BACL

The British Association of Clinical Linguistics

4th Colloquium of the British Association of Clinical Linguistics

Research Beehive (2.21), Old Library Building,
Newcastle University
Monday 13th – Tuesday 14th May, 2013

Conference will take place in the Research Beehvive in the Old Library Building

This is circled on the map

The nearest Metro is Haymarket (at the bottom of the map)

Shops are to the south of Haymarket

Conference Schedule

Coffee and Lunch will be provided

Schedule

INTRODUCTION AND WELCOME, Monday 9.35

SESSION 1, Monday 9:45 - Ageing, syntax and inhibition in working memory: Evidence from immediate sentence recall | Christos Salis*, Catherine Foy**, Jet Vonk*, *Mona Spaeth | *Newcastle University, **QEF

Working memory (WM) is a key construct in explaining age-related changes in sentence processing. Syntactically complex structures are thought to involve greater WM resources and present difficulties for older adults. WM demands increase when it is necessary to inhibit (or suppress) irrelevant information and this inhibitory skill is less efficient in older adults (Hasher, Lustig & Zacks, 2007). In this pilot study we used an unexplored method (immediate recall of ungrammatical sentences) to determine: (i.) Whether older adults show inferior performance than younger adults when recalling ungrammatical sentences; (ii.) whether performance of older adults is inferior to that of younger adults in recalling syntactically complex ungrammatical sentences.

Ten younger (mean age 41) and ten healthy older adults (mean age 75) participated. The sentence recall task comprised auditory syntactically simple and complex sentences with centre-embedded relative clauses in grammatical and ungrammatical conditions. Grammatical sentences had to be recalled verbatim. Ungrammatical sentences had to be transformed to grammatical sentences, upon recall, thus inhibiting the ungrammatical components.

Between group statistical comparisons showed: No difference in the simple grammatical condition, a difference in the simple ungrammatical condition (p<.01), a near-significant difference in the complex grammatical condition (p=.06), a significant difference in the complex ungrammatical condition (p<.05). Within group comparisons revealed an effect of sentence type in the younger group (p<.05) but not in the older group.

In line with Hasher et al. (2007), inhibitory control appears to be a factor modifying WM for sentence processing in older adults. However, the syntactic complexity of the sentence did not have an additional impact on recall. In these groups inhibitory control did not interact with syntactic complexity, suggesting that the two mechanisms are possibly distinct in modifying WM.

Reference

Hasher, L., Lustig, C., & Zacks, R. (2007). Inhibitory mechanisms and the control of attention. In A. Conway, C. Jarrold, M. Kane, A. Miyake, A., & J. Towse (Eds.), Variation in working memory. Pp. 227-249. New York: Oxford University Press.

SESSION 2, Monday 10.15 -Determiner cuing in Arabic anomia: the role of syntax in lexical retrieval, Tariq Khwaileh, Qatar University

Comments on Ingram's Procedures for Calculating Proportion of Whole Word Promixity (PWP) Ingram and Ingram (2001) advocate a clinically attractive procedure for measuring intelligibility at the level of the whole word rather than the segment. PWP measures the length and accuracy of the child's realisation in relation to the target word. Ingram and Ingram (2001) outline six sampling procedures including the use of 25 or more items classified as lexical class words (i.e. nouns, verbs, prepositions, adjectives and adverbs) taken from conversational speech contexts.

In this study, PWP was investigated using conversational speech data from four children aged 6-7 years with speech difficulties and associated intelligibility impairments. Detailed phonological and phonetic analysis of both single words and multiword utterances was employed. Several contentions with the measurement procedures emerged. These include lexeme by lexeme analysis and the inability of the measure to differentiate typical and atypical underspecification in connected speech (Newton, 2012). PWP relies on segmental correctness judgments, in this way it fails to take account of longer domain influences on single word productions. Clinical implications include the need to consider sampling contexts for assessment and to account for individual differences between children when selecting appropriate procedures as outcome measures. This study highlights the importance of qualitative approaches to connected speech analysis (Howard, 2012).

References:

Ingram and Ingram (2001). A whole-word approach to phonological analysis and intervention, Language Speech and Hearing Services in Schools, 32,271-283.

