

GALICIAN CDI: CROSS-LINGUISTIC APPLICATIONS AND LONGITUDINAL STUDIES WITH LOW-RISK PRETERM CHILDREN

MIGUEL PÉREZ-PEREIRA¹, ANASTASHIA OGNEVA²

¹ Department of Developmental and Educational Psychology, Institute of Psychology, University of Santiago de Compostela, Santiago de Compostela, Spain

² Department of Language and Culture, Center for Language, Brain, and Learning, UiT – The Arctic University of Norway, Tromsø, Norway

Corresponding author: Miguel Pérez-Pereira, miguel.perez.pereira@usc.es

Received: 28.10.2025

Accepted: 27.01.2026

ORIGINAL RESEARCH ARTICLE

UDK: 81'23-053.32:81'246.2

DOI: <https://doi.org/10.31299/hrri.62.si.8>

Abstract: *The Galician version of the MacArthur-Bates Communicative Development Inventories (Inventario do Desenvolvemento de Habilidades Comunicativas, IDHC) has been used over the past two decades to investigate early communicative and linguistic development in children across Galicia, a bilingual region of Spain. Two research topics have been explored within the framework of the European Network on the Communicative Development Inventory (EUNM-CDI). The first research topic involved cross-linguistic comparisons: Studies comparing Galician with Basque and European Portuguese revealed similar developmental trajectories in vocabulary and grammar. A large-scale study comparing ten European languages found gender differences in early communicative development. The second topic of research employed the Galician CDI in a longitudinal project involving low-risk preterm children, whose language development was monitored from infancy to nine years of age. Results showed that healthy preterm children do not differ significantly from their full-term peers in terms of language development when medical complications are absent, and that cognitive, communicative, and temperamental factors are the best predictors of later linguistic outcomes. The present article provides an overview of these two topics of research, synthesising their main findings and highlighting their contribution to our understanding of early language development in bilingual and minority-language contexts.*

Keywords: *Galician CDI; low-risk preterm children; longitudinal language development*

INTRODUCTION

Over the past 20 years, the European Network on the MacArthur-Bates Communicative Developmental Inventories (EUNM-CDI) has contributed to the adaptation of the CDI to several languages, as well as to its application to different research topics. The Galician version of the CDI – *Inventario do Desenvolvemento de Habilidades Comunicativas* (IDHC; Pérez-Pereira & García Soto, 2003) – has contributed to two main research topics. The first research topic has been the application of the Galician CDI to cross-linguistic studies, positioning Galician alongside other European languages and demonstrating that the CDI can be effectively used in bilingual and minority-language contexts. The second research topic

has applied the instrument to compare language acquisition in low-risk preterm and full-term children, as well as to examine how biological and environmental factors shape early communicative and linguistic outcomes.

In this paper, we aim to offer an overview of research topics that have incorporated the Galician CDI. Rather than presenting new empirical data, this contribution offers a concise synthesis of all previously published work employing the Galician CDI and highlights their main results. Given the space limitations of the special issue, the discussion focuses on the most general findings and their contribution to the field, without attempting an exhaustive comparison with the broader international literature.

METHOD

Cross-linguistic studies

The first research topic in which the Galician CDI was applied focused on cross-linguistic studies. These studies used normative data from the Galician CDI and compared them with equivalent CDI datasets from other languages. Depending on the specific research question, different comparative datasets were used across studies. All studies relied on published CDI adaptations and followed comparable procedures for assessing early lexical and grammatical development.

Preterm studies

The second research topic that employed the Galician CDI focused on language development in low-risk preterm children. The primary goal was to determine whether these children experienced delays in their linguistic development, as well as to identify the cognitive, communicative, and environmental factors that influence their developmental trajectories.

A total of 150 low-risk preterm and 50 full-term children born in Galician hospitals were followed longitudinally. The range of the gestational age (GA) of preterm children was 26-36 weeks (mean GA = 32.60). All preterm participants did not present any major medical, neurological, or sensory complications, representing a healthy preterm population. The children were followed from birth until the age of nine years. The Galician CDI was used to assess their language development at 10, 22, and 30 months, along with measures of cognitive development and temperament (Pérez-Pereira, 2021; Pérez-Pereira et al., 2016). This design allowed for the analysis of communicative and linguistic trajectories during the second and third years of life, as well as for the evaluation of long-term outcomes. Later work also explored other topics, such as behavioural problems in preterm children, or executive functions and different language abilities such as reading and writing skills, although these studies did not include Galician CDI data.

RESULTS

Cross-linguistic studies

Early cross-linguistic research with the Galician CDI aimed to explore the extent to which this tool could be applied to minority languages and contribute to comparative analyses across Europe. Initial studies compared lexical and grammatical development between Galician and Basque children (Arratibel et al., 2005; Pérez-Pereira et al., 2006). Despite typological and sociolinguistic differences, children acquiring Galician and Basque showed similar developmental trajectories in early lexical and grammatical development, based on assessments carried out with their respective CDI adaptations. These similarities involved not only overall vocabulary growth, but also lexical composition, with early vocabularies in both languages being initially dominated by nouns and showing a gradual increase in verbs and grammatical morphology as vocabulary size expanded.

