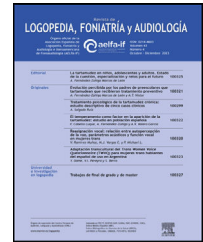




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ORIGINAL ARTICLE

Donna Jackson-Maldonado. A life dedicated to joining theory and practice in language development research



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Abstract

Precedents and objectives: Dr Donna Jackson-Maldonado, researcher and professor at the *Centro de Estudios Lingüísticos y Literarios* of the Universidad Autónoma de Querétaro in Mexico, left us on November 30, 2021. In this article, we review her main scientific contributions related to the three fundamental axes on which she worked: language acquisition, language disorders and language assessment.

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Methods and results: Dr Jackson-Maldonado's studies on language acquisition included groups of premature babies, late talkers, and typical development children in bilingual and diverse socioeconomic conditions. Moreover, she studied atypical language development in children with hearing loss, children with developmental language disorders and children with Down syndrome and other syndromes. Finally, regarding language assessment, it should be noted that she led the Mexican Spanish version of the Communicative Development Inventories (CDI) that was used as a model for later adaptations in other Romance languages.

Discussion and conclusion: Dr Jackson-Maldonado's methodological approach combined rigour with a creative and innovative scientific spirit, yet she integrated theory and clinical practice from its very beginning. She left us an immense research and personal legacy that we want to honour in this paper.

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PALABRAS CLAVE

Donna
Jackson-Maldonado;
Adquisición del
lenguaje;
Trastornos del
lenguaje;
Evaluación del
lenguaje

Donna Jackson-Maldonado. Una vida dedicada a unir teoría y práctica en la investigación del desarrollo del lenguaje

Resumen

Antecedentes y objetivos: La Dra. Donna Jackson-Maldonado, investigadora y profesora del Centro de Estudios Lingüísticos y Literarios de la Universidad Autónoma de Querétaro en México, nos dejó el 30 de noviembre de 2021. En este artículo repasamos sus principales aportaciones científicas relacionadas con los tres ejes fundamentales sobre los que trabajó: la adquisición del lenguaje, los trastornos del lenguaje y la evaluación del lenguaje.

Método y resultados: Las investigaciones de la Dra. Jackson sobre la adquisición del lenguaje incluyeron grupos de bebés prematuros, hablantes tardíos y niños de desarrollo típico en condiciones socioeconómicas bilingües y diversas. Además, estudió el desarrollo atípico del lenguaje en niños con pérdida auditiva, con trastornos del desarrollo del lenguaje y con síndrome de Down, así como otros síndromes. Finalmente, en cuanto a la evaluación lingüística, cabe destacar que lideró la versión en español mexicano de los Inventarios de Desarrollo Comunicativo (CDI) que sirvió de modelo para posteriores adaptaciones en otras lenguas romances.

Discusión y conclusiones: El enfoque metodológico de la Dra. Jackson combinó el rigor con un espíritu científico creativo e innovador, además, integró la teoría y la práctica clínica desde sus inicios. Nos dejó un inmenso legado personal e investigador que queremos honrar en este trabajo.

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Introduction

Talking about language acquisition and its disorders necessarily leads us to one of the most important references in Mexico: Dr Donna Jackson-Maldonado. She left us an immense legacy on language development in typical and atypical populations.

Dr Jackson-Maldonado boldly proposed new projects and she fought with passion for what she wanted. Our dear Donna drank ambrosia just a few months ago; she became immortal and unforgettable thanks to her passion for living and teaching. One of her greatest desires was to teach other adults about typical and atypical acquisition so that they would have the best information when offering help to children with difficulties in their linguistic development. She was proof of the intellectual and creative activity of women and

in her passion for teaching. She trained many professionals who continue her legacy.

Dr Jackson-Maldonado was productive in several areas of her personal and academic development. Her research greatly enriched three areas: language acquisition, language disorders, and the development of tests for early language assessment, such as the Communicative Development Inventory (McArthur Bates CDI). Her fertility has many strands that resulted in multiple publications. Born in Los Angeles but raised in Mexico, she marked her career as a bilingual. From the 1990s on, she published work on language acquisition and cognition in very young children and their individual differences (Jackson-Maldonado, 1992; Jackson-Maldonado, Marchman, Thal, Bates, & Gutiérrez-Clellen, 1993; Jackson-Maldonado & Thal, 1994). For many years, she analyzed the importance of gestures as predictors of language comprehension and production (Jackson-Maldonado,

Thal, & Muzinek, 1997). In the same decade, she ventured into research related to morphology and its productivity in early stages of language development (Auza Benavides, Jackson-Maldonado, & Maldonado Soto, 1998; Jackson-Maldonado, Maldonado, & Thal, 1998; Soto Martínez & Jackson-Maldonado, 1998), a topic she never abandoned and would work on together with her husband, Ricardo Maldonado (Jackson-Maldonado, 2002; Jackson-Maldonado & Maldonado, 2016, 2017), as well as with different master's, doctoral students and collaborators (Alarcón Neve, Guzmán Molina, & Jackson-Maldonado, 2011; Jackson-Maldonado & Conboy, 2007). At the early developmental stage, she also worked on the mental lexicon (Pérez-Pereira & Jackson-Maldonado, 2018). Thanks to her enduring bilingualism, she published work on language assessment in bilingual children (Jackson-Maldonado, 1999). At the same time, she began collaborating on the team of one of the most valuable instruments of all time: the CDI, or also known in Spanish as the *Inventario de Habilidades Comunicativas*, in collaboration with her friend, Donna Thal (Jackson-Maldonado et al., 2003; Jackson-Maldonado, Marchman, & Fernald, 2013; Thal, Jackson-Maldonado, & Acosta, 2000). Her tireless work towards clinical research bore many fruits in the field of Down syndrome (Jackson-Maldonado, de Santiago, & Sánchez Aguilar, 2010; Jackson-Maldonado, Galeote, & Flores, 2019), developmental language disorders (Carrasco-Ortiz et al., 2017; Jackson-Maldonado, 2011, 2012; Lara et al., 2015; Jackson-Maldonado, Bárcenas-Acosta, & Alarcón Neve, 2014) and of preterm children (Calderón-Carrillo et al., 2018; Carlier et al., 2016; Jackson-Maldonado et al., 2017).

Dr Jackson-Maldonado initially joined the Faculty of Psychology at Universidad Autónoma de Querétaro (UAQ) where she worked with a team of researchers who had previously founded the Master's Program in Educational Psychology. Dr Jackson-Maldonado's arrival enriched the research on language acquisition. She also began to collaborate on the Master's Degree in Linguistics of the Faculty of Languages and Letters. She promoted the growth of the graduate program when she founded the Ph.D. in Linguistics in 2005. She also taught in the undergraduate programs in Modern Languages in English and Spanish, and she continued to collaborate with the Faculty of Psychology. The graduate programs are included in the National Register of Quality Programs (PNPC), and much is due to Dr Jackson-Maldonado's work as a professor, supervisor, and as a tutor in different committees. As for the Graduate Program in Linguistics, she contributed to its consolidation as one of the most important graduate programs in Linguistics in Mexico.

Among her academic contributions, Dr Jackson-Maldonado through UAQ and Dr. Restrepo, at Arizona State University (ASU) created an exchange program for graduate students in the Linguistics Program at UAQ and the Communication Sciences and Disorders Master's program at ASU. Dr Jackson-Maldonado's vision was that students at both universities should have the opportunity to experience the other and learn from the interactions across academic and sociocultural contexts. She wanted to make sure that her students had opportunities like those of US students. To this end, two waves of exchange students at each university participated. The outbound students from ASU were master's students in the bilingual program who wanted to gain

experience in clinical skills while they also improved their Spanish. In addition, some of the students participated in small research studies with her at the university. The strength of the program was the mentoring and supervision that Dr Jackson-Maldonado provided them; students went back with a much deeper background of Mexican language, how speech-language pathologists worked in Mexico, and a deeper understanding of Spanish linguistics. They became friends with her and loved the experience she provided them with.

The inbound students from UAQ to ASU were masters or doctoral students who fully engaged in research studies the whole time and participated in coursework. For these students, the ability to take courses enrolled through the UAQ was invaluable given that they would gain credit at their institution. The students certainly played a pivotal role in the research we were conducting in the Bilingual language and literacy laboratory. Most importantly, these experiences forged long-term relationships that developed across students and faculty, which remain strong to this day. Therefore, Dr Jackson-Maldonado's vision created a network of clinicians and researchers that continues to give and generate interest in Spanish linguistics and bilingual speech-language pathology. These relations continue her legacy across the world.

