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Associations between Romani (L1) and Slovene (L2) proficiency in early schooling: quantitative evidence from Slovenia

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Abstract: This paper presents the results of a pilot study investigating the language proficiency of Romani children before they start school and during their first three years of primary education. The children were tested in their first language (Romani, L1) and the language of instruction (Slovene, L2). The testing included 29 children from two Slovene regions: fourteen were from Prekmurje (north-east Slovenia) and fifteen were from Bela krajina (southeast Slovenia). An oral language instrument adapted for Romani was used to assess comprehension, word recall, syntax and text comprehension. Composite indices were created for L1 and L2 knowledge. Simple regression analysis revealed a weak to moderate positive correlation between L1 and L2 proficiency, though this was not statistically significant. In the moderated regression model, this positive correlation was statistically significant after adjusting for region, with no evidence of a difference in magnitude between the two regions. At an average level of L1 proficiency, average L2 achievement is higher in Prekmurje. These results suggest that systematic development of L1 can support L2 acquisition. Further research is needed on a larger sample, as well as on the effect of testing measures, and additional linguistic training is required for employees who teach Romani children in Slovene schools.

Keywords: Roma children, Slovenia, Romani as L1, Slovene as L2, influence of L1 knowledge on L2

Zusammenfassung: Dieser Artikel präsentiert die Ergebnisse einer Pilotstudie, in der die Sprachkenntnisse von Roma-Kindern vor ihrer Einschulung und während ihrer ersten drei Jahre in der Grundschule untersucht wurden. Die Kinder wurden in ihrer Muttersprache (Romani, L1) und der Unterrichtssprache (Slowenisch, L2)

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getestet. An der Untersuchung nahmen 29 Kinder aus zwei slowenischen Regionen teil: 14 Kinder stammten aus Prekmurje (Nordosten Sloweniens) und 15 Kinder aus Bela krajina (Südosten Sloweniens). Zur Bewertung des Sprachverständnisses, des Wortgedächtnisses, der Syntax und des Textverständnisses wurde ein für Romani angepasster mündlicher Sprachtest verwendet. Es wurden zusammengesetzte Indizes für die Kenntnisse in L1 und L2 erstellt. Eine einfache Regressionsanalyse ergab eine schwache bis mäßige positive Korrelation zwischen L1- und L2-Kenntnissen, die jedoch statistisch nicht signifikant war. Im moderierten Regressionsmodell war diese positive Korrelation nach Bereinigung um regionale Unterschiede statistisch signifikant, wobei keine Hinweise auf Unterschiede im Ausmaß zwischen den beiden Regionen vorlagen. Bei einem durchschnittlichen Niveau der L1-Kenntnisse sind die durchschnittlichen L2-Leistungen in Prekmurje höher. Diese Ergebnisse deuten darauf hin, dass die systematische Entwicklung der L1 den Erwerb der L2 unterstützen kann. Weitere Untersuchungen mit einer größeren Stichprobe sowie zur Wirkung von Testmaßnahmen sind erforderlich, und für Mitarbeiter, die Roma-Kinder in slowenischen Schulen unterrichten, ist eine zusätzliche Sprachausbildung erforderlich.

Schlüsselwörter: Roma-Kinder, Slowenien, Romani als L1, Slowenisch als L2, Wirkung der L1-Kenntnisse auf L2

Resumen: Este artículo presenta los resultados de un estudio piloto que investiga el dominio del lenguaje de los niños romaníes antes de comenzar la escuela y durante sus tres primeros años de educación primaria. Se evaluó a los niños en su primera lengua (romaní, L1) y en la lengua de instrucción (esloveno, L2). En la prueba participaron 29 niños de dos regiones eslovenas: catorce eran de Prekmurje (noreste de Eslovenia) y quince de Bela krajina (sureste de Eslovenia). Se utilizó un instrumento de evaluación oral adaptado al romaní para evaluar la comprensión, la memorización de palabras, la sintaxis y la comprensión de textos. Se crearon índices compuestos para los conocimientos de L1 y L2. El análisis de regresión simple reveló una correlación positiva débil a moderada entre el dominio de la L1 y la L2, aunque no fue estadísticamente significativa. En el modelo de regresión moderada, esta correlación positiva fue estadísticamente significativa después de ajustar por región, sin evidencia de una diferencia en la magnitud entre las dos regiones. Con un nivel medio de dominio de la L1, el rendimiento medio en la L2 es mayor en Prekmurje. Estos resultados sugieren que el desarrollo sistemático de la L1 puede favorecer la adquisición de la L2. Es necesario seguir investigando con una muestra más amplia, así como sobre el efecto de las medidas de evaluación, y se requiere formación lingüística adicional para los empleados que enseñan a niños romaníes en escuelas eslovenas.

Palabras clave: niños romaníes, Eslovenia, romaní como L1, esloveno como L2, influencia del conocimiento de la L1 en la L2

1 Introduction

The Roma community is one of the most vulnerable minority groups in Europe, a fact that is reflected in the field of education. Recent studies show that, in many countries, including Slovenia, Roma children on average have lower academic achievement, higher dropout rates, and are less likely to continue their education after completing compulsory schooling (Bešter and Pirc 2021, 2025; Brüggemann 2012). The underlying factors contributing to this phenomenon are multifaceted, encompassing socio-economic dynamics, living conditions, cultural practices, and distinctive linguistic circumstances, particularly the salient fact that Roma constitute a linguistic minority without the benefit of kin-state linguistic resources. "Romani has to be described as a primarily oral, functionally restricted, dominated, stateless diaspora language with non-monolingual speakers" (Halwachs 2012: 251).

