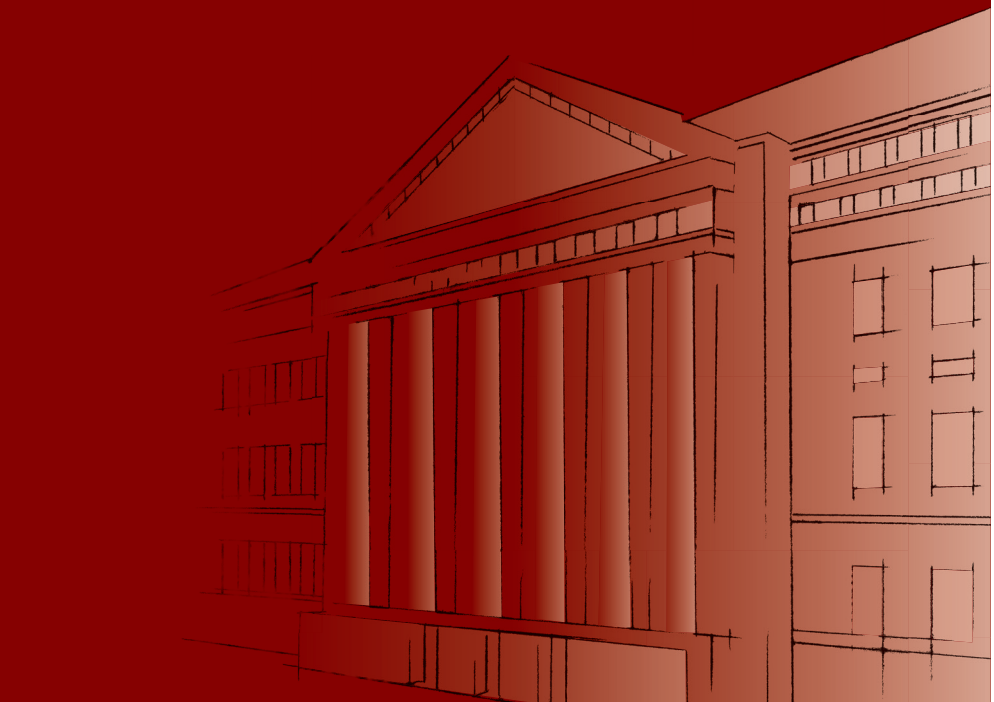
DISSERTATIONES
LINGUISTICAE
UNIVERSITATIS
TARTUENSIS
48

ANNA BRANETS

Mediated Receptive Multilingualism: Factors of Success in Facilitation of Language Learning



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GRONINGEN DISSERTATIONS IN LINGUISTICS
268

ANNA BRANETS

Mediated Receptive Multilingualism: Factors of Success in Facilitation of Language Learning

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University of Tartu, Institute of Estonian and General Linguistics

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The research reported in this study was carried out within the Graduate School for Humanities (GSH) at the University of Groningen, the Centre for Language and Cognition Groningen (CLCG), and the Institute of Estonian and General Linguistics of the Faculty of Arts and Humanities at the University of Tartu.

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Commencement: University of Groningen, Broerstraat 5, Groningen, the Netherlands, on 29th of January 2026

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Mediated Receptive Multilingualism: Factors of Success in Facilitation of Language Learning

PHD THESIS

to obtain the degree of PhD at the
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the College of Deans.

and

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Double PhD degree

This thesis will be defended in public on
Thursday 29 January 2026 at 12.45 hours

by

Anna Branets

born on 7 May 1989 in
Kyiv region, Ukraine

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This book reflects my personal story and outlines my personality and interests that have evolved since childhood. Growing up in Ukraine in a Ukrainian-speaking family, while simultaneously using Russian in communication outside the home, led me to reflect deeply on questions of multilingualism. Adding to this complexity was the presence of *surzhyk*, a language mode actively used in my family. As *surzhyk* carried negative connotations in society, and its use was largely confined to communication within the family or among close friends. My language situation always kept me curious and was one of the main reasons why I decided to carry out this project.

First and foremost, I would like to thank my supervisors – Prof. Anna Verschik, Prof. Birute Klaas-Lang, Dr Daria Bahtina, Dr Charlotte Gooskens, Prof. M.C. Michel, and Dr A. Schüppert. Together with Prof. Ad Backus, who acted as my mentor, they formed the core of this project. Their guidance, support, and dedication made this PhD possible, and I am profoundly grateful for everything they have done. I also wish to thank the reviewers and the assessment committee, Prof. Virve Vihman, Prof. Renate Pajusalu, Prof. Petar Kehayov, Associate Prof. Ann Veismann, Prof. Janet Fuller, Prof. Jan ten Thije, Assistant Prof. Dr. Remco Knooihuizen, for their valuable feedback and questions during my defence; any remaining issues are entirely on me. I would also like to thank my paranymphs, Diletta Comunello and Runyu Wu, for their support during my defence.

My path toward a PhD has been long and at times challenging. I want to share the story of my journey and the people who shaped it as they entered my life. After completing my master's degree in Ukraine, I realised the importance of broadening my academic horizons and deepening my expertise through international education. At that time, opportunities to study abroad were limited, and competition for scholarships was very high. I first learned about the Erasmus Mundus programme while working at the International Relations Office of Taras Shevchenko National University of Kyiv, where I spent ten years of my life. Encouraged and inspired by my colleague Svitlana Bilous, who gave me the confidence I had not yet found in myself, I decided to apply – undoubtedly one of the best choices I have ever made. I am also deeply grateful for the kind support of my colleagues at that time, Petro Bekh, Tetiana Misko, and Mykola Semiankiv, whose guidance helped me grow both personally and professionally. Petro Bekh (may his soul rest in peace) strongly believed in my potential and encouraged me to pursue a PhD, convincing me to apply for the programme at TSNU. Mykola Semiankiv was always supporting my academic journey. I owe special thanks to Tetiana Misko, who at that time was not only my manager but also remained a close friend, and whose encouragement has left a lasting impact on my personal journey.

While applying for the Erasmus Mundus programme, I carefully explored the consortium's partner universities and the study opportunities they offered. I came across the Linguistics PhD programme at Tallinn University and immediately looked into the professors and their fields of expertise. The first name on the list was Prof. Anna Verschik. By coincidence and intuition, I decided to write to her to inquire further about the opportunities available. To my surprise, she responded within five minutes and in Ukrainian. At that moment, I could not help but think: *this must be fate*. Anna suggested to read her articles, and after reading them without any hesitation, I immediately asked her to supervise my project. I wrote the application and was selected for the programme!

Meeting Prof. Anna Verschik marked a turning point in my academic career. When I arrived in Tallinn, I was immediately inspired by her energy, scholarly expertise, proficiency in multiple languages, and her genuine kindness and openness. Coming from Ukraine, where interactions with professors were limited to the classroom, I had never imagined that such interaction between supervisor and student could take such a supportive and personal form. Anna showed me what it truly means to be a passionate researcher who deeply cares about her research. It was she who suggested the topic of Receptive Multilingualism, which has since become my long-term research focus. Having worked with Anna for nearly a decade, I remain profoundly grateful for her constant support, patience, and willingness to guide me through every challenge with care and encouragement. This PhD project would not have been possible without Anna's supervision.

At Tallinn University, I was fortunate to meet wonderful people who supported and facilitated my stay. I am especially grateful to Bret Demant, who at the time was the HUMERIA Project Coordinator and consistently helped me with all administrative matters related to my programme. She also invited me to join her at a conference in Brussels as a grantee, which was an invaluable experience. I was delighted to reconnect with her recently at the University of Porto. My heartfelt thanks also go to Maris Peters, whose support in organising my studies at TLU ensured that everything ran smoothly.

To further develop the experimental part of my project, Anna Verschik introduced me to Dr. Daria Bahtina. I will never forget our first meeting at the Rahva Raamat café in Viru Keskus, where Daria kindly agreed to support my project. From that moment on, she became my supervisor, and over time, our professional collaboration grew into a close personal connection. One of my fondest memories with Daria is our trip to the ISB conference in Limerick, my first big international conference. I still remember arriving at the airport, where I had to wait for over an hour in the long non-EU passport control line while all the EU participants passed quickly. Despite this delay, Daria and Ad (who has a chapter of his own below) patiently waited for me, showing such genuine care that it left a lasting impression. I was also very anxious about presenting my study for the first time at such a large event, but Daria stood by me. Together with her, I rehearsed my presentation in the corridor, where she encouraged and supported me, helping me build confidence. Daria has always been incredibly understanding and suppor-

tive. Even in her busiest moments, she found the time to listen and offer thoughtful guidance. She taught me to remain positive and to face challenges with resilience. I also had the privilege of spending three months in Los Angeles on a research trip, where I was able to work with Daria on my project. I truly admire her ability to balance so many responsibilities while remaining positive, kind, and caring. She is an exceptional supervisor, and every student who has the chance to work with her is truly fortunate. Looking back, there were many moments in my life when I doubted my ability to continue, but thanks to Daria's guidance and encouragement, I was able to overcome those challenges. Daria is the one who showed me that experiments can be both fun and engaging, and she sparked my passion for experimental research.

Another important chapter of my life relates to Prof. Ad Backus, whom I first met at the annual conference in Tallinn, which Anna Verschik organises every year in April. Having read his articles beforehand, I felt somewhat intimidated, expecting a very strict professor coming to Tallinn. To my surprise, I found an exceptionally supportive and approachable person. I still remember how he came up to me and my friend Olga (her chapter is coming soon) during lunch, and from that moment on, we developed a lasting friendship. Although Ad is not my official supervisor, he acted like one and has been with me from the very beginning of my project, offering invaluable advice at every stage of my research. I am especially grateful for his invitation to Tilburg, where we worked closely for a month on my research proposal. This experience shaped not only my academic path but also identified me as a researcher. Ad became an integral part of my PhD journey, and I feel truly fortunate to have him in my life as both a mentor and a friend. Since then, we have attended numerous conferences and events together, and I have had the opportunity to visit the Netherlands many times. Ad has dedicated a great deal of time to helping me in the moments I needed it the most and has been present during many important moments of my life. I was also fortunate to meet Vic, his wonderful wife. Vic is an incredibly warm and welcoming person who makes you feel at ease from the very first moment you meet her. I am so grateful for Ad's and Vic's support all the time. I proudly call them my "Dutch family".

During my research trip to Tilburg, Ad suggested that I reach out to Dr. Charlotte Gooskens in Groningen, as my project closely aligned with her research group's work on mutual intelligibility. Charlotte kindly agreed to meet, and together with Ad and Vic, we travelled to Groningen. I had already read many of her publications and had built much of my own research on studies conducted by Charlotte. This is reflected in the numerous citations of her papers in this dissertation. I have always admired her ability to explain complex topics with such clarity and coherence. Before the meeting, however, I was extremely nervous. I worried that she might not like me or would not be interested in collaborating with me. The reality was the complete opposite. The meeting went very well, and Charlotte kindly agreed to supervise my project and has been nothing but supportive ever since. Each time I visit Groningen, she not only provides me with academic guidance and care but also makes me feel truly welcome, even opening

the doors of her family home and introducing me to her family. Her kindness and support have always reassured me that I could approach her with any issues or doubts. Charlotte was genuinely interested in my research and helped me develop my work on language attitudes, a topic I am very excited about.

Finally, I met my fourth supervisor, Prof. Birute Klaas-Lang, in Tartu at the doctoral seminar, where Anna Verschik and I presented our study. After some time, when I decided to apply for a PhD at the University of Tartu, I decided to approach Birute to ask if she would consider becoming my supervisor, and she kindly agreed without hesitation. Birute's expertise in multilingualism in the Baltic countries, Estonian as a foreign language, language policy, and language education has always inspired me. Throughout my PhD journey, I felt nothing but support from her. I often felt truly lucky, as Birute was always there to help. I will always remember the conference we attended together at Cambridge University, where her support during my presentation meant a great deal to me. Whenever I stopped by her office for advice, she welcomed me warmly and was always ready to help. I am deeply grateful for this.

I would like to thank Prof. M. C. Michel and Dr A. Schüppert for stepping in during difficult times and for making this defence happen. You welcomed me as your PhD student at the final stage of my PhD studies and invested a great deal of time and energy to ensure that this defence could take place. I truly appreciate all your efforts. Without you, I would not be here today to defend my dissertation.

During my time in Tallinn, I was fortunate to meet truly wonderful friends that became very dear to me. Olga Loitšenko we were so inseparable! I cannot imagine my Tallinn's period without you. We spent countless days at the university, working on my research and experiments side by side. We shared many unforgettable memories at Tallinn University. I deeply admire Olga's courage to pursue her dream for doing stand-up comedy. Our friendship has taken us across the world. I even visited her in Australia, and I know it is a bond that will last a lifetime.

I was fortunate to have wonderful flatmates in Tallinn. Nataliia Zolotukhina, I will never forget the moment you came into my life. From the very beginning, you were always by my side, and I knew I could rely on you in any situation. We shared countless adventures: first living together in the dorm, later renting an apartment, and traveling to many countries together. Even today, we continue our "crazy trips," and I cherish them deeply. You have become one of my dearest friends, you are like a sister to me, and I truly care about you. Thank you for walking this path with me and for patiently listening to all my complaints along the way.

Victoriya Aliyeva, you are one of the kindest people I have ever met – open-minded, warm, and endlessly friendly. I still remember meeting you for the first time in our kitchen and immediately having such a positive impression. You are such a nice person who brings people together, a true "social glue." I treasure every moment we have shared, our trips, concerts, cooking together, and all the small everyday joys. You are also one of the bravest and most determined people I know, someone who always follows her dreams and works tirelessly to achieve

them. Your strength and dedication are just remarkable – you are truly my inspiration. You gave me a nickname, *Anna Experiment*, which I am proudly carrying until now. I am very grateful to have you and Patrick at my defence. Although you both, Nataliia and Victoria, now live abroad, in Germany and the Netherlands respectively, distance has never created borders for our friendship. I always look forward to our reunions.

Kseniya Kosareva, we shared a room for only a short time, but you left a lasting impact on my life. Your sincerity, kindness, and the way your own laughter made me laugh will always stay with me. I will never forget how you woke me up every morning with the cheerful words. Many thanks also go to Matteo, Dorota, and the rest of my flatmates from Tallinn.

Tatjana Larintseva, I was lucky to meet you during a summer job. By coincidence, we applied at the same time to this job and went through the interview together, and since then, we have become close friends. I truly cherish our time together – our table tennis games (Tischtennis) and our occasional meetings across Europe mean a great deal to me.

Along my PhD journey in Tallinn, I was lucky enough to meet many truly amazing fellow PhD students, including Marit Alas, Helin Kask, Elina Bone, Tatiana Nikitina, Alisa Rekunova, Sander Paekivi, Timothy Anderson, and many others. I am deeply grateful to all of you for supporting my PhD journey.

When I began my journey at the University of Tartu, I had the privilege of meeting incredible researchers and experts in the field. From my very first encounters at the Institute of Estonian and General Linguistics, I was struck by how genuinely kind and supportive everyone was – it almost seemed as if this warmth was one of the key criteria for being part of the Institute.

I would especially like to thank the former Head of the Institute of Estonian and General Linguistics, Prof. Liina Lindström, for her constant support throughout my PhD years. I will never forget the moment, shortly after the Russian aggression against Ukraine in 2022, when you met me in the corridor, hugged me, and assured me that I could always turn to you if I needed anything and that you truly meant it. Those words are deeply embedded in my memory and meant the world to me. You consistently supported my participation in conferences and research trips and were always willing to help and make things possible. I am deeply grateful for all your support.

Another round of appreciation will go to Prof. Gerson Klumpp. Beyond being an outstanding professor (I still remember your presentation at the Livonian Summer School), you are also one of the fairest and most genuine people I have ever met. Our car rides at the Livonian Summer School and our writing retreat together remain among my fond memories. I am truly grateful for all the valuable advice and guidance you have given me throughout this journey, and it is always a pleasure to learn from you.

Prof. Ann Veismann, I am very grateful to have had you as the Director of my programme. We shared many meaningful moments during writing retreats and discussion groups. You were always ready to explain things clearly and thoughtfully. It was clear how much you care about every student in the programme. I am

especially thankful for your message of support when the war started. You were the first one who wrote me.

I would also like to thank Prof. Virve Vihman. Although we met later in my PhD journey, you quickly became one of the colleagues I most wanted to collaborate with. You introduced me to my first scientific project, which received two awards, such as the UT Language Award and recognition of the Estonian Ministry of Education and Research for engaging volunteers in teaching Estonian to Ukrainian war refugees. I am also honoured to have you on my assessment committee and very grateful that you came to the Netherlands for my defence. I truly look forward to our future collaboration.

I would also like to thank the academic staff of the Institute of Estonian and General Linguistics – Helle Metslang, Tuuli Tuisk, Kadri Koreinik, Renate Paljusalu, Karl Paljusalu, Pärtel Lippus, Kristiina Praakli, Miina Norvik, Joshua Wilbur, Mari Aigro, Marili Tomingas, Mari-Liis Korkus, and Kerttu Rozenvalde for the inspiring lectures and memorable encounters we shared. My apologies if I have unintentionally left someone out.

Meeting my fellow PhD students in Tartu was an inspiring and memorable part of my journey. When I first arrived in Tartu, I didn't have any friends. Almost a month passed, and I was starting to lose hope of finding any. Then one day in the kitchen, I met Eda-Riin Tuuling and Imar Koutchoukali. Imar was the first to strike up a conversation, and so my social life in Tartu started. Imar Koutchoukali, you introduced me to so many people and made my time in Tartu far less lonely. I was very honoured to be a part of your PhD defence and meet your family.

Eda-Riin Tuuling, you became one of my closest friends and have played a truly special role in my life. We shared so many wonderful moments, we even celebrated my very first New Year in Tartu. You patiently taught me Estonian while I introduced you to some Russian (well, mostly Ukrainian Russian). I will always remember our COVID writing retreat (in sickness and in health). You are an exceptionally talented researcher with a great potential in academia, and I deeply admire you.

Rodolfo Basile, I was very fortunate to have you as a colleague and to become your friend. Your great sense of humour made my PhD years much more enjoyable. It was always a pleasure spending time with you, whether at lectures, conferences, writing retreats, or puhkeruumis.

Merit Niinemägi, you are a dedicated researcher, a truly wonderful friend, and an amazing flatmate. I was incredibly lucky to share so much of everyday life with you. It was the most amazing time in my life to live in your apartment! I will always remember our conversations about life and research, watching Estonian TV shows and movies together, our trips to the festivals, and our journeys to conferences. I cannot imagine my life in Tartu without you. I am also very grateful to have met your family, Allan Niinemägi, Arno, and Linda. They are truly wonderful.

I would also like to acknowledge my other roommate, Līga Maskova, and her husband, Andris Maskovs, for the many beautiful moments we shared in our apartment. I am very glad that we have stayed in touch and continue to meet for

reunions together with Milda Kurpniece, her husband, Oskars Kurpnieks, and little Regmants. Milda, thank you for always sharing your experience and for your willingness to help and offer advice. It's great to have you as a friend.

I would also like to extend my special thanks to Bogáta Timár and Anti Lillak. I have always admired both of you for your active cultural lives and your enthusiasm for Finno-Ugric languages and culture. Anti, you have helped me with so many things – from organising a concert for the summer school, finding a participant for my experiment, to dealing with some practicalities. I always felt that I could turn to you, and I am deeply grateful for always helping. Bogáta, we have shared so many beautiful moments with our "club", which I will always cherish. Our long conversations on Pikk are some of my favourite memories. I am so glad to have met you and to be your friend and a PhD colleague.

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Alessandra Dezi, I am so glad to have met you at one of the doctoral seminars where you attended my presentation and showed genuine interest in my work. It was wonderful to meet such a like-minded colleague in the same field of study, with whom I can discuss projects and exchange ideas. Teaching together our summer course *Multilingualism and Beyond in the European Context* was a truly enjoyable and enriching experience, and I learned so much from you. You are such a talented sociolinguist!

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Polina Oskolskaia, I am so grateful to have met you in Tartu. You are an incredibly supportive and wonderful friend and a colleague, and I have always known that I could count on you in any situation possible. You are very much understanding person, and you have helped me in so many ways. It was a great pleasure to working with you. You are truly talented, and your dedication to helping others is truly impressive. I enjoyed our meetings and discussions.

James Baxenfield, when I first met you at a writing retreat, your personality immediately stood out to me. Although we have never been located in one place,

we developed such a beautiful friendship. Over time, we attended quite a few writing retreats and conferences together, and spending time with you has always been a great pleasure. You are one of the most polite and considerate people I have met, and I feel very lucky to have you as a friend. I wish you all the best with your PhD defence!

Adele Vaks, you truly made an impact in my life and on my future. You were the one who suggested that I apply for a postdoctoral position, seeing how well my profile matched the description, and for that, I am so much grateful to you. Thank you so much for thinking about me when you saw it! I was truly lucky to meet you and get to know you better at the summer school in Nijmegen. It is always a delight meeting and chatting with you!

Last but not least, I would like to thank our study specialists Tiia Margus, Andrea Nagy, Lelo Padari, and Ülle Niin for their support with study-related matters at the University of Tartu. I would like to extend my special thanks to Tiia Margus; I cannot imagine my PhD years without you. During this time, you helped me resolve so many issues, and I am deeply grateful for your constant support, quick responses, and willingness to help.

This dissertation would not have been possible without my wonderful colleagues from the International Cooperation and Protocol Office. I was truly fortunate to work in such a supportive and warm environment. I would especially like to thank Kristi Kerge, an exceptional Head of Department, whose kindness and support created such a positive and safe workplace.

My special thanks go to Eveli Soo, my immediate manager, with whom I am proud to say I developed a genuinely personal relationship. She consistently supported my academic career, enabling me to participate in numerous conferences and always demonstrating understanding, flexibility, and confidence in my work. Thanks to this support, I was able to successfully combine my professional responsibilities with my doctoral studies, which I deeply appreciate. I learned a great deal from you, Eveli! We shared many wonderful moments and business trips together, all of which the most memorable for me is our trip to Kazakhstan. You are a truly talented person, a great manager, and a very supportive and considerable friend. Thank you for six wonderful years of working together side by side and for tolerating me!

I would also like to thank Kristel Pedassaar for always reminding me that completing my PhD was important for my future. And she was right! Many thanks to Karoliina Vilimaa, Lauri Randveer, Sirje Uprus, Anneli Maaring, Kady Sõstar, Tiina Jaksman, Gerda Palm, Liis Mulk and others for being such supportive and encouraging colleagues. Sandra Eowyn Karu, you inspire me every day – it is truly a pleasure to work with you. Finally, I would like to thank Lotta Ellervee, from whom I learned so much while organising our summer school. You taught me how to work efficiently and decisively. Your motivation and dedication had a strong impact on me. I am so happy to have you as my friend.

When I first arrived in Estonia, I knew very little about the country and had few expectations. I assumed it would be similar to Ukraine, as both share a Soviet past. However, I soon discovered how profoundly this small country would

impress me and how deeply it would impact my life. The digital advancements, personal approach, and safe and clean environment stood me out. This country takes a special place in my heart, and I can proudly call it home now. I would especially like to acknowledge the support of my dear friend Evgeniya Mogylevska, who played a significant role in helping me make the decision to move to Estonia and begin a new chapter. At that time, we were flatmates, and she continues to be one of my closest and dearest friends.

I would also like to thank all the participants in my experiments for taking the time to contribute to my research. Without you, none of my articles would have been possible. Your contribution has been invaluable.

Я б також хотіла щиро подякувати моїй родині: мамі Тетяні, тату Анатолію, сестрі Анастасії та брату Богдану за їхню безмежну підтримку протягом усього мого життя. Ви завжди були моєю опорою і джерелом сили як у щасливі, так і в складні часи. Ваша віра в мене, любов і розуміння допомагали мені рухатися вперед і ніколи не здаватися. Ви допомогли мені повірити в себе і зрозуміти, що в цьому житті я можу досягти всього, чого забажаю. Я безмежно вас люблю і присвячую цю дисертацію вам.

Я б також хотіла щиро подякувати моїй вчительці, Світлані Василівні Калашник, за те, що ще в шкільні роки вона змогла розгледіти в мені потенціал. Дякую за те, що Ви були поруч зі мною під час вступу до університету і завжди підтримували мене як у шкільні роки, так і після них. Ваша віра в мене, турбота та підтримка мали для мене величезне значення.