Dr Jackson-Maldonado contributed actively to connecting groups and researchers from language acquisition. She made an important contribution to several national and international scientific associations, such as the Association for the Study of Language Acquisition (AEAL – Asociación para el Estudio de la Adquisición del Lenguaje) since it was created in 2005. AEAL (<https://aeal.eu/en/>) is a scientific association that was born from diverse previous national congresses. The first meeting was headed by Dr Miguel Pérez-Pereira in 1995 in Santiago de Compostela. In 2001, Dr Jackson-Maldonado was incorporated as a member of the Scientific Committee of the conferences, and this promoted the internationality of the conferences and the creation of the association in 2005, for which she was member of the Board Committee. Now, AEAL had associates from 18 countries including Argentina, Brazil, Canada, Chile, Colombia, Czech Republic, France, Germany, Hong Kong, Israel, Japan, Jordan, Mexico, Peru, Portugal, Spain, USA, and Venezuela.

She also contributed actively in other associations such as AELFA-IF (Asociación Española de Logopedia, Foniatría y Audiología e Iberoamericana de Fonoaudiología [Spanish Association of Speech Therapy, Phoniatrics and Audiology and Iberoamerican Association of Speech Therapy]; <http://www.aelfa.org/>) where she was associated editor of its scientific journal *Revista de Logopedia, Foniatría y Audiología* (<https://www.elsevier.es/es-revista-revista-logopedia-foniatria-audiologia-309>). She was also associate editor of the journal *Language Development Research* (<https://lps.library.cmu.edu/LDR/>) recently created by researchers from the IASCL – International Association of Child Language (<https://iascl.talkbank.org/>). Finally, she also had an important role in the recent creation of the AHITL (<https://mobile.twitter.com/aahitel>) Asociación Hispanohablante para el estudio del Trastorno Específico del Lenguaje (AHITL) – Spanish-speaking Association for the Study of SLI/DLD.

As a pioneer in psycholinguistics, she traced avenues and inaugurated paths that gave new clues about how children acquire language and also, how some of them develop with difficulties or delay. Dr Jackson-Maldonado, in her lifetime, saw that her efforts to build these avenues in collaboration with students, colleagues and friends, gave rise to new avenues of study that today continue and will continue to add to this field of science.

Her dedication and commitment to academia and research was such that a few days before her death, Dr Jackson-Maldonado was still working with students, participating in degree exams and was still planning her project of hippotherapy for children with Down syndrome and Autism Spectrum Disorders. Dr Jackson-Maldonado's departure leaves a huge void in our community. At the same time, her legacy motivates us to continue the work that she promoted.

Language acquisition

Contributions to language acquisition research

Dr Donna Jackson-Maldonado's studies on language acquisition typically address acquisition in particular under diverse conditions: in children with initial disorder or delay of language, with Down syndrome, in premature children, in bilingual acquisition processes, in contrasting socioeconomic conditions. From an early, sustained interest in deaf children, to the practice of hippotherapy (Jackson-Maldonado, 2021), her work has had as its *leitmotiv* special education, therapeutic practice, diagnosis. These motifs guided her decision to study the acquisition of Spanish, an unavoidable task when little or nothing was known about it, to provide diagnostic tools and knowledge for an informed, evidence-based practice.

In order to highlight the themes that run through the whole of her works, regardless of the population considered, the issue or the goals envisioned, we will direct our attention first to her research questions and successively to some angles of her methodological and conceptual contributions to the knowledge of the acquisition of Spanish, her collaboration of materials in CHILDES, her contributions to attend various environmental conditions, and more recently her commitment with indigenous languages.

A functional, constructivist-interactionist look at acquisition

Against the prevailing research, focused on a modular syntax, since her doctoral thesis (1989), Dr Jackson-Maldonado attends to the communicative forms and functions of children's language, without omitting its oral and gestural manifestations, and she recognizes the interaction of plural aspects in language development. Her functional constructivist-interactionist view – *avant la lettre* – surfaces in all her work as focal attention to very diverse issues: lexical, morphological, syntactic and pragmatic, and the search for interrelationships between various phenomena across diverse child populations. We recognize in her work the search for interrelationships between lexical development and gestural production (Amaya-Arzaga

& Jackson-Maldonado, 2021; Jackson-Maldonado et al., 1997); between the formulation of directives by oral or gestural means (in Down children; Jackson-Maldonado et al., 2010); between lexical development and grammatical development, in children with typical and atypical development, bilingual children, children with Down syndrome (Jackson-Maldonado, 2004b; Jackson-Maldonado et al., 2019); between early lexical development and later mental lexicon development (Pérez-Pereira & Jackson-Maldonado, 2018) or between the development of verbal inflection and the *Aktionsart* of verbs, (Jackson-Maldonado & Maldonado, 2001); without omitting the study of relationships between the development of complex constructions and the acquisition of connectors (Jackson-Maldonado & Maldonado, 2015, 2016). In short, her work as a whole has as its signature a wide thematic diversity, attention to diverse populations, and a search for predictive correlations among varied phenomena.

Acquisition of Spanish, seen from Spanish

Studying the acquisition of Spanish, from a Spanish perspective, runs through all of her works. This stems from her early recognition (Jackson-Maldonado, 1989b), of what it means to study the development of a particular language, which guided her adaptation of the CDI to Mexican Spanish, and is reflected in her research topics, relevant for Spanish, even if absent in the dominant languages in the acquisition scenario. Thus, the complex verbal morphology of Spanish led her to study the development of verb inflection (Jackson-Maldonado, 2004b; Jackson-Maldonado & Maldonado, 2001) considering various factors: the morphological system itself, verbal semantics, levels of lexical development and conditions of the children who learned this complex system. Along this route, the complex subjunctive, or the intriguing and multifunctional clitic "se" of Spanish attracted her attention and her analysis (Chaires et al., 2021; Jackson-Maldonado et al., 1998), and she analyzed carefully with Barbara Conboy the best way to characterize MLU in this language (Jackson-Maldonado & Conboy, 2007).

Attention to prevailing topics and theoretical debates

Sensitive to theoretical debates and aware of the problems that attracted the attention of researchers, Dr Jackson-Maldonado prepared several articles on prevailing topics: the relationship between language and cognition (Jackson-Maldonado & Thal, 1994), the impact of the lexicon on grammatical development. The studies on the development of verb morphology confronted the relevance of basic forms, the effects of verbal semantics, and exposed the relationship between particular verb types and characteristic inflectional forms (Jackson-Maldonado, 2011, 2004b; Jackson-Maldonado & Maldonado, 2001). The controversial preference for "nouns or verbs" in children's early lexicon in different languages was also a matter of her research (Jackson-Maldonado, Peña, & Aghara, 2011), and added to this topic evidence on the effects of the interlocutory situations in the presence of these lexical categories. She took up her early interest in individual differences (Jackson-Maldonado,

1992; Jackson-Maldonado & Pérez Pereira, 2018), a subject of increasing attention in our field of study. Thus, through her work, Dr Jackson-Maldonado makes clear her attention to the topics the acquisition community was considering, in a period of accelerated theoretical and methodological changes and empirical discoveries in our field of study.

Methodological contributions

From a methodological perspective, it is highly relevant to refer to the work on the mean length of utterance in Spanish, in which Jackson-Maldonado and Conboy (2007) question the way of characterizing this important comparative measure in this language. Spanish verbs and their morphological richness pose problems intrinsic to development and place the researcher before the dilemma of making a blind count or to detect and identify the productive management of different inflectional forms in early language. The uncritical application of a morpheme-based measure presents many problems to which the authors refer: some are practical problems in its application, which are amplified by the theoretical problems in the identification of morphemes and jointly impact the certainty of this measure to establish solid comparative bases between languages or populations, make a diagnosis or direct an intervention. The characterization of the difficulties for the analysis of the MLU in morphemes had as a secondary product the detection of very relevant problems – segmentation, productivity, contextual effects on the results – available for the future research agenda. Finally, for the sake of comparability and the certainty of the analyses without going into the problems of levels of morphological development, the authors conclude convincingly, in the operational convenience of adopting a word count as the basis unity in Spanish.

