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Linguistics: the challenge of clinical application
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1. Ariadne's thread. Preface

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This volume collects some of the contributions to the II International Conference on Clinical Linguistics (IICLC), to be held in November 2009 (11, 12 and 13), at the Department of Filosofía y Letras at the Universidad Autónoma of Madrid (UAM), in collaboration with the Universidad Nacional de Educación a Distancia (UNED).

It was preceded by the First Clinical Linguistic conference, celebrated at the Universidad de Valencia in November 2006, and hosted by Beatriz Gallardo Pauls and Carlos Hernández Sacristán. That first initiative received a warm welcome from a large number of participants, more than one hundred professionals from different fields (Medicine, Psychology, Speech Therapy and, of course, Linguistics). The meeting attracted a broad public, from Spain as well as from other Hispanic countries. It was an essential first impulse, without which we would not have undertaken the next step.

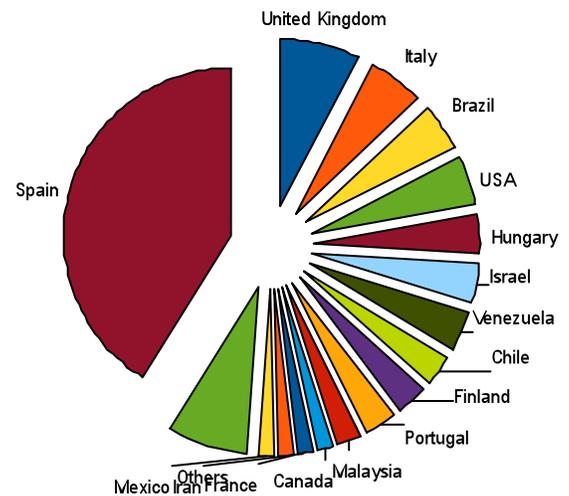
In this second edition our goal was to gain worldwide exposure. Thanks to the support of many colleagues, beginning with the members of the Scientific Committee, but also the organisation and members of the International Clinical Phonetics and Linguistic Association, the Sociedad Española de Neurociencia, the Sociedad Española de Lingüística Aplicada, our editor, Euphonia Ediciones, and many others, our aim has been achieved. 59% of participants come from outside Spain: mostly from Europe (28%), America (20%) and Asia (8%) (Cf. Fig. 1).

From among all the proposals, the following 84 studies submitted for publication in the Proceedings represent 63% of the accepted papers.

If the opening to the world is a source of richness for this second edition of the CLC, it is also responsible, in a similar measure, for the ensuing variety of languages under study. Far beyond the common predominance of English, more than half the contributions were undertaken in Romance languages, mostly Spanish, but also Italian, Portuguese, Catalan or Galician. The European linguistic landscape is rounded out with Slavic (Polish, Serbian) and Finno-Ugric representatives (Finnish, Hungarian), together with Greek. From further afield come languages such as Hebrew, Japanese and even Shona, an African Bantu language.

The book's structure follows the Conference's main topics; proposals appear in the order in which they were allocated to participants during registration:

- Linguistic analysis
 - Clinical phonetics and phonology: 10 papers
 - Clinical grammar: 9 “
 - Clinical linguistics and lexical or semantic analysis: 7 “
 - Clinical linguistics and pragmatics: 10 “
 - Clinical sociolinguistics: 2 “
- Assessment, treatment, description of language disorders: 27 “



- Language and the mind: papers
- Language acquisition and development, and Clinical Linguistics: L1 and L2: 8 papers.

However, these subdivisions should not be regarded as a series of closed compartments, since, as discussed in the following commentary, some of them straddle the border between various levels of linguistic analysis, while others could easily have been included in several sub-areas, demonstrating that language has a complex structure in which all components are closely interrelated. These categories will not be strictly followed here, and comments on the proposals will be made according to personal criteria of affiliation or similarity.