Language is a particularly important factor in the academic success of Roma children. Most Roma children in Slovenia start school speaking a language that is not used for instruction. Their L1 is typically a locally used variety of Romani that is not codified for educational use (i.e., there is no single widely accepted standard orthography and school grammar, and usage varies across local dialects), while their L2, the language of instruction - Slovene, is at very different levels of proficiency. Research shows that competence in the L1 has a significant impact on L2 acquisition (e.g., Cummins 2000), but this relationship has been relatively poorly researched in the Slovene context of Roma children.

International research in several European contexts highlights that Romani-speaking children's L1 competences are relevant for school trajectories and assessments and should not be treated as a deficit in educational settings (e.g., Kyuchukov 2015; Kyuchukov et al. 2017; Samko et al. 2021; Grzymała-Moszczyńska et al. 2019).

This article presents the results of a pilot study investigating the language skills of Roma children in two Slovene regions (Prekmurje in the north-east and Bela krajina in the south-east), which belong to two of the largest Roma dialect groups in Slovenia (Prekmurje and Dolenjska Romani). As the Roma in Bela krajina use a variant that forms part of the more widely spoken Dolenjska Romani dialect and is classified as such by Romani experts (e.g., Cech 2006), we will refer to this language as the 'Dolenjska Romani dialect' for the remainder of this article. The children were tested in Romani (L1) and Slovene (L2) using an adapted language instrument to assess word comprehension and retrieval, syntax usage, and narrative comprehension and production. Our analysis focuses on whether knowledge of Romani

predicts knowledge of Slovene and whether the relationship between L1 and L2 differs between the two regions. Although the term mother tongue may be encountered in the literature review, in this article we use the term first language (L1).

The article has two main objectives: firstly, it aims to empirically test the relationship between L1 and L2 knowledge in Roma children. Secondly, it considers the didactic and language policy implications for more successfully integrating Roma children into the Slovene education system, based on the findings.

2 The state of Roma education in Slovenia

Practice and research indicate that Roma children are less included and perform worse in the Slovene education system (Bešter and Pirc 2021, 2025; Jazbec et al. 2013; Krek and Vogrinc 2005; Peček et al. 2013; Pirc and Bešter 2020; Vonta et al. 2011). Such patterns of educational exclusion and underachievement are associated with lower social inclusion in adulthood and an increased risk of poverty. School attendance among Roma children is often irregular, dropout rates are high, and few individuals continue their education beyond compulsory schooling. There are several intertwined reasons for this, most notably the poor socio-economic situation of many Roma families and their unfavourable living conditions (Pirc and Bešter 2020; Peace Institute 2009; Komac 2015). Low parental education and the cultural environment in which Roma children grow up reinforce the transfer of life patterns across generations. Preschool socialisation is therefore crucial, but the low enrolment in formal preschool care is problematic. Since many Roma parents do not value education (Pirc and Bešter 2020), they often fail to support their children with learning and homework. However, studies conducted in environments where the socio-economic status of Roma children does not differ significantly from that of the majority population, and where schools pay special attention to inclusion, show that Roma children enjoy going to school and recognise its importance in acquiring knowledge and ensuring a better future. Nevertheless, their parents are often reluctant to send them to school, fearing that their children will be exposed to ridicule, humiliation, physical abuse and disrespect for their culture (Munda et al. 2016). The literature (e.g., Kovač et al. 2023) highlights several factors that contribute to the underachievement of Roma children and students, including lower teacher expectations, bias in standardised tests, and inadequate professional training of teachers. These issues are often linked to a lack of adequate social and cultural capital, particularly with regard to the linguistic and cultural competencies required for academic success. We must not neglect the concepts of the ‘Roma child’ and the ‘Roma student’. These two constructs appear to guide the institutional processes of inclusion and exclusion within the educational system, in which educators construct Roma otherness

as a deficit (Klun and Bartol 2021). Bešter and Medvešek (2016) make a similar observation based on their research in Slovenia, citing the poor intercultural competence of teachers who teach Roma children. Peček and colleagues (2013) also mention this factor, concluding that teachers attribute the academic success of Roma children primarily to parental encouragement and ambition, rather than to their own personal characteristics, such as perseverance or concentration (Peček et al. 2013: 81). Bešter and colleagues (2016) reached a similar conclusion: while most school principals and mentors of Roma assistants attribute Roma students' failure and exclusion to the Roma community itself, only a few acknowledge that the causes may also lie with teachers and the curriculum. This illustrates how responsibility for educational outcomes is frequently externalised, reinforcing deficit-based interpretations of Roma pupils and limiting the scope for institutional self-reflection.

3 The "Problem" of language among Roma children in the education system in Slovenia and elsewhere

Roma children in Slovenia, particularly in the south-east, often have a poor command of the language of instruction when they start school. This is widely regarded as a key reason why Roma children struggle at school (e.g., Réger 1999; Tancer 1994; Vonta et al. 2011). Research conducted within the Slovene school system with children for whom Slovene is not their L1 shows that Roma pupils face similar language difficulties to immigrant pupils (e.g., Knez et al. 2020), while some Roma pupils achieve very low levels of reading proficiency in Slovene (ibid.). Around two-thirds of the Roma first-graders from the study sample needed help with Slovene. Given the long-standing presence of Roma communities in Slovenia, this similarity is noteworthy and may indicate persistent structural gaps in early language support and access to pre-school education, rather than to a recently arrived L2-learner context. These factors contribute to Roma children often achieving results well below the average of their non-Roma peers (e.g., Peček et al. 2013), a higher proportion of Roma children being enrolled in special programmes (Bešter and Medvešek 2007; Bešter and Pirc, forthcoming),[1] and Roma children being less likely to complete pri-

1 In Slovenia, this refers to formal placement ("guidance") into special-needs education and adapted curricula outside the mainstream programme, based on expert assessment and an official decision under the Placement of Children with Special Needs Act (ZUOPP-1). Article 2 of this Act defines children with special needs as "children with special needs are children with mental disabilities, blind and visually impaired children or children with visual impairments, deaf and hard-of-hearing chil-

mary school and even less likely to continue their education at higher levels (Pirc and Bešter 2020; Bešter and Pirc 2025).