Contributions to the documentation of child language in natural settings of communicative interaction

Dr Jackson-Maldonado's commitment to methodological issues in the study of language acquisition led her to bridge the tension between the use of parental reports and direct observation of child language in natural settings of communicative interaction. Both perspectives were present from the beginning of her research activity, so in addition to her original engagement in the CDI initiative, she also collaborated early on in the CHILDES Project. It was during the 6th IASCL Congress in Trieste, in 1993, where she participated as a speaker in the symposium on "data from parents' reports on communicative development in five languages", where she attended for the first time a CHILDES workshop hosted by Brian MacWhinney. At that time, she was already part of the project "Language and Cognition in Spanish-speaking infants and toddlers" (1992–1995) from the John D. and Catherine T. MacArthur Foundation and from the Consejo Nacional de Ciencia y Tecnología (CONACYT) in Mexico, which included the collection of natural language samples. Thus, she collected together with Donna Thal a cross-sectional corpus with recordings of more than 200 children that would become the "Spanish Jackson/Thal Corpus", the largest Spanish corpus in the CHILDES Database.

The Jackson/Thal Corpus includes speech samples from children of five age groups: 10, 12, 20, 28 and 36 months from two sites, San Diego, and Mexico (Querétaro, Mexico City, and the small rural community of Santa Barbara) with different maternal education levels and language contact. The analysis of the corpus resulted in several publications and theses on communicative abilities, morphology, and vocabulary in early child language acquisition (Jackson-Maldonado, 2012; Jackson-Maldonado et al., 1998).

Since then, Dr Jackson-Maldonado became an active user and disseminator of CHILDES by teaching it to her students, using other CHILDES corpora (e.g., in developing the CDI-III and its preliminary norms that she presented at the 12th IASCL Congress in Montreal in 2011), and collaborating in the improvement of some programs (e.g., the MOR program while participating in the SYNDROLING Project, presented at the 13th IASCL Congress in Amsterdam in 2014).

Contributions to the study of the acquisition of Spanish and indigenous languages in contrasting social conditions

Dr Jackson-Maldonado's interest in the influence of social and cultural differences in children's language development was evident from her work that included socioeconomic status as a key variable in the analysis of data collected through parental reports (e.g., Jackson-Maldonado, 2012). Her concern for the diverse social conditions of language acquisition is also shown through her encouragement and advice regarding the development of CDI adaptations to different Spanish speaking countries. She pursued the idea that children's language assessment-tools should adequately reflect the specific Spanish variety spoken in each region and the characteristics of the social contexts in which they were to be used (e.g., the adaptation to the Río de la Plata, region in Argentina, and to Colombia).

In Jackson-Maldonado (2011), instead of merely considering socioeconomic status as a predictor of children's lexical, morphological, and syntactic knowledge, she delved into the ways social dimensions unfold in the interactions in which children's language development occurs. She examined the interrelationship between the pragmatic function of utterances and the preeminence of verbs or nouns in child directed speech in Mexican Spanish speaking mother-child dyads, from families differing in their linguistic and socio-cultural condition: either residing in their native country or in a situation of linguistic and cultural contact in USA.

Two projects in which Dr Jackson-Maldonado actively participated in the last years investigated language acquisition in indigenous communities: the adaptation of the CDI to the Nñahñú (Otomi) language and culture in Mexico and a bilingual adaptation of the Computerized Comprehension Test (CCT, Friend & Keplinger, 2003) to the variant of Spanish spoken in Chaco, Argentina, and to the Qom (Toba) language spoken by indigenous communities in that region (in collaboration with Celia Rosemberg, her team and Margaret Friend). Both projects combined Dr Jackson-Maldonado's interest in children's language environments, her knowledge regarding the role played by the specific morphology in children's process of acquisition, her valuable methodological experience in designing diagnosis tools as

well as her sensitivity to cultural and linguistic differences and awareness of the need to take them into account in order to avoid bias in children's language assessments.

Dr Jackson-Maldonado's methodological approach combined rigour with a creative and innovative scientific spirit, which was evident in the adaptation of robust tools created for English-speaking populations to local languages and cultures. Thereby she sought to assure ecologically valid data. Hence, the CDI designed for Nānahnū differed from other parent report tools in that it includes images that represent precisely and with pertinence the ways in which the culture conceptualizes reality through specific words. Dr Jackson-Maldonado's consideration of the languages' typological characteristics distanced her from an Anglo-dominant position. Her ideas imbued the discussions that led to the construction of the CCT for the bilingual Spanish-Qom community. In the test, the stimuli distribution by lexical category reflects the frequencies of lexical categories in each language. Also, the morphological aspects that could bias the correctness and time of children's responses were controlled in the stimuli: word gender in Spanish, and in Qom (a language with a complex morphology), control was extended to the determiners that mark the distance, visual accessibility, and position of the referent. With similar care, the prompts selected to deliver the stimuli included utterances that respect the natural social interactions in which children from these indigenous communities are daily involved.

As an interim summary

Our journey through Dr Jackson-Maldonado's work paints a rich landscape of motifs, points to her dialogue with the themes of central concern to the acquisition community, and shows her quest to aspects of linguistic development that she hoped were interrelated. She gives an account of her community involvement with the collaboration of materials to CHILDES and exposes her sensitivity to the different acquisition courses in children from different cultural, social, and linguistic environments.

Language disorders

Dr Jackson-Maldonado's inclusive perspective infused her research interests. Dr Jackson-Maldonado was curious about the language development of both typical and atypical children. Several studies included groups of late talkers, premature babies, children with Down syndrome and other syndromes, children with hearing loss, and children with developmental language disorders and typically developing children. Moreover, Dr Jackson-Maldonado readily considered the multilingual reality of families globally and incorporated monolingual and bilingual children in her studies (Simon-Cereijido et al., 2020).

Her work was relevant to our understanding of the characteristics of late talkers' language. In particular, her research on the early lexical development of monolingual and bilingual Spanish-speaking children was foundational for specialists in communication disorders. She engaged in the topic when the field acknowledged the pivotal role of language experiences in language development and the

monolingual approaches' limitations in understanding and assessing language development in diverse populations. For example, in the seminal early lexical development study of Spanish-speaking infants and toddlers (Jackson-Maldonado, 1992), a group of 328 typically developing Spanish-speaking children aged 0;8 to 2;7 residing in the United States and Mexico were recruited to assess the validity and reliability of the at the time new *Inventario del Desarrollo de Habilidades Comunicativas* (future CDI). Attesting to Dr Jackson-Maldonado's inclusive perspective, the project was conducted across the US-Mexico border and with families from diverse SES backgrounds. This seminal article provided researchers and clinical practitioners with a template for developing measures across languages, national and cultural communities, and socioeconomic statuses.

Through her academic collaborations with researchers in the US, she was able to immediately impact the evaluation services of bilingual Spanish-English children, a considerable proportion of US children. Due to cross-linguistic differences, Spanish verb morphology develops differently across English and Spanish. Her chapter on early verb morphology and its importance for the assessment and intervention of language delays in young Spanish-exposed children in the US (Jackson-Maldonado, 2012) has had a great impact on the education of bilingual speech-language pathologists in American institutions. The relationship between grammar and semantics in the verb system plays a larger role in Spanish than in English; for example, Spanish-speaking children tend to learn time tenses across different types of verbs. In the chapter, she describes typical and atypical Spanish verb development for an English-speaking audience and presents data on both monolingual and bilingual children with and without language delay.

The relationship between semantics and grammar was also explored with children with Down syndrome (Jackson-Maldonado et al., 2019). Ten Spanish-speaking children with DS were observed for vocabulary comprehension, production and initial morphosyntax using a parental report, the Down-CDI. At the general level, this relationship was supported, but children with DS had more variability than typically-developing children. For example, some children with high vocabulary scores were not combining words or had low complexity scores, and others with low vocabulary levels had high M3L scores.

Dr Jackson-Maldonado was also involved in research looking at other neurodevelopmental disorders. In particular, they studied morphological production in adolescents and adults with Williams, Downs, and Fragile X syndromes (Diez-Itza et al., 2017). She was also part of teams studying the language of premature babies and the effect of early intervention (Calderón-Carrillo et al., 2018). The parent training provided to 21 Mexican parents of premature babies helped both toddlers and parents to prevent the negative consequences of language delays.