Howard, S. (2012). A phonetic investigation of single word versus connected speech production in children the persisting speech difficulties relating to cleft palate. Cleft Palate-Craniofacial Journal, Early Online. Retrieved February 1, 2013, from Scholar Google Database

SESSION 3, Monday 10.45 - Sentence comprehension and memory load in aphasia: The role of interference in sentence processing. | Gemma Learmouth, Maria Garaffa | Glasgow University

Sentence comprehension involves the maintenance of linguistic information in memory whilst identification of the correct meaning is achieved. The precise nature of the memory resource involved in sentence comprehension remains a divisive issue. Two models have been proposed: 1) a general memory resource supports the processing of both sentences and non-syntactic information (Gordon, Hendrick & Levine, 2002) and 2) a sentence-specific working memory pool facilitates only the processing of sentences (Caplan & Waters, 1999).

An integrated "sentence-comprehension and memory load" task was presented to aphasic and non-aphasic stroke patients, as well as older healthy controls. Sentence complexity ranged from simple reversible actives to centre-embedded reversible subject-relatives (SRs). Memory load items in the recall task were matched (Animate Nouns) or mismatched (Inanimate Nouns) to comprehension task sentences, to assess similarity-based interference effects (Shulman, 1970; Lewis, 1996; Gordon, Hendrick & Johnston, 2001).

Interference based on similarity was observed only for complex centre-embedded relatives in healthy controls. Aphasics comprehended centre-embedded SRs less proficiently than non-aphasic stroke patients and healthy controls, however memory load recall in aphasics improved on these trials, indicating resource competition. The overall reduction in verbal working memory capacity in aphasics, together with an interference effect for complex sentences in controls, provides a novel case for the existence of a general, rather than sentence-specific, working memory resource.

References:

Caplan, D., & Waters, G. (1999). Verbal working memory and sentence comprehension. *Behavioral and Brain Sciences, 22*, 77-126.

Gordon, P.C., Hendrick, R., & Johnston, M. (2001). Memory interference during language processing. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 27(6),* 1411-1423.

Gordon, P.C., Hendrick, R., & Levine, W.H. (2002) Memory-load interference in syntactic processing. *Psychological Science, 13(5)*, 425-430.

Lewis, R.L. (1996). Interference in short-term memory: The magical number two (or three) in sentence processing. *Journal of Psycholinguistic Research, 25,* 93-115.

Shulman, H.G. (1970). Similarity effects in short-term memory. *Psychological Bulletin*, *75,* 399-414.

---------------- COFFEE = 20 minutes --------------

SESSION 4, Monday, 11.35 – INVITED SPEAKER - The relationship between language delay and social disadvantage: measurable phenomenon or social construct? | James Law | Newcastle University

---------------- LUNCH = 1 hour --------------

SESSION 5, Monday 1.35 - Acquisition of quantifiers and numerals in Williams syndrome | Alexandra Perovic, Emily Carter, Chris Donlan | UCL

Our use of quantifiers (e.g. no, some, all) and numerals (e.g. one, two, three) relies on both syntactic and pragmatic knowledge, along with the general ability to assess small quantities. The meaning of quantifiers is determined by reliance on pragmatic inferencing: 'some balls are red' implies 'at least some but possibly all balls are red'. Inferring this contextual interpretation ('scalar implicature') has long been known to pose difficulties to young children (Noveck, 2001). Numerals, in contrast, refer to exact quantities but have also been argued to behave like quantifiers in being able to allow for non-exact interpretations (Carston 1998). However, 3-4 year olds show excellent comprehension of numerals while also failing to compute scalar implicatures for *some* (Hurewitz et al 2006), suggesting a distinct developmental pattern, and a preference for an exact interpretation of numerals.

Investigating knowledge of linguistic constructs that refer to quantity seems particularly relevant in Williams syndrome (WS), a population known for relatively strong verbal skills but

poor number and counting skills (e.g. Patterson et al 2006). We tested the comprehension of quantifiers and numerals in 17 participants with WS (CA: 8-19; *M*=13;09; BPVS-2 SS: 40-99, *M*=58.65; Pattern Construction of BAS SS: 55-69; *M*=56.06), matched in gender and verbal MA to 17 typical controls (CA: 3;07-8, *M*=5;08). Following the experimental procedure of Pouscoulous et al (2007), participants were instructed by the puppet 'Mousey' to manipulate objects using simple addition and subtraction, upon hearing sentences that included quantifiers: 'Mousey wants *all/some/no* plates to have a button' or numerals: 'Mousey wants *one/two/three* plates to have a button'.