The Roma assistant mechanism, gradually introduced in Slovenia in 2004, has brought positive changes for schools, Roma children, and their parents (e.g., Bešter and Medvešek 2007; Bešter and Pirc 2023; Bešter et al. 2016; Gomboc Mrzlak 2009). From a linguistic perspective, it has proved to be a positive development, as Roma assistants often act as intermediaries between the Slovene and Romani languages. Nevertheless, teachers in Prekmurje are convinced that the use of Romani language in their work is not a priority task for Roma assistants. "Pupils from the village of Pušča understand the (Slovene, author's note) language well; only occasionally do they need explanations of less familiar expressions" (Gomboc Mrzlak 2009: 38). This is a consequence of the greater assimilation of the Roma community in this part of Slovenia, where the Roma language is already being abandoned within families. While most Roma children in north-eastern Slovenia attend kindergarten, where they acquire at least some knowledge of Slovene, a much higher proportion of Roma children in the south-east enter school without any prior knowledge of the language. As Bešter et al. (2016) point out, poor knowledge of Slovene remains a problem for some Roma pupils even in higher grades. Roma assistants report that this language barrier reduces pupils' interest in learning. Conversely, most teachers and kindergarten educators working with Roma children do not speak Romani, and even those who understand a few words do not know enough to communicate effectively (ibid.). Ten years ago, 85.7 % of Roma assistants were fluent in Romani. However, by 2023, this figure had dropped to 44 % in primary schools and 20 % in kindergartens, partly due to staff changes (Bešter et al. 2016; Bešter and Pirc 2023). Although Romani is considered important, assistants mostly communicate in Slovene, and 77.2 % of school principals or mentors believe that this should be the primary language of communication (Bešter and Pirc 2023). Other studies also highlight the predominance of Slovene, which is often promoted at parents' request (e.g., Bačlija Brajnik 2008). Bešter and colleagues (2016) raise important questions about language use among Roma assistants and pupils.

> Is it really the Roma teaching assistant who should bring the Slovene language closer to Roma pupils by speaking predominantly in Slovene with them? Would it not perhaps be more effective if Roma assistants helped Roma pupils understand Slovene, while at the same time encouraging them to use and further develop their own L1, in which they also may have a low

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dren, children with speech and language disorders, children with physical disabilities, children with long-term illnesses, children with deficits in specific areas of learning, children with autistic disorders and children with emotional and behavioral disorders who need adapted education and training programs with additional professional assistance or adapted education and training programs or special education and training programs."

> level of proficiency? Would it not be more effective to introduce other forms of additional Slovene language learning for Roma children in schools, while encouraging and training Roma assistants to help Roma children preserve and develop the Romani language? (Bešter et al. 2016: 20, translated from Slovene).

The lack of recognition of Roma assistants as mediators for learning the Romani language and culture is similar in other, mainly post-communist European countries (e.g., Kyuchukov and New 2019).

The role of L1 and its culture in the educational process is underestimated. In after-school activities, school mediators can provide activities in the children's L1, where they can learn more about their language, history, and culture. It is known that children who learn their L1 and culture are more motivated and interested in the educational process (Kyuchukov and New 2019: 96).

In Slovenia and other former Eastern Bloc countries, there is a persistent misunderstanding about the role of Roma assistants with regard to the use of Romani language in schools. This is evident as Roma children are overrepresented among those classified as having special educational needs and placed in adapted educational programmes. This is also common practice in other post-socialist countries, despite the European Court of Human Rights having found that disproportionate placement in special schools and classes violates the human rights of Roma children (*D. H. and Others v. the Czech Republic*, 2007, cited in Kyuchukov and New 2019). Research from Poland shows that Roma children enrolled in special schools perform no differently on IQ tests than Roma children enrolled in regular schools (Grzymała-Moszczyńska et al. 2019). A study of Romani children in the first year of special schools in Bulgaria, the Czech Republic and Slovakia (Kyuchukov et al. 2017) showed that, with additional support from Roma assistants in the form of intensive bilingual activities outside of school hours, Roma children achieved the same level of knowledge as their non-Roma peers in mainstream schools after one year. Kyuchukov and New (2019) emphasise that for a Roma child, the most important factor in achieving academic success is not only learning the semantics and grammar of the language of instruction, but also the associated social pragmatics. This is because, despite linguistic diversity in classrooms, European schools tend to enforce a monolingual habitus, tolerating diversity only in the case of integration (Kyuchukov and New 2019: 84). In such cases, we speak of "transitional bilingual/bicultural education" (ibid.). The main purpose is not to support the development of language skills in the L1 or the learning of one's own culture; rather, the L1 and culture are merely tools for learning the language and culture of the majority population. The ultimate goal is to eliminate any support, "so that Roma students can subsist in the monolingual monoculture of the school" (ibid.). For Roma children who grow up bilingual in Romani and the language of their environment, their bilingualism is not perceived as an advantage due to the inferior symbolic capital of Romani. This is

how the linguistic situation of Roma children is perceived by their parents and educational institutions. In kindergartens and schools, they do not have the opportunity to develop their first language. This can result in "semilingualism, whereby insufficient development of one's own language impedes the acquisition of the other language" (Kyuchukov and New 2019: 86). Psycholinguistic assessment work also shows that Romani-speaking pre-school children can demonstrate substantial first language (L1) grammatical knowledge when evaluated in Romani. Kyuchukov, de Villiers and Tabori (2017) describe the development of the ROMČHIT/ROMLAT assessment, which has been administered to children aged 3–6 in several European countries, including Bulgaria, North Macedonia, Serbia, Croatia and Sweden. In a new Slovak sample (N = 29), children performed significantly above chance on most subtasks, indicating substantial knowledge of grammatical categories in Romani. These findings support the conclusion that L1 testing is crucial for fair assessment and informing placement decisions, including those relating to special needs programmes and schools.

