

Let the Corpus Speak

09/04/2006

IATEFL 2006



Structure

- Use authentic language/exercises (Marty)
- NS and NNS Speech (Bunny)
- The Speech Corpus (Dermot)

Why use a NS Speech Corpus?

Exposure to the target language and culture:

- **McCarthy (1998a):** *‘Exposure to the spoken language, without the pressure to imitate and produce it, could be one of the most useful elements [in language learning] ...’*

Facilitates autonomous learning:

- **Stevens (1995):** *‘Data Driven Learning gives learners control over the learning process and exposes them to authentic language’*















Exposure to ‘real’ language:

- **Carter (1998):** *‘A learner who has been exposed to ‘real English’ has an advantage over a learner who has only been exposed to ‘disinfected textbook material’*

A Corpus with *spoken* data can reveal:

- practicalities of *characteristics of connected speech*
- *difference in pronunciation* of a word depending on its occurrence in a sentence
- *prosodic* information
- preferred *pronunciation styles* of chosen socio-cultural model

DITCall

slower Playback	OLA I	OLA II	Speed	OLA II
			100%	
			80%	
			60%	
			40%	

Exercises based on Speech Files



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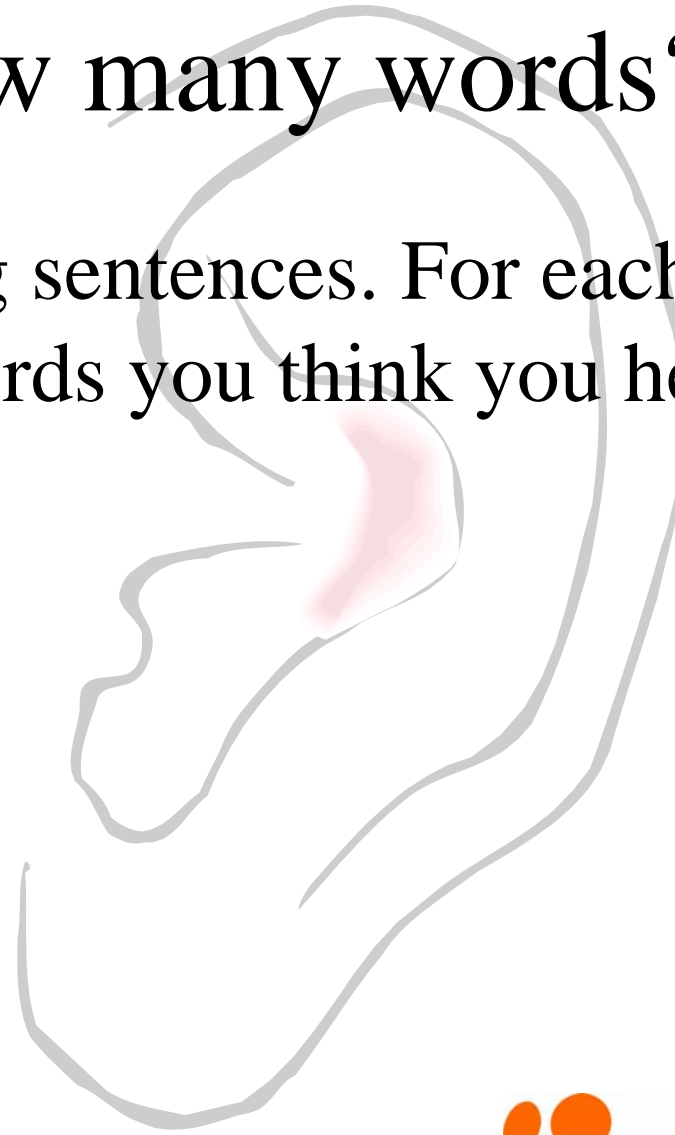
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Tune in: How many words?

Listen to the following sentences. For each one give the number of words you think you hear:

- (a) _____
- (b) _____
- (c) _____
- (d) _____



What did you *not* hear?