I would like to thank my fiancé, Tambet, for always standing by me and supporting me no matter what. I deeply appreciate you putting me first and believing in me, even when it meant supporting all of my (sometimes) crazy ideas. You are the kindest and most understanding person I have ever met, and I am truly grateful to have you in my life. I look forward to many more years together 🩶

TABLE OF CONTENTS

ABBREVIATIONS

RM	–	Receptive Multilingualism
SLA	–	Second Language Acquisition
IPS	–	Index of Perceived Similarity
MGT	–	Matched-Guise Test
IAT	–	Implicit Association Test
C-test	–	Cloze test
ELF	–	English as a *lingua franca*
EuroCom	–	European Intercomprehension (project)
MICRela	–	Mutual intelligibility of closely related languages (project)
CEFR	–	Common European Framework of Reference
CLI	–	Cross-linguistic Influence
LaRA	–	*lingua receptiva*
RTT	–	Recorded Text Testing
REMU	–	Receptive Multilingualism: Mutual intelligibility of closely related languages
DYLAN	–	Language Dynamics and Management of Diversity (project)
LINEE	–	Languages in a Network of European Excellence (project)
RR	–	Russians who recently have moved to Estonia
RR	–	Russians with Russian as L1 and Estonian as L2
REB	–	Estonian-Russian bilinguals
EE	–	Ethnic Estonian
EEi	–	Ethnic Estonian with instructions

LIST OF PUBLICATIONS

Chapter 3
Branets, A., Bahtina-Jantsikene, I., & Verschik, A. (2020). Mediated receptive multilingualism: Estonian–Russian–Ukrainian case study. *Linguistic Approaches to Bilingualism, 10*(3), 380–411. https://doi.org/10.1075/lab.17079.ver

Chapter 4
Branets, A., & Backus, A. (2020). L2 knowledge facilitating L3 learning: The role of Russian linguistic factors in understanding Ukrainian by Estonians. *Philologia Estonica Tallinnensis, 5,* 59–86.
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Chapter 5
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Chapter 6
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Chapter 7
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Chapter 3: *Anna Verschik:* Conceptualisation. *Daria Bahtina, Anna Branets:* Methodology. *Anna Branets:* Investigation. *Daria Bahtina, Anna Verschik:* Data Validation. *Daria Bahtina:* Data Curation. *Anna Verschik, Daria Bahtina and Anna Branets:* Writing – Original Draft preparation; Writing – Review & Editing. *Daria Bahtina:* Visualisation, Formal analysis. *Anna Verschik and Daria Bahtina:* Supervision.

Chapter 4: *Ad Backus:* Conceptualisation. *Anna Branets:* Methodology, Investigation, Data Validation, Data Curation. *Anna Branets:* Writing – Original Draft preparation. *Ad Backus:* Writing – Review & Editing. *Anna Branets:* Visualisation, Formal analysis. *Ad Backus:* Supervision.

Chapter 5: *Anna Verschik:* Conceptualisation. *Anna Branets:* Methodology, Investigation, Data Validation, Data Curation. *Anna Branets and Anna Verschik:* Writing – Original Draft preparation, Writing – Review & Editing. *Anna Branets:* Formal analysis. *Anna Verschik:* Supervision.

Chapter 6: *Daria Bahtina:* Conceptualisation. *Anna Branets:* Methodology, Investigation, Data Curation. *Daria Bahtina:* Data Validation. *Anna Branets and Daria Bahtina:* Writing – Original Draft preparation, Writing – Review & Editing. *Anna Branets:* Visualisation, Formal analysis. *Daria Bahtina:* Supervision.

Chapter 7: *Anna Branets:* Conceptualisation, Methodology, Investigation, Data Validation, Data Curation, Writing – Original Draft preparation, Writing – Review & Editing, Visualisation, Formal analysis.

INTRODUCTION

In today's world, people are actively moving around, whether for a short stay or long-term migration. When coming to a new country, people often find themselves in a complex multilingual environment, where they face the challenge of establishing communication with interlocutors who speak different, often unfamiliar languages or language varieties. Acquiring a new language requires considerable time and effort; however, the need for effective communication remains immediate. To achieve this, speakers may use different language modes to meet their communicative needs. For instance, interlocutors may attempt to communicate through a local *lingua franca*. However, this strategy is not always possible, particularly in contexts where the local lingua franca is unfamiliar to non-local interlocutors or where English as a *lingua franca* (ELF) is less understood by the local population (Bulatović et al., 2019). Interlocutors, of course, may use an interpreter or translator; however, this mode of communication is not always practical or convenient. One of the ways to navigate such situations is to use Receptive Multilingualism (henceforth RM), when interlocutors can speak to each other in different languages and still understand each other (Rehbein et al., 2012). For instance, Estonian and Ukrainian interlocutors might engage in a conversation such as the one illustrated below.

Est speaker: *Kus me kokku saame?* [Where do we meet?]
Ukr speaker: *Давай зустрінемось біля лікарні.* [Let's meet next to the hospital.]
Est speaker: *Haigla juures?* [Next to the hospital?]
Ukr speaker: *Так!* [Yes!]

(Conversation from the Map Task, Chapter 7)

In naturally occurring conversations, it is rare to find instances of pure RM without any interventions. Therefore, this mode of communication can be effectively combined with code-switching, code-mixing, metalinguistic commentary, and other language practices (Bahtina-Jantsikene, 2013; Härmävaara, 2022) to navigate complex multilingual situations.

RM is commonly observed between closely related languages, for example, Estonian and Finnish (Härmävaara, 2022) or Danish, Swedish, and Norwegian (Gooskens, 2005; Hilton N.H et al., 2011; Gooskens et al., 2022), and this type of RM is referred to as *inherited* (Rehbein et al., 2012). RM can also occur between typologically distant languages in contact situations, such as Russian and Estonian (Bahtina-Jantsikene, 2013), and it is called *acquired* RM (Rehbein et al., 2012). This thesis introduces a new type of RM, referred to as *mediated* RM, in which comprehension is facilitated through a third language that is closely related to the target language (Branets et al., 2020). This thesis is specifically focused on the Estonian-Ukrainian language case.

Previous studies on RM have examined a range of constellations involving closely related languages, such as Estonian-Finnish (Härmävaara 2014, 2022)

and Ukrainian-Polish-Russian (Rehbein & Romaniuk, 2014). By contrast, only a few studies have investigated RM in contexts involving typologically unrelated languages, for example, Russian-Estonian (Verschik, 2012; Bahtina-Jantsikene, 2013). Building on previous research, the present thesis extends the scope of RM by examining how it operates between unrelated languages and thereby advances the conceptual understanding of RM in new settings. In particular, this thesis extends beyond inherent and acquired RM and introduces its new type of mediated RM.

Estonian and Ukrainian are typologically different and genetically unrelated languages. While Estonian belongs to the Finno-Ugric branch of the Uralic languages, Ukrainian is a part of the East Slavic branch of the Indo-European languages. These languages share no common origin and have had no direct historical contact. However, mutual understanding between their speakers can be facilitated through Russian as a bridging language. Knowledge of Russian as a second language (L2) may support comprehension of Ukrainian as a third language (L3), as both belong to the East Slavic group, share similar syntactic structures, and display approximately 62% lexical similarity (Tyshchenko, 2010: 66). Furthermore, many Ukrainians use a linguistic continuum known as *surzhyk* – a cluster of in-between Russian-Ukrainian varieties that has a Ukrainian grammatical frame and most of its inflectional morphology while the stems come from both Russian and Ukrainian (Flier, 2008; Kapanov et al., 2025).

While Estonian is the national language, Russian is still widely used in Estonia. Approximately 39% of the population reports speaking Russian as a foreign language (Statistics in Estonia, 16 November 2022). In addition, Russians constitute the largest ethnic minority in Estonia, making up 21.6% of the population (Census, 2011). The use of Russian, however, is largely confined to specific linguistic environments, particularly Tallinn and north-eastern Estonia, where it remains the predominant language (Rannut, 2005). In addition, Russian is taught as a foreign language in schools from grades 5 to 12, meaning that many Estonians acquire it through formal education, although overall proficiency levels tend to be modest.

Estonians may be hesitant in using Russian directly with Ukrainians due to the political history, and, especially from 2022 when Russian aggression started against Ukraine. They might have a motivation to learn to understand Ukrainian because they feel solidarity with Ukraine due to a shared history from Soviet times. Russian shares a close linguistic relationship with Ukrainian, making it an effective bridge in comprehension. Therefore, this thesis explores how Estonian speakers use already learned/existing linguistic and communicative resources of Russian to understand Ukrainian, and how further learning is stimulated in multilingual settings. Empirically, it investigates the degree to which knowing Russian is helpful when Estonians and Ukrainians communicate in RM mode.

Various factors have been found to influence RM. Structural and linguistic variables such as lexical, orthographic, phonological, morphological, and syntactic distances are significant predictors of intelligibility (Gooskens, 2006; Hilton

et al., 2013). However, in RM and, by extension, in mediated RM, the determinants of comprehension extend beyond structural or strictly linguistic variables and also include extra-linguistic and individual factors (Verschik, 2012; Bahtina-Jantsikene, 2013; Muikku-Werner, 2013; Härmävaara, 2014; Kaivapalu, 2015). While typological proximity plays an important role, it is ultimately individuals rather than languages themselves who possess receptive competence and actively engage in the process of comprehension (Romaine, 1989; Sherkina-Lieber, 2015). Consequently, sociolinguistic, cognitive, and socio-political factors at the individual level also play a role in RM. Additionally, RM is employed not only in challenging multilingual situations where interlocutors lack sufficient proficiency in each other's languages, but also in contexts where speakers may choose a language in order to emphasise their affiliation with a particular ethnic group. Bilaniuk (2010), in her analysis of Ukrainian-Russian communication on a television programme, demonstrated that such language use is not perceived as impolite, but rather as a form of non-accommodation in favour of linguistic purism.

The topics of migration, diaspora, and heritage speakers hold significant relevance in the field of linguistics, as population movements often lead to complex multilingual and sociolinguistic dynamics. The full-scale Russian invasion of Ukraine on 24 February 2022 has triggered a significant wave of Ukrainian refugees across Europe, creating new social and linguistic contexts. Before 2022, the Ukrainian population in Estonia constituted about 1.7%, but by 2024, it had risen to 4.4% of the country's total population of 1.37 million. According to the latest data, around 44,480 Ukrainians arrived in Estonia since the full-scale invasion in early 2022 (Statistics Estonia, 14 May 2024). The dynamics of Ukrainian refugee communities continue to evolve each year, offering a valuable foundation for observing linguistic change and conducting linguistic investigations. This PhD project presents an overview of the situation both before and after the invasion, thereby capturing the sociolinguistic changes in the Ukrainian community in Estonia.

Comprehension in RM can be examined through written, spoken, or interactive modes. Comprehension of written text plays a particularly important role, as it enables readers to recognise cognates and structural similarities across languages, often resulting in higher intelligibility than spoken communication (Vanhove & Berthele, 2015; Gooskens & van Heuven, 2017). At the same time, communication in RM is not limited to grammatical and lexical competence but also involves additional strategies that uncover the mechanisms behind establishing understanding rather than merely measuring intelligibility (Backus & Bahtina-Jantsikene, 2016). This thesis explores Ukrainian-Russian intelligibility across all three modes – written, spoken, and interactive to provide a comprehensive overview of the mechanisms that facilitate understanding in RM.

Based on this, the central question for this PhD project is how linguistic and communicative skills are successfully used and expanded in a multilingual context, specifically in communication characterised as mediated RM. The following sub-questions elaborate on and specify this main research question:

Q1 What is the degree of comprehension of written Ukrainian by L1 speakers of Estonian?

Q2 What is the potential of Estonian-Ukrainian mediated RM in interactive settings?

Q3 How much receptive knowledge of Ukrainian do Estonian speakers display via their knowledge of Russian?

Q4 To what extent do linguistic and extra-linguistic factors affect comprehension of Ukrainian by speakers of Estonian?

The thesis aims to isolate, to the extent that this is possible, linguistic and communicative facilitators of the learning process, and does this by studying how Estonian speakers who know Russian to varying degrees use this to handle Ukrainian. The comprehensive methodology includes sociolinguistic questionnaires, a C-test to measure linguistic proficiency of Russian, and comprehension tasks to assess understanding of Ukrainian at both the word and text levels to examine the facilitative effect of passive knowledge of Russian and linguistic and extra-linguistic factors. The Implicit Association Test (IAT) and a Matched-Guise Test (MGT) were used to investigate implicit and explicit language attitudes towards Russian and Ukrainian among speakers of Estonian and Ukrainian. Finally, the Map Tasks were used to investigate communication between Estonian and Ukrainian speakers, a method that provides progressively greater opportunities for mutual communicative support. Based on this, the role of communicative competences, such as pragmatic, cultural, and sociolinguistic strategies in facilitating interaction, was addressed, which evaluated participants' ability to address linguistic challenges in real time. This multifaceted design and methods offer a comprehensive analysis of the interplay between comprehension, communicative success, linguistic, and extra-linguistic factors.

1.1 Sociolinguistic Situation in Estonia

Despite its relatively small population of 1.37 million, Estonia constitutes a particularly interesting case of multilingualism. According to the 2021 census, 84% of the population can speak or understand Estonian, with 67% speaking it as their mother tongue and 17% as a foreign language. Russian remains widely spoken in Estonia, with 379,210 people reporting speaking it as a foreign language (39% of the population), and the Russian minority group is the largest in Estonia, accounting for 296,268 individuals or 21.6% of the population.

In 2021, 12,431 people in Estonia identified Ukrainian as their mother tongue. Since 2021, however, this situation has shifted considerably, with the number of Ukrainians having significantly increased. Around 44,480 Ukrainians have arrived in Estonia since 2022 (Statistics Estonia, 14 May 2024). In total, currently 60,414 Ukrainians live in Estonia, representing 4.4% of the total population. Since the

first study was conducted, the number of Ukrainians has significantly increased (before 2020, there were 23,183 Ukrainians or 1.7% of the population).

According to the 2021 census, 48% of the population in Estonia speaks English, making it the most commonly spoken foreign language (Statistics Estonia, 16 November 2022). In contrast, for Ukrainians, Russian tends to be a language of higher proficiency, due to Russification policies and extensive exposure during the Soviet era (see more in Chapter 7).

For several decades after gaining independence from the Soviet Union in 1991, Estonia maintained a dual education system with separate Estonian and Russian language schools. In Estonian-medium schools, Russian is taught as an optional foreign language for seven to eight years. While technically optional, it has become a default choice in many schools due to the limited range of other foreign languages offered. As a result, many Estonians acquired a passive proficiency in Russian, enabling them to understand the language even without active use. However, a significant shift began with the Estonian parliament's decision in December 2022 to mandate Estonian-language instruction across all educational institutions starting from the 2024–2025 academic year (The Bill on Amendments to the Basic Schools and Upper Secondary Schools Act and Other Acts 722 SE). Under this reform, Russian-language schools are transitioning to Estonian as the primary language of instruction, though Russian remains a part of the school curriculum. In Estonian schools, students are required to learn at least two foreign languages (from 5th to 12th grade), and schools decide which languages to offer, usually influenced by regional demand. The national curriculum does not mandate Russian, but it is commonly available due to Estonia's historical and demographic connections with Russian-speaking communities. After the recent legislative change, students can choose to study Russian as a foreign language, and for those from Russian-speaking families, there is an option to receive classes in Russian language and culture if there are at least ten Russian-speaking students in the school (Ministry of Education and Research of Estonia). This reform encourages schools to provide multiple foreign language options as a secondary language, aiming to reduce the prominence of Russian in this role.

Taken together, these dynamics make Estonia a particularly compelling context for examining multilingualism. The coexistence of Estonian, Russian, and a rapidly growing Ukrainian-speaking community has produced a complex and continuously evolving sociolinguistic situation, giving rise to diverse multilingual practices, including RM. This complexity has been further heightened by the recent reform mandating Estonian-only instruction in schools, which has generated mixed reactions within communities (see more in Klaas-Lang et al., 2025) and, in turn, further complicated language attitudes. As a result, the present moment represents an especially crucial time to study language attitudes in Estonia.

1.2 Aims and Outline of the Thesis

The thesis structure is as follows. Chapter 2 provides a comprehensive overview of the theoretical background of RM and the key factors that facilitate comprehension. Chapter 3 elaborates on the concept of RM by introducing the notion of *mediated* RM and examining both linguistic and extra-linguistic variables. Chapters 4, 5, and 6 explore linguistic factors such as proficiency in Russian and the objective and perceived similarity between Russian and Ukrainian, alongside extra-linguistic aspects such exposure to Russian, including exposure to different language registers, context, learnability, experience in multilingual communication, metalinguistic awareness, and general knowledge. Chapter 7 explores how communicative skills such as pragmatic, cultural, sociolinguistic, and general communicative resources are employed to support understanding, along with an analysis of the role of explicit and implicit language attitudes.

Chapter 3 examines the use of passive skills, focusing on how Estonian speakers understand written Ukrainian. The primary aim is to assess and compare success rates in understanding individual words and overall text meaning among speakers with varying pre-existing proficiency in Russian. In addition, the study analyses linguistic features that either facilitated or hindered comprehension, considering the extent to which grammatical and lexical similarities between Russian and Ukrainian contributed to understanding. Importantly, participants received no support from a communicative context, as the test was conducted in isolation. Chapter 3 addresses the following questions:

1. To what extent can Estonians understand written Ukrainian via their knowledge of Russian?
2. How much receptive knowledge of Ukrainian do Estonian speakers display via their knowledge of Russian?
3. What linguistic and extralinguistic factors facilitate the success rate?

Method: Twenty Estonian L1 participants carried out a reading comprehension experiment, filled out a sociolinguistic questionnaire on language use and attitudes (Kaivapalu, 2015), and performed a C-test (Grotjahn, 1987) to test their proficiency in Russian. Their understanding of Ukrainian was tested at the B1 level in terms of individual words (Shumarova, 2000) and the text as a whole (Gooskens, 2013). The test was divided into tasks for understanding separate words and the texts. Additionally, half of the group received instructions about the differences and similarities between Ukrainian and Russian, while the other half did not. This procedure aimed to test learnability.

Chapter 4 focuses on the role of Russian language proficiency in understanding Ukrainian, both in understanding individual words and the texts as a whole. The grammatical and lexical errors made by Estonian participants in the Russian C-test are analysed. Furthermore, the correlation between C-test results in Russian

and comprehension of words and texts in Ukrainian is examined. Chapter 4 answers the following questions:

1. What role does proficiency in Russian play in the comprehension of Ukrainian words and texts by speakers of Estonian as L1?
2. Do success rates in Ukrainian correlate with proficiency in Russian?
3. Which specific aspects of Russian facilitate or obstruct the intelligibility of Ukrainian?

Method: Same as the comprehension experiment described in Chapter 3. The number of L1 Estonian participants was increased from 20 to 30 for this study compared to the experiment in Chapter 3. Particular focus was given to the C-test results in Russian and Ukrainian tasks for understanding separate words and texts as a whole.

Chapter 5 explores both objective and perceived linguistic similarities between Russian and Ukrainian. Structural similarities play an important role in establishing comprehension (Gooskens, 2006). The results of the word translation task are analysed separately for the participants' understanding of cognates, divergent cognates, and unrelated words. Particular attention is also given to the debriefing interviews and participants' explanations of their answers to the word definition task. Chapter 5 answers the following questions:

1. How do objective and perceived linguistic similarities between Russian and Ukrainian affect Estonian speakers' understanding of Ukrainian words?
2. How do participants draw on their prior linguistic experience and resources when navigating comprehension in complex multilingual settings?
3. What extra-linguistic factors affect the comprehension of Ukrainian by Estonian L1 speakers?

Method: The comprehension experiment described in Chapters 3 and 4. Participants include 30 L1 Estonian speakers. The data for this Chapter was obtained from the comprehension experiment presented in Chapter 3 and is focused on the Ukrainian word translation task and follow-up debriefing interviews.

Chapter 6 investigates the impact of language exposure on the comprehension of Ukrainian by Estonian speakers. Language exposure is one of the most important factors affecting intelligibility. The relationship between language exposure and intelligibility was previously found in a Scandinavian context (Gooskens & Heeringa, 2014; Golubović, 2016; Gooskens & Van Heuven, 2020). The following questions are asked:

1. What is the role of language exposure to Russian in the comprehension of Ukrainian by speakers of Estonian?
2. What is the correlation between language exposure to Russian and the Ukrainian word definition task and understanding Ukrainian texts as a whole?

3. What is the correspondence between language exposure and L2-L3 instructions?

Method: This study is based on the comprehension experiment described in Chapters 3 and 4, which involved 30 speakers of Estonian as L1. Particular attention was given to the questionnaire results, especially questions concerning language exposure and formal instructions in Russian. Participants were divided into three groups based on the frequency of their exposure to Russian: low, medium, and high. The results are correlated to the outcomes of the C-test in Russian and the Ukrainian tasks at the word and text levels. Additionally, the role of exposure to Russian on the C-test in Russian, word recognition, and text comprehension tasks in Ukrainian is examined across two conditions for participants who received the instructions and those who did not.

Chapter 7 explores the link between explicit and implicit language attitudes towards Russian and Ukrainian and the communicative success of Estonians and Ukrainians. Estonian and Ukrainian speakers first take the language attitudes tests, and then they are brought into a situation in which they have to employ their Ukrainian receptive skills in an RM conversation online (two communication sessions with equal difficulty). Spoken communication offers many strategies for building common ground (Clark, 1996), and in this particular case, reveals the mechanisms that govern the use of the RM mode (Härmävaara, 2014). The following questions are asked:

1. What is the potential for Estonian-Ukrainian mediated RM in interactive settings?
2. What is the level of communicative success after two sessions? How do the interactions differ across the sessions?
3. What implicit and explicit attitudes do Ukrainians and Estonians hold towards the Russian and Ukrainian languages?
4. What is the role of explicit and implicit language attitudes in Estonian-Ukrainian communication?

Method: Twenty-eight participants (15 Ukrainian and 13 Estonian) completed the Implicit Association Test (IAT), followed by a questionnaire incorporating an adapted Matched-Guise Test (MGT). Then, twenty-two participants were paired into eleven Estonian-Ukrainian dyads for two online communication sessions using Map Tasks of equal difficulty, which were randomised across dyads. The participants are instructed to use RM mode and cannot resort to English and have to complete each of the Map Tasks in ten minutes. The method was adapted and developed from Bahtina-Jantsikene (2013). Success rates, measured as task completion and time taken for successful completion, are presented.

Chapter 8 includes the discussions and conclusions of the main findings presented in the previous chapters. The methodological considerations, key findings, societal and scientific relevance, as well as further directions of the research are presented.

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CHAPTER 2 GENERAL CONCEPTS

2.1 Receptive Multilingualism and Intelligibility

While the phenomenon of RM is not new, it only gained academic attention in the 1950s, initially in the context of closely related languages. The earliest study on this topic, conducted on American Indian languages, referred to it as *intelligibility between closely related languages* (Voegelin & Harris, 1951). This was followed by discussions in the Scandinavian context, where the term *semi-communication* was introduced, highlighting that comprehension operates on two levels: the linguistic level, involving recognition of words and forms and the cognitive, involving the processing of meaning and contextual interpretation (Haugen, 1953). Later, the notion of *plurilingual communication* (Lüdi, 2007) emerged in the Swiss context, describing communicative practices in which interlocutors strategically use their entire linguistic repertoires to achieve successful interaction. Whereas earlier studies focused on incomplete or imperfect communication, this study identified its primary goal as achieving effective communication. This aligns with the concept of *intercomprehension* (Berthele, 2007; Grin, 2008), which refers to understanding between speakers of closely related languages. Another related concept is *lingua receptiva,* which is defined as "the ensemble of those linguistic, mental, interactional as well as intercultural competencies which are creatively activated when interlocutors listen to linguistic actions in their 'passive' language or variety" (Rehbein et al., 2012: 249). Studies on *lingua receptiva* (LaRa) encompass pragmatic and psycholinguistic approaches and, importantly, also investigate communication between typologically distant languages (Bahtina-Jantsikene, 2013). These newer approaches to RM have increasingly emphasised the goal of achieving successful communication, moving beyond earlier concerns with perfect language proficiency and extending to both closely related and typologically distant languages (Zeevaert, 2004; Ten Thije & Zeevaert, 2007; Braunmüller, 2007; Bahtina-Jantsikene, 2013).

Having outlined the different definitions and conceptualisations of RM, it is important to turn to the specific processes that help explain how RM functions in practice. One of the most frequently discussed mechanisms is *mutual intelligibility.* In fact, studies on RM are often associated with, or used synonymously with, this concept, which refers to the degree of understanding between closely related languages. The term is used to describe the extent to which one speaker can comprehend another while both are using their languages (Swarte, 2016: 2). Mutual intelligibility detects the mean score between two languages in both directions, although in cases of strong asymmetry, this mean may not accurately reflect the actual level of understanding between speakers (Gooskens, 2024). It has been shown that mutual intelligibility is frequently asymmetrical, meaning that comprehension in one direction does not necessarily correspond to comprehension in the reverse direction (Jensen, 1989; Gooskens, 2006; Schüppert &

Gooskens, 2010; Gooskens & Van Bezooijen, 2013; Rehbein & Romaniuk, 2014; Gooskens et al., 2015; Härmävaara, 2022).