Nevertheless, some cross-linguistic differences were observed. Galician children tended to show slightly higher levels of lexical development, a pattern possibly related to language proximity in bilingual contexts. While Galician and Spanish are both Romance languages, and therefore, share a substantial amount of cognate vocabulary, Basque and Spanish are typologically unrelated languages with minimal lexical overlap. This difference in lexical similarity may facilitate early lexical recognition and reporting in Galician, while posing greater phonological and lexical demands in Basque. In both languages, the production of grammatical suffixes is related to vocabulary size (i.e., the critical mass hypothesis). Specifically, the productive use of regular grammatical suffixes did not emerge until children reached a lexical repertoire of approximately 100 produced words, marking an initial threshold for the onset of morphosyntactic development.

A subsequent study examined lexical and morphosyntactic abilities in toddlers aged 16 to 30 months who were acquiring European Portuguese and Galician (Viana et al., 2017). This large-scale analysis revealed strikingly similar developmental trajectories in vocabulary and grammar. Gali-

Galician children produced slightly larger vocabularies on average, but the sequence of morphological emergence was the same in both groups: gender marking appeared first, followed by plural and past-tense forms. Moreover, correlations between lexical size and morphological or syntactic measures were comparable across languages, supporting the continuous growth of vocabulary and grammar.

The most comprehensive cross-linguistic contribution including the Galician CDI appeared in a large-scale study examining gender differences in early communicative development across ten language communities (Eriksson et al., 2012). The results of this study showed that girls tended to have slightly larger vocabularies and more advanced communicative skills than boys, a pattern consistent across languages. The inclusion of Galician data confirmed that developmental tendencies observed in major European languages also occur in minority bilingual settings.

Overall, the cross-linguistic studies demonstrated the robustness of the CDI as a cross-cultural tool and established the utility of the Galician adaptation. Moreover, they provided a foundation for subsequent applied research, showing that the CDI can be effectively used to investigate both universal and language-specific developmental features, as well as unique populations.

Studies with low-risk preterm children

Overall, the longitudinal findings point to a consistent conclusion: low-risk preterm children show no significant differences in language development compared to their full-term peers, when serious medical complications are excluded and age correction is applied. Across studies, gestational age itself was not a reliable predictor of communicative, lexical, or grammatical development.

Early analyses (Pérez-Pereira et al., 2011, 2013) demonstrated comparable communicative profiles between preterm and full-term infants at 10 months, although biomedical (e.g., Apgar score) and environmental factors (e.g., maternal education) showed modest associations with performance among preterm children. Subsequent

follow-up studies extended the observations to 30 months, revealing that low-risk preterm children show a similar linguistic development to that of full-term children, and that cognitive development and early linguistic measures were the strongest predictors of later vocabulary and grammar (Pérez-Pereira et al., 2014). Temperament was also found to be a relevant factor: positive affectivity and extroversion were associated with richer expressive vocabularies and faster language growth, suggesting that socio-emotional engagement supports communicative development (Pérez-Pereira et al., 2016).

Further analyses of vocabulary development (Pérez-Pereira & Cruz, 2018) revealed identical patterns of lexical composition in preterm and full-term children. In both groups, development progressed from early vocabularies dominated by personal and social pragmatically-oriented words to a predominance of nouns and predicates (verbs and adjectives) with primarily referential functions. This was followed by a relative increase in closed-class items, including function words and grammatical markers, as the vocabulary size increased.

Long-term follow-up at 60 months (Pérez-Pereira, 2021) indicated that healthy preterm children are not at increased risk of language delay, and that persistent delays, when present, were better explained by earlier cognitive and linguistic scores, rather than by gestational factors. Recent research (Ogneva & Pérez-Pereira, 2023) refined these findings by distinguishing predictors of vocabulary growth between groups: while gestures predicted later lexical size for full-term children, participation in social routines and games was especially predictive for preterm children. In both groups, early word production remained the most stable predictor of later grammatical competence.

In summary, these studies provide evidence on linguistic performance in low-risk preterm children. Their language trajectories are similar to those of full-term peers, and variability in their outcomes is explained primarily by cognitive, temperamental, and environmental factors, rather than by gestational age.

CONCLUSIONS

The research topics using the Galician CDI illustrate the versatility of the instrument for investigating early language development across different linguistic and developmental contexts. Together, the cross-linguistic and preterm studies demonstrate that, when environmental, cognitive, and social factors are taken into account, early communicative development follows broadly similar trajectories across languages and populations. They show that the CDI can reliably capture both universal developmental patterns and subtle individual differences, confirming its value as a shared framework for understanding early language acquisition.

Building on the existing longitudinal data, future studies should aim to explore the relationship between early Galician CDI measures and later academic, cognitive, and social outcomes during the school years. The Galician CDI will also continue to serve as a model for adapting the instrument to other bilingual contexts, ensuring that linguistic diversity remains central to the EUNM-CDI's ongoing effort to document the entire range of early communicative development.

Acknowledgments

The research cited in this manuscript was funded by the Ministerio de Ciencia e Innovación of the Spanish Government (Grants PSI2008-03905 and PSI2011-23210, to the first author).

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