

Baker, R. & Hazan, V. (2011). DiapixUK: Task materials for the elicitation of multiple spontaneous speech dialogs. *Behavior Research Methods* 43(3), 761-770. <https://doi.org/10.3758/s13428-011-0075-y>

Tuomainen, O. & Hazan, V. (2018). Investigating clear speech adaptations in spontaneous speech produced in communicative settings. In M. Gósy & T.E. Grácz (Eds.), *Challenges in analysis and processing of spontaneous speech*. (pp. 9-25) <https://doi.org/10.18135/CAPSS.9>

Keywords

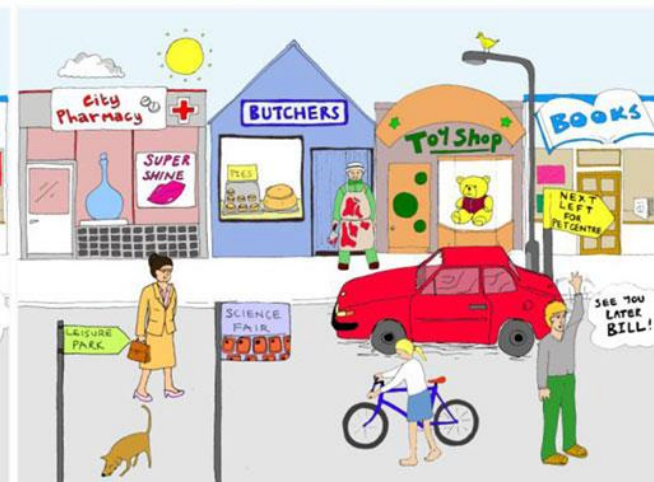
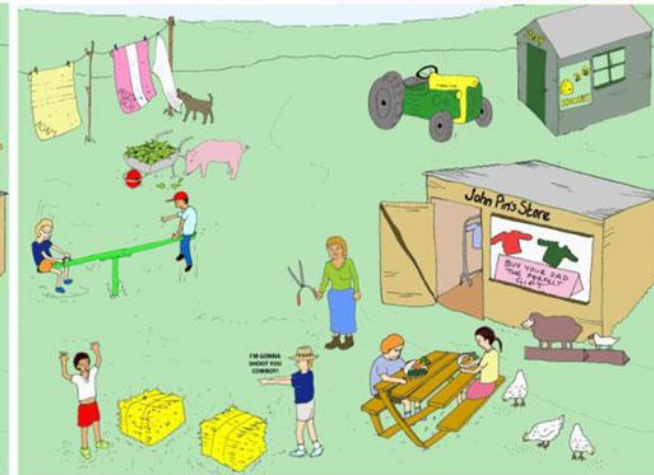
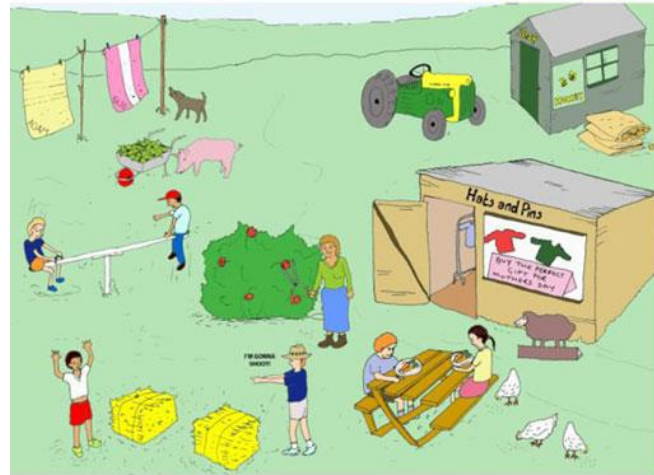
DiaPix, speech corpora, spontaneous speech, test design, clear speech