Clinical phonetics and phonology

Some of the studies on the segmental level of language concern the classic paradigm of phonological processes of speech simplification (Ingram, 1976): in Polish speakers with sensorineural hearing loss, mostly concerning sibilants [Marta Marecka and Monika Polcyńska]; in a Spanish agrammatic aphasic, displaying sound substitutions as a phonological problem –unit selection– and not a phonetic impairment [Anna Marczyk, Lorraine Baqué, Martine Le Besnerais and Marta Estrada], in both cases by means of acoustic analysis; or either in two Spanish children with Williams Syndrome–orthographic CHAT transcription–, in which the usual processes –affecting syllabic structure, substitutions and omissions– remain longer than in typical phonological development [Verónica Martínez, Aránzazu Antón, Manuela Miranda and Eliseo Díez-Itza].

Equally centered on the production of speech, Sara Howard and Zoe Jordan present an innovative comparison between the articulation of a ventriloquist and the output of two children with speech impairments: in both cases, compensatory strategies were adopted in order to obtain sufficient intelligibility and acceptability.

Beyond the phoneme, the syllable is the unit of study for Sara Candeias and Fernando Perdigão, focused on the coarticulation degree in C+r+V or C+l+V structures produced by a Portuguese child with speech dysfunctions compared with a normal child. Also, Limor Adi Bensaid and Yishai Tobin analysed the vowel lengthening in different syllable positions in the speech of a Hebrew deaf child with cochlear implant, and report vowel durations significantly longer before sonorant codas (specially if the coda is deleted) than before obstruent codas or open syllables, a less prominent context.

Concerning the rhythm of speech, Judit Bóna has observed the differences of disfluency of a Hungarian male clutterer across four different speaking styles, the most affected being spontaneous narration, and rhetorical speech the least.

Prosody receives substantial attention in this volume. Its assessment will be considered below; regarding its description, we have two examinations of intonation on oesophageal and /or tracheoesophageal speech: one of them with a Spanish alaryngeal speaker proficient in both speech modes [María Heliodora Cuenca and Marina Barrio], who uses different cues depending on speech modality–pauses for oesophageal and lengthening for tracheoesophageal–; the other, with four Hungarian good oesophageal speakers [Alexandra Markó and Tekla Etelka Grácsi], shows that F0 plays the weightiest role in intonational contrasts. Intonation has also been analysed in autism, in the work of Hila Green and Yishai Tobin: their ten high-functioning autistic children exhibit a limited repertoire of prosodic patterns, compared with ten Israeli Hebrew controls. Prosodic variations related to grammar complexity in Buenos Aires Spanish is the aim of Claudia Ruth Enbe and Yishai Tobin paper, in 132 typical and 18 atypical speakers of both genders from 5 to 58 years old; an inverse proportion was found

between the difficulty of the sentence and the range of prosodic variation for both groups. Finally, brain lateralisation of prosody in four aphasic patients, also in Spanish (Venezuelan), was chosen by Lourdes Pietrosemoli and Elsa Mora to show that inter-subject variability may be greater than expected, and that prosody might not be confined exclusively to the right hemisphere, as the literature suggests.

Assessment of the phonic level of language can be done by means of standardised tools, such as the *Profiling Elements of Prosody in Speech-Communication* battery (PEPS-C, Peppé and McCann, 2003), employed by Sue Peppé and Pastora Martínez-Castilla to assess lexical accent assignment in 20 autistic English children and 27 Spanish adolescents and adults with Williams Syndrome (WS); both groups show significantly lower performance than control matches, in spite of some cross-linguistic differences that can affect the test methodology. Moreover, Pastora Martínez-Castilla, María Sotillo and Ruth Campos administered the affective prosodic tasks included in the Spanish version of the PEPS-C to 27 teenagers and adults with WS, whose results were not only significantly lower than those of the control group, but teenagers with WS also performed better than adults. Lexical stress in typically developing Scottish children is the topic of Catherine Dickie's paper, which considers their performance with segmental and suprasegmental minimal pairs: the assignment of lexical stress in ambiguous or idiomatic items was quite difficult for these normal children (9-10 years old). Already within the segmental level, Hernán Martínez applies the TEPAPH-EV (*Test para la Evaluación de la Producción Articulatoria y de la Percepción del Habla para el Español Venezolano*) to 15 subjects affected by different production disorders, distinguishing the phonetic or phonological nature of their impairment. Finally, Barry Heselwood argues for the validity of the phonetic transcriptions made by trained experts as a clinical and research tool, a suitable way to assess and describe how physical parameter values affect the way spoken language is heard.