Dr Jackson-Maldonado's work also informed the understanding of Spanish language development in children with Specific Language Impairment (SLI), now known as Developmental Language Disorder (DLD). As Dr Jackson-Maldonado noted (Jackson-Maldonado, 2011), many Spanish language tests do not have relevant linguistic elements and DLD cannot be identified by just a few morphological markers, such as verb morphology in English. Her work revealed how

a combination of lexical, morphosyntactic, and narrative measures, plus the use of parent and teacher concern is necessary for the accurate identification of DLD in Spanish (Jackson-Maldonado, 2011). Grammaticality, in particular for the monolingual population, was an area of interest, as most of the available data was based on bilingual speakers. In a study of 49 Spanish-speaking Mexican children (18 with DLD, 17 age-matched typically developing controls, 14 language-matched controls), in fact, they found differences between their performance and previously reported data (Jackson-Maldonado & Maldonado, 2017). There were significant differences for article and preposition omissions (but not for clitic pronouns) and the percent of ungrammatical utterances. Her work emphasized the importance of continuing to explore the area of morphosyntax in children with DLD and accounting for the sociolinguistic context of the children.

Dr Jackson-Maldonado was an early leader in the assessment and intervention of children with language disorders. She studied the use of gestures as predictors of language development. This research showed that children's use of gestures during the early stages is highly linked to their later oral language abilities. Her tireless work towards clinical research made her study language development in children with DLD. Her work illustrated that the linguistic characteristics of DLD are language-specific, and Spanish-speaking children should not be evaluated based on results found in English-speaking children. Her contributions to the study of children with DLD gained national and international recognition and influenced the assessment approach for Spanish-speaking children with DLD. In a study conducted with 26 children in Mexico (13 with DLD), Dr Jackson-Maldonado found that children with DLD did not differ in the type of complex sentences, or the number of subordinated sentences used in a storytelling task but that they only differ in terms of the components in the sentence. For example, typically developing children used more causal and adverbial forms that were conceptually more complex (Jackson-Maldonado & Maldonado, 2015, 2016).

In recent years, Dr Jackson-Maldonado dedicated her time to a hippotherapy project for children with Down syndrome (DS) and Autism Spectrum Disorder (Jackson-Maldonado, 2021). She found promising results as children with DS benefited from hippotherapy mostly in their expressive language abilities, which developed at a faster and greater rate.

Language assessment

Contributions of Donna Jackson-Maldonado to the Spanish CDI

The Communicative Development Inventories (CDI) emerged in the early 1990s in the United States (Fenson et al., 1993) and soon became a valuable instrument for assessing first communicative and linguistic development in the early years, which has been used both in research and in the clinic and school environments. The appearance of the CDI made it possible to study the prelinguistic communicative development and the first language of young children by collecting the information available to their parents

(parental report). Parents have detailed knowledge of their young children's abilities that can be gathered reliably if appropriate means are used. This is the great merit of the CDI that of obtaining extremely valuable information from parents in a reliable and fast way. It also made it possible to obtain information on language development from a very large number of children, broadening our knowledge in an important way (Law & Roy, 2008).

The CDIs are also called MacArthur Scales (because the MacArthur Foundation is their sponsor), and, after the premature death of Elisabeth Bates in 2003, MacArthur-Bates Scales in honour of the relevant role that Elisabeth Bates had in their gestation and development. In fact, Elisabeth Bates, along with her colleagues, was the first to use parental inventories to obtain information about children's language development in a couple of highly relevant books (Bates, 1979; Bates, Bretherton & Snyder, 1988; Bates, Dale, & Thal, 1995).

The CDI-I Words and Gestures (generally for children between 8 and 15 months of age) aims to assess the first signs of the appearance of a sensitivity towards language in babies, their first understanding of sentences in context and their ability to comprehend and produce vocabulary, in its first part. In the second, it deals with the evaluation of the use of the first communicative gestures as well as the development of what Tomasello, Kruger, and Ratner (1993) and Tomasello (2003) would call the appearance of cultural learning: actions with objects, imitation of adult actions, imitation of behaviours that parents carry out with them and with babies (*pretending to be parents*). In addition, in this second part, the ability to participate in games and routines of daily life is also evaluated, what Bruner (1983) called formats of play and joint action, and the appearance of symbolic play (objects that are used as they were other objects), which is a competence closely related to the appearance of first words (Bates et al., 1979). Although at first glance it appears that the CDI is a very empirically based instrument, it has, nevertheless, solid theoretical foundations in its construction, which can provide similar information when analysing spontaneous language samples and other standardized tests (Mancilla-Martínez, Pan, & Vagh, 2011). The CDI-II Words and Sentences (for children between 16 and 30 months of age) is also divided into two parts. In the first, the production of words is evaluated, along with the use of language that is more distanced from the here and now, to refer to past or future events, to an object that is not present, or to relate an object with its possessor (how he uses and understands language). The second part explores aspects of morphological and syntactic development: the use of regular morphemes, correct use of irregular forms, use of over-regularizations, sentence production and LME3, and sentence complexity.

In addition, some versions have also been developed for older children (CDI-III), which are less widespread.

The repercussion of the appearance of the original version of the CDI was so great that very soon versions for children who lived in different linguistic and cultural contexts began to be developed.

The Mexican Spanish version of the CDI, *Inventario de Desarrollo de Habilidades Comunicativas* (IDHC), was after the Italian version (Camaioni, Castelli, Longobardi, Volterra, 1991; Caselli et al., 1995; Caselli & Casadio, 1995), the first

adaptation made to a language other than English, which followed the publication of the original CDI in the United States of America in 1993 (Fenson et al., 1993, 2007). Later, a long list of adaptations to different languages would come.

The adaptation to Mexican Spanish was a milestone in the history of the CDI in its own right (Jackson-Maldonado et al., 1993). Dr Jackson-Maldonado, her *alma mater*, had to face multiple challenges to develop it; she did so with hardly any previous models, carrying out a true adaptation of the scale to the linguistic and cultural context of Mexico, introducing multiple modifications of the lexicon and its organization into lexical categories and routines, adapting them to the cultural and linguistic context. These modifications in the vocabulary list or in the routines and games have had a great influence on the versions made in Spain due to cultural and linguistic affinity. The following are among some of the novelties introduced by the Mexican version of the CDI.

In the first place, the Mexican version of the CDI (Jackson-Maldonado et al., 2003, 2005) extends the age of application of the form for First words and Gestures up to 18 months of age, to a couple of months later than in the original North American version (Fenson et al., 1993). The fundamental reason is to also be able to collect information on the number of words understood and gestures up to that point, something particularly useful in the exploration of babies living in disadvantaged socioeconomic environments. This modification would later be incorporated into the CDI North American version of 2007 (Fenson et al., 2007).

In the case of the inventory for older children (CDI-II Words and sentences), the Mexican version introduces modifications in the section on regular morphemes (forms of verbs). It includes different verb forms of the present in various conjugations, as well as those of the past and the imperative. However, it does not incorporate nominal bound morphemes, nor irregular forms and over-regularizations. The incorporation of person and conjugation variations would be something that inspired the elaboration of some aspects of other versions (Galician, European Spanish and Catalan).

Another novelty that appears in the version developed for Spanish (Jackson-Maldonado et al., 2003) is in the calculation of the average length of the three most complex utterances reported by parents (MLU3), which is counted in words, and not in morphemes (Jackson-Maldonado & Conboy, 2007). This greatly simplifies the calculation (and allows it to be automated), without losing rigour, and also shows a clear development. On the other hand, as we have commented previously, Spanish is a much richer language than English morphologically, making it more difficult to count the number of morphemes.

Regarding the score, the adaptation to Mexican Spanish also introduces some novelties, particularly in the computation of the sections of the second part of the inventory of First words and gestures for 8–18 months, which would later be incorporated into the CDI North American version (Fenson et al., 2007).

Beyond the modifications in the structure, content and scoring procedures, the Mexican version of the CDI (Jackson-Maldonado et al., 2003) indicates the usefulness of the parental inventory as a screening tool to identify children who may present delay in language development (late talk-

ers or language delayed children). To do this, the criterion of having less than 50 words and an absence of combinations at 24 months should be combined with other measures to be applied later and with other indicators, such as the presence of ear infections (6 in 2 years) and parental concern (Klee et al., 2000). Dr Jackson-Maldonado herself used the IDHC as an initial diagnostic tool for language delay (Jackson-Maldonado, 2004a, 2011), and later in the evaluation of language in premature children (Jackson-Maldonado et al., 2017; Calderón-Carrillo et al., 2018).

Dr Jackson-Maldonado, along with Thal and Acosta (Thal et al., 2000), also conducted one of the first studies on the validity of the CDI. This study inspired further studies on concurrent validity in versions developed in Spain (Perez-Pereira & Resches, 2011) and elsewhere.