Listen again to audio clips (1) and (2). Tick the verbs you did *not* hear.

can

have

tell

lived

must

be

do

think

see

Highlight the linked words

‘And adapting to a country and culture so different from your own must be quite difficult. How do you cope?’

When a word begins with a vowel sound and the previous word ends in a consonant, the two words link:
e.g. Fish and chips = Fish ’n chips

Listen to the audio clip of the sentence above. In the sentence below, highlight the words that you think should be linked.



Cloze the gap!

Listen carefully to audio clip 3 and fill in the gaps:

There were ___ (six?/sick?) ___ students waiting for me.

There were ___ (ache?/eight?) ___ girls and ___ (ape?/eight?) ___ boys at the party.

Speak Out! Issue 33

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(Linguistic) **STRESS** is good for you!

Use the highlighter to mark the word(s) in each sentence which are emphasised:

- You would **want** to be financially **secure** before you actually consider **setting up**.
- But **hopefully** I will go back to the **land**.
- There's **not** much **money** in it.

Classroom – vs – Reality

‘Students whose education has been largely couched in **slowly and deliberately spoken English** are often shocked to find, when they enter a context in which **native speakers are talking** to each other, that **they have considerable difficulty in understanding what is being said**’.

(Brown, 1990: 6)

Features of Connected Speech

- **Elision:** omission of sounds
- **Assimilation:** replacing sounds to make them closer to neighbouring sounds
- **Weak Forms:** vowel quality modified, and length reduced

Examples of Connected Speech

	Citation Form	Approximation of Pron. Form
Elision	'Come here'	<u><i>Kmere</i></u>
Assimilation	'ten balloons'	<i>tem b'loonz</i>
Weak Forms	'I can go'	<i>I <u>kn</u> go</i>

Can Speech Stream be Recognised?

- The flow of speech can make even familiar words *unrecognisable*
- It makes word segmentation difficult
- What is needed is:
 - a comprehensive description of NS ‘messy speech’
 - clear, attainable learning goals
 - an accompanying teaching methodology
 - the technology for implementation of goals

NS vs NNS Listening

- The NNS has greater difficulty in decoding the acoustic signal than the NS
- This requires specific *training*
- Conscious comparison of stream and citation forms is needed
- Corpus can incorporate both NS and NNS speech samples