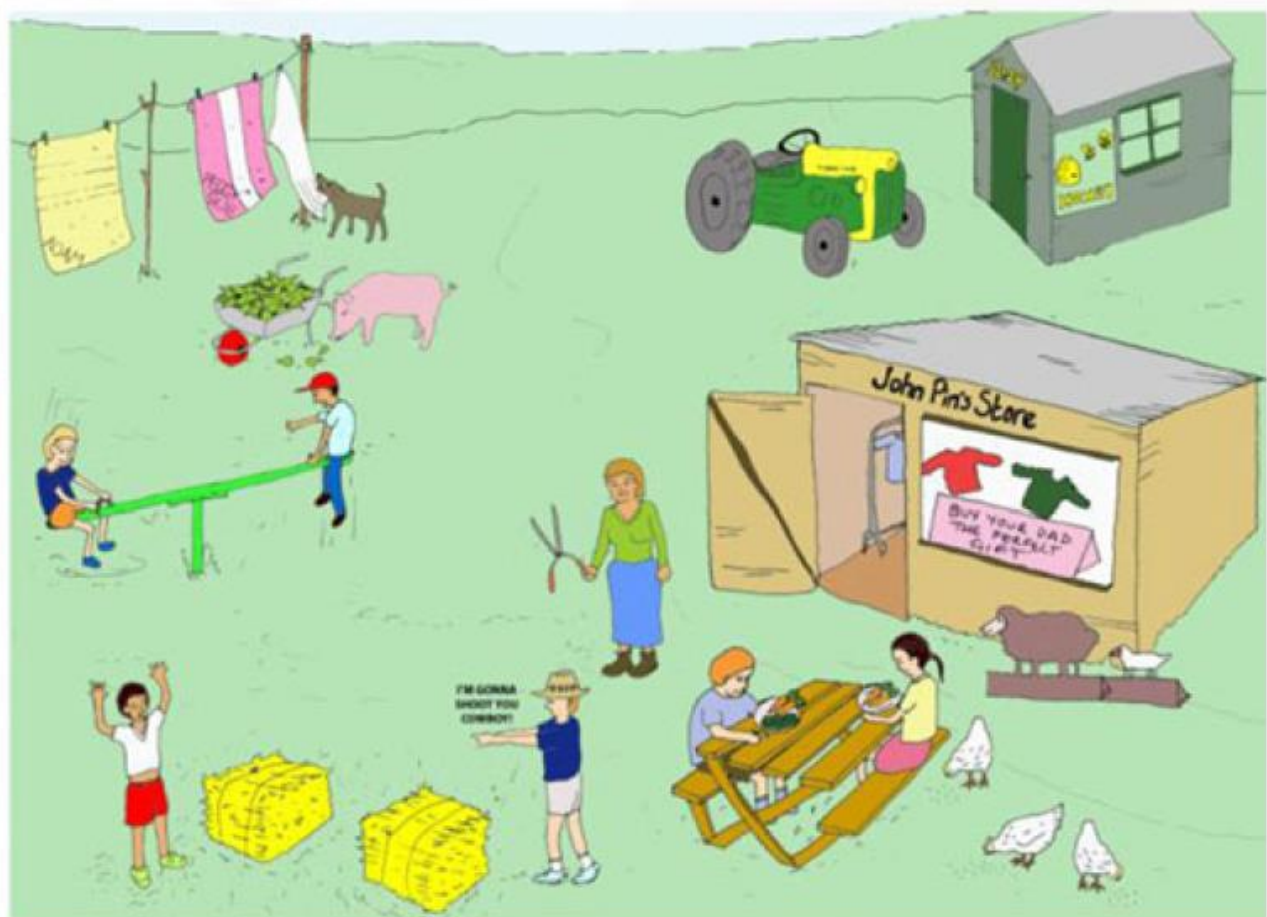
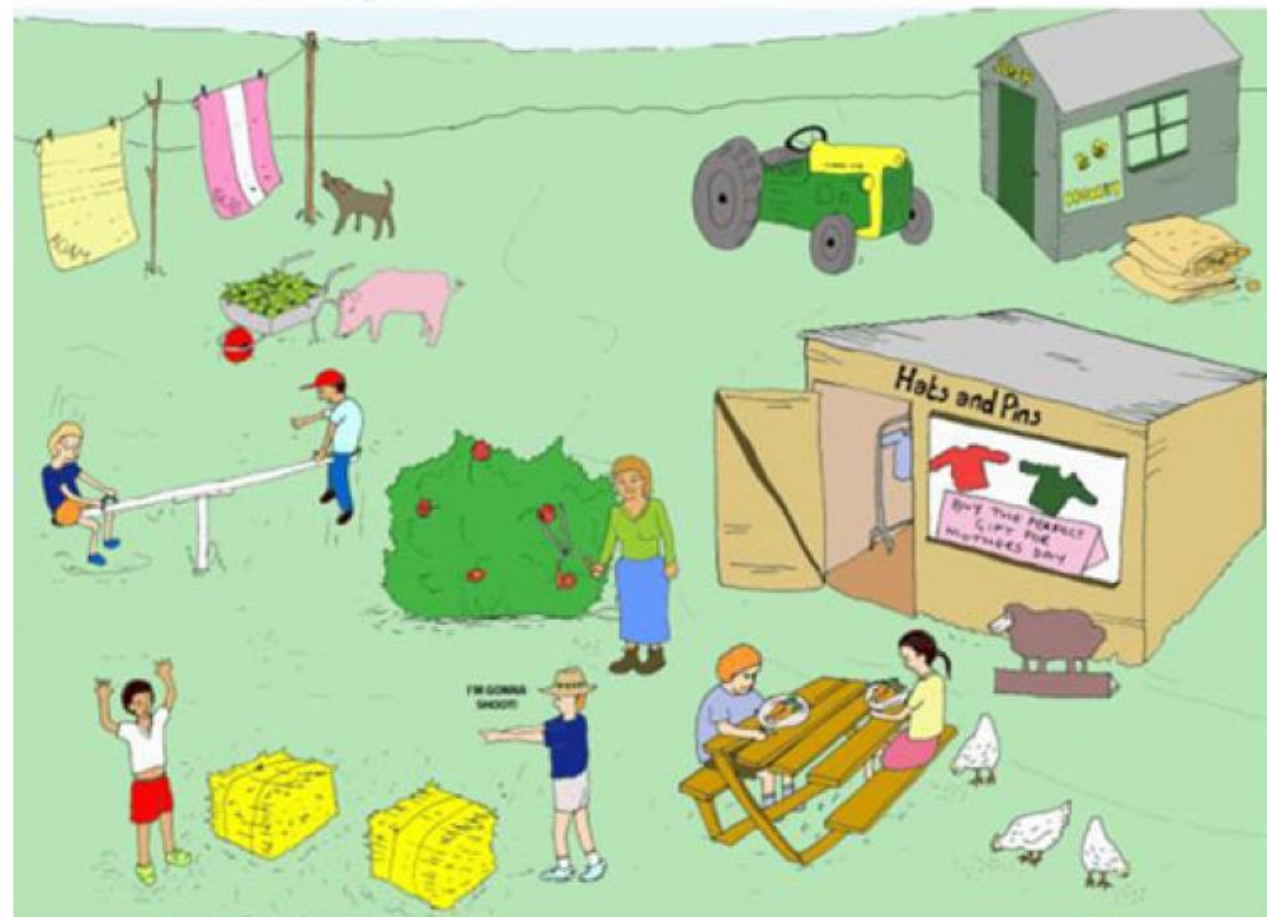
Research Questions or Hypotheses