Dr Jackson-Maldonado was also a pioneer in the elaboration of the short version of the IDHC (Jackson-Maldonado et al., 2013), which was the first done in Spanish following the directions of the North American version (Fenson et al., 2000), and which considerably shorten the application time.

But, beyond the influence of her own publications, Dr Jackson-Maldonado encouraged the creation of other versions, particularly those made in Spain in the different languages that exist: Galician, Spanish, Basque, Catalan, and the one made to be applied to children with Down syndrome. And this she did, not only from her position on the Editorial Board of the MacArthur Foundation but also, with great generosity, by providing support to those who requested it. During the VIIIth International Congress for the Study of Child Language of the IASCL that took place in San Sebastián in 1999, those of us who were starting to develop the inventories had a meeting with Donna Thal and Donna Jackson-Maldonado. This meeting was very enlightening for us and helped to promote the elaboration of the versions in Galician, Euskera, European Spanish, Catalan, and the adaptation for Down syndrome children.

Donna Jackson-Maldonado, one more of the KGNZ group

The instrument named *Komunikazio-garapena neurtzeko zerrenda* (KGNZ; Communicative Development Evaluation List; Barreña et al., 2008) is the adaptation to Euskera or Basque of the MacArthur-Bates Communicative Development Inventories or CDI (Fenson et al., 1993, 2007). The adaptation of the CDI-1 and CDI-2 questionnaires (ages 8–30 months) initiated in 2000 was quite a challenge for the KGNZ group of teachers, psychologists and linguists who launched themselves into the adventure of adapting an instrument designed for English to a non-indoeuropean, typologically very different language, spoken by a community of less than one million speakers, mainly Spanish-Basque or French-Basque bilinguals.

This process required discussion and coordination, but from the very start our group counted on the complicity of researchers committed to the adaptations of the CDI to Galician, Mexican Spanish, Iberian Spanish, and Catalan. Among them, Donna Jackson-Maldonado was a pillar, because of her contact with the group who designed the original CDI and of her experience in the adaptation to Mexican Spanish (Jackson-Maldonado et al., 2003). Furthermore, her publica-

tions on gestural, lexical and/or grammatical development constitute references in research on typical and atypical development (Jackson-Maldonado, 2004b).

She has always been close to the teams she worked with, a researcher friend who enjoys herself and makes enjoy the sharing her own and others' knowledge and results. For example, it was a pleasure to be able to discuss experiences in the adaptation of the CDI-III (García et al., 2014), while she was working on the Mexican CDI-III (Jackson-Maldonado, Marchman, Dale, & Rubio-Codina, 2022). In this sense, Dr Jackson-Maldonado was a KNGZ colleague on the other side of the ocean.

Galician CDI

The work to develop the Galician adaptation of the CDI (Inventario do Desenvolvemento de Habilidades Comunicativas IDHC) started at the very end of 1998. The meeting that Galician team had with Donna Jackson-Maldonado and Donna Thal at the IASCL congress in San Sebastián in July 1999 was invaluable help and a great push for its realization. In 2003 it was published the first normative results (Pérez Pereira & García Soto, 2003) for the IDHC-Words and Gestures and IDHC Words and Sentences, which were previously presented in several conferences. A few years later the short version was developed (Pérez-Pereira & Resches, 2007) and the validity study of the Galician CDI was published (Pérez-Pereira & Resches, 2011). Throughout this time, Dr Jackson-Maldonado's support was constant, as well as the support of the European Network Meetings on Communicative Development Inventories (EUNM-CDI) held in Dubrovnik (Croatia) every two years since 2006. Dr Jackson-Maldonado participated in one of these meetings as well. The last advance was the development of a web page for the parents to fill in the IDHC forms (short and extended) online and get the results of their children's communicative and linguistic development (<https://underisk.gal/t/idhc/>). Dr Jackson-Maldonado's help in the dissemination of the results obtained with the Galician CDI (as well as the adaptations to Euskera, European Spanish, Catalan, and children with Down syndrome) through the organization of thematic sections in different conferences, such as the IASCL in Berlin (2005) or in the AEAL congress that we had in Oviedo in 2007, was also a manifestation of her generous collaboration.

The adaptation of the CDI to Catalan

The work and support of Dr Jackson-Maldonado, Donna, was fundamental in the adaptation of the MacArthur-Bates CDI inventories to several languages, including Catalan. In this sense, the Spanish adaptation of Jackson-Maldonado et al. (2003) was decisive in the adaptation of the MCB CDI inventories into Catalan (Serrat-Sellabona et al., 2022). On the one hand, it was so because the characteristics of the adaptation to Mexican Spanish contributed significantly to the adaptation to the Catalan language. Thus, for example, the categories of the vocabulary list were mainly adapted from her proposal, as well as the morphosyntactic complexity section. On the other hand, Dr Jackson-Maldonado's role was also essential in the beginnings of the Catalan adaptation for another reason: Dr Jackson-Maldonado included

the Catalan team in a proposal for a joint presentation of several CDIs for the 10th International Congress for the Study of Child Language (Berlin, 2005), when the Catalan adaptation was just beginning. This inclusion in the presentation of the CDIs of several languages (Spanish-Mexican, Galician, Basque, French and Catalan), most of which had already completed their adaptation, gave the team confidence and was decisive in completing the data collection and standardization of the Catalan MCB-CDI. In this presentation, it was proposed to discuss the results of the participating CDIs in relation to the characteristics of the different adaptations and the characteristics of the languages studied. Thanks to Dr Jackson-Maldonado's initiative, the Catalan team were able to discuss several relevant aspects of their results and to assess the importance of continuing with the standardization of the inventories.

Down CDI

CDIs have been used to assess early language development not only in children with typical development, but also in children with different developmental disorders. However, CDIs do not always consider the linguistic and communicative development profile of these populations. Children with Down syndrome represent one of these cases. These children have a different developmental profile than typically developing children with a general delay in language development in relation to other areas (e.g., cognition), a delay increases as they get older. In addition, they present specific dissociations among different linguistic domains (e.g., comprehension vs. Production) or subdomains (e.g., lexicon vs. morphosyntax). On the other hand, their gestural communication is more advanced in relation to their language skills. This made it necessary to adapt the CDIs to the linguistic and communicative profile of children with DS. Finally, parents of children with developmental disorders may have different reporting styles than parents of children with typical development. This also makes it necessary to check the validity and reliability of CDIs in their use for the parents of these children.

Work to develop the adaptation of CDIs to children with Down syndrome began in 2003, and by 2006 was fully developed (Galeote, 2006; Soto et al., 2006). In 2010, the first data on the reliability and validity of the adaptation appeared (Galeote et al., 2010). The Spanish version of Jackson-Maldonado et al. (2003) was decisive in the adaptation of CDIs to this population. Dr Jackson-Maldonado played a significant role in this whole process.

Legacy/conclusion

As we have seen, Dr Donna Jackson-Maldonado marked a turning point in the study of native language acquisition, especially that of Spanish, and she was possibly the first psycholinguist in Mexico. Her research was done following international experimental protocols for the study of language and integrating neuropsychological metrics, norms, and assessments. She personified a researcher who perfectly understood the link between Psychology and Linguistics as well as the role of other areas of knowledge. Her work on the development of vocabulary in early childhood is clear proof

of that. Her research on children with different intellectual abilities, specifically those with Down syndrome, was also pivotal and helped many families feel noticed, appreciated, and considered for the first time by the science field in Mexico. She also did work with deaf children, and her interest in studying sign language rubbed off on several students.

But she also integrated theory and clinical practice from its very beginning. Theory and clinic have been intertwined in Dr Jackson-Maldonado's work, just in the way of authentic peer interaction. It was not a sole theoretical interest that motivated her approach to the clinical issues, nor a purely clinical interest that sustained her theoretical inquiry. Above all, it was an ethical commitment to children's individual differences and needs, possibly rooted in her undergraduate studies, the cause that enlightened much of her work.

From her first studies on deafness, going through her extensive research on child language disorders and that devoted to language abilities of children with Down syndrome, the theoretical explanations about the wide individual differences observed in these populations unfolded in parallel with two topics with strong clinical implications. On the one hand, a need to build up linguistically and sociocultural valid language assessment procedures and instruments for the monolingual Spanish-speaking population (Jackson-Maldonado, 2011, 2013; Jackson-Maldonado & Conboy, 2007; Jackson-Maldonado et al., 2003). On the other hand, the search for innovative, comprehensive, and culturally relevant interventions aimed at the populations under study (Calderón-Carrillo, Vecilla-Ramírez, Jackson-Maldonado, & Carrasco, 2015; Calderón-Carrillo et al., 2018; Jackson-Maldonado et al., 2017; Mendoza & Jackson-Maldonado, 2019).