Clinical grammar

Verbal morphology is Gaetano Fiorin's object of study, which tests the competence of dyslexics on two Italian past tenses, *imperfetto* (imperfective aspect) and *passato prossimo* (perfective aspect); failings are attributed to poor short-term verbal memory, affecting the computation of scalar implicatures associated with the imperfective aspect. Nikolitsa Stathopoulou and Harald Clahsen also investigate the processing of the Greek perfective past tense in eight adolescents with Down's Syndrome; on the contrary, they found that perfective past tense formation of existing verbs corresponded to that of typically developing control children, the only difference arising for novel verbs, unaffected by rhyme similarity with known stimuli.

Nominal morphology is the focus of two papers concerning Finnish: the first, by John Niemi, deals with two types of inflection in pseudowords, either phonologically rule-driven, or lexically indexed by analogical association; in typically developing children both improve with age, while this is not the case for children with Familial Language Impairment or Asperger Syndrome, even when they exhibit a high performance on systemic, rule-driven phonological inflection ("systemic brain"). The other, carried out by Jussi Niemi, Matti Laine and Juhani Järviö, compares paradigmatic inflection and extraparadigmatic suffixation (cliticization) in an aphasic Finnish subject, whose performance was similar to normal Finnish speakers. Clitic production in aphasia is also analysed by Silvia Martínez Ferreiro (15 agrammatical aphasics – 5 Spanish, 5 Catalan and 5 Galician – and 15 matched controls), finding a significant difference between reflexive forms (more than 75% of correctness) and object clitics, more severely impaired. Similarly, Andrea Anahí Junyent Moreno, María Chiara Levorato and Gianfranco Denes report an unexpected delay of object clitics and articles production of

in complex sentences and verbal inflections of an Italian child with Specific Language Impairment (SLI), suggesting the possibility of a selective impairment, possibly even internally, to the morphosyntactic area. Spanish gender morpheme acquisition by 20 typically developing children from 2.3 to 5.5 years of age living in Berlin has been studied by Laura Perona Jara and Christina Kauschke. Another Spanish group [Aránzazu Antón, Verónica Martínez, Joaquín Fernández-Toral, Jonathan Huelmo and Eliseo Díez-Itza] investigate the use of spatial prepositions in two Spanish subjects with Williams Syndrome: in spite of the special difficulties with spatial processing previously reported for their cognitive profile, the results were similar to other prepositions, with little improvement over time.

The relationship between Italian nominal and verbal morphology in fluent and non-fluent aphasia is the subject of Styliani Tsigka, Sharon Chan and Rita Capasso's contribution: the non-fluent subject shows agreement deficits in the nominal environment, while the fluent aphasic produces accurate nominal and verbal constructions, suggesting the value of investigating a possible link between verbal *versus* nominal processing and frontal *versus* temporal brain areas, respectively.

Word formation, and specifically compound processing in complex words, was examined for non-impaired subjects by Miguel Lázaro and Javier S. Sainz, differentiating between semantically transparent or opaque units. For aphasic illiterate patients, Dora Colaço, Ana Mineiro, Gabriela Leal and Alexandre Castro Caldas show an unexpectedly lower percentage of incorrect answers in using complex words, compared with literate aphasics, probably as a result of applying different strategies in access to lexicon and lexical retrieval, less dependent on morphological or phonological planning, and more semantic in nature.