Participants with WS scored below their matched counterparts on all measures. Yet, the pattern of their errors on quantifiers was identical to that observed in TD controls: while performing well on *no* and *all*, they failed to compute the scalar implicature for the quantifier *some*, treating it as compatible with *all*. In contrast, a different pattern emerged in their performance on numerals. TD controls made few errors but children with WS showed significant difficulties on *two* and *three*, which required simple addition and subtraction of objects in front them. Furthermore, the performance of some children with WS revealed a surprising pattern which involved 'spreading' the numeral so that it modified the object in the embedded clause, *a button*, rather than the object in the main clause, *three plates* (adding all 3 buttons to 1 plate, rather than 1 button to each of the 3 plates). This pattern, not reported in the literature, suggests an atypical trajectory in the acquisition of numerals in WS which may be linked to the extremely poor numerical skills in this population

SESSION 6, Monday 2.05 - Syntactic deficits in children with Dyslexia: An investigation of the co-morbidity with SLI | Luca Cilibrasi | University of Reading

Background: Dyslexia and Specific Language Impairment (SLI) are two common developmental disorders. Even if their symptoms are quite heterogeneous, there is substantial agreement that Dyslexia is usually characterized by a certain degree of phonological impairment, while SLI is often characterized by problems in syntax and morphosyntax. Studies so far have mainly used standardised tests to ascertain the degree of overlap between the two disorders, but few studies have investigated syntactic abilities in children with Dyslexia in specifically designed tasks. Complex syntactic structures can be used in order to investigate how children with Dyslexia process different syntactic computations: in this study we used Subject and Object Relatives, two similar structures that undergo very different levels of complexity.

Hypothesis: Considering the high percentage of comorbidity of the two disorders reported in the literature, we expect at least some children with Dyslexia to fail in highly demanding syntactic tasks, showing similar characteristics reported for children with SLI.

Method: We presented 6 impaired Italian children, age 7;06-9;04, identified during the school screening with a diagnosis of Dyslexia, and 20 aged matched controls, with a syntactic test. Children were tested using the picture matching paradigm. Children listened to Subject and Object Relative sentences and were asked to point to the picture that represented what they were hearing. They could choose between two pictures: one with correct and one with inverted theta roles in the action (for instance, given: "Show me the lion that washes the elephant" the child could choose between a picture where the lion was washing the elephant and a picture where the elephant was washing the lion).

The Comprehension of Long and Short Passives by Mandarin-speaking Adolescents with Down Syndrome | Yi-An Lin | St John's University

This study attempts to explore the comprehension of Mandarin passive sentences by people with Down syndrome. According to Ring and Clahsen (2005), English-speaking adolescents with Down syndrome have difficulties interpreting long and short passive constructions because the formation of A-chain is impaired among this group of people. However, according to Huang, Li and Li (2009), the long and short passives in Mandarin as shown in (1) involve different derivations.

    a. Zhangsan   bei   Lisi   da-le. (long passive)

    "Zhangsan was hit by Lisi."

    b. Zhangsan   bei   da-le. (short passive)

    "Zhangsan was hit."

The long passive in (1a) is derived by clausal complementation and A'-movement of a null operator which is predicated on the matrix subject of the morpheme *bei*. However, the short passive in (1b) is derived by VP complementation and A-movement of a PRO, subject to control by the matrix subject. To test if the formation of A-chain and A'-chain is impaired among Mandarin-speaking adolescents with Down syndrome, 15 participants, matched on chronological age and IQ to typically developing individuals, complete a sentence-picture matching task, in which participants listen to 48 sentences and be required to indicate for

each sentence which one of four pictures most closely matched its contents. From this task, this study aims to identify whether a specific syntactic operation (namely the formation of A-chain) or a more general mechanism (namely movement) is impaired in this population.

---------------COFFEE = 20 minutes--------------

SESSION 8, Monday, 3.25 - Early bilingual language acquisition in Welsh-English speaking children

Early bilingual language acquisition in Welsh-English speaking children

The clinical assessment of the early language in bilingual children is notoriously difficult because of the lack of norms or standardised testing materials for bilingual populations and, in many cases, for children speaking languages other than English. The *New Reynell Developmental Language Scales (NRDLS)*, published in 2011, includes a *Multilingual Toolkit* which provides guidance on adapting formal test procedures, either for full-scale standardised adaptations to different linguistic contexts, or for informal non-standardised probing of an individual child's language ability.