4 Romani language research of the L1 impact on the L2 knowledge

Literature and empirical research demonstrate the crucial role of L1 proficiency in L2 learning success. Core elements include vocabulary (e.g., Comesaña et al. 2012; Casaponsa et al. 2015; Leeuwestein et al. 2021; Cheung et al. 2019), phonological awareness (Uzal et al. 2015; Tan et al. 2003), and grammar transfer (Paradis et al. 2016; Hubers et al. 2021; Gülden 2021; Kroll et al. 1998; 2002; 2010); children with strong L1 skills are better equipped to acquire L2, both cognitively and academically. This transfer can be either positive, when structures overlap, or negative when they diverge, but L1 literacy remains a robust predictor of L2 achievement. The reinforcement of L1 in the classroom and family settings imparts benefits that extend beyond language into cognitive development and self-esteem (Cook 2001; Nguyen et al. 2023). International longitudinal studies confirm that L1 literacy and verbal skills measured early predict later L2 achievement (Sparks et al. 2009; Sparks 2012; Sparks et al. 2019). Sparks' theory is similar to Cummins' (2000) threshold hypothesis, as he himself states. However, it is difficult to generalise the theory to different contexts. The threshold level is subject to many variables, including the similarity of the L1 and L2 linguistic systems, the level of proficiency in the L2, the task difficulty and the learning context (Park 2013). While specific threshold accounts are difficult to generalise across contexts, existing research consistently indicates that stronger L1 competence supports L2 learning outcomes, even when bi-

lingual development unfolds under unequal sociolinguistic conditions. Moghtadi et al. (2014) further support this assertion, finding that learners with high L2 proficiency also tend to achieve better results in subsequent language acquisition.

However, it should be noted that L1 competence can be influenced by various factors, including linguistic, cognitive, and social factors. Testing the knowledge of Roma children in their L1, a vernacular and non-standardised language with low prestige that children never encounter in writing, reveals that Roma children have different linguistic starting points in early schooling. Comparability across studies involving other L1 is limited because Romani is typically an oral, non-standardised, low-prestige vernacular that children do not encounter in written form. Accordingly, theories derived from L1 literacy in standardised languages must be applied cautiously to early Romani-Slovene bilingual development.

Most research seeking to clarify aspects of bilingualism among Roma children comes from Slovakia, with individual cases also emerging from Greece and Hungary. These are contexts in which Roma communities are the largest, and education is mostly immersion-based in the children's L2 (as in Slovenia). In their study, Samko and his colleagues (2021) tested the vocabulary size (verbs and nouns) of children upon entering school and again at the end of their first year of schooling. The study involved both monolingual (L1 = Slovak) and bilingual (L1 = Romani) children. The latter group was divided into three subgroups: (1) urban; (2) urban peripheral (from settlements located on the outskirts of a city); and (3) spatially remote or separated Roma. Testing showed that the highest success rate was achieved by monolingual Slovak children, followed by Romani-Slovak bilingual children from type 1 communities, then children from type 2 communities, and finally children from type 3 communities. While various studies explain differences in L1 vocabulary size by factors such as socioeconomic background and other group and individual differences, the authors argue that data showing differences in the progress of bilingual Romani children in L1 should also be viewed from the perspective of differences in the language of the community in which they live. The Romani language is endangered in Slovakia, where it is not being passed on to new generations (Rácová and Samko 2017). Consequently, children are not learning to read and write in the language. This language shift has resulted in a spectrum of linguistic profiles among Roma children. It is crucial to distinguish these profiles from one another. At one end of this spectrum are the bilingual children studied by Samko et al., whose first language (L1) is Romani. At the opposite extreme is the group examined by Kyuchukov (2015), who investigated 40 Roma children in Slovakia who exclusively speak an ethnolect of Slovak and have undergone complete language shift from Romani. Kyuchukov concludes that Slovak effectively functions as their sole first language (L1). His testing showed that these children understand complex grammatical categories in Slovak and follow a typical developmental trajectory, acquiring the deep struc-

ture of complex sentences by the age of five. However, it should be noted that the Western approach of learning language through books is unfamiliar to traditional Roma communities. A strategy used by Roma mothers and a common way that Roma children learn new words is through action, rather than naming things. For many Roma, teaching Romani as a L1 at home is carried out through oral history, songs, fairy tales, language, jokes, games and teasing (Kyuchukov et al. 2017: 217). In short, the ways in which Roma and non-Roma children acquire language and develop communication skills differ significantly.

Research indicates that proficiency in a child's L1 (in this case, Romani) significantly impacts Roma children's L2 knowledge and plays a crucial role in acquiring additional languages. For instance, Kyuchukov (2024) emphasises that knowledge acquired in the L1 facilitates learning a new language, as evidenced by studies on bilingual children from various backgrounds, including Turkish bilinguals. Furthermore, the interdependence of language skills implies that a robust grounding in Romani could facilitate the acquisition of a second language. Williams et al. (2016) highlight that word knowledge in the L1 is a predictor of L2 word knowledge, indicating that linguistic skills developed in Romani can be transferred to learning an L2. This is corroborated by Kyuchukov et al.'s (2017) findings, which suggest that Roma children who receive systematic instruction in their L1 are better prepared for language development, including L2 acquisition. The educational context also plays a significant role in this dynamic. Kyuchukov's (2021) research indicates that Roma children who receive structured, culturally relevant education in their L1 demonstrate improved language skills, positively influencing their L2 learning. Furthermore, societal attitudes towards the Romani language can impact educational outcomes. The prevalent belief that Roma children do not need to learn their L1 can hinder their integration and overall language development. Research shows that children who develop literacy in their home language tend to perform better in the dominant language of instruction, thus reinforcing the idea that L1 competence is foundational for L2 success (Kyuchukov 2023). In conclusion, proficiency in Romani among Roma children is not just a cultural asset but a vital component that influences their ability to learn a second language. The interplay between L1 and L2 acquisition highlights the importance of developing a solid foundation in the L1 to improve language learning outcomes overall.