Regarding syntax, relative clauses are a major topic among our participants: Carla Contemori and María Garraffa reveal the difficulties of four Italian children with SLI in comprehension, production and repetition of subject relative and object relative clauses, compared with eight typically developing children, four matched by age and four matched by linguistic competence. Nick Riches also analyses subject and object relative clause repetition in 30 British adolescents, 14 with SLI and 16 with autism plus language impairment; the first group's performance was poorest, with many simplifications involving subject to object relative transformations. A second experiment on the comprehension and repetition of diverse syntactic structures led him to propose an algorithm –based on Levenshtein Distance in words– to provide qualitative information about children's underlying language difficulties. Elena Marulanda and José Manuel Igoa also examine relative clauses, though as a syntax frame for nominal metaphors, whose processing in three Spanish patients who suffered brain strokes seems to be conditioned by lexical factors such as the degree of familiarity and imaginability of referents. First and second order recursive utterances (object relatives) are employed by Ruth Campos, María Sotillo and Pastora Martínez-Castilla in order to assess syntactic comprehension in ten Spanish children with Williams Syndrome; they consider their subjects' difficulties to be associated with deficits in their Theory of Mind abilities. Zoltán Bánrési also looks at these two types of recursion in four Hungarian aphasic speakers, who avoid the use of formal subordination –especially in Broca's aphasia–, but can fall back on semantic recursivity.

Continuing the search for functional interpretations, Carlos Hernández Sacristán, proposes a distinction between two different manifestations of syntactic deficits in aphasia: one, identifiable by consistently ungrammatical constructions (common agrammatism), while the other is better described as “syntactic infradetermination” or “proximal use” of syntax, when patients use linguistic constructions that don't require

many morphosyntactic resources: a functional adaptation to the restriction of resources caused by injury. The use of compensatory strategies (communicative, pragmatic, metalinguistic) in passive comprehension, together with lexicon exploitation, is highlighted by Tomohiko Ito, Suzy E. Fukuda and Shinji Fukuda, in a female Japanese student diagnosed with SLI.

Clinical linguistics and lexical or semantic analysis

Many of the contributions on the *word* level are related to the consequences of strokes or brain surgery: anomia, nominal aphasia, paraphasia... Amaia Munarriz and María José Ezeizabarrena test two Spanish females suffering from anomia; their results show differing patterns of errors, depending on the stage of lexical access affected: one seems to have post-lexical (phonological) difficulties, while the other has problems in word retrieval. Cristina Vela, by means of videotapes of speech interactions, analyses two Spanish males with similar difficulties in lexical nominal retrieval, and also finds two different compensatory strategies for minimizing the effects of anomia: in one case circumlocutions, and in the other, face gestures and paralanguage. Furthermore, anomic aphasics, together with two groups of conductive aphasics (one literate, one illiterate, two subjects per group) constitute Dora Colaço, *et al*'s sample, mentioned above, addressed to evaluate the role played by access to reading and writing in mental organisation (and disorganisation); they confirmed some expected results (illiterates produce less phonological errors than literates), but produced unexpected findings as well: illiterate patients perform better at naming low frequency simple words than high frequency ones, and do better than literate subjects when faced with morphologically complex stimuli. In the case of the Serbian subject reported by Mile Vuković, naming and lexical retrieval were relatively preserved, despite that anomia is considered in the literature a characteristic of his transcortical sensory aphasia. G. Miceli *et al.* summarise, in just one page, the aim of their study about differences in the neurological response of non-impaired Italian speakers regarding lexical training *versus* semantic training –similar to those used during therapy for anomia–, as a first step to understanding the mechanisms underlying language recovery in aphasia.

Vocabulary decline, as an early measure of Alzheimer's disease, is the central point in Pascual Cantos' analysis of former UK Prime Minister Harold Wilson's speeches: once the disease appears, fixed structures, as well as nouns and indefinite words (*anyone, things...*), show increased repetition, whereas pronouns are less frequently used and less repeated.

Asperger's Syndrome is usually described as devoid of early linguistic delay; Mercedes Belinchón and María Sotillo compare clinical histories provided by families and test the lexical processing of 77 Spanish children and adolescents with high-functioning autism or Asperger's syndrome; they observe atypical effects in lexical processing tasks, as well as signs of developmental delays in lexicon and grammar. As a consequence, the research group [Belinchón, Eva Murillo, Mireia Barrios and Vicente Sánchez] presents a project for further study focusing on the early development of gestures, vocalisations and words in a significant number of very young children suspected of suffering from an autistic spectrum disorder. Christine Besnard, on the other hand, offers an account of second language (L2) learning by high functioning autistic and Asperger's Syndrome children, resulting from her experience in Psycholinguistics applied to L2; their need for and interest in repetitions patterns, regularities and routines, their good long-term memory and extensive use of formulaic language, as well as their love for computers can all be especially useful tools and strategies for L2 learning, reinforced by the advantages of the communicative approach regarding socialisation.