Two sections of the *Scales,* involving early verb vocabulary and simple sentence construction, have been adapted for the Welsh language. These sections cover both comprehension and production of the vocabulary and structures involved. Twenty-six children aged between three and four years and attending Welsh language medium nurseries have been tested on these sections in both Welsh and English. An extensive language background questionnaire was completed by parents and provides information on whether the children come from predominantly Welsh-speaking homes, predominantly English-speaking homes, or a mixed language background. Sixteen of the children were found to come from a mainly Welsh-speaking home background.

In this paper I will describe the process of making the Welsh adaptation and problems that needed to be addressed. Results from the Welsh language background children will be presented and comparisons made of performance in each language and also performance of this group with the larger sample used for the standardisation of the NRDLS. Issues around the feasibility of making adaptations of this kind, implications for assessment of bilingual children, and implications for expectations around typical early bilingual language, will be discussed.

Research into agrammatic comprehension in aphasia has described a pattern of impaired understanding of passives and retained ability on active constructions. The most prominent accounts of this dissociation (such as explanations based on syntactic movement or working memory) predict that patients who are unable to comprehend actives will also be impaired in the comprehension of passives. However, agrammatic profiles show great heterogeneity among patient samples.

We report the case of a man with primary progressive aphasia (WR). Similar to another case reported by Druks and Marshall (1995), WR's comprehension was at chance on active sentences, but at ceiling on passives. In a series of reversible sentence comprehension tests WR displayed difficulties with active transitives and truncated actives with an auxilliary. In passive sentences, he displayed sensitivity to the agent marker *by,* as well as the passive morphology of the verb. WR's profile challenges current theories of agrammatism, in particular mainstream generative theories.

We explore two explanations for this pattern of dissociation:

(1) Actives and passives differ not only in structure, but also in their semantic properties. The passive construction applies to a narrower range of event types than the actives. Loss of semantic control may impair processing of constructions with greater semantic diversity.

(2) Comprehension of English passives relies heavily on processing morphological information, while comprehension of actives relies on configurational (sequential order) processing. Data from artificial grammar learning suggest that people with agrammatism can have difficulties with configurational information.

The range of agrammatic profiles call for theoretical frameworks in which syntactic structures can be represented independently of each other. We discuss these alternatives.

Background: Pre-school children with Language Impairment (LI) are at risk of poor educational, social, and emotional outcomes. These risks are heightened for children living

with social disadvantage [1, 2]. Few rigorously evaluated intervention programs exist for this group and even fewer have been evaluated in languages other than English [3].

This paper describes the development of a theoretically motivated language intervention for pre-school children with language impairment from a culturally and linguistically diverse community with high levels of social disadvantage.

BEST (Building Early Sentences Therapy) is based on constructivist theories of language acquisition and promotes children's use of the cognitive strategies of cultural learning, schematization, categorization and analogy; a focus which allows the principles of the intervention to be applied cross-linguistically. BEST aims to support children aged 3 - 6 years with LI to create abstract representations of two, three and four clause element sentences.

Method: A standard programme and set of resources for intervention and assessment were developed in English and a number of Pakistani Heritage Languages. Practitioners received training and support and the approach was implemented in all clinics in the participating SLT service.

As part of a service evaluation, practitioners tracked the children's abilities to use the targeted structures at regular intervals during the intervention through a 'progress tracker' which elicited one production of each targeted verb in a sentence. The number of correct verbs, arguments and grammatical morphemes used were scored on each occasion.

Results: Data from 14 children receiving therapy in English and four in Mirpuri (a Pakistani heritage language) were subjected to a repeated-measures trend analysis for dichotomous data. All 18 children made significant progress in the target structures.

Conclusions: BEST is associated with significant progress in targeted language structures providing indicative evidence for efficacy. Further research is needed to rigorously evaluate its efficacy.

=========DAY 2=========

INTRODUCTION AND WELCOME, Tuesday, 9.20

SESSION 1, Tuesday, 9.30 - The effect of a 'mock-viva' video on students' ratings of knowledge and anxiety | Rachel-Anne Knight, Lucy Dipper, Madeleine Cruice | City University

Students in many disciplines take viva voce examinations as part of their formal assessments. In phonetics, higher education students sit oral exams in which they must produce and recognise sounds from the world's languages. Students informally report high levels of anxiety around the viva (and vivas are known to be a source of anxiety in other disciplines, e.g. Arndt et al 1986), and module evaluations show that students feel they do not have enough information about the viva, even though this is provided in verbal and written form two terms in advance.