International research on Roma children has repeatedly reported positive associations between L1 and L2 development, despite substantial cross-country differences in educational systems and sociolinguistic conditions. Evidence from Central and Eastern Europe and other European settings suggests that stronger oral proficiency in Romani is often linked to better performance in the language of schooling and underscores the importance of assessing L1 to avoid deficit interpretations (e.g., Kyuchukov 2015; Kyuchukov et al. 2017; Samko et al. 2021; Grzymała-Moszczyńska et

al. 2019). While these studies vary in design and do not provide directly comparable effect sizes, they converge in reporting that stronger L1 proficiency is associated with better L2 outcomes, a pattern consistent with resource-oriented rather than deficit-oriented models. In light of this, the present Slovene pilot study provides quantitative evidence on L1–L2 associations in early schooling and examines whether these links differ across two regional Romani varieties.

5 Romani case study in Slovenia

A sociolinguistic analysis of the two largest Romani dialects in Slovenia, in the regions of Prekmurje and Bela krajina, where the Roma have historically been present, shows that they are at very different stages in terms of vitality and preservation. However, both are highly endangered. Although the functionality, description and prevalence of the language are better in Prekmurje, knowledge of Romani is declining among the younger generation. This is mainly due to poorer intergenerational transmission in mixed marriages and language loss by younger, more educated individuals who move to cities. Parents frequently use Slovene with their children, typically in the local Prekmurje dialect, which is considerably divergent from standard Slovene. Moreover, their everyday speech may incorporate Romani words. It is important to note that the transition from the home variety of Slovene to the standard form of the language as taught in school may still pose difficulties for some children. Conversely, the Romani dialect is prevalent in private circles in the Bela krajina. However, due to its poorer standardisation and codification, the Dolenjska dialect is more likely to change, particularly under the influence of Slovene and Croatian, both of which have contributed significantly to its vocabulary. The Dolenjska Romani dialect shows similarities with southern central Romani dialects and southern Balkan dialects. At the same time, it is characterised by numerous linguistic peculiarities known only in Dolenjska Romani (Cech and Heinschink 2001). Elšík and Beníšek (2020: 402) consider it a dialectal group all by itself, "transitional between the Arli dialects of the South Balkan group and the South Central dialects in some respects". Romani from Prekmurje, on the other hand, has been described as a dialect of the South Central Romani group, Vendic subgroup, by Elšík & Beníšek (2020), a variety notably influenced by Hungarian according to Bodnárová & Wiedner (2020).

As previously mentioned, Roma children in Slovenia rarely complete primary school. Data (Bešter and Pirc 2025) show that only just over a fifth (20.8 %) of Roma pupils complete primary school or the ninth grade. In fact, the situation in the south-east of the country is considerably worse than in the north-east. In north-eastern Slovenia, almost 46.6 % of Roma pupils on average complete primary school (9th

grade), whereas in south-eastern Slovenia this figure averages at just 11.5 %. In fact, the proportion has been decreasing slightly in recent years (data are for the school years 2016/17–2024/25 (Bešter and Pirc 2025)).

In this article, we present the results of testing Roma children as part of a targeted research project entitled "A Toolkit for Assessing the Linguistic Competence of Roma Children and Pupils in the Romani Language". In this project, we adapted a language test and conducted pilot testing of Romani and Slovene language skills in 29 Roma children. Our aim was to examine the connection between L1 and L2 knowledge, based on the assumption that greater proficiency in Romani (L1) leads to better acquisition of L2.

6 Methodology

6.1 Sample and sampling

The study included 29 Roma children (17 boys, 12 girls) who spoke the two largest Romani dialects in Slovenia. Fourteen children were recruited in Prekmurje (north-east Slovenia) and fifteen in Bela krajina (south-east Slovenia); participants attended the final year of kindergarten or the first three years of primary school (ages 5–10). This age range was chosen to capture early schooling transitions in a pilot context. One older pupil (aged 13) attending an early-grade class was included to improve gender balance and explore potential age-related variation; sensitivity analyses were therefore conducted with this case excluded. None of the children attended supplementary Roma language classes available at the school, as this could have affected their knowledge of the language. As all the children speak the Romani language at home, it was assumed that their L1 was Romani.

Sampling was conducted using a non-probability convenience sampling method incorporating elements of purposive-criterion inclusion within the framework of two schools or kindergartens. The population frame consisted of Roma children who met the following criteria: a) aged between 5 and 10 years old, and either in the final year of kindergarten or in the first three years of primary school; b) speakers of the Romani language at home; c) not attending supplementary Romani language classes; d) whose parents had given written consent. In cooperation with the schools, the researchers tested children who met these criteria. As the implementers knew the children, organisation was facilitated, but this may have affected the standardisation of interactions and responses (e.g., uneven levels of encouragement, socially desirable responses and language use characteristic of their usual communication). While we consider this to be a methodological limitation, the teachers facilitated access to the Roma children and encouraged them to speak Roma-

ni. Without this encouragement, the children would never have used the Romani language with strangers and would have been much more reserved.

Given the small convenience sample, the findings cannot be generalised to the population of Roma children in Slovenia. However, the study provides a focused pilot comparison of the two largest Romani dialects and yields preliminary evidence on L1–L2 links, while also documenting the feasibility of administering the adapted Romani test in two regional contexts.

