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A case study of the London–Lund Corpus 2

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Abstract

The London–Lund Corpus 2 (LLC–2) is a new corpus of spoken British English, modeled on the same principles as the world's first machine-readable spoken corpus, the London–Lund Corpus (LLC–1). An important novelty of LLC–2 is that its transcriptions are released together with the audio files. This feature is important because, in contrast to LLC–1, the transcriptions in LLC–2 are orthographic and not annotated for prosodic features such as the pitch contour. In addition, similar to many other well-known corpora of spoken English (e.g., the British National Corpus), the transcriptions in LLC–2 contain basic representations of spoken features such as pauses, overlaps, non-verbal vocalisations, to name a few. Thus, the release of the audio files alongside the transcriptions is an innovation that allows users to extend the transcriptions relative to their own research interests, whether these concern prosodic information or other aspects of speech production. This paper has two aims, namely to (i) describe and discuss the main challenges of preparing the LLC–2 audio material for public release, and (ii) demonstrate the importance of the LLC–2 audio material by means of a case study of the prosodic and temporal aspects of impromptu speech.

The most important challenge encountered in the preparation of the LLC–2 audio material for public release was the anonymisation of personal information (e.g., names, workplaces, addresses) in the audio files without losing important linguistic information such as prosody. However, the anonymisation procedure was not straightforward because it required careful manipulation of the speech signal. Moreover, the approaches adopted in other spoken corpora have not been

completely satisfactory; for example, the decision to mute personal information in the 1994 British National Corpus ensured a reliable result, but also led to the loss of prosodic information in the original speech signal. The solution in LLC–2 is based on a Praat script written and developed by Hirst (2013). The script replaces all personal information in the recordings with *hum* sounds, which make the information incomprehensible, while at the same time retaining the pitch contour and intensity level of the original. The resulting audio files are thus compatible with the ethical requirements of data protection and privacy, and they also retain linguistically useful information such as prosody and other aspects of speech production.

In order to demonstrate the importance of the public release of the LLC–2 audio material, we carried out a case study investigating a powerful source of coordination in language, namely dialogic resonance, or when speakers reproduce constructions from prior turns. Consider (1) where resonance is achieved through B's choice of words and structures. The square brackets in the example represent overlaps.

(1) A: she hasn't hitherto been particularly interested in religious things [has she]
     B: [you mean] she hasn't particularly been up at seven AM

According to Du Bois (2014), dialogic resonance draws on conscious strategies of interpersonal engagement. While Du Bois (2014) acknowledges the role of automatic priming, this is not tested in his work. Instead, priming is the central mechanism of Garrod's and Pickering's (2004) interactive alignment theory, which states that primed linguistic material becomes available for interlocutors to use with reduced cognitive effort. In order to straddle the gap between these two research traditions, we conducted a case study in LLC–2 where we explored the social functions that resonance has in discourse (whether it expresses agreement or disagreement) and where priming was operationalized as the time it takes for speakers to respond to the interlocutor's prior turn. The results revealed that (i) resonance was more likely to express disagreement than non-resonance, which we interpreted as being due to the mitigating effect of resonance, and (ii) it also led to faster turn transitions, indicating that priming gives speakers the cognitive tools to counter the temporal pressures of impromptu speech. Therefore, while social motivations encourage speakers to

respond early, cognitive mechanisms give them the necessary tools, thus pointing to an intricate interplay between the processes.

Clearly, this case study would not have been possible without the LLC–2 audio material. We discuss two reasons. First, while orthographic transcriptions may reveal whether turn transitions involve gaps or overlaps, they do not provide detailed information about their duration. Yet, there are important differences between, say, slight overlaps, as in (1), and outright interruptions. We used the multimodal annotation tool ELAN (Wittenburg et al., 2006) to gauge these differences and to extract reliable measurements of turn transitions in the data. Second, observation of the results revealed that resonance manifests itself not only at the level of words and structures but also prosodically. More specifically, the original audio file of (1) shows that both utterances carry a rising–falling pitch, suggesting that prosody further contributes to B's desire to mitigate her disagreement with A. Thus, future work could extend the research in this study further by also investigating the role of prosodic resonance in speakers' perceptions of social proximity among themselves. In conclusion, the case study demonstrated the importance of the LLC–2 audio material in extending the scope of spoken corpus linguistics to also include prosodic and temporal investigations of language.

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