EIL, Non-Standard & NNs Varieties

Software allows other forms and varieties of pronunciation to be used

Sensitise listeners to EIL forms



accommodation skills

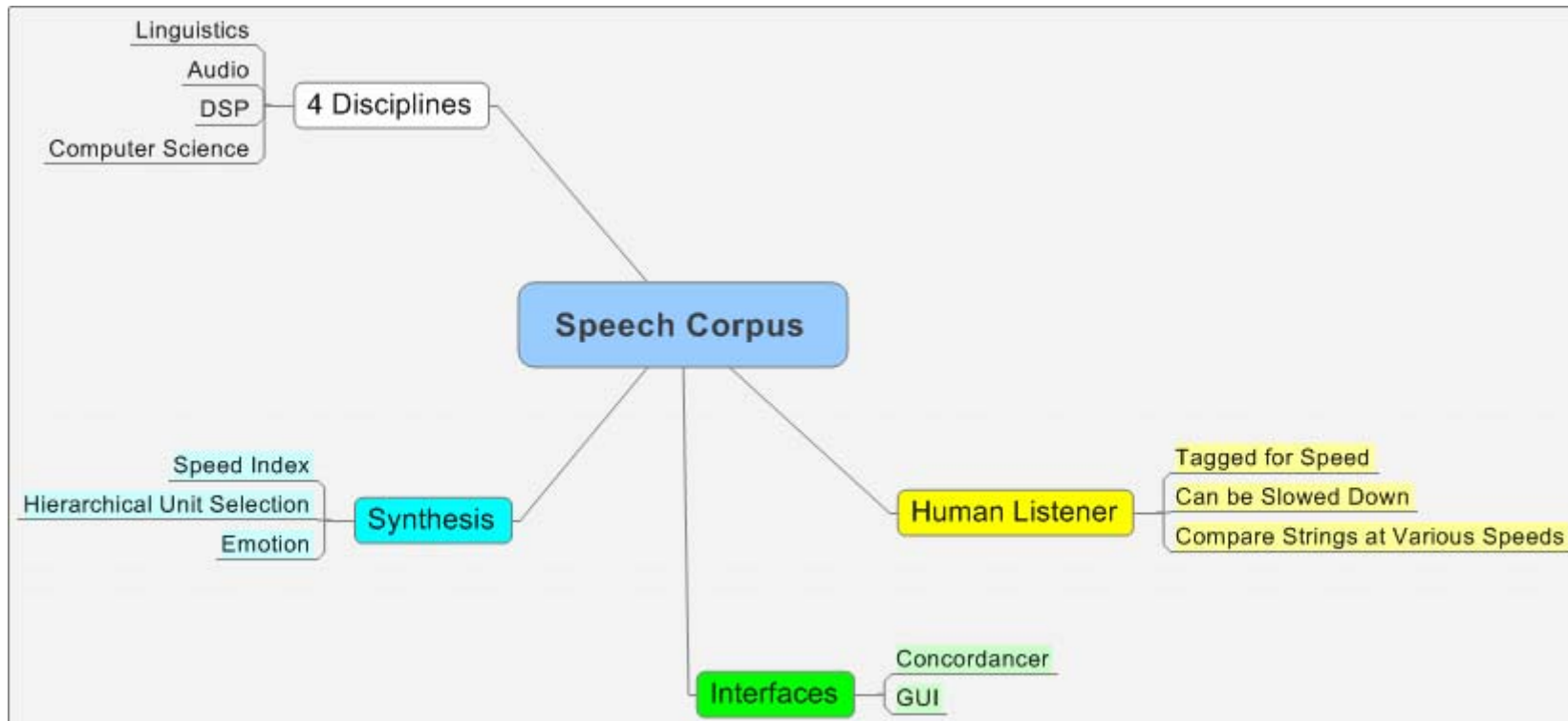
Allows: self-access and use of authentic listening and corpus materials

Classroom vs Reality

- Allows one to extend what happens in class
- Sensitise listeners to far greater variety of NS and NNS speech → adaptable
- Can also work on stressed syllables →
‘islands of reliability’ (Field, 2003)
- Highlights features of connected speech, stressed elements & chunks
→ reception & production