6.2 Test and testing procedure

The language test was adapted and translated into the relevant Romani dialect from an existing test used for researching bilingual Slovene-Hungarian language abilities (see Nećak Lük 1989). For cultural adaptation, we replaced the story about the theft incident with a fable about vanity. When the Romani L1 speakers and language test administrators translated the test into the relevant Romani dialect, they noted that there were no words that children might have difficulty with. Meanwhile, preparations for the testing process were underway, including education and training for the testers on the implementation method, the test content, and data recording. The oral language test comprises several sets of tasks designed to measure word comprehension and retrieval, the use of prepositions and cases, and the agreement of adjectives and nouns. It also assesses narrative comprehension and production. Each task contributes to the overall assessment. The children's individual achievements were added up to provide a comprehensive measure of language competence (Zorčič et al. 2023).

Testing took place in teachers' offices at schools during school hours between May and June 2023, with each child being tested individually. All children were initially tested in their L1 (i.e. Romani), followed by a test in their L2 (Slovene) no earlier than one week later, to minimise the impact of memory on the results. With the exception of the language, all elements of the test remained constant. Testing in one language usually took about 45 minutes, but this varied between children. Preschool children and first-graders in particular found it challenging to concentrate for such a long time. Consequently, two 5-year-olds were tested in two separate parts.

6.3 Data processing

All tests were transcribed, and any switches to Romani in the Slovene tests were translated. The data in the tables was checked for scoring consistency, while a linguistic analysis of the obtained data was carried out.

When collecting data, we noted results that deviated from standard expectations. Children often spoke vernacular versions of Slovene, which were marked as correct despite deviating from standard norms. The answer was also considered correct if it deviated from the expected answer due to cultural background. An example that illustrates language and culture-specific usage is as follows: When asked the question "When do we light the furnace/stove." (Slov. "*Kdaj zakurimo peč?*"/ Dolenj. Rom. "*Kada zaalavamo peči*?" / Prekm. Rom. "*Kada fitinas andi petja*?"), to which we expected the answer "In winter" / (Slov. "*Pozimi*"), the children gave very different answers, but we considered all answers that reflected cultural and local linguistic specifics to be correct (e.g., Slov.: "***Kdaj [***instead *ko] je* ***vuni [***instead *zunaj] dež, pa je mrzlo."* / "When it is rainy and cold." – ČSU2; Romani, "*Jutro*" / "In the morning." – MRU4).

We counted language transfers between Romani and Slovene in both tests, with ambiguous examples (influenced by regional language contact with the Croatian language)[2] labelled as partially correct. Syntactic transfer errors were identified but marked as partially correct rather than completely wrong (e.g., the answer in Slovene to the question "WHERE did she sit?": **na postelj**a***, instead of the correct "*na postelj**o***" (Slovene, prep. ON + acc "bed"; presumably transfer from the Dolenjska Romani "*nu postelja*")).

Total points represent an assessment of linguistic competence. The Slovene and Romani language proficiency indices represent a child's total result on the respective language tests. This composite variable is obtained by adding up the points for all the test items in each language. Each answer was coded according to a predetermined evaluation system: 0 points = no answer; 1 point = completely incorrect answer; 2 points = partially correct answer, requiring a note in the comments section; and 3 points = correct answer.

7 Statistical analysis

We included 29 children with complete data for two composite indices in the analysis: *knowledge of Romani* and *knowledge of Slovene*. The average result for the Romani language proficiency index was 374.10 points (*SD* = 41.06; 95 % CI [358.48, 389.72]), while the Slovene language proficiency index was 375.52 points (*SD* = 32.66; 95 % CI [363.09, 387.94]).

2 The settlements from which these Romani children come are located directly on the border between Slovenia and Croatia, less than a kilometre from the border.

There is a marked difference between the regions in terms of average achievements in Romani language skills. Children from Bela krajina exceed children from Prekmurje by approximately 52 points in Romani language skills. The confidence intervals do not overlap, which is consistent with a statistically significant difference in the sample size and confidence level considered, and indicates a substantively significant advantage for children from Bela krajina. The differences between the regions in terms of knowledge of Slovene are small. In terms of knowledge of Slovene, the regional confidence intervals overlap, so there is no evidence of a systematic regional difference. The sample shows regional heterogeneity in knowledge of Romani and relative uniformity in knowledge of Slovene, which is an important starting point for interpreting differences in language achievement (see Table 1).

Table 1: Descriptive Statistics for the Romani Language Proficiency Index and Slovene Language Proficiency Index by Region, n=29

Variable	Region	M	SD	Min	Max	Median	95 % CI for M
Knowledge of Romani	Bela krajina	**399.3**	29.3	341	456	395.00	[383.08, 415.58]
Knowledge of Romani	Prekmurje	**347.07**	34.40	271	387	346.50	[327.21, 366.93]
Knowledge of Slovene	Bela krajina	**373.67**	38.83	320	439	369.00	[352.16, 395.17]
Knowledge of Slovene	Prekmurje	**377.50**	25.80	334	428	381.00	[362.61, 392.39]

Source: Zorčič et al. 2023.

The Pearson correlation coefficient between the L1 (Romani) and L2 (Slovene) indices was moderately positive, $r(27) = .366$, $p = .051$, 95% CI [−0.001, 0.646], $N = 29$. The effect at the $\alpha = 0.05$ level is not statistically significant. Children with higher overall L1 scores tend to have higher L2 scores as well. The correlation is moderate in size, but just above the threshold of statistical significance.