Throughout her numerous studies on the phonological, grammatical, and discourse processes in children with language disorders (Jackson-Maldonado & Maldonado, 2016, 2017; Mejía-Villalobos & Jackson-Maldonado, 2017), or on the early predictors of persistent language delay among late talkers (Amaya-Arzaga & Jackson-Maldonado, 2021; Jackson-Maldonado, 2004a), an underlying question about the most discriminating and accurate language assessment procedures to address this population becomes evident. Her work highlights the close dependence between data and their elicitation methods, leading her to a strong defense of the use of a multidimensional and multi-method approach to clinical evaluation (Jackson-Maldonado, 2011; Jackson-Maldonado & Bárcenas-Acosta, 2006; Jackson-Maldonado & Maldonado, 2017). Dr Jackson-Maldonado's deep awareness of the linguistic and sociocultural diversity of the Mexican society and the wider Latin-American context, made her be extremely cautious about the use of standardized language assessment tests in monolingual Spanish-speaking children, a population for which adaptations are scarce and norms hardly representative (Jackson-Maldonado, 2011). Finally, she never disregarded the strong clinical implications of the well-known relationship between low-SES and language development (Jackson-Maldonado & Bárcenas-Acosta, 2006). Both through her academic writings and personal communications, Dr Jackson-Maldonado constantly warned us about the dangers of the sociocultural bias in the construction and standardization of language tests, as well as the risks of false diagnosis and the stigmatization that

it may entail (Jackson-Maldonado & Bárcenas-Acosta, 2006; Jackson-Maldonado et al., 2013).

The reciprocal interaction between theory and clinical practice in Dr Jackson-Maldonado's work also reached the field of intervention. Her theoretical-driven interest in analyzing the organization of linguistic knowledge and its affected components in children with language disorders became inseparable from its clinical implications (Jackson-Maldonado & Maldonado, 2015, 2016, 2017; Jackson-Maldonado et al., 2013; Roa-Rojas et al., 2016). Analogous to her positions regarding evaluation, Dr Jackson-Maldonado's perspective on intervention stands out for the respect for children's individual characteristics (Jackson-Maldonado, 1996), highlighting the need to base intervention strategies on language-specific information: "... many therapists simply translate programs and publications into Spanish without considering its specific structures and needs." (Jackson-Maldonado & Maldonado, 2017, p. 761).

Her last studies on the effects of hippotherapy on communication abilities in children with Down syndrome (Jackson-Maldonado, 2021) allowed her to combine a personal passion with her commitment to the search for interventions that may create functional and meaningful contexts for language learning. Both in this last case and those on the effects of different intervention strategies on language development in preterm children (Calderón-Carrillo et al., 2015, 2018; Jackson-Maldonado et al., 2017). Dr Jackson-Maldonado assumed a perspective that in a certain way moved her away from the traditional approaches to speech and language therapy. These intervention proposals conceive the child from a comprehensive view, where language and cognition remain inextricably linked with movement (i.e., motor development) and emotion.

Although she is no longer with us in person and leaves behind a large void as a researcher, supervisor, and friend, we will always remember her with a smile, an anecdote, her research, and all the lessons she left us.

Authors' contributions

AA, EAM, EDI and LA conceived of the study and designed the paper; all the Authors wrote a part of the first draft of the manuscript. AA, BC, CR, EAM, GSC, LA and MPP revised the manuscript. All authors approved the final version of the manuscript and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of interests

The authors declare that they have no conflict of interest.

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References

- Alarcón Neve, L., Guzmán Molina, M. C. G., & Jackson-Maldonado, D. (2011). *Cohesión anafórica en cuentos generados por niños mayores y adolescentes*. In M. Alvarado, M. Calderón-Carrillo, G. Guerrero, K. Hess, & S. Vernon (Eds.), *Desarrollo lingüístico y cultura escrita: Puntos, acentos, historias, metáforas y argumentos*. Universidad Autónoma de Querétaro-Porrúa.
- Amaya-Arzaga, A., & Jackson-Maldonado, D. (2021). La relación de gestos y lenguaje en niños con retraso inicial del lenguaje: Un estudio en dos tiempos. *Signos Lingüísticos*, 17(33), 100–132. <https://signoslinguisticos.izt.uam.mx/index.php/SL/article/view/302>
- Auza Benavides, A., Jackson-Maldonado, D., & Maldonado Soto, R. (1998). Estrategias de productividad morfológica en el niño de tres a tres años y medio: El caso de los nombres de ocupaciones. *Función*, 18, 35–53. <http://148.202.18.157/sitios/publicacionesite/ppperiod/funcion/pdf/17-18/auza.pdf>
- Barreña, A., García, I., Ezeizabarrena, M. J., Almgren, M., Arratibel, N., Olano, I., et al. (2008). *(MacArthur-Bates Communicative Development Inventories adapted to Basque. User's guide and technical handbook) MacArthur-Bates komunikazio garapena neurtzeko zerrenda euskarara egokitua Erabiltzaileentzako gida eta eskuliburu tekniko*. Universidad del País Vasco.
- Bates, E., Benigni, E., Bretherton, I., Camaioni, L., & Volterra, V. (1979). *The emergence of symbols. Cognition and communication in infancy*. Academic Press.
- Bates, E., Bretherton, I., & Snyder, L. (1988). *From first words to grammar. Individual differences and dissociable mechanisms*. Cambridge University Press.
- Bates, E., Dale, P. S., & Thal, D. (1995). Individual differences and their implications for theories of language development. *The Handbook of Child Language*, 30, 96–151. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.139.3528&rep=rep1&type=pdf>
- Bruner, J. (1983). *Child's talk. Learning to use language*. Oxford University Press.
- Calderón-Carrillo, M., Avecilla-Ramírez, G. N., Jackson-Maldonado, D., & Carrasco, O. H. (2015). *Efectos de estimulación temprana sobre el desarrollo de lenguaje de bebés prematuros*. In R. Bowater (Ed.), *Investigación Cuantitativa y la Estadística en la UAQ*. Universidad Autónoma de Querétaro.
- Calderón-Carrillo, M., Ricardo-Garcell, J., Avecilla, G., Jackson-Maldonado, D., Cycyk, L., & Garza, T. (2018). Los padres como promotores del desarrollo de lenguaje de bebés prematuros: Una propuesta de intervención temprana. *Actualidad en Psicología*, 32, 51–63. <https://doi.org/10.15517/ap.v32i124.30449>
- Camaioni, L., Castelli, M. C., Longobardi, E., & Volterra, V. (1991). A parent report instrument for early language assessment. *First Language*, 11(3), 345–359. <https://doi.org/10.1177/014272379101103303>
- Carlier, M., Harmony, T., Mendoza-Montoya, O., Marroquin, J. L., Jackson-Maldonado, D., & Ricardo-Garcell, J. (2016). Electrophysiological auditory response to acoustically modified syllables in preterm and full term infants. *Journal of Neurolinguistics*, 38, 14–25. <https://doi.org/10.1016/j.jneuroling.2015.10.002>
- Carrasco-Ortiz, H., Velázquez Herrera, A., Jackson-Maldonado, D., Avecilla Ramírez, G. N., Silva Pereyra, J., & Wicha, N. (2017). The role of language similarity in processing second language morphosyntax: Evidence from ERPs. *International Journal of Psychophysiology*, 117, 91–110. <https://doi.org/10.1016/j.ijpsycho.2017.04.008>
- Caselli, M. C., Bates, E., Casadio, P., Fenson, J., Fenson, L., Sanderl, L., et al. (1995). A cross-linguistic study of early lexical development. *Cognitive Development*, 10, 159–199. [https://doi.org/10.1016/0885-2014\(95\)90008-X](https://doi.org/10.1016/0885-2014(95)90008-X)
- Caselli, M., & Casadio, P. (1995). *Il primo vocabolario del bambino*. Franco Angeli.
- Chaires, J. H., Jackson-Maldonado, D., & Ortiz, H. C. (2021). Uso del presente de subjuntivo en niños con Trastorno Específico del Lenguaje. *Revista de Logopedia, Foniatría y Audiología*, 41(3), 107–116. <https://doi.org/10.1016/j.rlfa.2020.02.002>
- Díez-Itza, E., Fernández-Urquiza, M., Antón, A., Martínez, V., Jackson-Maldonado, D., & MacWhinney, B. (2017). Patterns of morphological error in neurodevelopmental disorders: Evidence from cross-syndrome comparisons of Williams, Down and Fragile X Syndromes. In *Presentation at IASCL. 2017. International association for the study of child language congress*.
- Fenson, L., Dale, P., Reznick, J. S., Thal, D., Bates, E., Hartung, J., et al. (1993). *MacArthur Communicative Inventories: User's guide and technical manual*. Singular Publishing Group.
- Fenson, L., Marchman, V. A., Thal, D., Dale, P. S., Reznick, J. S., & Bates, E. (2007). *The MacArthur-Bates Communicative Development Inventories: User's guide and technical manual* (2nd edition). Baltimore: Paul H. Brookes.
- Fenson, L., Pethick, S., Renda, C., Cox, J. L., Dale, P. S., & Reznick, J. S. (2000). Short-form versions of the MacArthur Communicative Development Inventories. *Applied Psycholinguistics*, 21, 95–115. <https://doi.org/10.1017/S0142716400001053>
- Friend, M., & Keplinger, M. (2003). An infant-based assessment of early lexicon acquisition. *Behavior Research Methods*, 35(2), 302–309.
- Galeote, M. (2006). Adaptación de los inventarios de desarrollo comunicativo MacArthur-Bates para el estudio del desarrollo del lenguaje en niños con síndrome de Down. *Revista de Atención Temprana*, 9(1), 4–16.
- Galeote, M., Rey, R., Checa, E., & Sebastián, E. (2010). El desarrollo de la morfosintaxis en niños con síndrome de Down: Primeros datos normativos [The development of morphosyntax in children with Down syndrome: First normative data]. *Revista Síndrome de Down*, 27, 138–148. <https://doi.org/10.3758/bf03202556>
- García, I., Barreña, A., Ezeizabarrena, M. J., Almgren, M., Arratibel, N., & Barnes, J. (2014). Haur euskaldunen komunikazio garapena neurtzen 30-50 hilabete bitartean: MacArthur-Bates CDI-III tresnaren euskal bertsioa [Assessing the communicative development of 30- to 50-month-old Basque children: The Basque version of the MacArthur-Bates CDI-III]. *Uztaro*, 88, 33–72.
- Jackson-Maldonado (1989a). *Una palabra: Multiplicidad de intenciones y funciones*. Tesis de doctorado, El Colegio de México (unpublished). <http://hdl.handle.net/20.500.11986/COLMEX/10004310>.
- Jackson-Maldonado, D. (1989). *Desarrollo del español como primera lengua*. In G. Waldegg (Ed.), *Procesos de Enseñanza y Aprendizaje II, Vol. 1*
- Jackson-Maldonado, D. (1992). El lenguaje en el segundo año de vida: Diferencias individuales. *Revista de Latina de Pensamiento y Lenguaje*, 1, 33–49. <https://donna-jackson.weebly.com/uploads/2/7/7/5/2775743/difind.pdf>
- Jackson-Maldonado, D. (1996). Rehabilitación y terapia de lenguaje: Aportes desde la adquisición del lenguaje. In F. Ostrosky-Solis, A. Ardila, & R. Chayo (Eds.), *Rehabilitación Neuropsicológica*. México: Fondo de Cultura Económica.
- Jackson-Maldonado, D. (1999). Early language assessment for Spanish-speaking children: Border realities. In T. Fletcher, & C. Bos (Eds.), *Social integration of children with disabilities and their families: Blending U.S. and Mexican perspectives*. Bilingual Press.
- Jackson-Maldonado, D. (2002). Rehabilitación y terapia de lenguaje: Aportes desde la adquisición del lenguaje. In A. Ostrosky-Solis, A. Ardila, & R. Chayo (Eds.), *Daño Cerebral y su Rehabilitación*.