While linguistic similarities and typological distance were proven to play an important role in comprehension, previous studies have shown that they are not the sole determining factors (Verschik, 2012; Bahtina-Jantsikene, 2013; Härmävaara, 2014; Kaivapalu, 2015; Muikku-Werner, 2013). The ability to draw on plurilingual resources, or the so-called M-factor, together with metalinguistic awareness as its key component (Jessner, 2014; Verschik, 2017) are pronounced additional/crucial factors in RM. Additionally, exposure to diverse varieties and registers, such as slang, regional dialects, and colloquial speech (Kaivapalu, 2015; Gooskens & Heeringa, 2014), and individual characteristics such as personal experience, communicative needs, and linguistic repertoire (Blommaert & Backus, 2011), and language attitudes (Delsing & Lunding Åkesson, 2005; Gooskens, 2006; Impe, 2010; Schüppert & Gooskens, 2011; Hilton & Gooskens, 2013; Schüppert et al., 2015; Hilton et al., 2022) play an important role (see more on these concepts in Section 2.3.2). Not all scholars accept the concept of mutual intelligibility between languages, as comprehension is ultimately a property of individual speakers rather than of languages per se (Verschik, 2012). While material and typological similarity between linguistic varieties is an important factor, empirical evidence indicates that even speakers of the same variety may display different levels of comprehension of a related variety. Consequently, mutual intelligibility cannot be explained solely in terms of structural similarity. RM encompasses not only linguistic factors but also pragmatic aspects, individual learner characteristics, and metalinguistic awareness (Blees & Ten Thije, 2016).

More specifically, multilingual speakers often possess highly developed metalinguistic awareness, enabling them to shift easily between the linguistic form and meaning of different languages (Jessner, 2014; Verschik, 2017). Because of the increased metalinguistic awareness, language users can easily activate various communication and pragmatic competences (Pitzl, 2005). This can be explained by the multicompetence model, which refers to the 'knowledge of two languages in one mind' (Cook, 2005), where multilingual cognition is defined as a complex system that differs fundamentally from the monolingual mind (Cook, 2013). Thus, multilinguals will find the similarities between the languages better than monolinguals. RM not only focuses on mutual intelligibility between languages but also includes individual differences of the interlocutors and their ability to find similarities and employ them. Additionally, it is not limited to typologically close languages and includes the studies between typologically unrelated languages in contact situations (e.g., Bahtina-Jantsikene, 2013). It may also occur through the mediation of a third language that is closely related to the target language, a phenomenon conceptualised in this PhD project as a mediated type of RM (Branets et al., 2020; Branets & Verschik, 2021; Branets & Bahtina, 2021; Branets & Backus, 2021). In this thesis, mutual intelligibility or just intelligibility is regarded as an outcome of RM.

Nowadays, RM is actively studied between different languages and language varieties, addressing a variety of research questions. Several studies have focused on measuring the degree of mutual intelligibility and identifying the factors influencing comprehension. One prominent example is the *Mutual Intelligibility of Closely Related Languages* (MICReLa) project, which examined mutual intelligibility across sixteen languages belonging to the Germanic, Slavic, and Romance language families (Golubović & Sokolić, 2013; Heeringa et al., 2014; Femke et al., 2015; Gooskens et al., 2016; Schüppert et al., 2017). Other studies focus on the investigation of communication strategies, meta-communicative factors, etc. (Zeevart, 2004; Bahtina-Jantsikene, 2013; Härmävaara, 2014). A further line of research conceptualises RM as the acquisition of passive competencies, incorporating strategies from foreign language learning (Hufeisen & Marx, 2007: 308). In this PhD project, the primary focus is on measuring the degree of comprehension and identifying the factors that influence it, while also addressing meta-communicative practices and the potential for language acquisition. This thesis is conducted in the context of Estonian and Ukrainian, a language pairing that, to my knowledge, has not been previously investigated.

Prior research has examined Estonian in combination with Finnish (Kaivapalu, 2015; Kaivapalu & Martin, 2017; Härmävaara, 2022) and with Russian (Bahtina-Jantsikene, 2013). In Finnish-Estonian trilingual communication, the similarity between Finnish and Estonian functioned as a key interactional resource, enabling participants to negotiate meaning, co-construct shared codes, and engage in incidental language learning (Härmävaara, 2022). Bahtina-Jantsikene (2013) reported that communication between Estonian and Russian speakers was possible even with limited language proficiency. She concluded that LaRa, without the intervention of other modes in unrelated languages, is relatively rare, particularly when interlocutors encounter communication difficulties, and works best in combination with other multilingual practices. Ukrainian was investigated in combination with Polish and Russian in communication situations. In Polish-Ukrainian constellations, Ukrainian participants were also more successful than Polish participants. This is explained by the extensive exposure to Russian in Ukraine (Rehbein & Romaniuk, 2014: 161) and is in line with the asymmetric understanding of mutual intelligibility between languages. In the Russian-Ukrainian language pair, Ukrainians were more successful in understanding Russian than Russians were in understanding Ukrainian.

This thesis aligns with the usage-based approach, which emphasises that a speaker's linguistic system is shaped by real-life language use (Barlow & Kemmer, 2000; Bybee, 2010) and cognitive mechanisms (Tomasello, 2003; Theakston & Lieven, 2017). It is further suggested that language skills and language learning are formed by both active use and passive exposure (Barlow & Kemmer, 2000; Blommaert & Backus, 2011) and experience (Langacker, 1987; Croft, 2001; Bybee, 2010; Quick & Verschik, 2019; Backus, 2014), with multilingual experience improving cognitive flexibility and creative productivity (Kharkurin, 2012). Both exposure and experience are determined in this thesis as influential factors.

2.2 Mediated Receptive Multilingualism

Research on RM has primarily focused on two types: RM between closely related languages (*inherent* RM) and RM across language families in contact situations (*acquired* RM). This thesis proposes a third type, termed *mediated RM*, in which comprehension is facilitated through a bridge language that is closely related to the target language. While the notion of mediated RM has been touched upon in earlier RM research (Swarte et al., 2015; Sloboda & Brankačkec, 2014), it has not yet been explicitly defined or systematically examined.

Previous RM studies have examined similar phenomena, often but not exclusively involving closely related languages. Swarte, Schüppert & Gooskens (2015) examined whether a second language (L2) can facilitate comprehension in RM. More specifically, whether knowledge of some German can help Dutch speakers understand Danish despite having no prior knowledge of Danish. The findings indicated that participants with higher proficiency in German performed better on a translation task. This phenomenon has been referred to as the 'foreign language mode' (Swarte et al., 2015). An investigation into the mediated aspect of RM was conducted with Czech, Polish, Slovak, and Sorbian, focusing on whether speakers of Sorbian as an L2, among L1 Sorbian speakers, could use it to facilitate comprehension of Polish, Slovak, and Czech (Sloboda & Brankačkec, 2014). Although the results suggested some degree of comprehension, the small number of participants with L2 Sorbian prevented firm conclusions. In the study of communication between Estonian salespersons and Finnish customers in Tallinn, it was observed that interlocutors with Russian as their L1 and Estonian as their L2 employed two strategies: either speaking Estonian with Finnish customers or using quasi-Finnish (*spontaneous grammar*, see below) extrapolated from their Estonian colleagues. This type of RM was referred to as acquired (Verschik, 2012).

Spontaneous grammar is an emergent and evolving grammatical system that develops naturally during language learning. For example, in the utterance *See on siella toise-lla korruse-lla* ('it is there on the second floor'), elements from Estonian (*See on seal teisel korrusel*) and Finnish (*Se on tuolla toisessa kerroksessa*) are combined, illustrating how speakers draw on multiple linguistic systems simultaneously (Verschik, 2012: 269). Spontaneous grammar evolves through four main stages. First interlocutors build spontaneous grammar in the target language via a bridge language and identifying interlingual regularities. Then they form interlingual correspondence grammar through rules between the bridge and target languages. After that, they create a plurilingual inter-system that stores successful (and some unsuccessful) transfer processes. Finally, they develop metacognitive strategies by retaining learning experiences in the target language (Meißner & Senger, 2001: 41–43). Spontaneous grammar forms part of the interlanguage system but is distinct from the target language. It contributes to a plurilingual framework that incorporates both positive and negative correspondence rules, which learners can apply and refine across languages.

Recent studies within the framework of mediated RM build on this theoretical foundation. Stenger and Avgustinova (2023) investigated how speakers of German

as an L1 comprehend Bulgarian by leveraging their proficiency in Russian, focusing on both intelligibility outcomes and individual differences. Another study examined comprehension between Russian as L1 and Finnish using L2 Estonian as a bridge language. The findings revealed that Russian speakers were able to successfully understand Finnish without prior learning, thanks to factors such as exposure through travel or the internet, highlighting the role of extra-linguistic factors in facilitating comprehension (Nikitina, 2023).

The system underlying mediated receptive multilingualism can also be understood through the lens of the spontaneous grammar concept. Spontaneous grammar refers to the provisional linguistic system constructed during the oral or written perception of an unfamiliar but closely related language, enabling learners to draw on their knowledge of previously acquired languages to formulate hypotheses about the new one (Hufeisen & Marx, 2007). This system is composed of the learner's cumulative linguistic knowledge and is gradually adjusted and reformulated over time to approximate the actual structure of the target language. Studies emphasise that one bridge language is crucial, including high proficiency in it.

Within the field of cross-linguistic influence (CLI), increasing attention has been given to the study of L3 acquisition (Cenoz, 2001; Hammarberg, 2001). According to Hufeisen's factor model, learning L2 and L3 are distinct processes. In L3 learning, learners can draw on specific knowledge of their L2. The model is therefore extended by the *foreign/second language factor*, which includes individual second language learning experiences, the ability to compare languages, identify similarities, make interlingual connections, apply foreign language learning strategies, etc. (Hufeisen, 1991). When acquiring a third language (L3), learners activate two or more pre-existing linguistic systems, each of which may interact with or potentially interfere with the acquisition process (Murphy, 2003). Various studies highlight the role of interlingual strategies, which enable learners to identify similarities between their two foreign languages and use these as bridges to facilitate learning (Marx, 2005). While the primary aim of mediated RM regarding one's own language is passive comprehension, it may nonetheless support future acquisition of the target language, and, if it occurs repeatedly, may lead to incidental learning. When the interlocutors reach passive proficiency of the target language, it would be easier for them to start using the language actively in the future (Ringbom, 2007).

The European Intercomprehension is a concept from the EuroCom framework introduced to increase communication between languages within language families (Hufeisen & Marx, 2007). It applies in didactic contexts as an approach to learning a related foreign language by combining RM with plurilingual resources. Particular emphasis is placed on the development of competencies that extend beyond purely linguistic resources, including metalinguistic, intercultural, domain-specific, and cooperative communicative skills. EuroCom employs mediated receptive multilingualism to explore how interlingual language acquisition operates, focusing on cases where the learner is already proficient in a closely related 'bridge' language. It has been implemented for Germanic, Romance, and Slavic

languages. Within studies in the Slavic language group, Russian serves as a base language for understanding and learning Slavic languages (Zybatow, 1999: 67–88).

Inferencing between closely related languages is possible by comparing the languages across seven levels, known as the 'seven sieves'. These include applying prior and contextual knowledge, identifying international vocabulary, recognising pan-Slavic vocabulary, detecting sound correspondences, finding common graphemes and pronunciations, observing syntactic and morphosyntactic regularities within the language family, and identifying common prefixes and suffixes (Zybatow, 2003). With practice, the application of these sieves can become automated, enabling efficient text comprehension within a language family (Stoye, 2000).

Although the EuroCom framework provides valuable insights into the processes underlying mediated RM, its applications remain largely confined to didactic contexts, with a primary focus on reading comprehension and the transfer of lexical inventories from one language to another. The approach has been developed mainly for translation-oriented tasks, yet reports indicate that translation performance with Estonian as a target language was comparatively weak (Eur-lex report). Ukrainian has also been examined within this framework (Zybatow, 2003; Ustaszewski, 2014), but the scope of analysis was limited to the framework of seven sieves for translator training. This highlights that EuroCom has not been systematically applied beyond didactic reading contexts to explore mediated RM in interactive, multimodal, or spoken communication settings, nor has it been extensively tested with less commonly taught languages or asymmetrical comprehension scenarios.

2.3 Linguistic and Extra-Linguistic Factors Enhancing Comprehension

When examining RM, it is crucial to assess the degree of comprehension between interlocutors and to identify the linguistic and extra-linguistic factors that shape it. As outlined in Chapter 1, a range of linguistic and extra-linguistic factors has been explored in previous research on RM. In this section, I discuss the linguistic and extra-linguistic factors that were detected within Estonian-Ukrainian mediated RM.

2.3.1 Linguistic factors

2.3.1.1 Language proficiency

Language proficiency is a crucial factor in RM: the higher an individual's proficiency, the better they can comprehend their conversational partner or a written text. Research in second language acquisition has examined the role of L2 in the acquisition of L3, showing that the typological relationship between L2 and L3 can predict positive transfer (Cenoz, 2003; Flynn et al., 2004). Although the

present thesis does not focus on language acquisition, this theoretical framework offers valuable insights into how linguistic transfer operates in mediated RM. Studies have demonstrated that when acquiring an L3 closely related to an L2, lower proficiency in the L3 leads to greater transfer of linguistic items from the L2 (Ringbom, 1987; Hammarberg, 2001). Interlocutors tend to establish connections primarily between L1 and L2 (Ringbom & Jarvis, 2009), and in cases where the L1 is not typologically close to the L3, the L2 takes on a pivotal role. For example, in a study on French L3 acquisition by Dutch–English bilinguals, participants exhibited more transfer from their L2 English to L3 French than from their L1 Dutch (Dewaele, 1998: 486). In the study with Spanish and Catalan L1 speakers learning German and English, it was found that in L3 acquisition, acquired languages were more likely to be activated rather than L1, regardless of typology (Sanchez, 2022). Therefore, the greater the number of linguistic cues shared between L2 and L3, the higher the likelihood of achieving successful comprehension.

Another important dimension in language learning is the transfer of items and systems. Item learning for comprehension involves cognitive processes and the activation of receptive skills, such as acquiring specific lexical elements and structures. This constitutes the initial stage of language acquisition. System learning for comprehension refers to recognising relationships and patterns between units and concepts in the target language and those in the learner's L1 or L2 (Ringbom & Jarvis, 2009). For example, learners may notice that the same lexical item can carry different meanings across contexts (Branets et al., 2020: 24, example 14) or that a particular grammatical meaning is consistently expressed through a specific morpheme.

Linguistic competence, shaped by phonology, lexicon, and syntax, also encompasses the crucial ability to use language pragmatically (Oller, 1970; Fisher, 1984; Harmer, 2001). It has been noted that various aspects of learning-in-action in naturally occurring foreign, second, or other language interactions, demonstrate that interlocutors can communicate effectively despite lexical or grammatical inaccuracies (Firth & Wagner, 2007: 296). The knowledge of formal syntactic, morphological, phonological, and lexical systems inherently includes an understanding of the principles and patterns governing their use, enabling speakers to employ these systems effectively for communication (Block, 2003: 61). Communication competence involves more than just verbal expression; it encompasses the capacity to interact effectively that requires more than grammatical and lexical competence (Backus & Bahtina-Jantsikene 2016: 32).

Language proficiency can be assessed through self-assessment tests, in which participants report on their own linguistic abilities. Although such measures are not always entirely reliable, numerous studies have found a correlation between self-perceived and functionally measured language proficiency (Gooskens & van Heuven, 2017; Tang & van Heuven, 2009; Branets & Verschik, 2020). Communicative proficiency is a core component of linguistic competence. Studies suggest that RM fosters the development of both communicative and cognitive proficiencies (Doyé, 2005). While popular testing frameworks, such as the 'can-

do' scales in the Common European Framework of Reference (CEFR), emphasise communication skills, they often underrepresent vocabulary and grammar assessment. In the present PhD project, participants provided self-assessments of their Russian language proficiency. Communicative skills were not tested; instead, Russian language proficiency was assessed using a C-test (Raatz & Klein-Barley, 1982) developed and adjusted in line with Grotjahn's (1987) instructions. Although traditionally applied to measure first or second language proficiency, C-tests have also been successfully used to evaluate intelligibility between closely related languages (Scharpff & Van Heuven, 1988; Van Bezooijen & Gooskens, 2005). Gooskens and Van Heuven (2017) identify the C-test as an optimal tool for this purpose, as it enables reliable assessment of grammar, vocabulary, and overall reading comprehension (Chapelle, 1994; Baghaei, 2011).

2.3.1.2 Objective and Perceived Similarities

Measuring linguistic distance is one of the most widely used approaches to investigating mutual intelligibility. Previous studies in RM have demonstrated that various dimensions of linguistic distance, such as lexical, orthographic, phonological, and syntactic, play a significant role in determining intelligibility (Van Bezooijen & Gooskens, 2005; Gooskens & Van Bezooijen, 2006, 2007; Van Heuven, 2008; Hilton et al., 2013). Due to the nature of the current thesis, which examines comprehension between Ukrainian and Estonian, two typologically unrelated languages, the thesis explores how Estonian speakers perceive structural similarities between Ukrainian and Russian.

The role of structural similarity between closely related languages is a prominent topic in RM research (Gooskens et al., 2015; Salehi & Neysani, 2017; Härmävaara & Gooskens, 2019). Similarity can be approached from both the structural point of view as well as from perception, thus researchers have distinguished between *objective similarity* and *perceived similarity*. Objective similarity refers to the measurable degree of correspondence between languages (Jarvis & Pavlenko, 2008: 177), whereas perceived similarity concerns language learners' subjective assessments of what elements might be similar between languages (Ringbom, 2007: 7). Perceived similarity becomes particularly relevant when proficiency in the target language is limited, as learners often base their judgments on L1 or other languages closely related to the target (Ringbom & Jarvis, 2009: 106). As van Heuven (2008) notes, languages occupy a multidimensional space and can be perceived differently in terms of linguistic proximity. Perceived similarity does not always function positively; it can also lead to misunderstanding or false inferences when learners incorrectly assume equivalence between forms or meanings. To operationalise perceived similarity, Kaivapalu and Martin (2014: 86) introduced the *Index of Perceived Similarity* (IPS) method to calculate separately the scores for completely similar, fairly similar, and different words.

In Estonian-Finnish comprehension, comprehension strategies often relied on identifying sound correspondences, such as vowel shifts or consonant changes,

but when these were unknown or perceived as differences, understanding became more difficult. Studies confirm that in processing closely related languages, perceived similarity rather than difference plays a decisive role, offering important implications for teaching Estonian and Finnish (Kaivapalu, 2015: 66).

Lexical similarity is widely recognised as one of the most important linguistic factors in RM. Based on Gibson's theory of affordances as applied in trilingualism research (Singleton & Aronin, 2007; Dewaele, 2010), it has been argued that multilinguals are more adept than bilinguals at identifying lexical similarities, particularly cognates, and benefit from a broader range of resources (Otwinowska-Kasztelanic, 2023). In both written and spoken comprehension, the ability to recognise words or identify similarities with one's L1 or other previously learned languages is crucial. Cognates are often the most readily recognised lexical items. However, if interlocutors recognise too few words, they may fail to grasp the overall meaning of a message (van Heuven, 2008). The term cognate is broad, so in this thesis we adopt the following classification: (1) cognates with the same meaning in both languages; (2) cognates with different meanings, i.e., words of shared origin whose meanings have diverged (*false friends*); (3) cognates from different registers, including colloquialisms, archaisms, and regionalisms; and (4) non-cognates (Branets & Verschik, 2020: 1078). Studies have shown that even non-cognates can be recognised through the use of L2 knowledge (van Bezooijen et al., 2012) or via extra-linguistic factors (Branets & Verschik, 2020).

The word translation task is one of the most widely employed methods for assessing intelligibility and can be administered in either spoken (Gooskens, 2024) or written form (Branets et al., 2020). To gain deeper insight into perceived similarities between languages, such tasks are often complemented by participants' qualitative explanations. In the RM, this method has been used extensively (Doetjes, 2007; Tang & van Heuven, 2009; Gooskens & van Heuven, 2017). The errors produced by participants provide valuable information about the strategies they employ to match words in the target language with corresponding cognates in their native language (see, e.g., Gooskens & van Bezooijen, 2013; Härmävaara & Gooskens, 2019).

While linguistic factors play a significant role in intelligibility, they are not the sole determinants. Cognitive, sociolinguistic, and individual factors also exert considerable influence, and structural similarity alone does not guarantee comprehension (Bahtina-Jantsikene, 2013; Branets et al., 2020; Härmävaara, 2014; Kaivapalu, 2015; Muikku-Werner, 2013; Verschik, 2012).

2.3.2 Extra-Linguistic Factors

When the material similarity between the languages is low, researchers in receptive multilingualism (RM) often emphasise the role of extralinguistic factors. Extra-linguistic factors including but not limited to metalinguistic awareness, general knowledge, context, random knowledge of certain linguistic elements (Kaivapalu, 2015: 69), multilingual experiences, communicative needs, linguistic

repertoires (Blommaert & Backus, 2011), geographical distance, language exposure, language attitudes, exposure to dialects, and multilingual experience, among others, have also been underscored as equally important in RM (Gooskens, 2006, 2007; Gooskens & Schneider, 2019; Schüppert & Gooskens, 2011; Gooskens & van Heuven, 2020; Branets & Verschik, 2021; Branets & Bahtina, 2021).

2.3.2.1 Language Exposure

Language exposure has received considerable attention in the field of RM (Bø, 1978; Delsing & Lundin Åkesson, 2005; Gooskens, 2006; Gooskens et al., 2011). Whether through reading newspapers, watching television, travelling, or participation in cultural activities, such exposure has been shown to positively affect language proficiency (Murphy, 2003) as well as facilitation of L2–L3 transfer in the context of CLI (Dewaele, 2002).

In SLA, language learning correlates with exposure, instruction, frequency of use, and proficiency. Language exposure, in particular, has been shown to enhance both comprehension and productive skills (David & Wei, 2008; Bybee, 2001; Gathercole, 2002; Pearson, 2002; Poulin-Dubois et al., 2013). At the linguistic level, language exposure is claimed to contribute especially to vocabulary development (Thordardottir, 2011). The study with children in Montreal acquiring French and English simultaneously found a strong link between the amount of exposure to a language and performance in that language, with different patterns for receptive and expressive vocabulary. The results have shown that children with equal exposure to both languages achieved receptive vocabulary scores comparable to monolinguals, whereas greater exposure was needed to reach monolingual levels in active vocabulary. Studies have shown that even with limited language exposure, there is an impact on the lexical level (Hulstijn et al., 1996; Rott, 1999; Webb, 2007). Additionally, several studies have suggested that grammar can be further developed through exposure to communication outside the classroom (Krashen, 1982; 1994; Truscott, 1996; 1999).

Beyond its contribution to formal learning, language exposure is closely associated with incidental learning (Malone, 2018), defined as the acquisition of a language without the intention to learn it, or, in other words, unintentional learning (Bruton et al., 2011). It can be also described as the acquisition of language without anticipating an upcoming test (Hulstijn, 2003; Dörnyei, 2009). Incidental learning is based on the learner consciousness, while forming the distinction between explicit and implicit learning (Ellis & Loewen, 2007). It was pointed out that incidental learning refers to the acquisition of language units such as grammar, vocabulary, orthography, pronunciation, and other features while engaging in communicative tasks with focus attention on meaning and function rather than on form (Hulstijn, 2003: 16). Underlying this process is a cognitive mechanism whereby learners integrate real-world information to derive semantic meaning (Bice & Kroll, 2019).

The concept of incidental learning, particularly in relation to language exposure, has been examined across diverse contexts. For example, in a study

involving Dutch adults with minimal exposure to Mandarin, participants were exposed to audio recordings containing repeated, gestured words. Participants successfully matched the words to weather conditions without conscious awareness, demonstrating that even brief exposure can facilitate learning (Gullberg et al., 2010). Likewise, research with speakers of English as L1 who learned Finnish as L2 indicates that, even without an explicit intention to learn, low levels of exposure can produce measurable, albeit limited, gains (Bice & Kroll, 2019). Exposure to registers such as colloquial expressions, archaisms, and dialects supported interlocutors in recognising cognates between Estonian and Finnish (Kaivapalu, 2015). Incidental learning has also been mentioned in content teaching, where language can be naturally acquired along with learning new content (Snow et al., 1992).