For further assessment, we performed a simple linear regression, with the Slovene language proficiency index as the dependent variable and total Romani language proficiency score as the predictor. The model was at the threshold of statistical significance $F(1, 27) = 4.19$, $p = .051$, and accounted for 13.4 % of the variance in Slovene language proficiency ($R^2 = .134$; adjusted $R^2 = .102$). The standardised regression coefficient ($\beta = .37$) indicates a small to moderate positive effect of Romani language proficiency on Slovene language proficiency (see Table 2).

Table 2: Linear Regression Predicting Slovene Proficiency from Romani Proficiency, n =29

Predictor	Unstandardized regression coefficient (B)	Standard error of B (SE B)	Standardised regression coefficient (β)	t	p
Constant	266.495	53.590	–	4.973	< .001
Romani language proficiency index	0.291	0.142	.366	2.046	.051

Note. R^2 = .134; adjusted R^2 = .102; $F(1, 27) = 4.19$, p = .051.
Source: Zorčič et al. 2023.

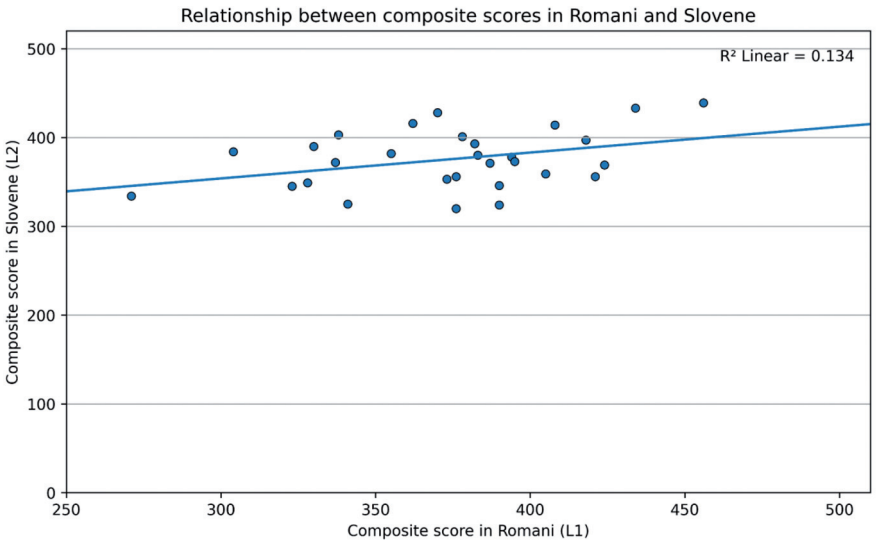

Figure 1: Relationship Between Composite Scores in Romani (L1) and Slovene (L2).
Note: The scatter points represent individual participants; the line indicates the fitted linear regression with a 95 % confidence band.
Source: Zorčič et al. 2023.

In a moderated regression model with grand-mean-centered Romani language proficiency (rom_c), region indicator (0 = Bela krajina, 1 = Prekmurje) and their interaction (rom_c × region) as predictors, the model was significant, $F(3, 25) = 4.06$, p = .018, R^2 = .328 (adjusted R^2 = .247). The effect of L1 remained positive and significant (b = 0.795, SE = 0.258, t(25) = 3.08, p = .005). However, the interaction term (rom_c × region) was not significant (b = −0.430, SE = 0.345, p = .224). Analysis of simple slopes revealed that the relationship between L1 and L2 was reliably positive

in Bela krajina (b = 0.795, SE = 0.258, p = .005), but not statistically significant in Prekmurje (b = 0.366, SE = 0.229, p = .122). The main effect of the region (at an average level of L1 proficiency) was positive and significant, b = 33.78, SE = 13.84, p = .022, indicating that after adjusting for differences in Romani language proficiency, children from Prekmurje demonstrate higher Slovene language proficiency than those from Bela krajina. This suggests that Prekmurje children achieve similar raw Slovene scores despite having substantially weaker Romani language foundations. It is important to clarify this finding. While raw scores show minimal regional differences in Slovene (3.83 points), the statistical control for L1 proficiency reveals a substantial adjusted difference (33.78 points). This occurs because Bela krajina children's superior Romani skills (52 points higher) should predict better Slovene performance; however, both regions achieve similar raw Slovene scores. This suggests that Roma children from Prekmurje demonstrate unexpected resilience in L2 acquisition, despite having weaker L1 foundations.

The analysis shows that Romani (L1) proficiency is positively associated with Slovene (L2) proficiency. Although the zero-order L1–L2 correlation did not reach statistical significance (r(27) = .366, p = .051), in a moderated regression that adjusts for region L1 significantly predicted L2 (b = 0.795, p = .005), with no evidence that the slope differed between regions. Simple-slope probes indicated a significant L1–L2 relation in Bela krajina but not in Prekmurje. The model explained about one-third of the variance in L2, with the remainder likely reflecting other individual and contextual factors (e.g., socioeconomic background, pedagogical approaches, age/grade, motivation, family language input).

We caution against interpreting regional differences in L2 outcomes as evidence that speaking Romani at home is detrimental. Our findings point in the opposite direction: higher Romani (L1) proficiency is associated with higher Slovene (L2) proficiency. Any L2 differences are more plausibly linked to variation in early Slovene exposure and institutional support than to Romani use per se.

To address potential age-related heterogeneity in the sample, we ran two exploratory checks: (1) re-estimating the regression models with age (in years) as a covariate and (2) a sensitivity analysis excluding the single older participant. When age was included in the full sample (N = 29), age significantly predicted Slovene (L2) proficiency, while the Romani (L1) coefficient remained positive but was no longer statistically significant; the regional difference remained significant, and the L1 × region interaction remained non-significant. Excluding the older participant (N = 28) yielded a comparable pattern. Overall, these checks suggest that the direction of the main associations is robust to age adjustment, although statistical power is limited in this small pilot sample.

Given the limited sample, interregional differences should be treated as exploratory and confirmed in larger, more robust samples.