- Nuevos Tratamientos Neuropsicológicos*. American Book Store y Teletón.
- Jackson-Maldonado, D. (2004a). El retraso del lenguaje en niños mexicanos: Vocabulario y gestos. *Anuario de Psicología*, 35(2), 257–278. <https://doi.org/10.1344/%25x>
- Jackson-Maldonado, D. (2004b). Verbal morphology and vocabulary in monolinguals and emergent bilinguals. In B. Goldstein (Ed.), *Bilingual language development and disorders in Spanish-English speakers*. Brookes.
- Jackson-Maldonado, D. (2011). La identificación del Trastorno Específico de Lenguaje en niños hispano- hablantes por medio de pruebas formales e informales. *Revista Neuropsicología, Neuropsiquiatría y Neurociencias*, 11(1), 33–50. <https://dialnet.unirioja.es/descarga/articulo/3640853.pdf>
- Jackson-Maldonado, D. (2012). Verb morphology and vocabulary in monolinguals, emerging bilinguals and monolingual children with primary language impairment. In B. Goldstein (Ed.), *Bilingual language development and disorders in Spanish-English speakers* (2nd edition, pp. 153–173). Brookes.
- Jackson-Maldonado, D. (2013). MacArthur-Bates communicative development inventories. In C. Chapelle (Ed.), *The encyclopedia of applied linguistics* (pp. 1–4). Blackwell.
- Jackson-Maldonado, D. (2021). Hippotherapy and the communicative abilities of children with down syndrome: A preliminary study. *Communication Disorders Quarterly*, 42(2), 81–92. <https://doi.org/10.1177/1525740119870769>
- Jackson-Maldonado, D., & Bárcenas-Acosta, R. P. (2006). Assessing early communicative abilities in Spanish-speaking children from low-SES families. *Zero to Three*, 27(1), 22. <https://donna.jackson.weebly.com/uploads/2/7/7/5/2775743/zero.to.three.pdf>
- Jackson-Maldonado, D., Bárcenas-Acosta, R. P., & Alarcón Neve, L. J. (2014). Variabilidad morfosintáctica en las narrativas de niños con Trastorno Específico de Lenguaje. In R. Barriga (Ed.), *Las narrativas y su impacto en el desarrollo lingüístico infantil*. El Colegio de México. <http://www.weebly.com/uploads/2/7/7/5/2775743/jackson-maldonadocorregido.pdf>
- Jackson-Maldonado, D., & Conboy, B. (2007). Utterance length measures for Spanish-speaking toddlers: The morpheme vs. word issue revisited. In J. G. Centeno, L. K. Obler, & R. Anderson (Eds.), *Studying communication disorders in Spanish speakers: Theoretical, research & clinical aspects* (pp. 142–155). Multilingual Matters.
- Jackson-Maldonado, D., de Santiago, B., & Sánchez Aguilar, N. (2010). Verbal and non-verbal requests in Spanish-speaking children with Down Síndrome. *Down Syndrome Research and Practice*, 12(2), 98–102. <https://doi.org/10.3104/reports.2102>
- Jackson-Maldonado, D., Peña, E., & Aghara, R. (2011). Funciones de lenguaje y tipos de palabra en la interacción de madres y sus hijos e hijas. In C. Rojas-Nieto, & D. Jackson-Maldonado (Eds.), *Interacción y uso lingüístico en el desarrollo de la lengua materna* (pp. 27–62). Universidad Nacional Autónoma de México – Universidad Autónoma de Querétaro.
- Jackson-Maldonado, D., Galeote, M., & Flores, F. (2019). The relationship between the lexicon and grammar in Spanish-speaking children with Down síndrome. In E. Aguilar-Mediavilla, L. Buil-Legaz, R. López-Penadés, V. Sánchez-Azanza, & D. Adrover-Roig (Eds.), *Atypical language development in romance languages* (pp. 201–218). John Benjamins.
- Jackson-Maldonado, D., & Maldonado, R. (2001). Determinaciones semánticas de la flexión verbal en la adquisición temprana del español. In C. Rojas-Nieto, & L. De León Pasquel (Eds.), *La adquisición de la lengua materna, Español, lenguas mayas y euskera* (pp. 165–200). Universidad Nacional Autónoma de México.
- Jackson-Maldonado, D., & Maldonado, R. (2015). La complejidad sintáctica en niños con y sin Trastorno Primario de Lenguaje. In I. Rodríguez Sánchez, & E. Vázquez (Eds.), *Lingüística Funcional* (pp. 253–301). Universidad Autónoma de Querétaro.
- Jackson-Maldonado, D., & Maldonado, R. (2016). *El uso de conectores en niños con y sin Trastorno del Lenguaje*. <http://www.ama.org.mx/wp-content/uploads/2014/02/Maldonado.05.pdf>
- Jackson-Maldonado, D., & Maldonado, R. (2017). Grammaticality differences between Spanish-speaking children with Specific/Primary Language Impairment (SLI/PLI) and their typically developing peers. *International Journal of Language and Communication Disorders*, 52(6), 750–765. <https://doi.org/10.1111/1460-6984.12312>
- Jackson-Maldonado, D., Maldonado, R., & Thal, D. (1998). Reflexive and middle markers in early child language acquisition. *First Language*, 18, 403–429. <https://doi.org/10.1177/014272379801805407>
- Jackson-Maldonado, D., Marchman, V. A., & Fernald, L. C. H. (2013). Short-form versions of the Spanish MacArthur-Bates Communicative Development Inventories. *Applied Psycholinguistics*, 34(4), 837–868. <https://doi.org/10.1017/S0142716412000045>
- Jackson-Maldonado, D., Marchman, V. A., Dale, P., & Rubio-Codina, M. (2022). The MacArthur-Bates CDI-III for Spanish-speaking Children. *PsyArXiv*, <https://doi.org/10.31234/osf.io/7cw4v>
- Jackson-Maldonado, D., & Pérez Pereira, M. (2018). Diferencias individuales en el desarrollo del vocabulario temprano y uso de términos mentales. ¿Consecuencias a largo plazo de las diferencias individuales iniciales? In C. Rojas Nieto, & V. Oropeza Gracia (Eds.), *Diferencias Individuales en la adquisición del lenguaje. Factores Lingüísticos, cognitivos y socioambientales* (pp. 81–100). Universidad Nacional Autónoma de México.
- Jackson-Maldonado, D., Pérez-Pereira, M., Avelilla Ramírez, G., Cycyk, L., Calderón Carrillo, M., Fernández-Trisac, J., et al. (2017). Effects of early intervention on the language of Mexican and Galician preterm infants. *Journal of Neonatology and Clinical Pediatrics*, 4(18), 1–9. <https://doi.org/10.24966/ncp-878x/100018>
- Jackson-Maldonado, D., & Thal, D. (1994). Lenguaje y cognición en los primeros años de vida: Resultados preliminares. *Revista Psicología y Sociedad*, 21, 21–27.
- Jackson-Maldonado, D., Thal, D., Marchman, V., Bates, E., & Gutierrez-Clellen, V. (1993). Early lexical development in Spanish-speaking infants and toddlers. *Journal of Child Language*, 20(3), 523–549. <https://doi.org/10.1017/S0305000900008461>
- Jackson-Maldonado, D., Thal, D., Marchman, V., Fenson, L., Newton, T., & Conboy, B. (2003). *Inventarios del Desarrollo de Habilidades Comunicativas. User's guide and technical manual*. Brookes.
- Jackson-Maldonado, D., Thal, D., Marchman, V., Newton, T., Fenson, L., & Conboy, B. (2005). *Inventarios MacArthur-Bates del Desarrollo de Habilidades Comunicativas. Manual Moderno, México*.
- Jackson-Maldonado, D., Thal, D., & Muzinek, K. (1997). Gestos comprensión y producción del lenguaje: Predictores del desarrollo lingüístico. In R. Barriga, & M. Martín Butragueño (Eds.), *Varia lingüística y literaria. 50 años del CELL* (pp. 307–325). El Colegio de México.
- Klee, T., Pearce, K., & Carson, D. K. (2000). Improving the positive predictive value of screening for developmental language disorder. *Journal of Speech Language and Hearing Research*, 43(4), 821–833. <https://doi.org/10.1044/jslhr.4304.821>
- Lara, W., Rojas Nieto, C., Díaz, C., & Jackson-Maldonado, D. (2015). ¿Qué problemas fuente autorreparan los niños con Trastorno Primario de Lenguaje? El él, el súsape, el pícipe. *Estudios de Lingüística Aplicada*, 33(61), 165–198. <https://doi.org/10.22201/enallt.01852647p.2015.61.156>
- Law, J., & Roy, P. (2008). Parental report of infant language skills: A review of the development and application of the communicative development inventories.

