Cambridge University Press. (in the framework of Optimality Theory).

With particular reference to poetic meter:

Hayes, B. (1989) The prosodic hierarchy in meterin P. Kiparsky and G. Youmans (eds.) *Rhythm and Meter*. Orlando, FL. Academic Press. 201-260.

On prosody and language processing and acquisition:

Christophe, A., Guasti, M. T., Nespor, M., & van Ooyen, B. (2003). Prosodic structure and syntactic acquisition: the case of the head-complement parameter. *Developmental Science, 6,* 213-222.

Christophe, A., Peperkamp, S., Pallier, C., Block, E., & Mehler, J. (2004). Phonological phrase boundaries constrain lexical access: I. Adult data. *Journal of Memory and Language, 51,* 523-547.

Gout, A., Christophe, A. & Morgan, J. (2004). Phonological phrase boundaries constrain lexical access: II. Infant data. *Journal of Memory and Language, 51,* 547-567.

Millotte, S., René, A., Wales, R. & Christophe, A. (2008). Phonological phrase boundaries constrain the on-line syntactic analysis of spoken sentences. *Journal of Experimental Psychology : Learning, Memory & Cognition, 34,* 874-885.

Morgan, J.L. and K. Demuth (eds.) (1996) *Signal to syntax: bootstrapping from speech to grammar in early acquisition*. Mahwah, NJ: Lawrence Erlbaum. 1996. Pp. 487.

Shukla, M., M. Nespor and J. Mehler (2007) Interaction between prosody and statistics in the segmentation of fluent speech. *Cognitive Psychology*. 54.1.1-32.

On the prosody of sign language:

Nespor, M. and W. Sandler (1999) Prosody in Israeli Sign Language. *Language and Speech*. 143-176.
Wilbur, R.B. (1999) Stress in ASL: Empirical evidence and linguistic issues. *Language and Speech*. 42. 229-250.