Multilingual competence is a complex phenomenon, and research indicates the need for further studies on metalinguistic awareness (Bono, 2009). This awareness can be raised both through formal instruction (Thomas, 1988; Sanz, 2000; De Bot & Jaensch, 2013) and through sustained language use (Schwartz, 1993; Sharwood, 2004; Ellis, 2005). In incidental learning, the acquisition of linguistic items is achieved through interaction (Brouwer, 2003; Brouwer et al., 2004). Repeated engagement with the target language in communicative contexts not only strengthens automatic processing and procedural knowledge but also supports the development of metalinguistic awareness. Speakers who gain substantial L2 knowledge through such exposure can integrate it into communication, which in turn facilitates implicit language skill development. Over time, these skills become automated, enabling more fluent and efficient language use (DeKeyser, 2003). Language exposure therefore plays a dual role, fostering both metalinguistic awareness and implicit learning (Norris & Ortega, 2000; Doughty, 2003; Ellis, 2002). The latter is defined as "the non-intentional, automatic acquisition of knowledge about structural relations between objects or events" (Frensch, 1998: 49).

The first study in RM to examine the relationship between language exposure and intelligibility was conducted in the Scandinavian context (Bø, 1978), revealing that participants living in border areas and thus more frequently exposed to the neighbouring language demonstrated higher levels of comprehension. In the same context, Gooskens and Heeringa (2014) investigated the impact of dialect exposure, showing that increased variation and contact can enhance comprehension between closely related languages; for example, Norwegians displayed better understanding of Dutch and Danish due to their familiarity with diverse dialects. Similarly, Verschik (2012: 271) observed that Estonian speakers from Tallinn tend to understand Finnish more readily than those from other regions, a difference attributed not to greater linguistic similarity but to increased exposure through Finnish television and interaction with Finnish tourists. Language exposure was detected to positively affect the use of different language registers such as slang, dialects, archaisms, etc. (Kaivapalu, 2015).

One of the few studies addressing language exposure in the Slavic context examined six languages: Czech, Slovak, Polish, Croatian, Slovene, and Bulgarian

(Golubović, 2016). Despite limited cross-language contact, language exposure significantly predicted intelligibility, explaining 3–6% additional variance and reducing AICc by 13–50 points (with the partial exceptions of Czech-Slovak and Croatian-Slovene). Although other studies in RM have not identified a direct correlation between language exposure and intelligibility, this factor should not be dismissed as insignificant (see Gooskens, 2006; 2007; Gooskens & Hilton, 2013).

Regarding the sociolinguistic situation in Estonia, large numbers of Russian-speakers were settled in the country during the Soviet occupation to work in industry and the military, leading to their concentration in major urban areas. Today, 85% still reside in just two counties and three cities, with only a small minority dispersed elsewhere (Statistics Estonia, 2000; Rannut 2002; 2003). On this basis, four main language environments can be distinguished according to the use of Russian and Estonian. Tallinn and north-eastern Estonia both have a considerable number of Russian-speaking inhabitants; the former is predominantly bilingual, while the latter is largely Russian monolingual. The remaining Estonian cities form the third area, while rural regions constitute the fourth. Both are characterised predominantly by the use of Estonian (Rannut, 2005: 31–34). In intelligibility experiments conducted in Estonia, taking into consideration participants' place of residence is essential, as regional language environments may influence results. In the present thesis, language exposure was controlled both by place of residence and by actual exposure in daily life, such as through family, friends, neighbours, television, music, and similar contexts. Participants reported the frequency of their exposure by selecting one of the following options: 'once a day', 'once a week', 'once a month', 'once a year', or 'never'. All participants in the comprehension experiment were residents of Tallinn either from their birth or for a substantial time, while all participants in the communication experiment were residents of Tartu.

2.3.2.2 Learnability

Explicit attention to specific linguistic features has been shown to produce immediate gains in language learning outcomes (DeKeyser, 2003). In RM, research has demonstrated that understanding even basic differences between two language codes yields better results than relying solely on comprehension of the communicative situation (Golubović, 2016). Consequently, in designing intelligibility tests, the role of instructions was also examined.

The effect of explicit instructions was investigated in RM in the Czech-Croatian intelligibility test (Golubović, 2016). The Czech experimental group received explicit instructions, whereas the Croatian group did not. The groups were given pre- and post-tests to measure the progress. The findings demonstrated that even a small amount of instructions could significantly improve comprehension: it enhanced both the functional and perceived intelligibility of Croatian among Czech participants. Notably, participants were also able to transfer their acquired knowledge from the written to the spoken language.

Understanding even basic differences between two language codes leads to better results than understanding the communicative situation only (Golubović, 2016: 139–152).

Lightbown and Spada (1990) reported differences in language test performance between student groups depending on the type of explicit instructions provided: a focus on vocabulary improved overall comprehension, while a focus on grammar additionally increased accuracy. However, language learners who perform well on formal tests do not necessarily perform equally well in spontaneous speech, and vice versa (Spada & Lightbown, 2008). These findings are consistent with research on child language acquisition (e.g., Harley & Swain, 1984; Swain, 1985; Swain, 1989), which shows that formal instructions and language immersion foster different outcomes. Learners in classroom contexts typically perform well in areas that are explicitly taught, whereas immersion in the target language environment is particularly effective in fostering grammatical accuracy in morphology and syntax.

In this context, instructions are most effective when they combine a focus on both form and meaning (Spada & Lightbown, 2008). Multimodal exposure, such as listening to an audio recording while reading the corresponding text (Shefelbine, 1990), can serve as a supplementary strategy to enhance comprehension. Similarly, Gooskens (2013) noted that providing audio recordings of texts in intelligibility tests can activate participants' processing of multiple linguistic cues, thereby improving understanding.

In this PhD project, the term *learnability* is used to describe the process by which participants develop explicit or implicit skills to improve their understanding of Ukrainian texts. In a usage-based perspective, language acquisition is viewed as a natural process occurring through daily engagement with form and meaning "in use" (Tomasello, 2003), with competence emerging even in one's first language. The findings of this study reflect similar developments in mediated RM in two ways: first, through explicit instructions that highlights specific linguistic correspondences and makes them more accessible; and second, through predominantly implicit pattern recognition that emerges as participants progress from one task to another.

2.3.2.3 Language Attitudes

Language attitudes are defined as "affective, cognitive, or behavioural reactions toward different language varieties and their speakers" (Ryan et al., 1982: 7). Language attitudes can predict individuals' willingness to learn a language (e.g., Gardner, 1982; Gardner & MacIntyre, 1993), the frequency with which they use it (e.g., Edwards & Fuchs, 2018), and the contexts in which this language is used (Kircher & Zipp, 2022). Language attitudes may also focus on specific aspects of a language, such as towards multilingualism (Kircher & Zipp, 2022).

Numerous factors shape language attitudes. A crucial aspect of interaction is the evaluation of an individual's social belonging based on their language use, which reflects group membership or *social identity* (Tajfel & Turner, 1986;

Grosjean, 1982: 117). For example, Ukrainians speaking Russian with fellow Ukrainians who use varieties of Russian common in Ukraine, or Estonians communicating in Russian, may not evoke negative attitudes, since the language is associated with in-group membership within their national context. By contrast, interaction with speakers of Russian from Russia may trigger negative attitudes, as their linguistic variety is closely associated with the state perceived as an aggressor.

Processes such as categorisation and stereotyping play a central role in shaping language attitudes. These attitudes arise when interlocutors evaluate one another by linking language use to a particular social group and attributing corresponding stereotypes to the speaker (Dragojevic & Giles, 2016; Kircher & Zipp, 2022). This can be observed in encounters with speakers of *surzhyk*, a cluster of in-between Russian-Ukrainian varieties created due to the contact situation of two closely related languages. *Surzhyk* is often stereotypically associated with rural backgrounds or lower levels of education, although such associations do not reflect reality (Branets, to be submitted). Similar attitudes were historically attached to Ukrainian, which had a low status during the imperial and Soviet period, while Russian retained prestige and was widely used (Bilaniuk, 2020; Verschik, 2010). Ukrainian is regaining both status and prestige, and since the Russian aggression in 2022, a marked shift from Russian to Ukrainian has been observed (Kulyk, 2023; Bahtina & Throne, 2025). Such processes highlight the role of status and prestige in shaping associations between language attitudes and ideologies. In this sense, language attitudes can be understood as "expressions of social convention and preference which, in turn, reflect an awareness of the status and prestige accorded to the users of these varieties" (Edwards, 1982: 21).

Individual characteristics of the speakers are crucial in language attitudes (e.g., Ryan et al., 1982; Hill, 2015; Dragojevic et al., 2020). Socio-demographic factors such as age, residence, education, etc. as well as familiarity (Karam, 1979; Gooskens, 2006) and the social context of the interaction (Carmichael, 2016) affect language attitudes. The role of familiarity in communication is examined by Bahtina-Jantsikene and Backus (2016), who link it to the establishment of common ground that can influence reaching communicative goals. In the context of language attitudes, familiarity may likewise generate favourable or unfavourable evaluations depending on speakers' previous contact experiences. Familiarity can also be expressed in other domains, for example, in music (Zissman & Neimark, 1990). This is highly associated with the context of communication that can provoke different feelings. Listening conditions (Dragojevic & Giles, 2016) and voice quality of the speaker (Zuckerman & Driver, 1989) were identified to affect one's attitudes. Unfavourable listening conditions or speaker-related factors such as voice pitch, nasality, tone, intonation, and other vocal characteristics can predict negative or positive attitudes.

In research on RM, considerable attention has been given to the relationship between language attitudes and intelligibility (Delsing & Lundin Åkesson, 2005; Gooskens, 2006; Schüppert & Gooskens, 2011; Hilton & Gooskens, 2013; Schüppert et al., 2015; Hilton et al., 2022). While not all studies have identified

a significant link, several have reported correlations between attitudes and intelligibility (Delsing & Lundin Åkesson, 2005; Gooskens & van Bezooijen, 2006; Impe, 2010; Schüppert, Hilton, & Gooskens, 2015; McDonough et al., 2022). One of the most extensive investigations into mutual intelligibility examined sixteen European languages from the Germanic, Romance, and Slavic groups, revealing a clear correlation between language attitudes and intelligibility, although this effect appeared to be moderated by language exposure (Gooskens & Van Heuven, 2020). In the context of Slavic languages (Croatian, Slovene, Bulgarian, Czech, Slovak, and Polish), there was no correlation found between perceived language beauty and intelligibility, concluding instead that the role of language attitudes is likely mediated through broader motivational factors rather than exerting a direct effect (Golubović, 2016).

One of the key debates concerns the causal relationship between language attitudes and intelligibility. Positive attitudes towards a language may increase listeners' willingness and motivation to comprehend it, while negative attitudes or social stigmas can hinder successful communication (Giles & Niedzielski, 1998; Lambelet & Mauron, 2017). Conversely, reduced intelligibility may also give rise to more negative evaluations, as research indicates that speech which is harder to process tends to be judged less credible or less favourable (Dragojevic & Giles, 2016; Schüppert et al. 2015; Gooskens 2024: 89). This raises the broader issue of causality, whether greater intelligibility fosters more positive attitudes or whether favourable attitudes enhance intelligibility, an issue that scholars continue to investigate.

According to the social cognition model, attitudes emerge through two different cognitive mechanisms: one that is automatic and based on associations, and another that is deliberate and propositional in nature (Pantos & Perkins, 2013). Based on this distinction, language attitudes can be classified as implicit and explicit and conscious and unconscious.

Explicit language attitudes are typically assessed through direct measures, in which participants are fully aware that their attitudes are being evaluated and often recognise the study's aims. They can also be examined using indirect measures, where participants may realise that the research concerns attitudes but remain unaware of the specific focus, for instance, when asked to evaluate a speaker rather than a language directly (Vogel & Wänke, 2016). Explicit measures capture intentional, conscious evaluations that individuals can reflect upon and report, involving attitudes that are generally controllable and dependent on cognitive resources, although these elements do not necessarily operate simultaneously (McKenzie & McNeill, 2023). Some studies further suggest that explicit attitudes may also include a degree of subconscious processing, particularly when indirect measures are employed (Vogel & Wänke, 2016). While explicit measures are widely used in language attitude research, participants' awareness of their own language biases can make interpretation more complex. Moreover, such measures are subject to limitations, including the tendency for respondents to adjust their answers in line with perceived social norms (McKenzie & McNeill, 2023).

Research on implicit language attitudes offers different perspectives on their nature and measurement. Petty, Fazio, and Briñol (2009) distinguish three main viewpoints on how implicit measures relate to explicit attitudes. The first view suggests that implicit measures can be assessed through indirect explicit methods, which, although less direct, still rely on self-report. The second perspective regards tools such as the Implicit Association Test as particularly effective in uncovering subconscious attitudes, revealing evaluations that individuals may not consciously acknowledge. The third perspective views implicit measures as capturing automatic evaluative responses – spontaneous reactions to attitudinal objects that occur unintentionally and often without conscious awareness or control. Overall, implicit language attitudes can be understood as automatic, subconscious, and indirect responses to an attitude object (Petty & Cacioppo, 1981; Kihlstrom, 2004; Banaji et al., 2004). Therefore, implicit attitudes are characterised by spontaneous and unconscious reactions, whereas explicit attitudes involve intentional, conscious judgements, often shaped by beliefs and stereotypes about a language or a language user (Bishop et al., 2005; Pantos, 2019; Levon et al., 2021).

Different methods are used to measure language attitudes. One of the most frequently used is the Matched Guise Technique (MGT), which was developed by Lambert, Hodgson, Gardner, & Fillenbaum (1960). In the MGT, participants hear bilingual speakers reading the same text in different languages or varieties. These recordings, called "guises", are matched because the same speakers read the text twice, once in each language or variety, without the participants' awareness. This design helps isolate their attitudes toward the language or language variety rather than the individual speaker. Participants are then asked to rate each guise on a semantic-differential scale on five to seven traits like intelligence, friendliness, or competence (Osgood et al., 1957). MGT is considered an indirect measure as it examines how participants rate the same speaker performing in different linguistic guises. For example, if a bilingual speaker is rated more favourably when using one language over another, it reflects the participant's attitude toward the language rather than the individual. Although the MGT is used to test the implicit language attitudes, as it involves indirect evaluation in this thesis, it is considered a tool for capturing explicit attitudes, as respondents remain aware that their judgements are being recorded, though thoughtful and accessible evaluations (Pantos, 2019). Previous studies recommend adopting a mixed-methods approach, combining MGT with direct data collection methods such as questionnaires or interviews (Hoare, 2001; Ihemere, 2006; Loureiro-Rodríguez et al., 2013; Kircher, 2014). In this thesis, the MGT is supplemented with explicit questions directly addressing the language attitudes that are strategically placed after the Implicit Association Test (IAT) and incorporated into the questionnaire (Loureiro-Rodríguez & Acar, 2022).

In RM research, the MGT has been applied to examine the link between language attitudes and intelligibility. Schüppert et al. (2015), for example, used this method to investigate Danish and Swedish schoolchildren's attitudes (Danish for Swedish children and Swedish for Danish children). Their findings revealed

a statistically significant, albeit modest, relationship between language attitudes and intelligibility.

The Implicit Association Test (IAT), introduced by Greenwald et al. (1998), is the most widely used tool for measuring implicit attitudes. This computer-based task assesses the strength of automatic associations stored in memory, revealing underlying evaluative biases that individuals may not consciously recognise (Rudman et al., 1999). The test compares reaction times when participants classify contrasting target concepts (e.g., Russian vs. Ukrainian) alongside evaluative categories (e.g., positive vs. negative). The logic is that people respond more quickly when the pairing aligns with their implicit associations. For example, if participants categorise 'Ukrainian' with 'positive' more rapidly than 'Russian' with 'positive', this suggests a subconscious preference for Ukrainian. The outcome is expressed as a D score ranging from –2.0 to +2.0, where scores closer to zero indicate neutrality, while higher absolute values reflect stronger implicit preferences (McKenzie & McNeill, 2023). In the present thesis, the IAT is employed to examine implicit attitudes towards Russian and Ukrainian, aiming to uncover hidden biases and subconscious preferences among Estonian and Ukrainian participants.

Research has shown that results from implicit measures such as the IAT often align only weakly with explicit self-reports, particularly in areas that are socially sensitive, including issues of race and minority groups (Hofmann et al., 2005; Lane et al., 2007). This gap, which is commonly referred to as the implicit-explicit attitude discrepancy, underscores the difference between spontaneous, automatic evaluations and consciously reasoned judgements. Evidence further suggests that when the discrepancy between the two is large, the underlying attitudes are more malleable and open to change, whereas smaller discrepancies typically indicate attitudes that are more firmly held and resistant to shift (Karpen et al., 2012; Luttrell et al., 2016). Analysing how implicit and explicit measures converge or diverge is therefore crucial for understanding the nuanced and multi-layered nature of language attitudes, an issue addressed in the present thesis.

In the context of RM, Impe (2010) examined the relationship between unconscious language attitudes and intelligibility among Dutch speakers in Belgium and the Netherlands using an effective priming experiment. Participants were presented with auditory word primes in Belgian Standard Dutch and regiolectal varieties, followed by positive or negative images, which they had to classify rapidly and accurately by pressing a keyboard button. The results indicated a significant, though weak, correlation between attitudes and intelligibility, suggesting that subconscious attitudes are predictors of intelligibility (Impe, 2010: 96).

The correspondence between explicit and implicit language attitudes was discussed in the study on regional varieties of Belgian Dutch. Implicit language attitudes were measured with the personalised Implicit Association Test (P-IAT), and explicit attitudes were gathered through rating tasks. While both methods produced broadly similar trends, such as participants valuing their own regional varieties, the results diverged on specific points, for example, in evaluations of

the standard variety. Correlations between implicit and explicit results were weak or altogether absent. This discrepancy suggests that implicit and explicit methods may not be measuring the same underlying construct. In addition, methodological issues such as task order, structural fit between the two methods, and the social sensitivity of language attitudes further complicate the relationship. Taken together, the lack of strong correlations highlights the value of treating implicit and explicit attitudes as complementary rather than interchangeable perspectives, underlining the need to use them in combination for a fuller understanding (Rosseel et al., 2018).

This thesis investigates both explicit conscious and implicit subconscious language attitudes towards Russian and Ukrainian among Estonian and Ukrainian participants. The MGT and IAT are employed to capture different dimensions of these attitudes. Combining these approaches allows examination of how the results correspond and provides a basis for reflecting on the value of integrating multiple methodological perspectives in language attitude research. The thesis also explores how explicit and implicit language attitudes affect communicative success. Whereas earlier research has primarily investigated the impact of language attitudes on intelligibility (Impre, 2010; Debreczeni, 2022), the present analysis aims to offer a broader perspective, highlighting the wider impact of attitudes on communication outcomes.

2.3.2.4 Other Factors

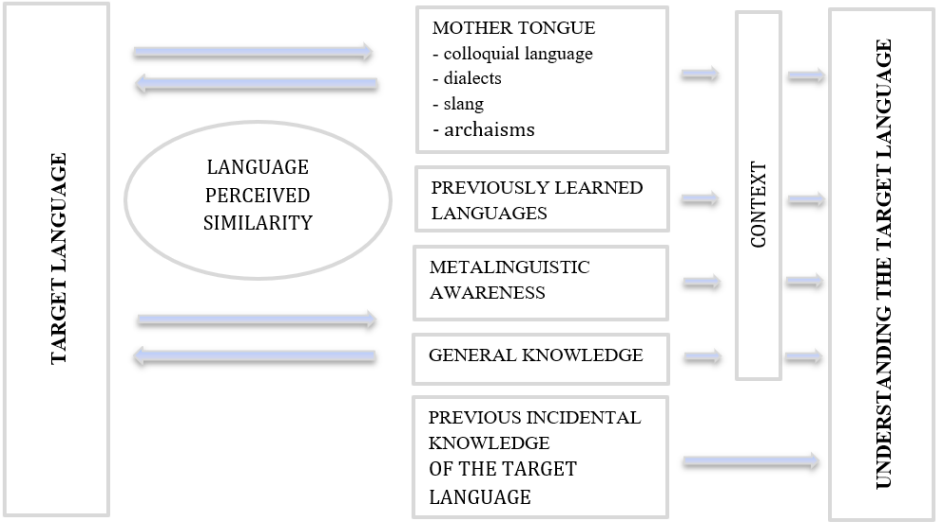
The perception of similarities between languages is closely tied to participants' metalinguistic awareness, which encompasses general knowledge of how language functions, familiarity with the mother tongue, and competence in previously acquired as well as target languages. In a study on Estonian-Finnish full-text comprehension, meta-linguistic awareness played a crucial role in finding similarities between the languages (Kaivapalu, 2015). Metalinguistic awareness refers to the ability to recognise and analyse language categories and grammatical forms (Blees & Ten Thije, 2016). Verschik (2017: 9) defined meta-linguistic awareness as the capacity to recognise that a form, category, or construction in one language corresponds to a pattern in another. Another definition of meta-linguistic awareness is the switching between form and meaning (Jessner, 2014: 177).

Metalinguistic awareness is more developed in multilingual speakers than in monolinguals. In the study of speakers of Polish who learned English, only those proficient in several languages consciously noticed and used cognates, demonstrating a positive relationship between multilingualism and cognate awareness (Otwinowska-Kasztelanic, 2011). In the study of native speakers of German, French, and Italian, they were asked to translate cognates from unfamiliar but related languages. The study showed that multilinguals were more successful at recognising cognates, applying strategies such as focusing on consonants and relying on context (Berthele, 2008; Berthele, 2011). Meta-linguistic awareness is

a powerful mechanism that transcends linguistic systems and helps learners to overcome difficulties in connecting them.

In Estonian-Finnish communication (Kaivapalu, 2015), the participants' comments showed that the components of target language comprehension are intertwined and function interactively in the individual understanding process. Some relied primarily on the perceived similarity between Estonian and Finnish and then used context to fill in gaps, while others started from the context and looked for similarities with their native language. Overall, comprehension strategies varied: participants combined perceived similarity with guessing, general knowledge, metalinguistic awareness, and prior knowledge of the target language. These findings highlight individual differences in processing, with some moving from detail to whole and others from whole to detail, depending on their linguistic background. This is reflected in the proposed model of understanding a closely related language (Table 1, Kaivapalu, 2015: 69).

Table 1. Model of Understanding a Closely Related Language (Kaivapalu 2015).



Each additional language learned influences the understanding of other languages as well as the overall mechanisms of comprehension. This has led to the identification of the so-called M-factor as one of the predictors of comprehension (Jessner, 2014; Verschik, 2017). Within the M-factor, language contacts play a crucial role in developing linguistic awareness: interactions between languages have a positive effect by enabling learners to establish links across their repertoires and by strengthening their metalinguistic awareness (Jessner, 2006: 122). In CLI, every learned language has an impact on the newly acquired one (Cenoz et al., 2001; 2003, Dewaele, 1998).

2.4 Comprehension of Written Language and Communication in Receptive Multilingualism

Among the developments that have shaped international communication in Europe since the Middle Ages, written norms came to determine the appropriateness of language use, replacing the more flexible oral practices that had previously supported RM (Braunmüller, 2013). Research on mutual intelligibility between related languages has increasingly focused on the role of cognate recognition as a key factor enabling RM. These studies explore the extent to which speakers can rely on similarities in vocabulary, morphology, and orthography to understand closely related languages without prior formal learning (Gooskens, 2006; Tang & van Heuven, 2009; Kaivapalu & Muikku-Werner, 2010; Schüppert, 2011; Kaivapalu & Martin, 2014; Golubović, 2016; Swarte, 2016; Oktavia, 2019). This was done from multiple perspectives and across different modalities, focusing on both written and spoken language. Findings indicate that comprehension is generally higher in written tasks than in audio tasks (Gooskens & van Heuven, 2017).

Building on this line of research, comprehension of written language is assessed at different levels, such as word, sentence, and text. Among these, word-level testing, particularly the word translation task, is one of the most widely used methods. While words are often presented in isolation, in this thesis, they were embedded in a text in order to provide contextual support. Assessing text comprehension is regarded as more natural, as it mirrors the way messages are understood in real-life communication. Such a method can also be combined with Recorded Text Testing (RTT), in which listeners answer comprehension questions after hearing a recorded passage. Developed in the 1950s, RTT remains an important tool for measuring comprehension, as it quantifies understanding through the percentage of correct responses (Voegelin & Harris, 1951). In the written mode, assumed phonetic similarity with words in a reader's native language can facilitate successful cognate guessing, as shown by Vanhove and Berthele (2015). For this thesis, word translation tasks, text comprehension, and RTT were combined to develop a comprehensive test for investigating mediated RM.