In order to address students' anxiety, and their worries about their knowledge of the viva, we recorded a video of a mock viva voce examination. 40 Students were divided into two groups and shown the video after (group 1) or before (group 2) the usual preparation session for the viva. Ratings of their knowledge and anxiety about the viva were taken after the video and after the practice session, and compared with two baseline measures taken previously.

Results show that ratings of anxiety were not affected by watching the video, with both groups showing high levels of anxiety at all four measurement points (group1: $\chi2(3)=3.4$, $p=0.34$, group2: $\chi2(3)=5.6$, $p=0.13$). However, both groups' ratings for knowledge increased after watching the video, (group 1: $z-2.12$, $p=0.03$, group 2: $z=-3.12$, $p=0.01$), although ratings did not increase further for group 2 when they then attended the practice session ($z=-1.41$, $p=.16$). This indicates that the video provided information contributing to knowledge over and above that provided by the practice session. We relate these findings to Bandura's Social Learning Theory (1977, 1986), and implications for preparing students for viva voce exams are discussed.

SESSION 2, Tuesday, 10.00 - Reflections on LARSP as a teaching tool, and introduction to the Newcastle LASS system for computer-transcription.

SESSION 3, Tuesday, 10.30 - SLT students attitudes towards clinical linguists and phonetics | Nicole Whitworth | Leeds Metropolitan

Clinical phonetics and linguistics form a core component in the education of speech and language therapists. While they form an important part of their training, many students approach this strand of their course with some degree of trepidation. This cross-sectional study explores what feelings and ideas students associate with a selection of core clinical phonetics and linguistics terms and whether these change depending on the students' year of study.

An online questionnaire has been sent to 135 students enrolled on an undergraduate qualifying degree course asking them to write down one word they associate with each of ten items of terminology from the clinical linguistics and phonetics subject area. The students also provided information about their year of study. The data have been analysed by producing frequency counts of word associations and are presented in the format of a Wordle.

Possible implications of the results for clinical phonetics and linguistics teaching will be discussed.

----------COFFEE = 20 minutes----------

SESSION 6, Tuesday, 11.20 - Supporting a system-wide view as the basis of principled clinical decision-making in SSI : a cost-benefit analysis using the PPSA (SSI = Speech Specific Impairment, PPSA = Phonetic and Phonological Systems Analysis) | Jocelynne Watson*, Sally Bates** | *Queen Mary's, **Marjon

----------------LUNCH = 1 hour--------------

SESSION 7, Tuesday, 1.20 - Ultrasound as a visual biofeedback tool for the treatment of Speech Sound Disorder | Joanne Cleland*, Zoe Roxburgh*, James M Scobbie*, Alan Wrench** | *Queen Margaret University, **Articulate Instruments

Ultrasound has been used in a number of clinical settings as a diagnostic and therapeutic tool, the latter making use of real time visual biofeedback in, for example, hearing impairment (Bernhardt, Bacsfalvi and Alder-Bock 2005; Bacsfalvi and Bernhardt 2011) and residual speech impairments (Bernhardt et al. 2008). Raw ultrasound provides partial information, e.g. about mid-sagittal tongue shape and position. In therapy clients can use this feedback to modify tongue shapes to achieve target articulations and to develop more appropriate vocal tract constrictions. The ULTRAX project aims to enhance these real-time articulatory displays, adding overlays of important aspects of the vocal tract which are not present in any ultrasound image, such as the hard palate. Via a model, under development, of tongue movement in the vocal-tract, based on a paired MRI-ultrasound corpus, we aim to further enhance the images in real time by reducing fuzzy or weak echoes from parts of the tongue, such as the tongue tip, which might be temporarily missing due to certain articulations. As well as these technical enhancements, the project is testing the clinical applicability of ultrasound as a visual biofeedback tool with different levels of enhancement, recruiting both typically-developing primary school aged children (n=90) and children with a primary Speech Sound Disorder (SSD) (n=9). As part of the project, a unique articulatory database of these typically-developing children is being collected, which will be described in the paper. Therapy with 6 children is complete, and we will summarise their progress so far, including post-therapy outcomes where complete (t+3 / t+6 months). Indirect articulatory feedback in therapy is also possible using animated models of typical articulation. Comparison of ultrasound, to a non-real-time articulatory visual model (the Speech Trainer 3D app for iPAD, Smarty Ears 2011), will also being undertaken, in a parallel clinical research project. The clinical application in therapy of both ultrasound and animations will be tested and compared in six children aged 6-16 with secondary SSDs associated with repaired cleft palate. We will summarise the progress of this project so far.

