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DIT's Dynamic Speech Corpus

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The Dublin Institute of Technology, funded by Enterprise Ireland, is using the *FLUENT* project to construct a Dynamic Speech Corpus (DSC). This is a resource aimed mainly at learners of English, but is sophisticated enough to also address the needs of teachers, materials writers and researchers, academics and scholars.

The DSC contains unscripted L1-L1 dialogues of a high audio quality, yet very natural, as both speakers know each other well. This innovative resource supplements conventional teaching materials and goes well beyond scripted, 'choreographed' teaching dialogues which, while necessary, cannot prepare learners for the L1 speech patterns they will hear in an L1 English-speaking community.

Orthographic transcripts allow users to understand the semantic content of the lexical items in the speech flow and contrast the clarity of the written version with the 'messiness' of real speech. The learning effect is in the comparison of the speech which the transcript triggers in the learner's head (which will be different in each individual case) and the sequences actually spoken by the L1 speakers. The transcript also allows all occurrences of a search string to be retrieved (from hyper-articulated to hyper-eroded), listened to and compared.

Cauldwell (2002) urges us to spend more time studying *how* something was said, rather than *what* was said, and here again the DSC obliges. Each speaker in a dialogue can be heard in isolation, or faded in/out. Each segment can be listened to at normal speed or slowed to 40% of normal speed – without tonal distortion. This means that the natural prosody of real dialogue can be studied, as it were, in slow motion, but without the tonal shifts associated with physically slowing a recording. Just as the high-speed filming of a sporting action can allow technique to be studied, so too the audio slow-down technique allows attention to be focused on the *manner* in which speech was produced.

Aims of the Dynamic Speech Corpus

The DSC is a tool which can be used in conjunction with any course materials to prepare students to work or live in an L1 speech community. Since it provides an orthographic, idealised transcript, and since each communicatively significant feature is tagged, it is possible to find samples of speech features being studied by means of multivariant searches.

The database can be searched by text string or linguistic feature (e.g. speaker intention, formulaic sequences, turn behaviour, expressivity, etc.) and the samples found listed in a concordanced view. These can be clicked on in turn to play-and-contrast the various examples returned. Each sample can then be listened to in slow-down mode; or the dialogic environment which gave rise to the sample can be entered into and the pragmatics of the speech production studied. How the string was said, in what variety of English, by whom, in response to what, and by way of turn taking, turn retention or turn contention are all dynamic features of speech which can be made accessible to the user.

Ways into the DSC

The recordings in the DSC are unscripted interchanges between L1 speakers of several English varieties. The dialogues contain samples of L1-L1 reductions which can be found via multivariant searches, played and contrasted and then the semantic and phonetic environment in which they were uttered studied at normal or slowed speeds.

While this sort of resource is suitable for advanced learners or researchers, the DSC could also be approached in a scaffolded manner, allowing learners to practise scripted dialogues, move on to storyboarded interchanges and finally move into the unscripted dialogues of the DSC.

The DSC and Self-study Mode

The 'new learning paradigm' shifts the emphasis from teaching to learning. Using the resource in self-study mode can free up precious class time for targeted teacher interventions. Key to L1-L1 *dialogic* fluency are elements such as chunks, linking words and 'small' words. The phonetic environment in which these are uttered means that speakers often communicate in phonetic and expressive 'envelopes' as short as 3–4 words, before pausing, changing pitch or changing the speed of delivery. None of these communicative features can be studied via a transcript and therefore a principled access to them via the audio assets is necessary – and available in the DSC. Users will also be able to search the corpus on a particular topic (e.g. travel), slow down the speech to study its prosody, study the phonetic characteristics of connected speech, find similar samples spoken at different speeds, or find strings spoken with different levels and manners of expressivity. The *FLUENT* project finishes in June 2010.

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References

Aitchison, J. 1994. 'Understanding words' in G. Brown, K. Malmkjær, A. Pollitt and J. Williams (Ed.). *Language and Understanding*. Oxford: Oxford University Press.

Brown, G. 1990. *Listening to Spoken English*. 2nd ed. Harlow: Longman.

Brown, G. & Yule, G. 1983. *Teaching the Spoken Language: an approach based on the analysis of conversational English*. Cambridge: Cambridge University Press.

Campbell, D.F., Wang, Y., McDonnell, C. 2008. 'FS ≠ FS (Formulaicity and Prosody)'. Paper presented at BAAL. Swansea, UK, Sept.

Campbell, D.F., Wang, Y., McDonnell, C. 2007. 'A Prototype Speech Corpus'. Paper presented at EuroCALL. Coleraine, N. Ireland, Sept.

Carter, R. & McCarthy, M. 1997. *Exploring Spoken English*. Cambridge: Cambridge University Press.

Cauldwell, R. 2002. *Phonology for listening: relishing the messy*, www.speechinaction.net.

Cruttenden, A. 1997. *Intonation*. Cambridge: Cambridge University Press.

Cullen, R. 2001. 'PPP and Beyond: Towards a Learning-Centred Approach to Teaching Grammar' in H. Ferrer Mora et al. (eds.). Spain: Universidad de Valencia.

Field, J. 1998. 'Skills and strategies: towards a new methodology for listening'. *ELT Journal* 52 (2): 110–118.

Field, J. 2003. *Psycholinguistics. A resource book for students*. London: Routledge.

Gibbons, P. 2002. *Scaffolding Language, Scaffolding, Learning: Working with ESL Children in the Mainstream Elementary Classroom*. New Hampshire, USA: Heinemann.

Hasselgreen, A. 2004. *Testing the spoken English of young Norwegians: A study of test validity and the role of 'smallwords' in contributing to pupils' fluency*. Cambridge: Cambridge University Press.

McCarthy, M. 2006. 'Fluency and confluence: what fluent speakers do'. In: M. McCarthy, (Ed). *Explorations in Corpus Linguistics*. Cambridge: Cambridge University Press. Ch.1.

McCarthy, M. and Tao, H. 2008. 'Profiling spoken fluency. Feeling like an independent user of English'. *The Language Teacher* 32.07 July.

Maybin, J., N. Mercer and Steirer, B. 1992. '"Scaffolding" Learning in the Classroom' in K. Norman, (Ed.). *Thinking Voices: The Work of the National Curriculum Project*. London: Hodder and Stouton for the National Curriculum Council.

Mehrabian, A. and Wiener, M. 1967: 'Decoding of inconsistent communications'. *Journal of personality and social psychology* 6(1): 109–114.

O'Keeffe, A., McCarthy, M., Carter, R. 2007. *From Corpus to Classroom*. Cambridge: Cambridge University Press.

Sinclair, J. McH. 1991. *Corpus, Concordance, Collocation*. Oxford: Oxford University Press.

Tatham, M. & Morton. K. 2006. *Speech Production and Perception*. New York: Palgrave Macmillan.

Tao, H. 2003. 'Turn initiators in spoken English: a corpus based approach to interaction and grammar' in P. Leistyna & C. Meier (Eds.), *Corpus Analysis: Language Structure and Language Use* (pp. 187–207). Amsterdam: Rodopi.

Walsh, S. 2006. *Investigating Classroom Discourse*. London: Routledge.