Clinical pragmatics

Discursive and conversational competence are reviewed in these Proceedings from a number of different perspectives and in diverse clinical populations. The analysis of speech acts in typically developing children [Beatriz Dieste] show that narration is the most difficult of these, emerging in relatively late stages (42-49 months). Narration is precisely the focus of Elena Garayzábal and Esther Moruno's contribution, comparing performances in eight Spanish subjects with Williams Syndrome, the same number with Smith-Magenis Syndrome, and a control group. They conclude that the Smith-Magenis group has better global coherence than those with Williams Syndrome, even if their production is brief, succinct and syntactically the simplest. Joaquín García-Medall and Elisa Arranz also characterize the general linguistic behaviour of a young Spanish woman suffering from Williams Syndrome. M.^a Isabel Navarro, on the other hand, has focused on SLI, and compares the metapragmatic profile of a bilingual (Catalan / Spanish) child with control children; all analysed categories (providing and obtaining information, its reorganisation and verification, discursive accuracy, etc.) emerge later in SLI, except for the detection of incoherencies. Dyslexic Italian children's pragmatic competence is explored by Maria Vender, analysing their response to scalar implicatures: their performance level is that of preschool children in comparison to age-matched typically developing children and adults, due, according to the author, to limitations of their verbal working memory. Manel Gimeno studies argumentation strategies in the written texts of adolescents with Attention Deficit Hyperactivity Disorder; they are more active producing arguments than their control matches, but more frequently employ affective-emotional reasonings and sanctions, and fewer rational explanations.

Asperger's discourse is assessed by Lidia Otsa, Aleksandra Evtyukova, Laura Lehtoaro, John Niemi and Jussi Niemi based on conversations between two Finnish patients with therapists and on the picture description tasks of the Boston Diagnostic Aphasia Examination. The Asperger's samples present a "lowered dynamics of discourse," with less overlapping speech, fewer predictions and social expressions, and more ambiguous referential strategies than the control group. The adequacy of this assessment tool (the Boston Diagnostic Aphasia Examination) is probed by Lourdes Pietrosevoli and Sandra E. González by comparing the performance of 20 healthy Venezuelan subjects categorized by educational level. According to their findings, test results can be biased by social, cultural and personal variables. Still in the aphasia area, Sandra Elisabete de Oliveira Cazalato deals with the interpretation of parodied proverbs (for example, "better late than never") by three Brazilian aphasics, and concludes that they use a broad set of competences, not just linguistic, but also pragmatic, socio-cognitive, cultural and interactional, in order to understand the world.

The use of "I" as the deictic center of discourse is the main topic of two studies here; one of them, by Ricardo Escavy, is more theoretical and attempts to establish a relation between the different phases in which the subject operates and certain language disorders. The second, by Camelia-Mihaela Dascalu, focuses on autism, given their particular difficulties with the use of "I", as a result of their difficulty with accessing the context and the conceptual contents derived from linguistic rules; their special type of cognition, the author concludes, can better be explained through Evan's neo-Fregean approach.

The Theory of Mind –the presumption that others have mental states, desires, beliefs and intentions different from one's own that can explain their behaviour– is raised by José M. Gavilán and José E. García-Albea, because it seems to be defective in schizophrenics. Their study with 23 patients, *versus* 23 matched controls, confirms this

hypothesis, revealing that this impairment affects the level of linguistic processing when the listener must interpret meanings according to the speaker's intentions, and not their grammar or lexical levels. Ethan Weed, William McGregor, Jørgen Feldbæk Nielsen and Andreas Roepstorff also attempt to assess the Theory of Mind in subjects with right hemisphere damage, by means of animated films featuring moving triangles which must be described by the patients; sometimes the triangles represent simple objects, while at others they represent intentional agents with mental states. Patients failed to distinguish reliably between the two conditions, and showed a tendency to under-attribute mental states.