SALERO (EU IP) Project

Semantic Audiovisual L Educational Reusable Objects



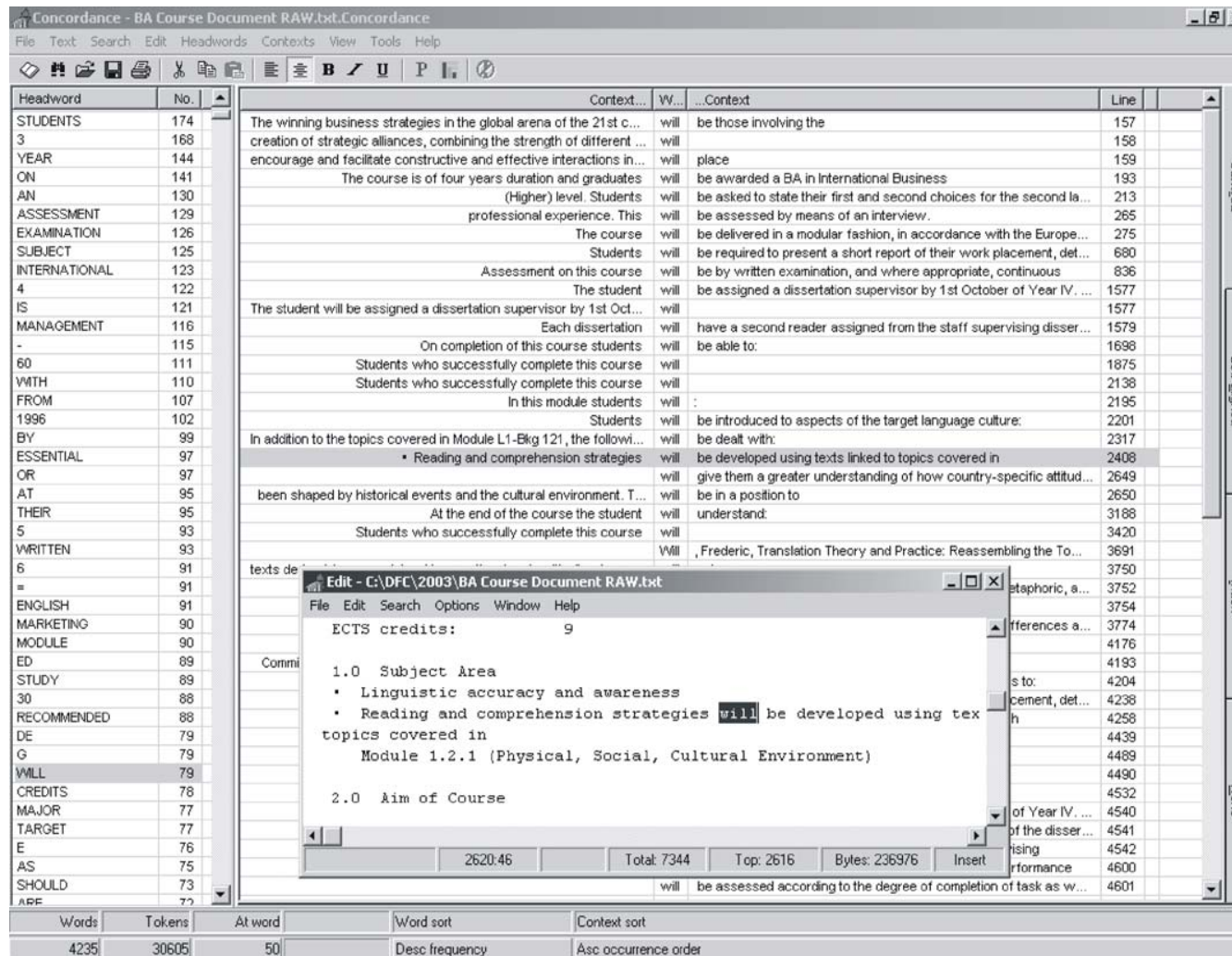
Why a *Speech* Corpus?

- Written corpus useful for e.g. collocations and discourse analysis
- Access to *actual speech* is necessary if we wish to study speech *production*.
- Once accessed, this can be slowed down for detailed study (*DITCall* Project)

Riding the WAV

- Need to study *original* sound files
- Access to WAV files by means of concordancing interface ...
- ... via ‘citation transcription’
- Compare sound file with transcribed version
- Compare sound file with sound files at different speeds

'Discourse' Concordancer Collocations



The screenshot displays a concordance software window titled "Concordance - BA Course Document RAW.txt.Concordance". The interface includes a menu bar (File, Text, Search, Edit, Headwords, Contexts, View, Tools, Help) and a toolbar with various editing and search icons. On the left, a list of headwords is shown with their corresponding line numbers. The main area contains a concordance table with columns for Headword, No., Context, W..., ...Context, and Line. An inset window titled "Edit - C:\DFC\2003\BA Course Document RAW.txt" shows a text editor with the following content:

```

File Edit Search Options Window Help
ECTS credits: 9
1.0 Subject Area
  • Linguistic accuracy and awareness
  • Reading and comprehension strategies will be developed using tex
topics covered in
  Module 1.2.1 (Physical, Social, Cultural Environment)
2.0 Aim of Course
    
```

At the bottom of the concordance window, there are summary statistics: Words: 4235, Tokens: 30605, At word: 50, Word sort: Desc frequency, Context sort: Asc occurrence order.