Communication involves more than verbal expression; it requires effective interaction that goes beyond grammatical and lexical competence (Backus & Bahtina-Jantsikene, 2016: 32). When linguistic similarities are limited, interlocutors may draw on plurilingual resources (Lüdi, 2007; 2013) and holistic brain activation (Grosjean, 2008) to establish common ground. The holistic activation theory views the multilingual brain as an integrated system in which all linguistic resources can be mobilised simultaneously. Plurilingual resources thus encompass skills across all known languages, forming a combined repertoire to achieve communicative goals. Importantly, these resources include not only verbal but also non-verbal strategies, which play a key role in securing mutual understanding (Lüdi, 2013: 142).

Studies emphasise that communication succeeds when participants develop a shared frame of reference, built on mutual awareness and sustained through cultural knowledge or joint experiences. This shared basis allows interlocutors to recognise and validate each other's understanding, making interaction smoother and more effective (Clark, 1996: 120–121). It was pointed out that establishing common ground is a crucial aspect of achieving successful communication. It is associated with reflexive awareness, which should include awareness itself that can be interpreted as a joint perceptual experience or action of interlocutors (Clark, 1996).

Successful communication in RM depends on the interlocutors' communicative skills, linguistic awareness, and understanding typological (dis)similarities (Blees & Ten Thije, 2015). Crucially, the hearer's role is as significant as the speaker's (Rehbein & Kameyama, 2004). RM is inherently collaborative: speakers adjust their output to the hearer's comprehension, while hearers actively interpret meaning through linguistic and contextual cues (Beerkens, 2010; Rehbein et al., 2012). This hearer-oriented perspective (Dascal, 2003) highlights comprehension as an active process of coordination. Speakers employ strategies to activate the hearer's passive knowledge (Rehbein et al., 2012), while hearers use back-channel cues such as "yes" or "uh-huh" (Yngve, 1970) to display attentiveness and guide interaction. These cues, described by Rehbein (1977, 1979) as part of a 'communicative apparatus', help synchronise speech actions and align mental processes. They may also prompt elaboration, leading to successive stages of understanding (Rehbein, 1987; Rehbein & Kameyama, 2003) and guiding interaction through different stages of understanding (Rehbein, 1987; Rehbein & Kameyama, 2003; Rehbein & Romaniuk, 2014).

Central to communication in RM is the inference-making mechanism, which connects utterances and reconstructs meaning by drawing on linguistic, discourse, institutional, and cross-linguistic knowledge (Sacks, 1985; Rehbein et al., 2012). Cognates, shared vocabulary, and familiar contexts may facilitate this process. Compared to monolingual interaction, RM demands greater linguistic awareness, as interlocutors must manage cross-linguistic differences and varying proficiency levels. Alignment is essential: in monolingual settings, it is often achieved through repetition and conceptual adaptation (Pickering & Garrod, 2004), but in RM it requires explicit repair and negotiation. Speakers employ strategies such as repetition, elucidation, reformulation, and summary, while hearers, especially those with lower receptive proficiency, must actively signal problems (Beerkens, 2010). The importance of explicit alignment has been demonstrated in Estonian-Russian communication, where meta-communicative devices were detected to be important in establishing common ground (Bahtina-Jantsikene, 2013; Backus & Bahtina-Jantsikene, 2016). Multilingual practices in RM are more complex than monolingual ones, as they require diverse communicative processes and the use of multiple linguistic repertoires to secure mutual understanding.

Communication in RM can be successfully maintained even without full proficiency in the languages involved (Zeevaert 2004; Braunmüller 2007; Ten

Thije & Zeevaert 2007; Bahtina-Jantsikene 2013). Rather than viewing limited proficiency as a barrier, these practices demonstrate how interlocutors can actively compensate for the lack of language proficiency with advanced communication strategies. This list includes comprehension checks, self-corrections, appeals for assistance, signalling uncertainty, and offering help by more proficient speakers. To address lexical gaps, speakers employ compensatory strategies, which may be process-oriented (e.g., providing descriptions or using superordinate terms) or code-oriented (e.g., inventing words, literal translations, or code-switching).

Communication in RM is typically studied either in naturally occurring interactions or in experimental settings designed to imitate real-life conversations. Compared to comprehension of written text, communication always involves at least two interlocutors who may interact through different modes, such as face-to-face conversation (Kendon et al., 1975, Rehbein & Romaniuk, 2014), verbal-only interaction (Bahtina-Jansikene, 2013), or computer-mediated communication (Van Mulken & Hendriks, 2015). In computer-mediated communication, paralinguistic strategies such as capitalisation, emoticons, and punctuation were detected as influential (Van Mulken & Hendriks, 2015: 40–41).

The face-to-face conversation was discussed in a triangle Polish-Ukrainian-Russian constellation, where they discussed the aspects of problematic understanding. On average, problematic understanding accounted for only 10.4% across all 12 conversations (Rehbein & Romaniuk, 2014). The face-to-face interaction was also discussed between Finnish and Estonian student organisations in multiparty interaction with asymmetric language skills. Mutual understanding was supported by the similarity of the languages but was recognised as only partial. This was evident in explicit remarks on exclusion, frequent meaning negotiations, translatory activities to facilitate access, and bilingual punning to manage asymmetries (Härmävaara, 2022: 3).

Verbal-only interactions are used to eliminate non-verbal cues, which play a significant role in achieving communicative success. In everyday life, this mode of communication is represented by, for example, phone conversations or online meetings without webcams. Applied to Russian-Estonian communication, this method demonstrated that the majority of participants were able to communicate successfully in this mode and complete the task (16 out of 20; Bahtina-Jantsikene 2013: 67). This method was used between unrelated languages (Estonian and Russian). Thus, in the present research, I used this method for the communication task that was adapted to the specific conditions within the mediated RM.

The context in which RM is studied varies considerably, ranging from workplace interactions (Börestam Uhlman, 1994; Ribbert & Ten Thije, 2007; Ludi, 2007; Beerkens, 2010) to academic settings (Ten Thije & Zeevaert, 2007; Beerkens, 2010; Blees & Ten Thije, 2014) and to everyday encounters (Braunmüller, 2007; Lüdi, 2013; Härmävaara, 2022). Studies on naturally occurring workplace interaction show that the use of RM is not automatic but needs to be negotiated, and it is not necessarily the interlocutors' first choice. Once established, however, participants tend to predominantly maintain their first languages, accounting for 89.8% of the interaction in German-Dutch RM meetings (Beerkens, 2010).

Positive examples were also observed in German–Dutch communication at the Goethe Institute in Amsterdam, where participants explicitly agreed to use RM, finding it most effective to speak their native languages, supported by strong language skills and a history of equal collaboration (Ribbert & Ten Thije, 2007). However, on the contrary, in workplace communication between German-French colleagues in Switzerland, it was found that "pure" RM was rare, as participants often switched languages and modes despite instructed use of RM (Lüdi, 2007).

In naturally occurring conversations, RM rarely appears in its ideal form, as interlocutors often employ strategies such as code-switching, accommodation, negotiation, or other communicative adjustments. For example, Bahtina-Jantsikene (2013) observed that in Estonian-Russian conversations, participants resorted to code-switching within RM when encountering difficulties, while Verschik (2012) described accommodation strategies in which language forms were compromised and interlocutors consciously imitated one another's speech, resulting in the creation of a so-called "quasi-Finnish" in Estonian-Finnish interactions. Accommodation aims at reducing linguistic differences between interlocutors (Giles et al., 1991; Hlavac, 2014). In the Scandinavian context, accommodation has similarly been described as a process that may blur the boundaries between languages (Braunmüller 2002: 7–9). Similar tendencies were found in the Swiss context, where creative accommodation blurred the boundaries between languages (Lüdi, 2013: 143). Accommodation may range from minimal adjustments to more gradual blending through convergence and code-switching, incorporating dialectal and interdialectal varieties and deviations from native pronunciation, including direct quotations (Braunmüller, 2002: 8; 2007: 35).

With the growing emphasis on internationalisation in higher education, RM has been suggested as a viable complement or alternative to ELF. It offers students the possibility to engage in academic interaction in their preferred languages, while lecturers are not required to duplicate teaching materials or instruction across multiple languages (Blees et al. 2014). In recent years, the question of using RM in higher education has been raised in the Netherlands in light of new governmental reforms aimed at reinforcing Dutch as the primary language of instruction. Under the *Internationalisation in Balance* initiative (Ministerie van Onderwijs, Cultuur en Wetenschap), the government emphasised Dutch as the norm, limiting English-taught content to a maximum of one-third unless strongly justified. Against this background, RM could be an alternative to ELF, enabling students to use their preferred languages without requiring lecturers to duplicate all materials. Although the application of RM in classrooms is relatively rare, translanguaging practices in educational settings where teachers and students code-switch languages have been argued to be more ecologically relevant. Such processes can occasionally give rise to RM (Creese & Blackledge, 2010).

Taken together, these findings demonstrate that RM cannot be reduced to linguistic intelligibility alone. Rather, it emerges from the interplay of written and oral comprehension, interactional dynamics, and context-specific practices. Communication involves much more than intelligibility alone, as it also draws on interactional dynamics, cognitive processes, and a variety of linguistic and extra-

linguistic factors. Assessing both written text and oral communication provides a more comprehensive picture of overall language comprehension, since it captures not only the understanding of texts but also performance in naturally occurring conversation. The next section looks at the particulars of RM in communicative settings, namely, different strategies found in the speaker and hearer roles.

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CHAPTER 3. MEDIATED RECEPTIVE MULTILINGUALISM: ESTONIAN-RUSSIAN-UKRAINIAN CASE STUDY

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ABSTRACT

This article introduces and defines the concept of mediated receptive multilingualism as a mode of multilingual communication which eases understanding between typologically distant languages through the medium of a language closely related to the target. In an experimental setting, Estonians without previous exposure to Ukrainian were quite successful in understanding Ukrainian texts via their knowledge of Russian. As expected, they made use of various language-specific elements to improve intelligibility, such as linguistic similarities between Russian and Ukrainian. However, a number of extra-linguistic factors were detected as influential predictors of success, especially metalinguistic awareness, exposure to Russian, exposure to various registers, experience with multilingual situations, learnability, and attitudes towards Ukrainian. These findings contest a static take on multilingual potential and point out the emergent nature of competencies and practices that become relevant in multilingual settings. Unconventional communicative modes – like mediated receptive multilingualism – may activate linguistic and sociolinguistic resources needed for establishing understanding in novel and potentially challenging communicative settings.

Keywords: receptive multilingualism, mediated receptive multilingualism, comprehension, Estonian, Russian, Ukrainian

3.1 Introduction

Interpretation of the world around us is a natural process characteristic of human beings (Tomasello, 2008), including our capacity to understand languages via dynamic construction of meaning. The activation of different cognitive processes behind such mechanisms depends on a number of factors, for instance perception and availability of immediate cues in the environment, or previous histories of social interaction or exposure (Galati & Brennan, 2010; Gibbs & van Orden, 2012). Multilingual communication has been shown to benefit from specific cognitive skills, such as multilingual awareness and meta-linguistic competence (Jessner, 2014; Blees & Ten Thije, 2016; Verschik, 2017) and a number of non-

linguistic factors, like positive attitudes towards the target language and its users (Bahtina- Jantsikene, 2013).

In the strict sense, this paper reports on results from reading comprehension tasks in an unknown language. However, we conceive of structural and material similarity as a precursor to human-to-human communication that, similar to actual interaction, does not rely on de-contextualised knowledge alone, but can be described as a reader's active engagement with a text that is affected both by linguistic and extra-linguistic factors. Our goal is to better describe a multitude of factors that come into play in multilingual situations when people try to access a completely new language via other available resources. We focus on receptive multilingualism (henceforth, RM) as one alternative mode that addresses the complexity of communication and capitalises on plurilingual resources and cognitive strategies that allow its users to access a new language. In other words, RM is primarily enabled by receptive skills rather than productive, which makes com prehension tests highly relevant for exploring the prowess and limitations of this mode. We then support our claim that comprehension is not context-free by demonstrating the effects of these linguistic and extra-linguistic resources and finally suggest that the factors of influence detected in a series of reading tasks – along with factors that go beyond the scope of this study such as audiovisual perceptions and intersubjective relations – have the potential to promote understanding also in human-to-human version of receptive multilingualism.

Research in the field of a relatively young theory of receptive bi/multilingual is becoming more and more topical in a world characterised by the rise of computer-mediated communication and unpredictable migration patterns. These developments affect how we communicate and with whom. This calls for systematic exploration of alternative interactive modes and language combinations that previously have not been considered relevant by mainstream linguistics.

RM is a communicative mode in which interlocutors use their own languages (or modifications thereof, i.e., code-switching, adaptation, compromise strategies, etc.) while speaking to each other (Rehbein, Ten Thije & Verschik, 2012). Traditionally, this mode has been discussed in relation to typologically related languages (inherent RM, e.g., Estonian-Finnish) or in contact situations (acquired RM, e.g., Estonian-Russian). In reality, there might be language constellations that include a third language which is closely related to one of the languages in question, for instance, communication between Russian salespersons and Finnish customers in Estonia through the medium of Estonian. Local Russian salespersons can understand Finnish via Estonian and even speak quasi-Finnish adopted from their Estonian colleagues (Verschik, 2012). Another example of such RM is the situation experienced by one of the authors when her Estonian physicist colleague noticed that she was reading a Ukrainian newspaper on the Internet and mentioned that he was also able to read and understand Ukrainian because, in his words, "Russian and Ukrainian have the same structure". This example is a confirmation of the fact that understanding is possible through the medium of a third language. Although the phenomenon as such is not new (e.g., Swarte, Schüppert & Gooskens, 2015) and has received some attention, we feel that it

would be useful to have a specific term for it. We call this type of RM "mediated receptive multilingualism".

In our contribution we seek to explore whether and how speakers of Estonian as L1 with some knowledge of Russian understand Ukrainian. Estonian (Finnic, Uralic) and Ukrainian (East-Slavic, Indo-European) are not related and do not have a history of direct contacts. Typically, Estonian speakers have no exposure or experience with Ukrainian. However, there are a substantial number of Russian- speakers in Estonia (about 29% of the population) and Russian is widely taught (L2 or L3). Older generations have some proficiency in Russian dating back to the Soviet era (1940–1941, 1944–1991) when Russian was compulsory for all non-Russians. The recent events in Ukraine have sparked interest among Estonians to seek additional information, and some have trained themselves to read Ukrainian- language texts, leaning on their experience with Russian. However, to our knowledge, Estonian-Ukrainian interaction has never been studied in the framework of receptive multilingualism.

We propose investigating this instantiation of mediated RM as a fruitful method for explicating the processes of reaching understanding in plurilingual settings. More specifically, we aim to pin down the essential elements, both cognitive and linguistic (extra-linguistic), that enable understanding in language constellations without pre-existing common ground. What knowledge is required to "understand a language" and what affects language comprehension is of course a vexing question for most linguists, and to this end receptive multilingualism offers a novel perspective on the mechanisms of establishing understanding.

A large-scale study on typologically related languages in the Germanic, Slavic and Romance families points to exposure as one of the leading factors to predict spoken language intelligibility (Gooskens, this volume). In the absence of exposure, lexical distance is claimed to be the main factor to affect potential understanding in a new language (ibid.). However, the non-linguistic criteria of that study, in addition to exposure and number of years of learning a target language, are restricted to the melodic attractiveness of that language. We argue that structural and/or material similarity is but one factor facilitating understanding and emphasize the need to include extra-linguistic factors that span beyond attitudes towards the sound of a language. The cited example shows the importance of metalinguistic awareness (i.e., the ability to focus on form and abstract categories: the colleague tried reading Ukrainian texts and established for himself parallels with Russian) (see Blees & Ten Thije, 2016, on the role of metalinguistic awareness in RM). Section 3.2 details the assumptions we aim to scrutinize and outlines the factors we included in the analysis to address not just the languages, but also language users and the contexts of use.

In this paper, we will test empirically whether mediated RM has any potential in expanding the use of multilingual resources in reading comprehension. Despite this receptive mode being still new to most of the experiment participants and Estonian society at large, our preliminary findings make it evident that even partial knowledge of Russian as a foreign/second language combined with various instantiations of metalinguistic competence lead to the ability to make sense

of Ukrainian texts. The factors defining success in comprehension tasks, such as receiving minimal metalinguistic instructions prior to task completion or a noticeable progress in understanding texts throughout the experiment, suggest that there are unrealised cognitive facilities that can be scaled up via mediated receptive multilingualism to inform us about language acquisition as such. We will also briefly touch upon some specific linguistic aspects of meaning making in our data; namely, we will sketch out some examples that support the idea of multiple causation in mechanisms that provide intermediate level learners or complete beginners with access to relatively advanced linguistic materials, typically seen as restricted for more advanced language learners.

The paper is organized in the following way: first, we discuss general issues in relation to receptive multilingualism and the concepts that we find problematic. We present alternative mechanisms and factors that could provide a more comprehensive explanation to the processes at work in mediated RM. We then proceed to describe the experimental design, procedures and the participants. This is followed by data analysis and main conclusions.

3.2 Rethinking Receptive Multilingualism

Research on RM operates under a recurrent assumption that mutual intelligibility or advanced proficiency in the other's language is determinate of communicative success, with only a number of studies pointing out the importance of creativity employed by the interlocutors as they jointly attempt to achieve sufficient mutual understanding. As a result, research is focused chiefly on the issue of mutual intelligibility between various pairs of closely related languages, tested either on the basis of typological distance measures or via intelligibility ratings of stimulus material.

A similar tendency to prioritise linguistic properties is observed in a number of analogous concepts: intelligibility between closely related languages (Voegelin & Harris, 1951), semicommunication (Haugen, 1953), plurilingual communication (Lüdi, 2007, albeit the situated nature of locally negotiated plurilingual resources is acknowledged), and intercomprehension (Berthele, 2007). These concepts presuppose incomplete understanding whereas RM in essence is purpose-based, and the focus is shifted from "perfect" language command towards reaching interactive goals (Braunmüller, 2007; Ten Thije & Zeevaert, 2007; Zeevaert, 2004).

There seems to be a misleading approximation between mutual intelligibility (i.e., the intrinsic properties of languages in question), individual ability to notice and employ any existing linguistic similarities, and mutual understanding as a final product that relies on but is not limited to available linguistic resources. Previous studies (Bahtina-Jantsikene, 2013; Härmävaara, 2014; Kaivapalu, 2015; Muikku-Werner, 2013; Verschik, 2012) have shown that similarity and typological distance in and by themselves do not determine understanding and effective communication in multilingual contexts. In RM, particular individuals were found to combine plurilingual and interactive resources to formulate hypotheses

that help them understand speech (Bahtina-Jantsikene, 2013) or text in a foreign language they have not consciously studied (Gooskens & van Heuven, 2017; although the study just reports the results, it is important that understanding can be achieved). Blees and Ten Thije (2016) provided a good overview of how the field has moved from exclusive focus on intelligibility towards a broader approach that includes pragmatics, individual factors, and metalinguistic awareness in addition to structural characteristics of the languages involved.

We therefore propose that research should be further expanded from typologically close language combinations (i.e., *inherent* RM) to typologically unrelated languages in contact situations (i.e., *acquired* RM)[1] and beyond (i.e., *mediated* RM). Another paramount direction of this research endeavour is a shift from a purely linguistic take on prerequisites in RM to a more comprehensive account to address extra-linguistic as well as individual factors that contribute to understanding. In brief, extra-linguistic factors include the spread of multilingualism in society, language ideologies, attitudes, language acquisition planning while individual factors enroll exposure to and experience with the languages in question, personal needs and motivation, degree of metalinguistic awareness and language learning experience more generally.

Another problematic assumption we would like to address is the widelyspread view of multilingual understanding as more challenging than monolingual interaction and therefore requiring extra effort. One solution is to capitalise on the communicative skills of multilingual speakers that are different in type and wider in range than those of monolinguals (Graddol, 1997, p. 13; Saville-Troike, 2003, p. 168). The acknowledged need to monitor understanding more carefully leads to activation of various interactional and pragmatic competences (Pitzl, 2005).

The same applies to the notion of metalinguistic awareness: multilingual language users are able to extrapolate available resources to achieve fuller understanding through switching between linguistic form and meaning and through finding recurrent patterns in the languages involved (Jessner, 2014; Verschik, 2017). Multilingual experience improves performance and cognitive flexibility, which results in more creative production (Kharkurin, 2012). This is in line with how multilingualism is understood in the multicompetence model, developed by Cook. It is claimed that multicompetence is a "knowledge of two languages in one mind" (Cook, 2005). Moreover, multilingual cognition is not a mechanical sum of separate monolingual cognitions but a complex system, and that the nature of knowledge of L1 of multilingual and monolingual users can not be the same (Cook, 2013). An L2 user has an advantage in development of reading and writing skills, multiple mental thinking and creativity due to general greater awareness

[1] The investigated constellations between typologically related languages include but are not limited to Estonian-Finnish (Härmävaara, 2014; Muikku-Werner, 2013; Verschik, 2012; Kaivapalu, 2015), Dutch-German (Beerkens, 2010; Ribbert & Ten Thije, 2007), Norwegian-Danish-Swedish (Gooskens & Heeringa, 2014), Polish-Russian-Ukrainian (Rehbein & Romaniuk, 2014), Czech- Polish-Slovak-Sorbian (Sloboda & Brankačkec, 2014). Typologically unrelated languages have been analysed in Estonian-Russian (Bahtina-Jantsikene, 2013).

and diversity of available language modes (e.g., code-switching, code-copying). Thus, every learned language affects comprehension of other language and the ability to learn a new one. In different terms, Jessner (2014) speaks of the factor of multilingualism or M-factor as an integral part of understanding the linguistic systems.

A need to understand the mechanisms of creating understanding depending on the amount of available information has been indicated by Bahtina-Jantsikene & Backus (2016). We will therefore also investigate how meaning is created on the cline of already available sense of knowledge (pre-existing familiar vocabulary or other linguistic elements) towards established sense (partial understanding or hypotheses regarding separate words or texts in general that participants are able to formulate with some contextual cues).

Our overarching research task is to call into question the more static take on multilingual potential and to describe the emergent characteristics of understanding by focusing on the diverse nature of elements that underlie its very possibility. To extract these linguistic, extralinguistic and individual factors, we will first look at the degree to which Estonian speakers comprehend Ukrainian (L3) without prior exposure depending on their proficiency in Russian (L2). We will compare their performance to that of Russian-speaking Estonians, Russian-speaking newcomers to Estonia and the so-called Russian Russians to capture the acquisitional and contextual aspects that may have an effect on text comprehension. Next, we will elicit general and language-specific elements that subjects combine with metalinguistic knowledge in order to complete experimental tasks in Ukrainian.

3.3 Experiment and participants

3.3.1 General context

Ethnic Ukrainians constitute the second largest ethnic minority in Estonia after Russians (23,183 or 1.7% of the population) [https://www.stat.ee/34278]. This group is relatively small and due to various reasons, that cannot be discussed here had mostly shifted linguistically to Russian already during the Soviet era, in some cases likely prior to migration to Estonia. According to the last census of 2011, there are 8,012 persons in Estonia who declared Ukrainian as their mother tongue [https://www.stat.ee/64629?parent_id=39113]. Consequently, there is a small number of Ukrainian-speakers in Estonia, and Estonians have little to no exposure to Ukrainian through direct contact. An exception to this are people from mixed (Ukrainian-Estonian) families and those Estonian-speakers who have personal connections to Ukraine. Unlike a local Russian-language TV-channel launched in Estonia in 2015, Ukrainian-language channels are only available via additional cable network; Ukrainian printed and digital media is also in principle available but not produced locally. It is therefore improbable that an average Estonian

would be in contact with speakers of Ukrainian and mediated RM is consequently the most likely mode of understanding Ukrainian among speakers of Estonian.

3.3.2 Participants

Since our main goal was to elicit a multitude of factors that can play a role in mediated receptive multilingualism, we aimed to conduct an exploratory study involving residents of Estonia with distinct sociolinguistic backgrounds. A total of 50 participants currently residing in Tallinn were recruited for the experiment. They can be schematically presented as a cline ranging from the fullest access to Russian as a mother tongue towards minimal expertise of Russian as a language acquired at B1 level: 10 ethnic Russians from Russia who recently have moved to Estonia (RR), 10 local Russians with Russian as L1 and Estonian as L2 (RE), 10 simultaneous/early Estonian-Russian bilinguals (REB), and 20 speakers of Estonian as L1 with B1 and B2 proficiency in Russian (EE). There were 13 male and 37 female participants.

The first group (RR) contains newcomers from Russia who have lived in Estonia (specifically Tallinn) from 8 months for up to ten years. According to Linck, Kroll and Sunderman (2009), L1 could become affected already after 3 months of living in a foreign country depending on the level of exposure to L2 environment. Verschik (2008, p. 42) points out that Russian purism in Estonia among Russian-speakers is not prioritized and even monolingual varieties of local Russian speakers are being affected by Estonian. Therefore, those newcomers who do not have full proficiency in Estonian use compromise strategies in Russian-to-Estonian communication by starting and ending the conversation in Estonian, similar to ethnic Russians who do not have a good command of Estonian (Verschik, 2008, p. 43). In our case, all Russian participants are students at the University, who were taking Estonian classes at the moment the experiment was conducted and were immersed in a L2 Estonian-speaking surrounding.