Global descriptions

Some papers offer overall views, as is the case with linguistic profiles used to characterize intellectual disabilities: Teresa Fernández de Vega, E. Cabeza Pereiro, G. García Marcos and G. y S. Llena Díaz offer two contributions along these lines: the first ("Un corpus oral multimedia...") outlines a project to create a multimedia corpus of speech interactions with subjects ranging in age from 6 to 21; the second ("First linguistic and cognitive description...") analyzes word and verb frequency according to semantic class, the use of *ser* and *estar* (to be), and syntactic structure in speech samples from 26 Spanish children and adolescents with intellectual disabilities. Eliseo Díez-Itza, Elena Garayzábal and Monserrat Fenández carried out a bibliographical review of linguistic profiles in five genetic syndromes co-occurring with intellectual disabilities (Williams, Down, X-Fragile, Smith-Magenis and Prader-Willi), and conclude that structural linguistic levels (phonetic-phonological, grammar, lexical-semantic) are relatively preserved in the four rare genetic conditions (even if phonology can offer difficulties for X-Fragile or Smith-Magenis, and grammar for Prader-Willi and X-Fragile) but are weak points for those with Down syndrome, who, on the contrary, perform much better in Pragmatics. Paloma García Bellido, Antonio Benítez Burraco and their collaborators are also engaged in describing the speech profile of a Spanish woman with a rare genetic disorder, trying to correlate linguistic disability with the malfunctioning of specific genes. Anny Patricia Castilla investigates aspects of morphosyntactic language development in 115 typically developing Colombian preschool children as a way to provide normative standards for clinical comparisons. Lastly, Sharon Chan, Styliani Tsigka, Federico Boschetti and Rita Capasso present a computer tool for aphasic production that automatically generates typical error patterns (phonological and morphological errors, word or fragment omissions, etc.) and speech profiles, useful for clinical and academic purposes.

Assessment is another area suitable for general approaches. A. González Cuenca, M. J. Linero Zamorano, C. Barajas Esteban and I. Quintana García evaluate the level of language development in eight deaf Spanish children, half who use digital hearing aids, half with cochlear implants (though the results do not distinguish between them, as subjects are grouped by age); all them show significant speech delay. Leah R. Paltiel-Gedalyovich and Yishai Tobin examine, in the framework of *Phonology as Human Behaviour*, the relative contributions of intelligibility *versus* message content in clinical-decision making, in order to improve patients' communicative abilities.

A global point of view is also often adopted in therapy or treatment descriptions. John Niemi discusses the general linguistic improvement –an "opening up" of latent language skills reflected in enrichment of sentence and phrasal structure– shown by an autistic echolalic Finnish boy after eight weeks of therapy with Pivotal Response Training, a naturalistic behavioral treatment intervention, that enabled rapid progress to be made from a point resembling the two-word-stage to one employing complex syntactic

structures. Jeannette Altarriba reflects on the strategic use of bilingualism in the therapeutic context; studying the references of nine therapists in New York State, she concludes that code switching between English and Spanish depends on emotion, identity, and conversation topic, and can be formally introduced into a clinical setting with bilingual populations. Finally, Inmaculada Báez Montero argue for the benefits of sign languages as a useful therapeutic tool in the treatment of communicative disorders, such as mild intellectual disabilities, Down syndrome or autism, since non-verbal language facilitates basic answer skills to stimuli, reduces frustration during the communicative process and improves auditory memory.

Within this selection is a group that could be entitled “the neglected role of the right hemisphere,” e.g., in the processing of a second language, as occurred with 12 proficient learners of Spanish who displayed, by means of evoked potentials, increased neural activation in the right hemisphere when engaged with 30 Spanish abstract nouns, unlike what occurred with native speakers [Lourdes Pietrosevoli and Pedro Coutin]. In a study concerning the processing of lexical tones in Shona, an African Bantu language, McLoddy R. Kadyamusuma, Ria De Bleser and Jörg Mayer tested six left-hemisphere and six right-hemisphere damaged patients in production and perception tasks of lexical tone contrasts; both groups performed worse than the control, but no differences were found between them, contrary to the literature. Nieves Mendizábal and Teresa Solías highlight the role of lateral dominance on hemispheric specialisation: they compare the linguistic, pragmatic and semiotic performance of two Spanish right-hemisphere damaged patients, one left-handed and the other right-handed; the first shows a lack of language, but preserves pragmatic skills, while the latter lacks in communicative intention despite the relative preservation of grammar and lexicon.