SESSION 8, Tuesday, 1.50 - Speech production in Amharic Speaking children with Cleft Palate | Abebayehu M. Mekonnen | Sheffield

Background: Cleft lip/palate, caused by atypical facial growth of the foetus during the initial stages of gestation, affects the structure and function of the upper lip and/or palate. Studies

have shown that a history of cleft palate often affects an individual's speech production, and similar patterns of atypical speech production have been reported across a variety of different languages (Henningsson and Willadsen, 2011). Currently, however, no such studies have been undertaken on Amharic, the national language of Ethiopia. Amharic has non-pulmonic (ejective) as well as pulmonic consonants which makes it different from other languages reported in the cleft literature. For individuals with a cleft palate the Amharic phonological system may present a particular and interesting challenge in maintaining contrasts between pulmonic and non-pulmonic consonants.

This report presents the preliminary results of a study, aiming to describe the speech output of Amharic-speaking children with repaired cleft palate. Speech samples were obtained from 20 Amharic-speaking children aged between 5 and 14, with a repaired cleft palate, and a control group of 5 typically-developing children, all resident in Ethiopia. Audio and video recordings were made of the participants' speech production in a variety of contexts including single word production, sentence repetition and spontaneous speech, using a version of the GOS.SP.ASS (Great Ormond Street Speech Assessment: Sell, Harding and Grunwell, 1999) modified for Amharic. A descriptive research design, which involves a combination of perceptual and acoustic phonetic analysis, is employed. Perceptual analysis (using narrow phonetic transcription) reveals the presence of speech production patterns including atypical realizations of ejective consonants, unusual non-pulmonic realizations (implosives, ejectives and clicks) for pulmonic sounds, retracted vowel productions, and mild hoarse voice quality. Some of the identified speech behaviors (e.g., realization of ejectives as pulmonic, ejectives as implosives or as clicks) are attributed to the effects of the constraints imposed by the cleft on the Amhaic phonological system. The results indicate that, in addition to the features of speech production associated with cleft palate which are common across languages, there are also language-specific speech production characteristics related to the phonetic and phonological systems of specific languages. Examination of a language which makes use of both pulmonic and non-pulmonic airstreams in its consonant inventory adds to our understanding of the effects of a cleft palate on speech production.

References

Henningsson, G., & Willadsen, E. (2011). Cross linguistic perspectives on speech assessment in cleft palate. In S. Howard, and Lohmander, A. (Eds.), *Cleft Palate Speech: assessment and Intervention* (pp. 167-180). Chichester: John Wiley & Sons, Ltd.

Sell, D., Harding, A., & Grunwell, P. (1999). GOS.SP.ASS.'98: an assessment for speech disorders associated with cleft palate and/or velopharyngeal dysfunction (revised). *International Journal of Language and Communication Disorders, 34*(1), 17-33.

SESSION 9, Tuesday, 2.20 - Speech production in Arabic Speaking children with Cleft Palate | Nissreen Al-Awaji | University of Sheffield

Background: Although traditional accounts of the speech production difficulties associated with cleft palate categorise them as an articulatory problem, more recent research has suggested that children with cleft palate are also susceptible to speech difficulties of phonological origin (Scherer and Kaiser, 2010). Furthermore, it has been hypothesised that cleft palate speech characteristics are universal and similar articulatory and phonological patterns have been noted in several European languages (Henningsson and Willadsen, 2011). However, relatively little research has been carried out on cleft speech production in non-European languages, which may provide important insights into how truly universal cleft speech characteristics are. The Arabic language is a relevant example in this instance. Only one published small group study exists, on the Arabic spoken in the West Bank (Shahin, 2006), as well as a single unpublished study of a small group of Saudi Arabian children conducted by Al-Awaji (2008).