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SPEECH Concordancer

	A	B	C	D	E	F	G	H
1	Speaker	Line	Orthotext	SigSyll	Start	Duration	OrthoSyll	Speed
2	Aelish	185	probably	1	6:38.162	0.185	3	973
3	Aelish	151	I do not know	3	5:33.390	0.259	4	927
4	Marc	307	yeah	1	10:37.009	0.065	1	923
5	Marc	15	I am not giving	4	0:28.801	0.359	5	836
6	Marc	254	yeah	1	8:59.738	0.072	1	833
7	Marc		Yeah	1	3:14.785	0.075	1	800
8	Marc		Yeah	1	6:22.970	0.075	1	800
9	Aelish	317	and	1	10:55.488	0.076	1	789
10	Marc		yeah	1	8:59.958	0.079	1	759
11	Marc	166	That is right	2	6:0.976	0.243	3	741
12	Marc	109	that is right	2	4:12.225	0.250	3	720
13	Marc	256	yeah	1	9:3.070	0.084	1	714
14	Marc	10	originally	4	0:19.304	0.424	5	708
15	Marc		very good	3	9:33.502	0.258	3	698
16	Marc	65	Right	1	2:33.489	0.087	1	690
17	Marc	208	That is right	2	7:32.976	0.266	3	677
18	Marc		Yeah	1	8:1.450	0.092	1	652
19	Marc	240	engineer	3	8:32.314	0.281	3	641
20	Marc	65	right	1	2:33.749	0.095	1	632
21	Marc	111	that is right	2	4:15.730	0.287	3	627
22	Marc	22	how are you doing?	4	0:40.679	0.482	5	622
23	Marc	252	That is correct	3	8:55.194	0.387	4	620
24	Marc		right	1	5:5.544	0.097	1	619
25	Marc	81	Civil War?	3	3:14.307	0.294	3	612
26	Marc		isn't that right?	4	6:37.768	0.393	4	611
27	Aelish	206	he was in the	4	7:27.517	0.393	4	611
28	Marc	153	That is where Daddy is from	5	5:37.579	0.692	7	607
29	Marc	127	He was a Taylor	5	4:41.263	0.498	5	602
30	Marc		the	1	6:24.456	0.100	1	600
31	Marc	130	Israel	3	4:45.854	0.310	3	581
32	Aelish	66	but it does not mean	4	2:37.791	0.520	5	577
33	Marc	153	is not it	2	5:38.272	0.312	3	577
34	Aelish	271	sure	1	9:31.063	0.105	1	571

Marc
average
388 syll/min

Citation Transcription

Spoken	Sec.	Syl.	Citation	Syl.	Syl./min
Whydjedotha?	0.863	4	Why did you do that?	5	348 (278)
I'll be 5 mints.	0.986	5	I will be 5 minutes.	6	365 (304)
'Mon quick!	0.497	2	Come on quick!	3	362 (241)

Features of Citation Transcription

- Uses idealised forms of ‘reduced’ NS flow
- Easy to find multiple instances of search string
- Transcribed records can be compared
- Speech records can be compared
- Ability to find what is *barely* in speech signal
- Can be tagged for other features such as EIL