Local speakers of Russian as L1 (RE) are participants from Russian-speaking families whose proficiency in Estonian is on A2 and B1 level. They were recruited from Estonian language classes at Tallinn University.

Early/simultaneous bilingual group (REB) comprises people either from mixed Russian-Estonian families where both languages are spoken or those Russian-speakers who acquired Estonian in early childhood or in their pre-teen years in Estonian-medium kindergartens and schools.

L1 Estonian speakers (EE) were chosen according to their proficiency in Russian. Based on the results from a pilot study conducted on three Estonian respondents, A2 level in Russian was deemed insufficient for the experiment and B1 was selected as the lowest required proficiency in Russian of Estonians. L1 Estonian participants had language proficiency certificates of B1 or higher and/or were enrolled in language classes at B2 level (in the Common European Framework of Reference for Languages B1 and B2 both represent independent language users but differ on a number of variables). Language proficiency was further tested with a C-test (see Section 3.3.3 for details).

The EE group was further divided into two subgroups: the first group (henceforth, EEi) received explicit instructions prior to the tasks – a presentation with some remarks about differences and similarities between Ukrainian and Russian as well as audio recordings of the Ukrainian texts; the second group only received the texts with assignments (henceforth, EE). Each group, EE and EEi, included 5 participants with B1 proficiency and 5 with B2. Other groups of participants (REB, RE, RR) we similarly divided into two subgroups (with/without instructions) but since no difference in results was found, we do not differentiate between subgroups in the discussion and simply refer to them as REB, RE and RR.

Table 1 describes the main sociolinguistic characteristics of the groups. RR, RE and REB are more homogenous in terms of age while EE and EEi demonstrate a wider range in that respect. The groups are predominantly female, except for RE where genders are in balance. The only difference in performance between female and male participants was the time required to complete the test (on average, male participants spent more time). All participants either have a university degree or are in the process of obtaining it, but their specializations differ: social science, linguistics, human-computer interaction, IT, media, design and art, communication, anthropology, recreation arrangement and business. Geographical origins of the participants are added for general purposes and no claims are made about immediate importance of previous place of residence and level of integration or language proficiency. Our analytical focus remains on the tentative groups, such as Russian-speaking residents or bilinguals, regardless of geography.

Table 1. Sociolinguistic characteristics among different participant groups in Estonia: RR – newcomers from Russia currently residing in Estonia, RE – Russian-speaking residents of Estonia, REB – Russian-Estonian bilinguals, EEi – ethnic Estonians who received language instructions before completing the tasks, EE – ethnic Estonians

Groups	**Age**	**Gender**	**Previous places of residence**
RR	19–33	8 female, 2 male	Moscow, St.-Petersburg, Tula, Pskov, Novosibirsk
RE	20–27	5 female, 5 male	Kohtla-Järve, Tapa, Sillamäe, Narva, Tallinn
REB	20–27	8 female, 2 male	Tartu, Viimsi, Narva, Pärnu, Moscow, Tallinn
EEi	22–59	9 female, 1 male	Kohtla-Järve, Viljandi, Tartu, Kivi-Vigala, Rakvere, Tallinn
EE	22–53	7 female, 3 male	Keila, Pärnu, Rakvere, Loksa, Iisaku, Tallinn

3.3.3 Testing material

The experiment consists of four stages and is focused on comprehension skills of Ukrainian among different groups of Estonian and Russian-speakers in Estonia. First, the sociolinguistic questionnaire was used to collect information on participants' background, exposure and attitudes to different languages. Second, actual proficiency in Russian as L2 was tested with a C-test. Following this, Ukrainian as L2 for Russian speakers and L3 for Estonian speakers was measured in a series of reading tasks on individual word recognition and whole text comprehension at a B1 level. Finally, participants were debriefed after reading comprehension tasks to collect their general feedback about the level of complexity and reported explanations on how they approached the tasks (i.e., what strategies they used to guess the meaning). The experiment was conducted individually with every participant and took on average 2 hours per participant.

The questionnaire was designed on the model of previous studies on RM, in particular on acquired RM by Bahtina-Jantsikene (2013). The general part of the questionnaire included biographic information and ethnolinguistic profiles: gender, age, education, ethnicity, place of residence, L1 and proficiency in other languages, frequency and type of exposure to Russian and Ukrainian, and also attitudes to Ukraine. The text of the questionnaire was verified by two translators who performed several translations for more precision between the two versions to account for semantic and stylistic nuances.

The C-test (Raatz & Klein-Barley, 1982) for measuring proficiency in Russian was considered optimal for the purpose of this study, since it allows for an accurate evaluation of grammar and vocabulary as well as participants' overall reading comprehension (Chapelle, 1994; Baghaei, 2011; among others). The latter is seen as an invaluable skill in receptive multilingualism: the ability to grasp general meaning despite possible gaps in understanding. We combined the standard C-test design (for detailed instructions see Grotjahn, 1987) and a flexible scoring system. In essence, a standard C-test consists of four short independent passages where parts of selected words are deleted: each text had 20 incomplete words. A participant's task was to fill the gaps to the best of their knowledge drawing on the context and grammatical compatibility; the participants had 5 minutes to complete each short text.

We used a flexible scoring system motivated by the task-oriented language use within receptive multilingualism theory that is not focused on grammar or stylistics and included even partial skills of L2 (Bahtina-Jantsikene, 2013, p. 28):

– 1 point: a fully correct answer (e.g., when a participant recognizes that *лече…* corresponds to *лечение* 'treatment')
– 0.75 points: a correct yet grammatically or semantically imperfect answer or a near synonym that matches the context (e.g., *супруг* 'husband' for *супруги* 'spouses')
– 0.5 points: a misspelled word, only approximating the target (e.g., **аромы* for *ароматы* 'flavours')

– 0.25 points: a semantically related but grammatically or contextually incorrect (e.g., **культурой* ‘by/with culture’ for *культурной* ‘cultural’)
– 0 points: an unrelated word or gaps (*термиты* ‘white ants’ for *террасы* ‘terraces’).

In the process of selecting the four optimal texts, we ran a pilot study on 8 texts selected from various non-specific journals and newspapers. The results indicate a difference in text complexity depending on the speakers’ L1. The C-test texts that were the easiest for Russian as L1 speakers turned out to be the most difficult for Russian as L2 speakers. Similar to our choice to apply a more flexible scoring system to better describe language in use, we opted for the four texts that got the highest scores by the non-native speakers since they are the target group of this test. This selection was also justified by the nature of the experiment, in which Russian was used only as a medium and using an overly strict proficiency measurement could compromise our endeavour to establish the role of L2 in reading L3.

We selected three Ukrainian texts from the textbooks and supplementary literature for B1 learners of Ukrainian. To avoid specialised knowledge biases, we chose two commonplace genres: artistic (narratives and fairytales) and journalistic (social media). We used these texts to measure Ukrainian comprehension of (i) separate words (being able to give explanations to content words is a reliable indication of successful understanding of a text, according to Shumarova 2000) and (ii) general understanding (e.g., a set of true or false or open-end questions, as outlined in Gooskens, 2013). The same flexible scoring system was applied.

These Ukrainian texts contained a total of 55 content words. For the purpose of our analysis, all content words were divided into three groups based on their formal and semantic similarities with Russian, in line with work on Finnish-Estonian comprehension (Kaivapalu, 2015). One group contained 29 words with related forms and semantics, like in (1):

(1) Ukrainian *вчитель* ‘teacher’ (cf. Russian *учитель* ‘teacher’)

Next, there were 15 items similar in form but not in meaning (‘false friends’), as in (2):

(2) Ukrainian *важливий* ‘important’ (cf. Russian *важный* ‘important’) vs Russian *вежливый* ‘polite’

Finally, 11 items were not cognates – completely different in form, as in (3):

(3) Ukrainian *мережа* ‘net’, ‘network’ vs Russian *сеть* ‘net’, ‘network’

The general understanding tasks contained 36 content questions presented in Table 2.

Type of question	Number of questions	Scoring system (in points)
True or false	15	1 – correct 0 – incorrect
Multiple choice (three alternative answers)	15	1 – correct; 0 – incorrect
Open	6	1 – full answer 0.75 – partial answer 0.5 – many details left out 0.25 – relevant but some incongruence with context 0 – false or no answer

3.3.4 Experimental procedure

The experimental procedure started with the distribution of Ukrainian texts that the participants were asked to read. After this, the respondents were given a list of Ukrainian words from the text, in the same order of appearance, and asked to write definitions for these words to the best of their knowledge. The same words were highlighted in the text to help the participants instantly find respective sentences and use the context. Next, the questions about meaning were presented. The participants could answer in any language they were comfortable with.

As mentioned above, speakers of Estonian as L1 were further divided into two groups. The first group received some instructions about Ukrainian prior to the experiment: they were shown a short presentation with a summary on the most important differences and similarities between Ukrainian and Russian. The presentation consisted of some remarks on sound correspondences, basic information on inflectional morphology and some stylistic notes (for instance, when the same word has archaic or poetic connotation in Russian but is ordinary in Ukrainian). The audio recordings of the Ukrainian texts were played for this group in order to activate their listening perception (Gooskens, 2013). The sound clips were read out by one of the authors of this article who is a native speaker of Ukrainian.

The second group received only the texts without the presentation about Ukrainian and the audio recordings. Both groups were required to do the same assignments aimed at checking their understanding of Ukrainian. The order in which the texts were presented was randomized for each participant to reduce any bias from the factors that have not been accounted for in the experiment design.[2]

[2] We have observed the learnability effects already in the pilots – the participants demonstrated improved scores as the experiment progressed. Text randomization was used to avoid effects from these and similar factors of influence that have not been originally plotted in the design.

The last stage of the comprehension experiment was debriefing. The participants were interviewed after every task and asked about the strategies they used (e.g., similarities with Russian or other languages, context-oriented answers, experience), the easiest text, content questions, clarification of answers. These short interviews, approximately 5 minutes each, were recorded and used to report on types of expertise and specific strategies the participants claimed to have employed as they were completing the reading tasks (e.g., recognising a cognate from an archaism, making an assumption about a particular word meaning based on general understanding of the context or remembering a newly acquired word from a previous text).

3.4 Results and analysis

As confirmed by previous studies on RM (Bahtina-Jantsikene, 2013; Härmävaara, 2014; Kaivapalu, 2015; Muikku-Werner, 2013; Verschik, 2012), similarities across languages are but one factor in understanding. Other factors include plurilingual resources, registers, multilingual contacts, perceived proximity between languages, possible differences in attitudes towards languages, and metalinguistics awareness. Kaivapalu (2015, p. 69) who also used texts for her study, outlined extralinguistic factors that proved to facilitate understanding of Estonian words among Finns and vice versa: general knowledge, metalinguistic awareness, command of other languages and closely related varieties, such as regional dialects or sociolects. It seems reasonable to us to discuss these factors in our analysis as well.

The current section is organized as follows. First, we present the general overview of the understanding rate for each group. Then we will focus on case by case demonstration of factors that affected comprehension of different groups. Finally, we look at the difference between EE and EEi as well as at the impact of the randomization of the texts' presentation order. Due to the diversity of the tested groups in Estonia and the small number of participants in each of them, the data is analysed qualitatively, with the exception of the general overview, which is given in figures.

3.4.1 Success rates across the groups

Since our study was designed as chiefly exploratory and qualitative, the expected numbers in many analytical categories, such as inter-group comparisons of specific factors of influence, are too low for statistical analysis. When no statistical observations can be made, we report findings as percentages and indicate success rates as observed in this data sample. The diagrams are used to illustrate the general trends found in the data.

We first compared success of all participants in the two types of tests we used to measure comprehension: paired samples test on the whole data set confirmed that general meaning and separate word recognition scores were positively correlated ($r = 0.715$, $p < 0.001$), which is an expected result since we assumed

that the two measurements are testing the same – proficiency in Ukrainian. However, as illustrated in Diagram 1, all groups performed better on one type of comprehension test: there was a significant average difference between success rates in questions on general meaning and on separate words ($t49 = 37.613$, $p < 0.001$). On average, general text meaning scores were 36% higher than separate word scores (95% CI [34.99, 38.95]) across all groups. This finding is also in line with our understanding of the nature of receptive multilingualism as such: in the context of limited resources, general meaning – supported by contextual cues and some other factors listed in Section 3.4.2 – might become accessible before the specific meanings of separate words. If separate words are recognised, they consequently increase understanding of texts as a whole and the tendency of "general before specific" is maintained.

Diagram 1 represents an overview of understanding of separate words and of texts in general across the groups. The best result in comprehending separate words and general meaning of the texts in Ukrainian was demonstrated by the group of Russians who have recently moved to Estonia. Most probably, RR have better understanding of Ukrainian due to larger lexical resources of Russian (their exposure to Ukrainian was no different from RE) while RE and REB have different input in Russian and local Russian varieties are to a degree affected by Estonian.[3] Compared to other groups, EE participants demonstrated the lowest comprehension rate.

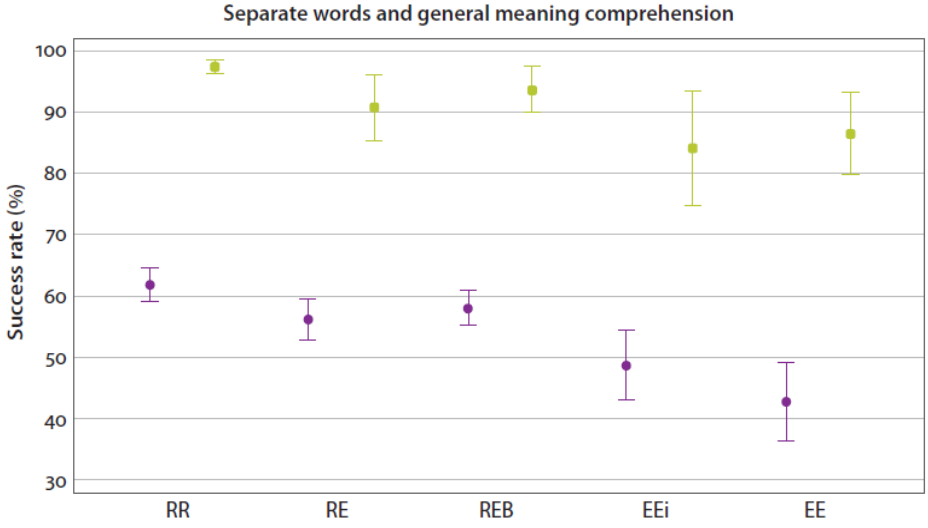

Diagram 1. General overview of understanding across the 5 groups in Estonia

RR – newcomers from Russia residing in Estonia, RE – Russian-speaking residents of Estonia, REB – Russian-Estonian bilinguals, EEi – Estonian L1 speakers who received language instructions, EE – Estonian L1 speakers without instructions. Round shapes – words, square shapes – general meaning.

[3] Whether the nature of L1 acquisition is one of decisive factors to influence understanding in mediated RM remains to be tested empirically on a larger number of participants.

When comparing the comprehension in these different groups, we established that the scores for separate words comprehension and comprehension of general meaning of text as a whole is quite similar in the following groups: the average score per participant in RR group is 89.7% for separate words and 97% for the general understanding questions; in RE respective scores are 81.4% and 90.6%; in REB success rates are 84.2% and 93.5%. It was established that both EE and EEi were more successful in comprehending the meaning as a whole (85% success rate in the general understanding tasks versus 66.3% in the definitions of separate words), whereas RR, RE, REB demonstrated comparable results in the two types of tasks. Moreover, EEi with instructions and parallel audio recordings coped better than EE without any similar support. We were not able to detect any strong pattern for EE participants that would predict Ukrainian reading comprehension depending on their B1 versus B2 Russian language proficiency (B1 scored better by 5.2% on general understanding and B2 demonstrated 4.64% higher scores on separate word recognition tasks). We will now look at these results separately in a more qualitative manner and discuss potential factors of influence for each group combination.

When comparing Russian-Estonian bilinguals and the local speakers of Russian as L1, we found that many bilingual participants provided answers in two languages simultaneously; however, these answers often lacked precision. For instance, in the tasks on separate words, instead of giving a short translation, REB produced a longer definition (see 4 and 5):

(4)	Ukrainian:	Russian:
	хата	*место, где ночевать*
	‘house’	‘place where to stay overnight’

(5)	Ukrainian:	Estonian:
	величезна	*võtab palju aega*
	‘huge’	‘takes a lot of time’

or a list of words with the same meaning, as in (6):

(6)	Ukrainian:	Russian
	юнаки	*молодые мужчины /юный парень /мужчина*
	‘youth’	‘young men’ /‘young guy’/‘man’

In the second part of assignments on general understanding, REB were unable to formulate the answer briefly and gave long response messages either in both Russian and Estonian or in their dominant language. For example, the question “What did father want his son to do according to the text?” was first answered in the 3rd person singular in Russian and continued in Estonian, with a translation from the text in imperative mood, with repetition of some expressions (Russian in bold for the sake of highlighting):

(7) *Чтобы вставал рано и ходил на работу и чистил свои сапоги (oleks korralik ja puhas) ela nii, et igas külas oleks koht kus magada, et iga päev oleks tal uued jalanõud ja et kõik tema poega teretaks.*

"That he should wake up early and go to work and polish his boots (would be decent and clean) live in such a way that in every village you have a place to sleep, that every day he would have new shoes, and everybody would greet him".

While the REB group demonstrated some lack of precision and sometimes provided more information than asked, the members of the group completed their assignments quite successfully and scored somewhat higher than RE in the understanding of separate words as well as general meaning. Based on the debriefing interviews, Russian-speakers relied more on the similarities between Russian and Ukrainian in the process of completing the task, while bilinguals used more context and creativity in challenging questions. As previously discussed, multilingual situations are characterized by increased creativity and divergent thinking, which improves performance and cognitive flexibility.

While analysing the data, we found out that, against our expectations, there was no direct link between completing Ukrainian tasks and L2 proficiency levels of EE and EEi participants in Russian. Estonians with B2 proficiency coped better with understanding separate words than Estonians with B1 proficiency by 4.64%. Moreover, EE with B1 level in Russian succeeded more than EE with B2 level by 5.2% in understanding general meaning of the texts. EE participants with B2 proficiency more frequently reported that they relied on the structural and lexical similarities between L2 and L3, and were therefore more successful in understanding separate words, while EE with B1 proficiency had a higher success rate in understanding general meaning due to increased motivation, exposure to non-standard registers, low or high style. This association was observed in the questionnaires, where the participants claimed to follow Ukrainian social media, or during the debriefing, where the participants made an explicit comment: *Я люблю слушать украинские песни и поэтому так хотел понять текст!* "I love listening to Ukrainian songs and this is why I was so eager to understand the text!".

3.4.2 Factors facilitating understanding

In this subsection, we will address the factors that enhance understanding of Ukrainian texts and provide further comments on Russian proficiency results. It appears that a combination of factors played a role in understanding, but taken individually, each factor has a restricted predictive power due to the low number of participants in each subcategory.

3.4.2.1 Exposure to Russian

In our study, we observed a correlation between exposure to Russian in general (and especially to a wide range of registers) and the results of the Ukrainian tests. First, the place of residence of the participants and language environment determines exposure to Russian. According to Rannut (2005, p. 31–34) there are four types language environments in Estonia: the first, Tallinn and the second, urban North-East Estonia, are segregational (large number of Russian-speakers sufficient to maintain near-monolingual communication), while Estonian language is dominant in the rest of urban Estonia and rural areas (the third and the fourth environment respectively).

The degree of exposure to Russian is predictable, dependent on the environment. In our case, the participants have a background in all four language environments (see Table 1). The EEi and EE respondents from the 2nd environment have much more exposure to Russian and performed better than participants from the 1st language environment, while the latter coped with the tasks better than participants from 3rd and 4th environmental types. For instance, in EEi group, a participant from Kohtla-Järve (2nd environment type) scored 89.5% for under- standing separate words and 97.2% for the context; a participant from Tallinn scored 65% and 90.2% respectively; yet another participant from the same group from Rakvere (3rd environment type) received only 50.5% and 79.9% respectively. In general, the results correlate with language environments where the participants reside, except for those who have considerable L2 experience dating back to the Soviet period.

Second, professional domain may influence exposure and input in Russian, regardless of place of residence. Prior to the experiment, some of the participants were currently working with Russian-speaking colleagues and/or customers or had such experience in the past. For instance, one participant worked in a pharmacy for some time, where her Russian skills improved considerably. We did not observe any significant differences in the results of this participant compared to others with the same proficiency in Russian and the same place of residence. The respondent has a highly specific professional vocabulary that did not affect her results in general. At the same time, another participant works in the penitentiary system and showed remarkable results in understanding Ukrainian. The fact that this respondent spends most of her time at work were Russian prevails and has exposure to a vast variety of registers (including informal varieties, slang, etc.) invites an elaborate discussion that we will return to in the next section.

Third, we have traced a relation between participants' specialisation and the success rate of understanding Ukrainian texts. The respondents whose major is in engineering science were more successful in texts about social networks, whereas participants with a major in humanities were better in understanding fairytales. Thus, participants' previous knowledge and experience in a particular domain has an influence on comprehending Ukrainian texts.

As for the individual exposure to Russian, as reported in the questionnaire, the frequency among EE and EEi respondents varies greatly, from daily to annually.

The domains where they are exposed to Russian differ as well: home, university, leisure time, social networks. We were able to trace the pattern: the more often Russian is used outside the university settings (e.g., social media, informal communication), the higher the result of understanding regardless of language proficiency in Russian, which suggests that language proficiency tests capture only a subset of the skills that make up proficiency.

3.4.2.2 Exposure to various registers

According to the Lexical distance map between languages, Ukrainian and Russian have a 62% similarity in lexical composition (Tyshchenko, 2010, p. 66). Many lexical items in Russian found mostly in archaic or high style (or the opposite, colloquial style and pejorative lexicon) have Ukrainian cognates with neutral connotation. Thus, exposure to different registers, although not quantifiable in the strict sense, could foster comprehension. During the feedback session, one participant from the EE group reported significant exposure to a range of non-standard varieties in Russian that they claimed to be useful in completing the task; this participant has indeed performed better in all tasks (80.9% success rate in understanding separate words vs 62% average rate per group and 92.4% in the general understanding task vs 86% average rate per group). That EE group also had a participant with the same B2 proficiency in Russian but no such exposure, and his success rate was noticeably lower (30.9% for separate words and 65.2% for the general meaning). This comparison highlights the relation between diverse exposure and success rate. We will now look at particular instances.

For instance, Ukrainian *батько* 'father' corresponds to Russian *отец* 'father', different in form between the languages. However, there is a colloquial usage of this word in Russian that is represented by *батя* 'father, elderly man' that overlaps with the meaning in Ukrainian, albeit with a different connotation. Respondents who were familiar with the word recognized it in the Ukrainian text and gave an accurate definition or interpreted it in colloquial form as *батя* by providing the answer in Russian and not Estonian. Another example of colloquialisms is a definition of the Ukrainian word *чоловік* 'man', 'husband' which has assonance with Russian *человек* 'person'. It misled some participants into thinking they were close both in form and in meaning. An alternative definition found in the data was a Russian word *мужик* 'peasant man', 'bloke', 'a man with a strong character' which represents low style register and is stylistically different from Ukrainian but has a similar meaning.

The next register of colloquial usage observed in our data is *хата* 'house'. In Russian, it has different stylistic connotations compared to Ukrainian, either colloquial (meaning any dwelling) or specific (peasant house, rural dwelling). The respondents familiar with this word from Russian colloquial speech have defined this word in Estonian as *maja* 'house', *kodu* 'home' or *kodukoht* 'home, place of residence'. Other participants found similarity with the Estonian word *hütt* 'hut'. The connection resembles folk etymology but is not devoid of logic, since the word refers to some kind of a dwelling. Some respondents were probably familiar

with the meaning ‘rural dwelling’ in Russian and explained it as *talu* ‘farm’, ‘farmstead’. And finally, three participants gave a combined definition that included all these explanations:

(8) Ukrainian: *хата* ‘house’
Russian: *дом* ‘house’
Estonian: *maja* ‘house’, *hütt* ‘hut’, *kodu* ‘home’,
talu ‘farm, farmstead’, *kodukoht* ’place of residence’

The knowledge of poetic and archaic usage proved helpful as well. Consider the interpretation of Ukrainian *очі* ‘eyes’: its Russian cognate *очи* is characteristic of poetic or archaic style. Participants who knew this word from Russian literature or songs (e.g., *очи черные* ‘black eyes’, the first line of a well-known song) correctly translated it into Estonian as *silmad* ‘eyes’. Those aware only of the contemporary Russian counterpart глаза, found the parallel with the Russian *очки* ‘glasses’ derived from the same stem, and answered correctly.