- Baker & Hazan
 - Task length minimum ~5 mins
 - Balanced speech between speakers
 - No learning effect
 - Equal difficulty across pictures
 - Reliable production of keywords
- Tuomainen & Hazan
 - Review of methods for eliciting spontaneous speech in interaction, including in challenging environments, as seen in Baker & Hazan and LUCID corpora
 - LUCID: London UCL Clear speech in Interaction Database

DiapixUK Materials

- Twelve picture pairs, with three different themes
 - Beach (B), farm (F), and street (S) scenes
 - Four pairs per theme
- From Diapix to DiapixUK, number of differences increased from 10-12
 - Allowed for 3 differences in each quadrant
- Materials are accessible to the public as Photoshop files
 - Customizable for research needs





Stimuli: Baker & Hazan

- /p/-/b/, /s/-/ʃ/ in 36 monosyllabic CV(C) keywords with near minimal word pairs
 - e.g. *pear/bear, sign/shine*
- LUCID corpora made no phonetic comparisons

Participants: Baker & Hazan

- Native speakers of Southern British English (19-29 years)
- With friend of same gender
- Screened for appropriate accent, normal hearing

Participants: LUCID Corpora (Tuomainen & Hazan)

- LUCID: monolingual Southern British English speakers, 18-29 years old
 - Conversational partners known to each other (NORM and VOC)
 - Unfamiliar confederate in BAB and L2
- kidLUCID: S. Brit. Eng. speakers, 9-14 years old
 - NORM, BAB, VOC conditions, all with familiar conversational partner
- elderLUCID: S. Brit. Eng. speakers, 19-26 years (YA) and 65-84 (OA)
 - NORM, HLS, BAB-1, BAB-2 conditions
 - HELPS software to mimic sensorineural hearing loss
 - Unfamiliar conversational partner

Diapix Task

- Participants in separate rooms, communicated through headsets
- Speech saved on separate audio channels
- Training task, then three Diapix tasks in succession; one from each scene
 - Maximum 15 minutes per image
- For between-pair comparability, told to start in top left corner and work clockwise

Findings: Baker & Hazan

- Approx. 8 mins of speech per participant – enough speech material for acoustic and linguistic analysis
- Balanced contributions by speakers
 - Percent of total words by A = 51%, B = 49%
- No significant learning effect
- Images consistent in difficulty, measured by time to solve
- Difficult to elicit multiple repetitions of keywords, as nouns would often be replaced by pronouns
 - Phonetic investigation of target sounds still possible

Findings: LUCID Corpora

- Taken as a whole, revealed group differences by age in articulation rate, F0, normalized pitch range, energy distribution
 - Articulation rate: ages <11 and 65-85 years slower speaking rate than young adults
 - F0: at 13-14 years, steep reduction in males, gradual reduction in female speakers
 - Normalized pitch range: 9-12-year-olds and older adults used wider range than 13-14 and young adults

Most Relevant Info

- DiapixUK materials able to be edited in Photoshop
 - Made suitable for research needs
 - E.g. Customize for Canadian English
- Well-suited for use among wide variety of participants
 - Without alterations, participant ages have ranged from 8-85 years
 - Children with typical hearing and hearing loss
 - Native and nonnative speakers
- Can also measure vowel space, articulation rate, F0, long-term average spectrum, rate and type of disfluencies or repairs, or communication efficiency
- Naturally elicited through communication demands