Reading / writing

Throughout the volume are a series of studies that refer to the processes of reading and writing. Ana Belén Domínguez and Isabel Pérez attempt to determine the reading level of 71 deaf Spanish students (6-16 years old), 38 with cochlear implants, matched with a control group; their results show a significant difference between implanted and non-implanted children. The first show a reading competence similar to the control group and are able to apply semantic as well syntactic reading strategies, while the non-implanted group performs at the level of much younger normal-hearing children, and only employ semantic strategies. Responding to the deaf community’s difficulties with written language, Kyrlian Bortolozzi, Ana Cristina Guarinello, Ana Paula Santana and Ana Paula Berberian discuss a software application called *Surdo Aprendendo em Silêncio* and its use with two deaf adolescents, who became more autonomous and interested in reading, and paid additional attention to their own writing, both its formal features and its semantic and textual aspects. Competence in written language in aphasic literates and illiterates is considered by Heloisa de Oliveira Macedo and Julia Marinho, mostly in relation with textual genre. In a somewhat related paper, Kyrlian Bortolozzi, Ana Cristina Guarinello and Ana Paula Santana analyze the retextualization process from gesture to written text in Brazilian aphasic subjects –in collaboration with their therapists– in work with personal reports that allows patients a reconnection with their own identity. Finally, Suro *et alii* present an ongoing investigation into the late identification of dyslexia in 2,400 Spanish-speaking university students from Mexico and Spain. And moving from assessment to therapy, Alma Silvia Rodríguez recommends writing as a rehabilitation therapy for people with severe and chronic psychiatric disorders, enabling the development of creativity, interrelations between reason and emotions, better emotional self-regulation and the reinforcement of communicative mechanisms that support socialisation.

Epistemological reviews: analysing the nature of clinical linguistic knowledge

Last, but not least, a number of papers cross into the area of scientific debate by suggesting new interpretations of several relevant topics in the field of present-day Clinical Linguistics, and even its overall design. This is the case of the two individual proposals by Antonio Benítez Burraco. The first, centered on SLI, questions precisely the specifically linguistic nature of this impairment, arguing from clinical, cognitive, neuroanatomic, neurophysiological and genetic points of view, concluding that, even taking into account our current methodological limitations, the polygenetic character of language and the pleiotropic quality of involved genes (each single gene influences multiple phenotypic traits) make unlikely an autonomous and modular design of language, of language impairment and of SLI. Complex relationships between genes and language are the main subject of his second paper (“Los supuestos “genes...””). Phylogenetically, the origin of language would be a process of recycling and adapting for this specific function certain genetic, cellular and molecular components already present in the species; ontogenetically, language development, even conditioned by genes, needs environmental stimuli to complete the brain’s cytoarchitectonic and functional maturation. To conclude, Prakash Chandra Mondal proposes a new global framework for the neurocognitive architecture of language, divided into two main levels: a functional level, with a sub-architecture (phonology, morphology, syntax, lexicon and semantics) and a supra-architecture (social cognition, memory, emotion, attention, motor system, auditory system and vision), and a neural level, characterised by a massive dynamics of multiple direction activation patterns, called “polarities” by the author.

And finally...

This alternative reading of our Proceedings, jumping between sections in the style of Julio Cortázar’s classic novel *Rayuela* (*Hopscotch*), is the result of a very personal choice. Any errors, misinterpretations or misapprehensions are entirely my responsibility. Fortunately, each reader can devise their own itinerary from the complete studies offered below. Our main goal, during the conference organisation and now, has been to arouse interest and provoke possible interrelations between different research groups, as a starting point for new collaborations. Hopefully this initiative, born in Valencia three years ago, will continue its fruitful development elsewhere in Spain or another Spanish-speaking country in the near future.