- Child and Adolescent Mental Health*, 13(4), 198–206. <https://doi.org/10.1111/j.1475-3588.2008.00503.x>
- Mancilla-Martínez, J., Pan, B. A., & Vagh, S. B. (2011). Assessing the productive vocabulary of Spanish–English bilingual toddlers from low-income families. *Applied Psycholinguistics*, 32(2), 333–357. <https://doi.org/10.1017/S0142716410000433>
- Mejía-Villalobos, A. S., & Jackson-Maldonado, D. (2017). Procesos fonológicos en una prueba de repetición de palabras en niños con trastorno específico del lenguaje. *Revista de Logopedia, Foniatría y Audiología*, 37(4), 188–197. <https://doi.org/10.1016/j.rlfa.2017.06.002>
- Mendoza, E., & Jackson-Maldonado, D. (2019). Word reading in Mexican deaf signers. *Revista de Logopedia, Foniatría y Audiología*, 40(1), 4–11. <https://doi.org/10.1016/j.rlfa.2019.05.003>
- Pérez Pereira, M., & García Soto, X. R. (2003). El diagnóstico del desarrollo comunicativo en la primera infancia: Adaptación de las escalas MacArthur al gallego. *Psicothema*, 15(3), 352–361. <https://reunido.uniovi.es/index.php/PST/article/view/8078>
- Pérez-Pereira, M., & Jackson-Maldonado, D. (2018). Diferencias individuales en el desarrollo del vocabulario temprano y uso de términos mentales en narraciones. In C. Rojas (Ed.), *Diferencias individuales en la adquisición del lenguaje* (pp. 81–99). Universidad Nacional Autónoma de México.
- Pérez-Pereira, M., & Resches, M. (2007). Elaboración de las formas breves del Inventario de Desenvolvimiento de Habilidades Comunicativas. Datos normativos y propiedades psicométricas. *Infancia y Aprendizaje*, 30(4), 565–588. <https://doi.org/10.1174/021037007782334292>
- Pérez-Pereira, M., & Resches, M. (2011). Concurrent and predictive validity of the Galician CDI. *Journal of Child Language*, 38(1), 121–140. <https://doi.org/10.1017/S0305000909990262>
- Roa-Rojas, P., Jackson-Maldonado, D., Silva-Pereyra, S., & Villa-Rodríguez, M. (2016). Explicit and implicit learning in Spanish-speaking children with SLI. *Peer J*, 2–45. <https://doi.org/10.7287/peerj.preprints.1675v1>
- Serrat-Sellabona, E., Aguilar-Mediavilla, E., Sanz-Torrent, M., Andreu, L., Amadó, A., Badia, I., et al. (2022). *Inventaris del desenvolupament d'habilitats comunicatives MacArthur-Bates en català. Guia d'ús i manual tècnic*. UOC.
- Simon-Cerejido, G., Conboy, B., & Jackson-Maldonado, D. (2020). El derecho humano de ser multilingüe: Recomendaciones para logopedas [The human right of being multilingual: Recommendations for speech-language pathologists]. *Revista de Logopedia, Foniatría y Audiología*, 40(4), 178–186. <https://doi.org/10.1016/j.rlfa.2020.09.001>
- Soto, P., Pulido Bedoya, L., Galeote Moreno, M. A., Serrano, A., Rey, R., & Martínez-Roa, P. (2006). Un nuevo instrumento para evaluar el desarrollo comunicativo y lingüístico de niños con síndrome de Down. *Revista Síndrome de Down: Revista Española de Investigación e Información sobre el Síndrome de Down*, 88, 20–26.
- Soto Martínez, B., & Jackson-Maldonado, D. (1998). Artículo indefinido 'un' y definido 'el': Una aproximación en niños de 28 meses. In *Memorias del IV Encuentro de Lingüística en el Noroeste*. Universidad de Sonora.
- Thal, D., Jackson-Maldonado, D., & Acosta, D. (2000). Validity of a parent-report measure of vocabulary and grammar for Spanish-speaking toddlers. *Journal of Speech, Language and Hearing Research*, 43(5), 1087–1100. <https://doi.org/10.1044/jslhr.4305.1087>
- Tomasello, M. (2003). *Constructing a language. A usage-based theory of language acquisition*. Cambridge: Harvard University Press.
- Tomasello, M., Kruger, A. C., & Ratner, H. H. (1993). Cultural learning. *Behavioral and Brain Sciences*, 16, 495–552. <https://doi.org/10.1017/S0140525X0003123X>