GUI Interface - Key Features

Use various DSP functions

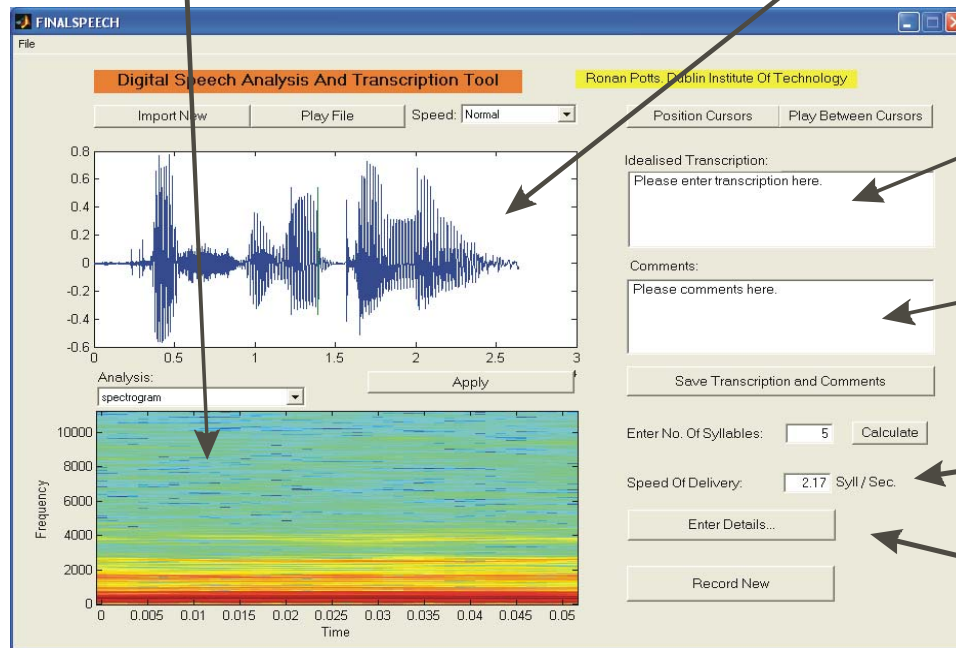
Assist in segmentation

Listen to recording and produce CITATION transcription

Tag for various features?

Indicate speed: syll/min

Further screens/views



Stress Isolates a Word/Syllable



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Prosody is a Series of Stressed Items