Now let us consider Ukrainian words that had no cognates in Russian and the semantics of which could only be derived from the context. The following example *дивляться* which is in Russian смотрят ‘to look at’ are not similar in form in two languages. Yet the participants who identified the word *очі* as ‘eyes’, instantly recognised the verb *дивляться* ‘look at’ (3PL) as Estonian *vaatavad* ‘look’ or *näevad* ‘see’ (3PL). Interestingly, they were also able to provide the same grammatical forms in their definitions: inflection *-vad* is 3PL marker in Estonian. It has been attested that certain types of linguistic information, such as cognates or similar syntactic structures, may already be available to speakers of typologically related languages even prior to language instruction or exposure (e.g., Berthele, 2007). In a similar vein, acquisitional studies (e.g., Pienemann, 1998) point out that certain elements, such as cognitively costly structures and complex morphology (e.g., subordinate clauses or subject – verb agreement) become available later than lemmas or simpler morphemes (e.g., nouns or past tense markers). We claim that recurrent examples of attention to grammatical forms (e.g., case, tense, mood and mode marking) testify to the idea that their remarkable degree of metalinguistic awareness provides access to more complex aspects of a completely new language. This pattern was detected in participants regardless of their proficiency in mediated or target languages, so salient aspects of grammar might be available even at earlier acquisitional stages.[4] For instance, in (9) they correctly identify Ukrainian instrumental as Estonian essive, in (10) imperative and in (11) 3SG:

[4] It should however be mentioned that the minimal proficiency of our participants was at B1 level and we do not have access to the whole acquisitional spectrum, which we believe could shed more light on the differences in available resources, depending on the degree of proficiency in the mediating language. Moreover, our experimental design focuses on separate word or general meaning understanding and cannot be used to crystallise the degree of syntactic structure comprehension.

(9)	Ukrainian: *чоловік-ом* man-INSTR 'as a man'	Estonian: *inimese-na* human-ESS 'as a human'	Estonian: *mehe-na* man-ESS 'as a man'

(10)	Ukrainian: *подаруй-те* make present-IMP.2PL 'make a present'	Estonian: *kinki-ge* make present-IMP.2PL 'make a present'

(11)	Ukrainian: *бува-є* happen-3SG 'happens'	Russian: *быва-ет* happen-3SG 'happens'	Estonian: *juhtu-b* happen-3SG 'happens'

Perceived proximity and material similarity between lexical items were another factor to affect comprehension of Ukrainian and in our data led either to increased understanding or false interpretation. Consider the following example of a Ukrainian word, a cognate with Russian that is only slightly different in form and was easily recognised by respondents:

(12)	Ukrainian: *життя* 'life'	Russian: *жизнь* 'life'	Estonian: *elu, elamine* 'life', 'living'

The so-called 'false friends', similar in form but not related semantically, triggered false interpretations in some cases. The Ukrainian *кожний* 'every' was identified as *iga* 'every' or *igas* 'in every' by one group of EE and EEi respondents but was falsely identified as *nahk* 'leather' by the other, due to form similarity with Russian *кожаный* '(of) leather'. In addition to sounding similar to the Russian word, in this particular case there might have been also a context reference to shoes earlier in the text that the participants might have over-interpreted in the absence of knowledge of the translation.

(13)	Ukrainian: *кожний* 'every'	Russian: *каждый* 'every' *кожаный* 'leather', 'of leather'	Estonian: *iga/ igas* 'every'/ 'in every' *nahk-, nahast* 'of leather'

3.4.2.3 M-Factor and metalinguistic awareness

Metalinguistic awareness in this context is a powerful mechanism that transcends different linguistic systems and helps overcome difficulties that language users might have connecting the two. Jessner (2014, p. 177) explains it as an ability to switch focus between linguistic form and meaning. More specifically, language users decide that a pattern, category, form, or construction X in language A

corresponds to a pattern Y in language B (Verschik, 2017, p. 9). A crucial aspect that enables a successful equivalent search without overloading cognitive apparatus is an assumption expressed by Dewaele (2016): when talking about language learners we assume that they are aware of the fact that not every unknown lexical unit or a pattern in a text has an influence on general understanding of the text and might use the "let it pass" strategy towards elements in a language they are not able to retrieve form the context. The same concept of metalinguistic awareness explains why the participants in the experiment who may have never consciously tried to link Russian and Ukrainian linguistic resources, were nevertheless able to use relevant knowledge to activate pattern recognition to achieve fuller understanding than they could anticipate before the experiment.

Although the nature of multilingual awareness is chiefly implicit and therefore not easy to grasp and more investigation is needed, some of the comments given by participants indicated that their multilingual experience does play a role in dealing with the Ukrainian text: for instance, a remark during the feedback interview that the Ukrainian word *фахівець* 'specialist, professional' resembled German *Fach* 'subject, matter, speciality' (in fact, a borrowing from German).

In our study, all respondents from EE and EEi are multilingual and thus multicompetent: they are proficient in two to four languages in addition to Estonian. Besides Russian and English, some of them also speak German, Spanish, Swedish, Norwegian, French, Finnish and Japanese, with proficiencies ranging from beginners to independent users. Franceschini (2011, p. 351) states that a multicompetent person has knowledge of an extended and integrated linguistic repertoire and is able to use the appropriate linguistic variety for appropriate linguistic situation. To our regret, Russian-Ukrainian was the only Slavic to Slavic integrated repertoire in our experiment. However, both EE and EEi groups include four participants with varying language proficiency in Finnish. Thereby, EE who have multilingual experience between Estonian and Finnish would at least in theory be able to extrapolate this knowledge onto Russian-Ukrainian, because once they know how parallels between closely related languages can be drawn, they would be able to transfer these skills to other language pairs. Currently, due to the setup of the experiment (focusing on comprehension rather than investigation of explicit cognitive mechanisms that enable it), we cannot demonstrate how it works, but it would be a topic for future research. Due to low numbers of such participants it was not possible to apply any statistical analysis to their results, but their overall success rate was high (but see related discussion in 3.4.2.5 on emergent multicompetence after instruction about language similarities). Once the skills to draw parallels between typologically related languages are acquired, they might lead to improved results in another typologically related constellation.

3.4.2.4 Motivation and language attitudes

Motivation as such is continually linked to success in second and foreign language acquisition research (e.g., Ellis, 1997; Henter, 2014) to the degree that it is found to be the main determinant in language learning (Dörnyei, 1994). In our

case, the emergent motivation and interest towards Ukrainian among native speakers of Estonian are not instrumental but spurred by recent socio-political developments in Ukraine and the subsequent desire to get access to their media channels. In that respect, attitudes are almost inseparable from motivation. All participants in our experiments expressed either positive or neutral attitudes toward Ukrainian, their test results did not demonstrate any significant difference; the effect of negative attitudes could not be tested.

Language attitudes have played out differently for some participants who assumed high similarity between Ukrainian and Russian. A number of more linguistically proficient participants expected fewer problems solving the task and demonstrated less metalinguistic awareness. Similar phenomenon was attested by Mustajoki (2017) who claims that instances of miscommunication are much more typical of interactions in familiar settings due to lack of attention. Increased attention, on the contrary, could explain higher results in those participants who reported lower confidence in comprehending Ukrainian. We associate this phenomenon both with increasing metalinguistic awareness (Subsection 3.4.2.2) and learnability (Subsection 3.4.2.5).

3.4.2.5 Learnability

The pilot experiments indicated that individual text comprehension improved from text 1 to text 3. Therefore, we randomised the order in which the texts were presented to participants in the main set of experiments to avoid any bias in the analysis and to zoom into these individual developments to get a better understanding of the learnability effect. Thus, numbers 1, 2 or 3 refer to the order of text presentation to a participant, not a specific text.

We use the term "learnability" to refer to the process through which participants develop explicit or implicit skills to reach a better understanding of Ukrainian texts. Language acquisition in a usage-based approach is seen as a natural process we are involved in daily because we learn about form and meaning "in use" (Tomasello, 2003), so our competence is emergent even in our first language. The results of this study mirror similar developments in mediated RM in two ways: explicit instructions that make certain linguistic correspondences more salient and through that accessible and predominantly implicit pattern recognition that emerges as participants move from one task to another.

Therefore, EEi group was provided with instructions that highlight linguistic similarities and differences between the languages at hand and thus crystallize focal points that can be used in the tasks for explicit text analysis (e.g., awareness of sound correspondences between languages). All in all, EEi participants were more successful than EE in separate words comprehension (but on par in general meaning tasks, see Diagram 1).[5] For example, information about Ukrainian prefix

[5] There were a few exceptions observed in the EE group but advanced performance in a selection of tasks could be explained with other factors: higher exposure to Russian and wider selection of available registers.

що- ‘every’ helped EEi group recognise the same prefix in *щодня* ‘every day’, *щовечора* ‘every evening’ in the task text. Uninstructed participants would typically ignore the unfamiliar prefix and define these words simply as ‘day’ or ‘evening’ based on cognates in Russian.

The more implicit or unfocused learning process was similar to developing an algorithm that helped participants reach a better understanding of the texts. Studies in cognitive linguistics report on various automatic cognitive mechanisms aimed at enhancing information processing. Clark (2013) suggests our brains rely on action-oriented predictive processing to match input (e.g., text) with top-down expectations (e.g., knowledge about pattern A in language X), and these predictions are constantly checked with reality (i.e., whether this interpretation matches the context). Kleinschmidt & Jaeger (2015) talk about expectation adaptation and other optimization strategies that facilitate input recognition, generalizing it to similar situations and adapting it to novel uses. This provides an explanation for our finding that informants were able to capitalise on their expanding knowledge as they progressed from task to task. The first candidates for such unfocused learning were some of the most frequent words in texts, such as personal pronouns and prepositions: for instance, Ukrainian *її* ‘her’ vs Russian *её* ‘her’ and Ukrainian *ma/i* ‘and’ versus Russian *да/и* ‘and’. This learnability effect can also be illustrated with a dynamic meaning interpretation found in the answers provided by one informant:

(14)	Ukrainian:	Estonian:
	чоловік	Text 1: *inimene* ‘human, person’
	‘man’, ‘husband’	Text 2: *mees* ‘man’, ‘husband’, peigmees ‘fiancé’
		Text 3: *abikaasa* ‘spouse’

As explained earlier, Ukrainian *чоловік* meaning ‘man’ or ‘husband’ is easily confused with Russian *человек* ‘person’ due to a form similarity. This word appeared in all three Ukrainian texts in different meanings, and participants had to define it each time. In the first text, the participant interpreted the meaning based on the so-called false friend association with Russian. The second and the third texts provided more context that helped reach a more accurate understanding of the word. The incomplete understanding of the word was thus updated in accordance with new contextual information, which proves the positive effect of learnability on understanding in mediated RM.

We tested the robustness of our qualitative findings on learnability with a series of statistical measures; as anticipated, low numbers in the data lead to limited predictive power of such tests, yet we were able to detect some statistically significant correlations and use the diagrams to illustrate these findings.

First, a linear regression was calculated to predict success in separate word understanding in the first text presented to participants. Availability of an explicit instruction about linguistic similarities and differences between Ukrainian and Russian was used as the independent variable. A significant regression equation was found ($F(1, 18) = 4.415$, $p = .50$), with an $R2 = .197$. The mean success rate

is 57% in the group without any instructions (*SD* = 21.38) and noticeably higher, at 74%, in the group that was given linguistic instructions before the experiment (*SD* = 11.72). Diagram 2 illustrates this difference. This finding can be explained by the special status of the first text: since the participants have never been engaged in a similar task in Ukrainian prior to the experiment, going through the first text was similar to a training phase and participants equipped with a brief instruction performed significantly better at the level of separate word recognition. It remains to be investigated further why there were no significant interactions between instructions and general understanding scores.

We also calculated a summed comprehension score by combining success rates of separate words and general meaning and dividing them by two in order to keep the same minimum-maximum range (0 to 100%). A repeated measures *ANOVA* was run at two levels (overall success rate in text 2 and 3) and the two groups performed significantly differently (see Diagram 3): EE group improving their score considerably (text 2: *M* = 72.3, *SD* = 12.87; text 3: *M* = 83.2, *SD* = *13.47)* while EEi group kept a similar score (text 2: *M* = 76.9, *SD* = 13*;* text 3: *M* = 77.9*, SD* = 12.95), with *F (1, 19)* = 4.97*, p* = .038.

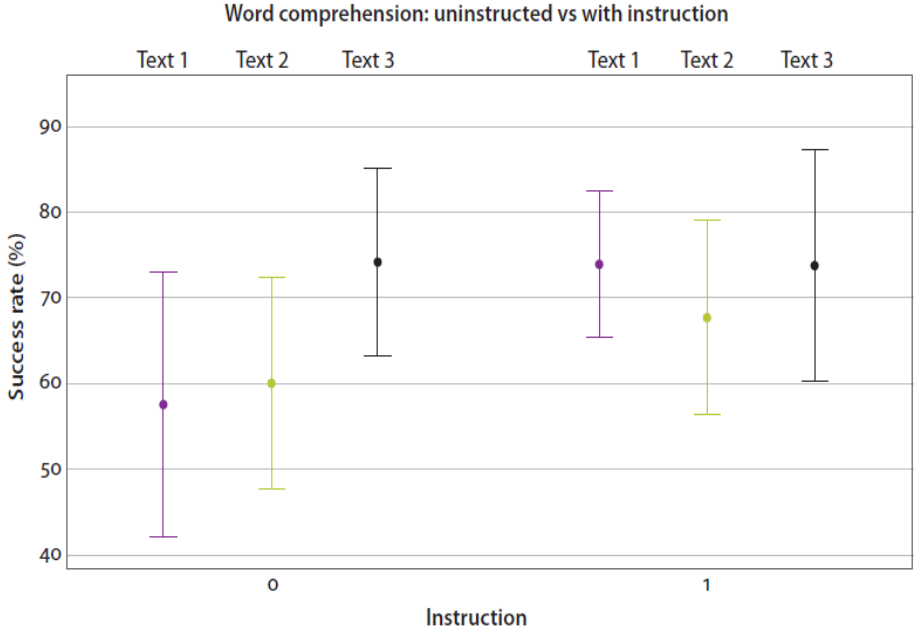

Diagram 2. Success rates in understanding separate words in EE vs EEi groups on three texts

EEi – Estonian L1 speakers who received language instructions, EE – Estonian L1 speakers without instructions. Text 1 – a text presented sequentially first, text 2 – second, text 3 – third.

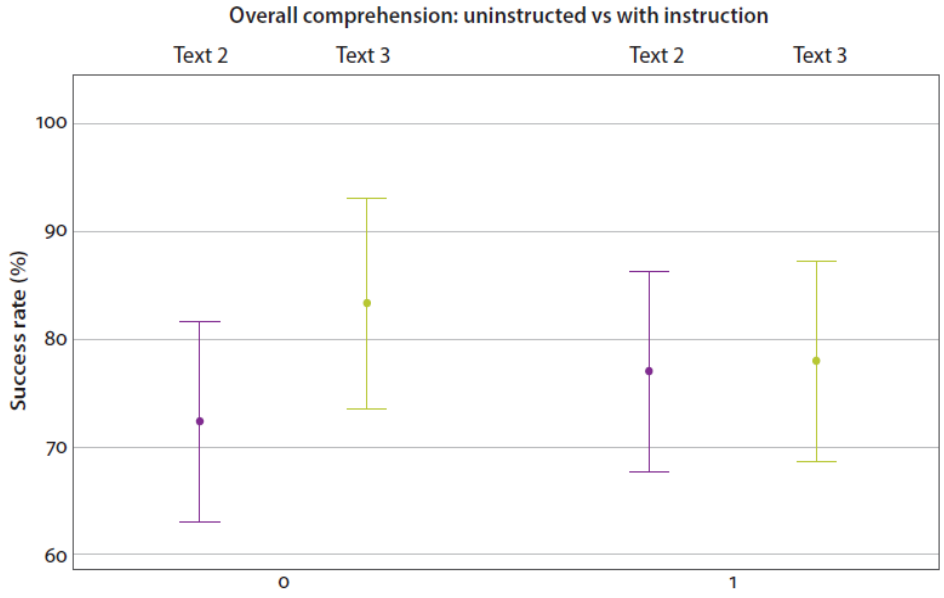

Diagram 3. Success rates in overall comprehension in EE vs EEi groups on two texts

EEi – Estonian L1 speakers who received language instructions, EE – Estonian L1 speakers without instructions. Text 1 – a text presented sequentially first, text 2 – second, text 3 – third.

In other words, in the absence of explicit instruction the participants demonstrated improved comprehension as they got more familiar with the tasks in Ukrainian. The combination of these two findings supports our claim that learnability is a usage-based process – explicit (i.e., in the group that received linguistic instructions) or implicit (i.e., the uninstructed group) – in which one's competence in a language is expanded through recognising and accumulating recurrent relevant knowledge, which recurrently enhances comprehension of the new language in question.

3.5 Conclusions

We established that Estonians without any previous exposure to Ukrainian were able to cope with Ukrainian texts with the help of their knowledge of Russian in a mode we call mediated receptive multilingualism. It is facilitated by various linguistic and cognitive factors. However, since typological similarity between the target and the mediating languages was the same for all groups, whereas their respective success rates differed, we conclude that typological distance is only one of many factors that have an effect on comprehension. The same goes for fluency in the mediating language: participants with varying degrees of proficiency in Russian (B1 and B2, which are sequentially close yet different) were

all able to complete the reading tasks in Ukrainian, thanks to the emergent nature of knowledge. Respondents were constantly expanding the inventory of resources available to them and developing skills for accurate information processing. Our conclusions are as follows:

1. Speakers of Estonian as L1 and Russian as L1 demonstrated significantly different patterns of understanding Ukrainian. Among Estonian speakers, comprehending texts as a whole yielded higher results than tasks on separate word definitions; other participants succeeded equally well both in comprehending separate words and the general meaning.
2. Russian-Estonian early bilinguals coped slightly better with understanding Ukrainian than local Russian as L1 speakers. According to debriefing interviews, in the process of completing the tasks, the latter group relied more on the similarities between Russian and Ukrainian, while bilinguals used more context and creativity. This constitutes a difference in the way these groups approach the tasks. However, it remains to be further explored whether Russian-Estonian bilinguals are inherently better than their Russian-speaking counterparts. It is valid to consider whether multilinguals are inherently better at RM; at this point we can say that our findings are in line with research on multilingual awareness (Jessner, 2014).
3. For Estonian speakers, proficiency in Russian did not correlate with understanding Ukrainian texts. Difficult tasks and limited competence in Russian encourage people to be more creative and to rely on their multilingual experience. In general, as demonstrated by qualitative examples from our data, groups characterised by exposure to a greater range of resources (such as non-standard registers in the mediating language) were more successful at comprehension tasks. The lack of a straightforward correlation between proficiency in Russian among participants with Estonian as L1 speaks to the fact that their success is determined by multiple causation. One useful approach is to consider each linguistic constellation as a starting toolkit, in which resources available to particular speakers affect the choice of the most efficient strategies (for discussion on a toolkit for multilingual communication see Backus, Marácz & Ten Thije, 2011).
4. Learnability plays a significant role in comprehension of Ukrainian texts by Estonians. The results showed that speakers of Estonian as L1 with previous instructions generally had greater success in comprehending Ukrainian texts than their counterparts without any instructions; the former were significantly better than the latter in word recognition in the first text. These uninstructed participants, on the other hand, showed a remarkable ability to improve their performance in the course of experiments, which is also reflected in statistical analysis of their learnability scores. We argue that learnability is a powerful mechanism that may take various forms, from instructions that explicitly construct or activate relevant knowledge, to usage-based processes that help recognise and entrench patterns and other linguistic and extra-linguistic resources.

We see the ability to comprehend as an interplay between shared sense (i.e., information available thanks to past experience) and established sense (created dynamically in interaction). The manifestations of knowledge management differ depending on the availability of common ground (Liu & Liu, 2017). In our experiment, this translates into the use of pre-existing familiar items (e.g., the relatively prosaic understanding of words and structures) and of knowledge generated as participants engage with the reading task (e.g., newly formulated hypotheses regarding Ukrainian based on instructions or contextual cues).

Our results support the idea that mediated receptive multilingualism, when available, can be a valuable resource in the initial stages of the acquisition of a new language. This is particularly true in situations when contextual cues are available, hence the general pattern of higher success rates in understanding in tasks on general meaning compared to defining separate words. It stands to reason that the use of a whole variety of resources to increase knowledge quickly is called upon most when the learning task is a difficult one, as was the case when our participants were confronted with a language they had virtually no experience with. Future research could focus on testing the robustness of our findings and establishing the predictive power of extra-linguistic factors on a larger population in similar experimenting settings, including face-to-face interactions. In practical terms, the challenge is to further integrate the use of linguistic and extralinguistic resources in our linguistic theories and language pedagogies.

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CHAPTER 4. L2 KNOWLEDGE FACILITATING L3 LEARNING: THE ROLE OF RUSSIAN LINGUISTIC FACTORS IN UNDERSTANDING UKRAINIAN BY ESTONIANS

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ABSTRACT

This paper reports on an empirical investigation of how knowledge of L2 Russian can facilitate the acquisition of passive knowledge of L3 Ukrainian by speakers of L1 Estonian. The experiment was conducted with 30 speakers of Estonian as L1, who first filled in a sociolinguistic questionnaire, then completed a C-test in their L2 Russian, before carrying out a task testing their understanding of L3 Ukrainian words and texts, and providing some feedback in a debriefing session. We pay specific attention to the performance on the Russian C-test and how participants' scores correlate with their results on the Ukrainian tasks. We also made an inventory of the grammatical and lexical elements that proved easy or difficult. The results show a positive correlation between the scores on the C-test and performance on the Ukrainian tasks. However, this correlation was lower for text understanding in Ukrainian than for understanding separate Ukrainian words. This suggests that a C-test score does not predict participants' ability to understand the Ukrainian texts to a full extent, while it has better predictive value for the understanding of individual Ukrainian words. These findings suggest that learners use resources beyond just L2 lexical-grammatical knowledge in forming an understanding of texts in an L3 that is closely related to the L2.

Keywords: mediated receptive multilingualism, comprehension, L3 language acquisition, C-test, Ukrainian, Russian, Estonian

4.1 Introduction

One of the effects of globalization is that people around the world increasingly find that their linguistic resources are not sufficient to meet life's demands. As people move around the world, they often face the task of having to learn a new language, or at least learn it well enough to get by. Some need to function professionally in an L2 environment, for example, or need to be able to function informally in an L2 environment in which English is used professionally but the local language is used for everything else, etc. Similarity between L1 and L2 has

been shown to facilitate L2 learning (Odlin 1989), and the same is claimed to hold for the relation between L2 and L3 (Bardel, Falk 2007; Flynn et al. 2004). While an L3 may be very different from the mother tongue, speakers may have learned an L2 that is closer to the new language. This is the case for example for someone who needs to learn English and has already learned German, or, as we will examine in this study, for an Estonian speaker who has to learn Ukrainian and already knows Russian. The similarities between Ukrainian and Russian will provide useful scaffolding for learning Ukrainian words and structures as they both belong to the East Slavic language family.

While previous work has shown that knowing a closely related L2 positively influences L3 acquisition (Bardel, Falk 2007; Flynn et al. 2004), many aspects of this facilitation need illuminating, since knowing a language involves many different kinds of knowledge, from the purely linguistic, such as pronunciation, words and grammar rules, to the pragmatic and cultural, such as how to infer intended meanings, when to say what and how, and how to co-create communication in which interlocutors help each other achieve understanding. Pronunciation, vocabulary and grammar tend to hold privileged positions in language teaching settings, an importance reflected by the importance they are accorded in proficiency tests, but it may be that this comes at the expense of other skills. Having previous experience in multilingual environments, for example, may equip one with communicative resources for learning how to overcome the consequences of limited fluency. Interlocutors may, for example, help each other negotiate the meanings of unfamiliar words, they may engage in codeswitching where useful, or they may encourage each other to use their respective mother tongues (a pattern known as 'Receptive Multilingualism'; Rehbein et al. 2011). In this study, we investigate whether Estonian speakers' Russian vocabulary and grammar knowledge, as tested with a traditional proficiency test, impacts their general understanding of Ukrainian texts as much as it does their recognition of Ukrainian words. None of the participants had previous experience with Ukrainian.