The current study builds on Al Awaji (2008), using a much larger group of children (together with control data), to explore the phonetic and phonological features of speech production associated with cleft palate in Saudi Arabian Arabic-speaking children. It examines data collected using a version of the GOS.SP.ASS (Sell, Harding and Grunwell, 1999) developed specifically for Arabic, to provide an account of the ways in which a history of cleft lip and palate may affect the development of speech in Arabic, and to consider the implications of these findings for our understanding of universal versus language-specific features of speech associated with cleft.

Method: The study used speech data taken from 21 Arabic-speaking children aged from four- to seven- years old, and a control group of 5 normally developing children aged between four and five, from Riyadh, the capital of Saudi Arabia. Audio and video recordings were made of the participants' speech production in a variety of contexts, including single word production (through picture naming) and connected speech production (using sentence repetition based on picture description).

A mixed method design in research was employed. The data were transcribed using narrow phonetic transcription, and the transcriptions formed the basis for completion of Arabic

GOS.SP.ASS forms for each individual participant. Phonological analysis was also carried out on the data from each participant. From these preliminary analyses, descriptions of atypical speech production features were made, and categorized into those associated with the cleft palate, and those which indicated non-cleft developmental difficulties. Furthermore, statistical analysis was carried out to determine the most and least accurate segments and to explain the relationship between accurately produced segments and the following variables (age, age at repair and type of cleft palate). Individual case studies were also conducted to illustrate and exemplify individual differences from the speech of four of the children with cleft palate with contrasting speech output patterns.

Results: The results of this study indicate that speech characteristics of Saudi children with cleft palate are not entirely consistent with previous cross-linguistic studies of cleft palate speech: a series of different compensatory strategies and unusual speech production features emerged in the data which suggested that not all characteristics of cleft palate speech are universal. Rather some speech features emerge in response to the particular structural and systemic properties of a specific language, in this case Saudi Arabian Arabic. Theoretical and clinical implications for assessment and intervention for children with speech difficulties associated with cleft palate are discussed.

References:

Al Awaji, N. (2008) *Cleft Speech in Saudi Children.* Unpublished Master's Dissertation, University of Sheffield, United Kingdom.

Heningsson, G. & Willadsen, C. (2011) Cross-linguistic perspectives on speech assessment in cleft palate. In Howard, S.J. & Lohmander, A. (eds.) *Cleft palate speech: assessment and intervention.* Chichester: Wiley.

Scherer, N.J.&Kaiser, A. (2010) Enhanced   Milieu Teaching / Phonological Emphasis: Application for Children with cleft Lip and Palate. In Willias ,L. , McCauley,R. and McLeod,S. (Eds.)*Speech Sounds Disorders in Children*,427-452

Sell, D., Harding, A., & Grunwell, P. (1999) GOS.SP.ASS '98: an assessment for speech disorders associated with cleft palate and/or velopharyngeal dysfunction, *International Journal of Disorders of Communication,* 34(1), 17-33

Shahin, K.(2006) Remarks on the speech of Arabic-speaking children with cleft palate: three case studies. *Journal of Multilingual Communication Disorders*,4,2,71-77.

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A mixed method design in research was employed. The data were transcribed using narrow phonetic transcription, and the transcriptions formed the basis for completion of Arabic GOS.SP.ASS forms for each individual participant. Phonological analysis was also carried out on the data from each participant. From these preliminary analyses, descriptions of atypical speech production features were made, and categorized into those associated with

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---------------COFFEE = 20 minutes--------------

SESSION 11, Tuesday, 3.40 - Phonetic variability in mother-child interactions - learning how to do words | Sara Howard | Sheffield

There is a long tradition of interest in the speech production variability observed in typically-developing children and also in children with developmental speech disorders, where variability may be more marked and may persist for longer than in typical development. An important question is how far such variability is unpredictable and inconsistent, and how far it reflects systematic properties of speech and language organisation, whereby significant phonetic variation is seen as typical of all speakers. This is an issue which has implications for our understanding of speech development and disorder, and for approaches to clinical assessment and intervention.