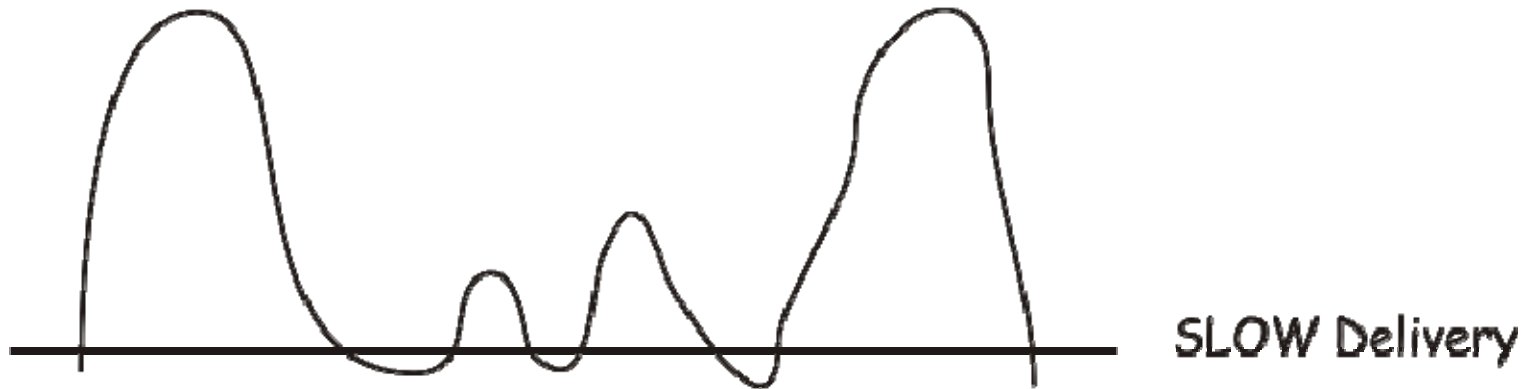


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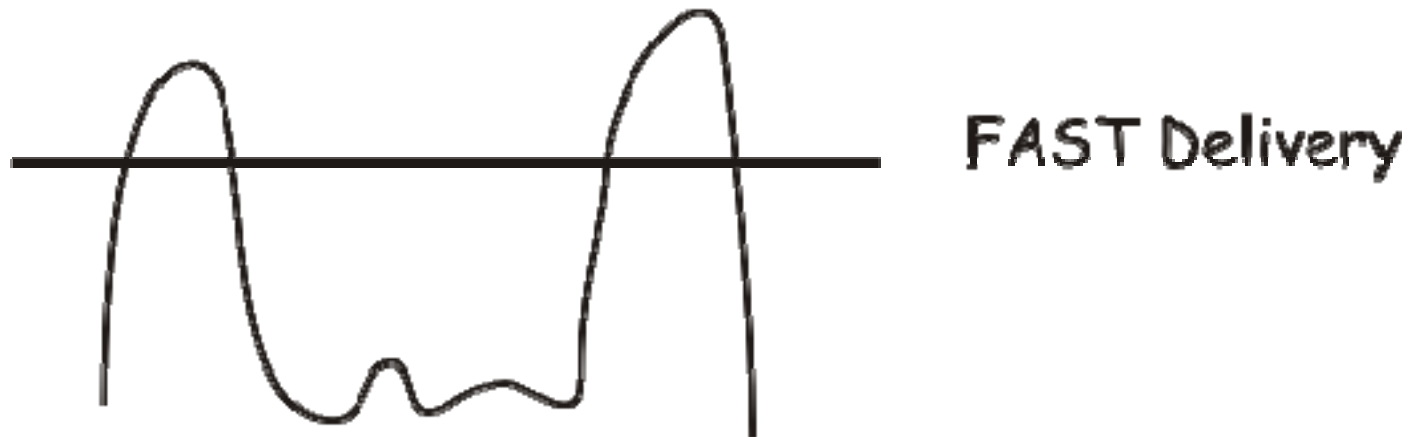
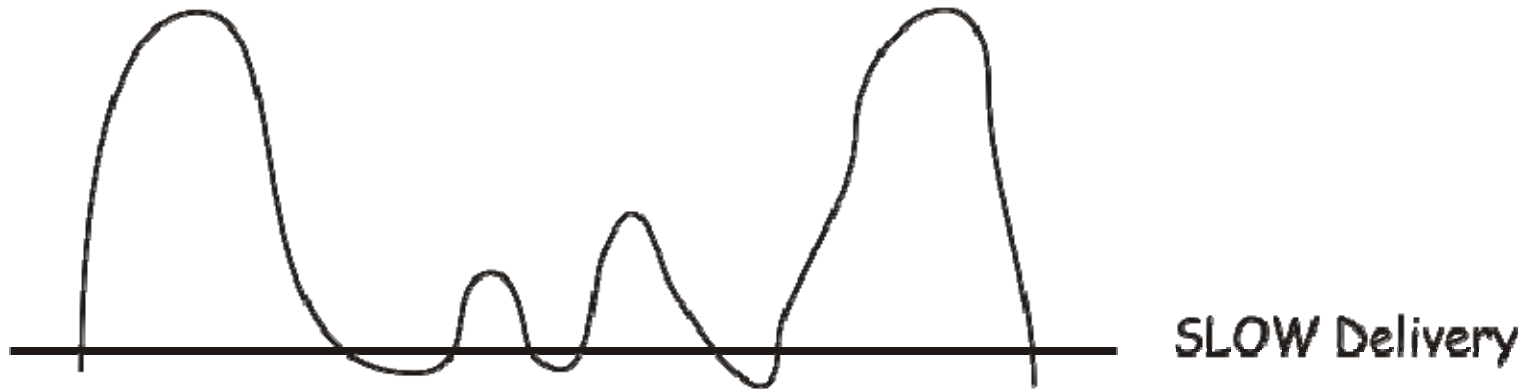
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Stress Patterns



Stress Patterns



Grouping into Tone Units

	A	B	C	D	E	F	G	H	I
1	Speaker	Unit	Orthotext	SigSyll	Start	Duration	OrthoSyll	Speed	Emotion?
2	Marc	1a	The 	1	0:0.000	0.363	1	165	
3	Marc	1b	lapel mike is on	5	0:0.419	1.041	5	288	
4	Marc	2	The front mike is on	5	0:1.916	1.028	5	292	
5	Marc	3	#erm#						
6	Marc	4	I shall leave that for the moment	7	0:3.870	0.863	8	556	
7	Marc	5	#erm#						
8	Marc	6a	Pat	1	0:6.517	0.327	1	183	
9	Marc	6b	Patrick	2	0:6.873	0.366	2	328	
10	Marc	6c	Paddy	2	0:7.234	0.366	2	328	
11	Pat	7	P	1	0:8.104	0.359	1	167	