8 Discussion

There was no evidence of interaction between L1 and region, indicating that the direction of the relationship does not differ between regions. However, analysis of simple slopes shows that the relationship is statistically significant in Bela krajina but not in Prekmurje.

When controlling for L1 proficiency, average L2 achievement in Prekmurje is higher, indicating contextual differences that extend beyond L1 proficiency. One possible explanation for this could be higher attendance at kindergartens, linguistic assimilation into the Slovene language, and a slow but steady shift in language use. A similar final scenario for the Romani language in Burgenland is described by Halwachs (2012). Nevertheless, these results align with theories of interlanguage transfer (Cummins 2000; Sparks 2012) and with the findings of other empirical studies in Romani contexts, which have reported positive correlations between L1 and L2 proficiency (Kyuchukov 2015; Kyuchukov et al. 2017; Kyuchukov et al. 2024). However, as this is a pilot study, we cannot interpret the results causally. Alternative explanations include the influence of shared cognitive resources, the quality of language input at home and in kindergarten/school, socioeconomic status, and school practices that can shape both L1 and L2 simultaneously.

An important feature of the Slovene case, as in many other countries with a Roma minority, is that children often enter school without having developed literacy in Romani (L1), and without prior exposure to any standardised form of the language. Nevertheless, our research has shown that a higher level of proficiency in spoken Romani is associated with a better knowledge of Slovene. This suggests the possibility of cognitive transfer, even in circumstances where the language in question, Romani, is not highly regarded socially. This lends weight to the idea that recognising and systematically incorporating L1 as a source of learning can foster more successful L2 acquisition. The results support the thesis that it is sensible to judiciously incorporate Romani activities in kindergarten and the first three years of primary school, while monitoring progress in both languages using validated indicators. Professionals should be trained to work in bilingual contexts, collaborating with Roma assistants who can act as linguistic and cultural mediators. Beyond linguistic outcomes, recognising Romani (L1) in early schooling may also support children's socio-emotional development, including confidence, belonging, and identity formation. For many Roma communities, the L1 is a key element of group identity, although this aspect was not directly measured in this pilot study.

In light of the small sample size, wide age range and absence of controls for socioeconomic variables, as well as other individual differences such as motivation and family language input, the results should be interpreted cautiously and are therefore exploratory, requiring confirmation in larger longitudinal studies. De-

spite these limitations, the study is an important step towards understanding how the Romani language relates to Slovene acquisition. It emphasises that L1 can be a valuable resource, even when it lacks institutional support or a standardised form, and that taking this into account can improve the school performance of Romani children.

9 Conclusion

Roma children's educational success can be attributed to a number of different factors. In this article, we focus only on the influence of first language (L1) knowledge on second language (L2) learning. This is also the language of instruction for Roma children and is therefore essential for their educational success.

Previous research has shown that L1 knowledge is often associated with L2 learning in children through various mechanisms, including lexical, phonological and syntactic influences. The interplay between L1 and L2 is complex, and understanding this relationship can inform effective teaching strategies that use L1 as a resource rather than viewing it as a hindrance. Studies show that Roma children have knowledge of complex sentence structures (e.g., Kyuchukov 2015), but that they progress at different rates in their L1 and consequently in their L2 during schooling. As Sparks et al. (2012) claim, individual differences in L2 achievement mirror individual differences in L1 skills. Thus, understanding these dynamics is crucial for educators and linguists alike, as it can inform effective teaching strategies and interventions for bilingual children. In addition to these linguistic dimensions, the socio-emotional context of language learning must also be considered. Preserving L1 among ethnic minority students can enhance their confidence and critical thinking skills, ultimately benefiting the L2 learning experience.

This article demonstrates a positive correlation between Romani (L1) proficiency and Slovene (L2) proficiency among Roma children. On average, children who perform better in Romani also perform better in Slovene, the language of the environment and instruction in Slovene schools. As this is a pilot study, we must interpret the results cautiously and non-causally. The language development of Roma children in their first language is an important indicator of their success in their second language. Results indicating specific language difficulties among Roma children in Slovene (Zorčič 2025) highlight the necessity of revising instructional methods for children whose first language is not the language of instruction. It is particularly important to collaborate with the Romani-speaking community, as their situation differs from that of other linguistic minorities; speakers usually only use their first language in the local non-standard vernacular. Although the results support the inclusion of L1 in education, they also highlight the importance of re-

gionally specific strategies that consider the various sociolinguistic contexts of Roma communities.

These findings suggest potential directions for language policy and practice. For example, Romani classes implemented as part of an inclusion-oriented language policy could increase the visibility and legitimacy of the Romani language in schools. This could include targeted training for bilingual Roma assistants and teachers, as well as structured classroom activities in the early years that encourage the use of Romani alongside Slovene. Combined with early Slovene support and improved preschool access, this approach could strengthen the engagement of Roma pupils and parents. These implications are consistent with the idea that recognising ethnolinguistic diversity can promote minority language teaching as a means of fostering social cohesion (Halwachs 2020). As this study did not assess these outcomes directly, they were treated as hypotheses for further evaluation.

As in many other national contexts, the role of the first language and culture for Roma children in the educational process is underestimated in Slovenia. The primary task of the education system is to enable children from the Roma community to receive a more linguistically appropriate education. This involves developing and preserving the Romani language through high-quality second language learning (in this case, Slovene) and helping children to learn standard Slovene when the local ethnolect is used at home (e.g., in Prekmurje). Currently, there are still too few initiatives in Slovene schools to successfully develop the language skills of children from the Roma community. Additional training for education staff is also necessary, as there is still a prevailing belief (even among the Roma themselves) that Roma children should abandon Romani in school as soon as possible in favour of Slovene. As this study shows, this is not necessarily the most effective approach.

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