This study reports on the phonetic variability encountered in spontaneous conversational interaction between a mother and a typically-developing child, in a free play setting. Eight hours of speech data (one from each of eight age points between 2;00, and 3;00) were analysed using a combination of detailed perceptual and instrumental phonetic analysis (narrow transcription and spectrography) and Conversational Analysis (CA). Multiple tokens of the mother and child's realisations of specific items were tracked both within and across age-points and the phonetic analyses allowed a detailed investigation of variability of the child's productions across different tokens. A specific focus was those conversational sequences where the child produced an item, the mother repeated it and the child said it once again, immediately after the mother's production. Of particular interest in these cases was the difference between the child's first and second productions and the ways in which the second production could be seen to reflect the child's on line tuning of their production to the mother's model. Other articulatory and prosodic differences between tokens of the same word suggested that in some cases the phonetic variability encountered was a product of the conversational sequence and the particular action the child's utterance was designed to achieve. Just as it has been demonstrated that lexical phonetic variation in typical adult conversation is not random but systematic and with an interactional function, in these data variability does not appear to be random, but is linked to both frequency of usage and conversational function. The implications for our understanding of developmental phonetic variability in are discussed.

SESSION 12, Tuesday, 4.10 - Comments on Ingrams Procedures for calculating portion of whole word proximity | Joy Newbold, University of Sheffield

Ingram and Ingram (2001) advocate a clinically attractive procedure for measuring intelligibility at the level of the whole word rather than the segment. PWP measures the length and accuracy of the child's realisation in relation to the target word. Ingram and Ingram (2001) outline six sampling procedures including the use of 25 or more items classified as lexical class words (i.e. nouns, verbs, prepositions, adjectives and adverbs) taken from conversational speech contexts. In this study, PWP was investigated using conversational speech data from four children aged 6-7 years with speech difficulties and associated intelligibility impairments. Detailed phonological and phonetic analysis of both single words and multiword utterances was employed. Several contentions with the measurement procedures emerged. These include lexeme by lexeme analysis and the inability of the measure to differentiate typical and atypical underspecification in connected speech (Newton, 2012). PWP relies on segmental correctness judgments, in this way it fails to take account of longer domain influences on single word productions. Clinical implications include the need to consider sampling contexts for assessment and to account for individual differences between children when selecting appropriate procedures as outcome measures. This study highlights the importance of qualitative approaches to connected speech analysis (Howard, 2012)

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Equipping the SLT with a functionally useful way of describing a client's intonation (dis)abilities presents us with theoretical and practical challenges. Crystal's PROP profile, 30 years on, has not been taken up on a grand scale despite its solid linguistic credentials. Tests of intonational competence, such as PEPS-C, have been used quite extensively in research but are not easy to use in routine clinical settings. After identifying some of the possible reasons for the lack of uptake of these instruments in the clinical domain, I will present an alternative approach, the IIP. Like PROP, it is based on a recorded sample of talk-in-interaction, transcribed orthographically with accompanying intonational notation. In the case of co-participants with 'typical' intonation, the notation can be a simple systematic one of the traditional British type: Intonation Phrase (IP) boundaries, Head, Tonic and Tail, with Tone direction notated at the Tonic (fall vs. rise. vs. fall-rise). For the client, normally this will be an impressionistic transcription of pitch using stave notation, along with other relevant features (loudness, tempo etc) using IPA and ExtIPA conventions. The transcript can be produced on the basis of perceptual observation, in conjunction with acoustic analysis where feasible. The profile itself is completed through a process of interpreting the recording and transcript in relation to fundamentals of talk-in-interaction. The 4-page form consists of 21 questions about the client's ability to use intonation to handle Turns, Topics, and Actions. The section on Turns includes questions about floor management and turn allocation, e.g. "*Does C use the Tonic to project the end of her/his turn?*" There are also questions about turn construction, e.g. "*Does C use the Head to create an IP / Turn Constructional Unit of more than a single word?*" The questions relating to Topic management include "*Can C highlight the topically salient item in the turn, by locating the Tonic on that word?*" Examples of questions relating to Actions are: "*Can C use Tonal Matching to align with the action of the co-participant's prior turn?*" and "*Can C use Tonal Non-matching to initiate a new action?*" Following the methods of Conversation Analysis, answers to these questions are arrived at by reference to the observable behaviour of the participants rather than to the intuitions of the analyst / profiler. The profile derives from extensive research into the phonetics of talk-in-interaction, involving typical adult speakers and young children. In this talk, its use will be illustrated with data from children with interesting intonation features. Notably absent, for theoretical and empirical reasons, will be any reference to 'question intonation' or 'attitudinal intonation'.

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