Estonian (Finnic, Uralic) and Ukrainian (East-Slavic, Indo- European) are not related, nor is there a bilingual community that speaks these languages, but many speakers of Estonian have knowledge of Russian. The two languages of Ukrainian and Russian have similar syntactic structures, and 62% similarity in lexical composition (Tyshchenko 2010: 66). In this study we report on an experimental investigation with 30 Estonian participants who completed a C-test in Russian (Grotjahn 1987), followed by a test on individual Ukrainian words (Shumarova 2000) and one on a connected Ukrainian text (Gooskens 2013). In a debriefing session, participants were also invited to provide feedback on their experience. Prior to the experiment, participants filled in a sociolinguistic questionnaire on language use and attitudes. The participants are speakers of Estonian as L1. The experiment is a part of a larger study discussed in Branets, Bahtina and Verschik (2020). The aims of this paper are to verify whether the participants' performance on the C-test in Russian indeed predicted their results on the two Ukrainian tasks, and to see which aspects of Russian turned out to be difficult for the participants, and therefore unlikely to be of much help in understanding Ukrainian. The paper

is organized as follows: first, we discuss previous work on L3 learning, then we report on the experimental design of the study, and this is followed by the results and a general discussion.

4.2 L3 learning facilitated by L2 knowledge

Studies of third language (L3) acquisition have shown evidence for the positive influence of an L2 on the acquisition of an L3 (Cenoz & Genesee, 1998; Cenoz & Jessner, 2000; Cenoz, 2001; 2003; Leung, 2005). Flynn et al. (2004) and Cenoz (2003) state that typological proximity is a significant facilitator of positive transfer in language acquisition: the closer the L2 is to the target L3 the more structures are transferred from L2 to L3. Ringbom (1987) and Hammarberg (2001) pointed out proficiency as an influential factor: the lower the proficiency in L3, the more it will be affected by L2, echoing what is found for transfer in L2 acquisition. In the transfer, learners establish relations between units of the target language and their L1 or L2 (Ringbom & Jarvis, 2009). The more linguistic cues that can be established between L2 and L3, the better understanding of L3 can be achieved. In addition to developing linguistic competence (phonology, vocabulary and syntax), becoming communicatively competent in a language also requires learning ways of pragmatically using the language (Oller, 1970; Fisher, 1984; Harmer, 2001). Successful communication can take place even if interlocutors have limited linguistic competence, especially if they can make skilled use of communicative strategies (Firth & Wagner, 2007: 296). Good learners are argued to be able to combine knowledge of the rules of formal syntactic, morphological, phonological and lexical systems with knowledge of the rules or conventions for their use (Long, 1981: 275; Block, 2003: 61). This becomes especially important when the goal of language learning is not to achieve a good score on a classroom assessment but to be able to communicate in everyday settings. In fact, language learning often proceeds without formal instruction, and thus without explicit lessons on formal grammar and vocabulary. It is unclear to what extent gaining strictly linguistic knowledge facilitates the acquisition of communicative competence more generally.

Applying second language knowledge in informal interaction, and the specific challenges this involves, captivated the attention of second language acquisition (SLA) researchers early on (Alcón, Usó, 1998; Brouwer & Wagner, 2004; Eskildsen, 2019; Firth & Wagner, 1997; Long, 1981; Wagner, 2004). 'Incidental' learning has also been investigated in SLA research that focuses on how linguistic items are learned in interaction (Brouwer et al., 2004, Brouwer, 2003). Accordingly, language testing regimes use 'can do' scales to measure proficiency (e.g. the Common European Framework of Reference), which have the advantage of acknowledging the importance of communicative skills, but lack the precision associated with the vocabulary and grammar tests that are still widely used as well, perhaps for that very reason. The current article does not directly contribute to the development of tests for communicative competence, but we do investigate

how well the ability to achieve general understanding of text in a foreign language correlates with knowledge of words and grammar. If it does, this would suggest that traditional proficiency tests are a good proxy for general communicative proficiency. However, we will see that our results call for caution in this respect.

We will address these issues specifically in a situation of incipient L3 learning. Learning an L3 is increasingly common in today's globalized world. Often, the desired ability is not necessarily to converse fluently in the foreign language but to be able to at least achieve sufficient understanding in order to follow a conversation or read a text. This mode of using a passively mastered language is known as Receptive Multilingualism and for various reasons, such as efficiency or fairness, it may be a preferred language choice pattern in specific settings. The phenomenon of reaching understanding in an L3 through the medium of an L2 has been investigated in constellations of typologically related languages, for instance, Dutch-German-Danish (Swarte et al., 2013) or Czech-Polish-Slovak-Sorbian (Sloboda & Brankačkec, 2014). Our study builds on this tradition, but concerns a situation in which the L1 is unrelated to L2 and L3.

It is important to point out that our study is experimental: our participants were not actually engaged in learning L3 Ukrainian. We merely exposed them to the language for the first time, to see how their performance differs from the zero knowledge one would expect if they really had to start from scratch (i.e. without knowledge of Russian). For Estonians with knowledge of Russian, many of the words encountered in a Ukrainian text will immediately activate knowledge of cognates in Russian. Similarly, the order in which words appear as well as their general appearance, with various kinds of grammatical markers affixed to stems, will resemble patterns they are familiar with from Russian, and the expectation is that this knowledge is immediately activated to form hypotheses about what the Ukrainian words and sentences may mean. If their knowledge of Russian is shown to indeed facilitate substantial understanding of Ukrainian without any previous exposure, this would point to the potential of Receptive Multilingualism even when it is mediated through an actually mastered L2.

An earlier study (Branets et al., 2020) reported that in experimental settings participants (ethnic Russians from Russia who recently have moved to Estonia, local Russians with Russian as L1 and Estonian as L2, simultaneous/early Estonian-Russian bilinguals and speakers of Estonian as L1 with B1 and B2 proficiency in Russian) were indeed quite successful in understanding Ukrainian without previous exposure. Interestingly, participants who reported less advanced knowledge of Russian e.g. Estonian-Russian bilinguals and speakers of Estonian as L1 with B1 and B2 proficiency in Russian often tried harder and were more motivated, and this actually compensated for the more limited potential for positive transfer. However, this does not mean that the participants enjoyed only negligible amounts of positive transfer. The current paper focuses on the degree to which Russian proficiency as measured with a traditional test that privileges vocabulary and grammar predicts the participants' ability to perform two different aspects of foreign language performance: to recognize Ukrainian vocabulary, and to get the gist of Ukrainian texts. Given the overwhelming evidence for

positive transfer in previous literature, we should expect positive correlations in both cases. If it is true that learners utilize the support of more than just available vocabulary and grammar knowledge to achieve general understanding, the correlation with the C-test results should be stronger for the word recognition task than for the general understanding test.

The rationale underlying the assumed facilitatory effect of L2 knowledge is that things known in the L2 are useful in learning the new language as long as they have similar counterparts in the L3. To understand why particular aspects of Ukrainian may present problems we analysed qualitatively what errors were made on the C-test so as to better understand the aspects of Russian that are problematic for Estonian speakers, and therefore will be of little use in understanding Ukrainian.

4.3 Method and participants

4.3.1 Approach

The experiment consisted of a socio-linguistic questionnaire (Bahtina-Jantsikene, 2013), a C-test (Grotjahn, 1987), tasks testing the understanding of Ukrainian words (Shumarova, 2000) and of Ukrainian text as a whole (Gooskens 2013), and a debriefing session also used to collect participants' comments about their choices. The experiment is part of a larger study, presented in Branets et al. (2020). The questionnaire was based on one used in Bahtina-Jantsikene (2013). It comprises 16 questions, and was used to document the sociolinguistic background of participants (age, gender, place of birth, place of residence, etc.), their degree of exposure to Russian and Ukrainian, and their language attitudes towards Ukrainian.

The C-test was developed according to the instructions of Grotjahn (1987). C-tests are usually used to measure proficiency in a first or second language. They allow precise assessment of grammar, vocabulary and overall reading comprehension (Chapelle, 1994; Baghaei, 2011). In our study, we used the C-test to measure the Russian grammatical and lexical proficiency of the participants. In order to choose four reliable texts, we piloted eight texts, selected from various magazines and newspapers, and ran them online on 11 speakers of Russian as L1 and 11 speakers of Russian as L2. The L1 and L2 speakers are all highly educated, and the L2 speakers had proficiency levels from B1 to C1 level. Participants were recruited either from Russian language courses at university level or had certificates attesting B1 to C1 level of proficiency.

Considering the fact that the participants in the main experiment would be similar to the L2 speakers in the pilot, we analysed the pilot results to see which items turned out to be more difficult for the L2 speakers (we discuss the results in Section 4.4.1).

Our eventual C-test consisted of the four short texts that had received the best scores from the L2 speakers. The second half of every second word in a sentence,

starting from the second sentence, was missing (following Grotjahn's (1987) instructions). The texts comprised five or six sentences of the following types: simple, compound with an independent and a dependent clause, and one compound-complex sentence with two independent and two dependent clauses. The topics were an island in Italy, a story about the Chinese wall, prenuptial agreements, and travelling. The participants were asked to fill in the gaps using correct words and grammatical forms. Each text had 20 gaps, and participants were given five minutes to complete it. Their performance was evaluated according to the flexible scoring system from Bahtina-Jantsikene (2013: 28):

– 1 point: a fully correct answer (e.g., when a participant answered that *боль… bol'…* corresponds to *большой bol'shoi* 'big');
– 0.75 points: a correct yet grammatically or semantically imperfect answer, or a near synonym that matches the context (**любов liubov* for *любовь liubov*' 'love');
– 0.5 points: a misspelled word, only approximating the target (e.g., **путешествовается puteshestvovatsia* for *путешест-вовать puteshestvovat'* 'to travel');
– 0.25 points: a semantically related but grammatically or contextually incorrect (e.g., **имущение imuschenie* for *иму-щество imuschestvo* 'property');
– 0 points: an unrelated word or no answer (**залы zaly* 'halls' for *залив zaliv* 'gulf').

We conducted the C-tests manually with the participants right before they completed the Ukrainian tasks. The total number of test items was 80 (20 words per text and four texts in total).

After completing the C-test in Russian, the participants were given three Ukrainian texts to test their comprehension in Ukrainian. Each text was accompanied by a word-definition task to see whether they understood particular words from the text (Shumarova, 2000) and questions to assess overall understanding (Gooskens, 2013). The Ukrainian texts were given one by one and participants had to first read a text, then complete the assignments that accompanied it, and then do the same with the next text. They were allowed to read the text as many times as they wanted. The word definition task comprised 55 words from the texts: 36 that have cognates in Russian with the same meaning, 12 that have cognates with different meanings or that belong to different registers, and seven without cognates in Russian. Participants had to translate Ukrainian words into the language they were comfortable with or to write an answer in their own words. The following scoring system was applied (also outlined in Branets & Verschik, 2021):

– 1 point: an entirely correct answer (e.g., when a participant recognizes that Ukrainian *донька don'ka* 'daughter' is the translation of Estonian *tütar* 'daughter', etc.)

– 0.75 points: a correct definition presented in an incorrect grammatical form (e.g., *юнаки junaky* ‘young men, youth’ (plural) translated as *noormees* ‘young man’ (singular) instead of *noormehed* ‘young men, youth’ (plural), etc.
– 0.5 points: almost correct meaning (e.g., *ніяк niyak* ‘by no means’ translated as Estonian *kuidagi* ‘somehow’ instead of correct *mitte kuidagi* ‘by no means’)
– 0.25 points: a semantically related lexeme that fits the context but is incorrect (e.g., Ukrainian *запитав zapytav* ‘asked’ translated as Estonian *ütles* ‘said’)
– 0 points: a completely wrong answer (e.g., Ukrainian *ревнощі revnoschi* ‘jealousy’ translated as Estonian *põhjustel* ‘reasons’) or no answer.

The tasks for general understanding consisted of 15 true or false questions (1 –correct answer; 0 – incorrect), 15 multiple choice questions with three alternatives including one correct answer (1 – correct; 0 – incorrect), and 6 open questions (1 – full answer; 0.75 – partial answer; 0.5 – many details left out; 0.25 – relevant but some incongruence with context; 0 – false or no answer) (Branets et al., 2020: 11).

During the debriefing, which immediately followed the completion of all the aforementioned tasks, the participants were interviewed in order to collect their explanations of their answers and the strategies they used. The duration of each interview was 10–20 minutes. The whole experiment was conducted individually with each participant with pen and paper and took about two hours.

4.3.2 Participants

The experiment was conducted in Tallinn in 2017–2018, with 30 speakers of Estonian as L1 with B1 or B2 proficiency in Russian. Based on the results from an earlier pilot study with three respondents, B1 was selected as the lowest proficiency in Russian that was sufficient for completing the Ukrainian tasks (Branets et al., 2020). The sample included 10 male and 20 female participants, and all were residents of Tallinn at the moment of testing. Their ages ranged from 22 to 59 years. Most of the participants were current university students in many different programs and disciplines. Seven participants had already completed higher education.

4.4 Results

4.4.1 C-tests: Pilot Results

Recall that we first carried out a pilot study to test the four most suitable texts to use in the C-test for the experiment. The pilot also gave us valuable information about which words were problematic for L2 speakers. We found that the items that gave L2 learners trouble can be classified into four categories. These include idioms, low-frequent words, adverbial participles, and words that show particular

lexical or phonological differences from Estonian. We shall provide a few illustrative examples.

Non-native speakers of Russian were not familiar with some expressions and idioms:

(1)	Russian	answer
	предавался праздной жизни	*представляя predstavliaja*
	*predavalsja prazdnoy zhizn*i	envisioning-PRESP
	‘was luxuriating’/	‘envisioning’, ‘imagining’
	‘was leading a pleasure-oriented life’	предавал predaval
		‘was betraying’

Only two respondents were able to recognise this idiom correctly, while two participants offered the answers cited above, and the rest left this item unanswered. The answer *предавал predaval* ‘was betraying’ sounds like the target word *предавался predavalsja* ‘was leading’ but has a completely different meaning.

Participants were not familiar with some low frequency words that were specific to the semantic domain central to a particular text, such as to the text on Egyptian archaeology: *раскопки raskopki* ‘excavation’, *фараоны faraons* ‘Pharaohs’, *египетской jegypetskoy* ‘Egyptian’, and *летописи letopisi* ‘Chronicle’. For native speakers such lexemes appeared to be easy.

Adverbial participles seemed to be the one grammatical category that was problematic. Respondents either gave no answer in (2) or recognised only the verbal root, settling on erroneous grammatical markers:

(2)	Russian	answer
	покрыты pokryty	*покрыться pokryt’za*
	covered-adv part, pl	to get covered-v, inf
	‘covered’	*покрыто pokryto*
	covered-adv part, sg, neut	

Participants sometimes made use of variants based on Estonian that resemble the correct Russian word:

(3)	Russian	answer	Estonian
	гигантское gigantskoje	*гигантное gigantnoje*	*gigantne*
	‘huge’	*гигантовое gigantovoje*	‘huge’
		гигантише gigantishe	

The first answer *гигантное gigantnoje* ‘huge’ is very similar to Estonian *gigantne* ‘huge’ and most probably was interpreted in such a way because of the similarity. Seven participants provided incorrect answers with non-existing words in Russian as presented in example 3 further below. At the same time, four respondents provided the correct answer: *гигантское gigantskoje* ‘huge’.

Finally, words that are generally felt to be difficult to pronounce for Estonians appeared also to be difficult to recognize, e.g. *изображения izobrazhenija* ‘image’, *прическа prichoska* ‘hairstyle’. In most cases respondents left blank spaces for such words.

4.4.2 C-test Errors

The general success rate in completing the Russian C-tests by speakers of Estonian was 66%. In Section 4.4.3 below, we will explore the correlation between C-test scores and the scores on the Ukrainian tasks. However, we first report on information the C-test errors provide on which aspects of Russian prove difficult for L2 speakers, and would therefore be of little use when deciphering input in Ukrainian.

We start with the items that proved relatively difficult, defined here as items that scored under 15 points. This group (‘Series 1’ in diagram 1) contains 19 words, with scores between 7.75 and 14.75 (i.e. recognised correctly by fewer than half of the 30 participants). The second group (‘Series 2’) comprises 67 words, with scores ranging from 15.5 points to 29.75.

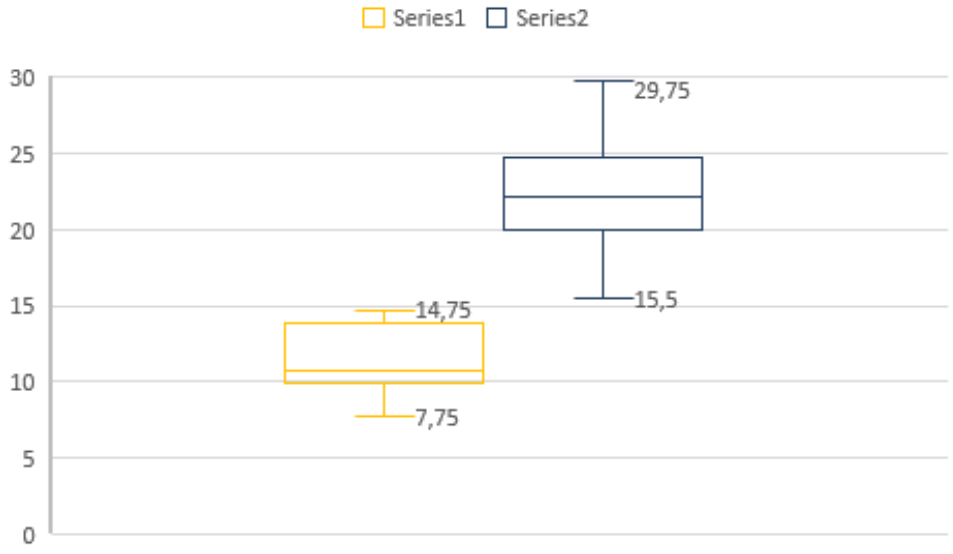

Diagram 1. The division between low- and high-scoring words in the C-test.

We found that the group of words that received low scores contains mostly lexical elements that could well be unfamiliar to participants due to their low frequency or because they belong to specific semantic domains. Other words led participants astray because phonological and lexical similarity with Estonian made them assume more semantic similarity than there really is (false friends). Finally, there were words which were partially understood, as the root was recognized, but which were given erroneous grammatical marking. These findings confirm the

findings from the pilot study, reported in Section 4.4.1 above. Below we present some more examples.

The lowest score (7.75) was for *термальные termal'nyje* 'thermal', a word not widely used in everyday communication, and specific to domains related to recreation facilities. It is likely that many participants had not encountered this item before. They either left an empty space or offered non-existing words such as *термалы termaly, терматологи termatologi, термательный termatelnyi, терманые termanyje.*

Participants also experienced difficulties with the adverbial 'only', which received a score of 10.75.

(4)	Russian	answers
	лишь lish'	*либо libo*
	'only'	'either'
	лиш lish,	*лиж lizh*

The word *лишь lish'* 'only' had a functional role in the test sentence and is not commonly used this way in everyday speech. Six times, it was interpreted as *либо libo* 'either', probably because of its similar beginning. In five cases, it was misspelled and written as *лиш lish* or *лиж lizh*.

A common error in the C-test is to attach the wrong grammatical endings to a correctly identified root. This can be seen in the various ways in which the adjective богатыми bagatymi 'rich' was represented; this common word received a score of only 11.25.

(5)	Russian	answer
	богатыми bagatymi	*богатами bagatami, богатьом*
	rich-PL, INS	*bagatjom, богатными bagatnymi*
	'rich'	*богатый bagatyi*
		rich-SG, NOM
		богатым bagatym
		rich-SG, INS
		богатые bagatyje
		rich-PL, NOM
		богатом bagatom
		rich-SG, PREP

In most cases, participants filled in non-existing words, such as богатами bagatami (seven times), богатными bagatnymi (one time) and богатьом bagatjom (one time). There were also many cases where the grammatical number and grammatical case were wrong. In the example, the correct choice would have been the plural and instrumental case богатыми bagatymi 'rich'.

The final example in this category concerns orthographic errors.

(6)	Russian	answers
	надеяться nadejat'za	*надеяца nadejazha,*
	'to hope'	*надеять nadejat',*
		надеют nadejut,
		надеють nadejut',
		надеятса nadejatsa

With the word надеяться *nadejat'za* 'to hope' (score 14.75), participants had difficulties with orthography. They wrote this word as they would pronounce it for instance, *надеяца nadejazha* or *надеятса nadejatsa*.

The group of words that received high scores contains many cases where some of the grammatical marking was wrong but the root word was identified correctly. The first example is мира mira 'world' (15.5):

(7)	Russian	answers
	мира mira	*мир mir*
	world-GEN	word-NOM
	'world'	*мире mirje*
		world-PREP
		мига miga
		moment-GEN
		'moment'

Six times the word was given in its nominative form and two times with prepositional case instead of correct genitive. The one participant who used the genitive filled in the incorrect stem *мига miga* 'moment'.

The final example presents a different kind of error: a misunderstood pronoun. Participants sometimes missed its lexical meaning completely; this word received a score of 22.5.

(8)	Russian	answers
	такие takije	*также takzhe*
	such-PL, NOM	'also'
	'such'	*таки taki*
		still-PTCL
		'still', 'after all'
		таким takim
		such-M, IST, SG
		такое takoje
		such-N, NOM, SG

Misunderstood function words can keep L2 speakers from understanding the input, perhaps more so than recognized content word stems of which the grammatical marking is misunderstood. Five times this word was interpreted as *также takzhe* 'also', which has a completely different meaning. One participant mistook it as equally incorrect *таки taki* 'still', 'after all'. Two participants were confused concerning grammatical case and number and instead of plural used

singular, neuter *такое такоје* ‘such’ and also instead of nominative used instrumental and masculine *таким такім* ‘such’.

The few times that functional words were target items in the C-test did not yield exceptionally high scores (74.4% versus 64.4% for content words). This suggests that, despite high frequency, misunderstood function words can contribute to compromised understanding in an L2, alongside the other three main sources documented in our analysis above: unknown lexical items, missed grammatical markers, and spelling errors. We now turn to the question of whether problems encountered in the C-test correlated with problems experienced in the Ukrainian tasks.

4.4.3 The Effect of C-test Score on Ukrainian Scores

In this section, we present the correlations between the participants’ performance on the C-test in Russian and on the tasks testing their understanding of separate Ukrainian words and Ukrainian texts in general. Diagram 2[6] presents the correlations per participant between the Russian C-test results and their results on the Ukrainian word recognition task. The correlation is quite strong: r=0.74, confirming our expectation. Better performance on the Russian C-test implies better recognition of Ukrainian words.

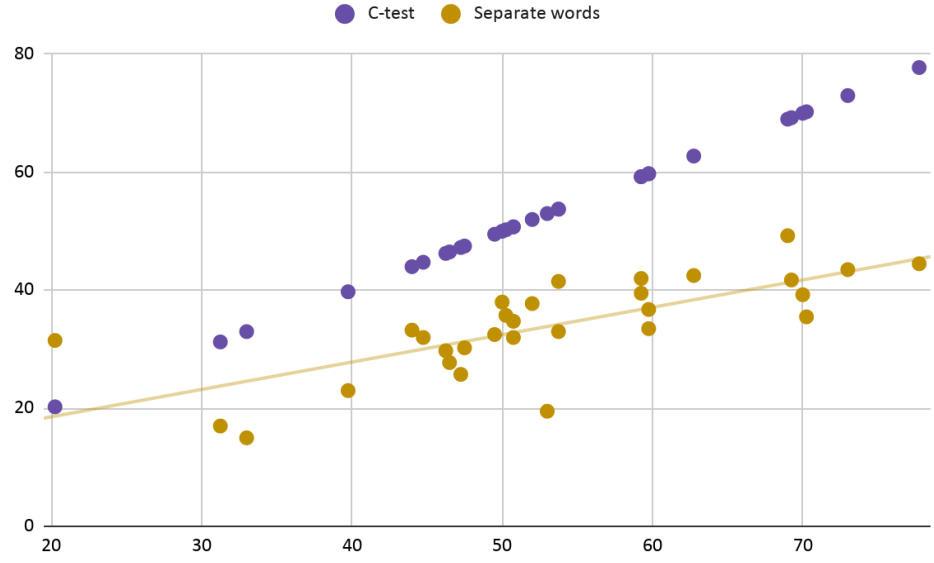

Diagram 2. Correlation between C-test results and word recognition tasks in Ukrainian.

[6] Russian C-test scores in the scatter charts (Diagrams 2 and 3) are presented as x-axis of independent variables from lower score to higher, while Ukrainian scores presented as dependent variables on the performance of the C-test in Russian.

Next, we compare the scores on the Russian C-test and the task testing general understanding of the Ukrainian texts (see Diagram 3 below). Note that the absolute scores are quite high, as 40 is the maximum score and many dots are above 30, while there are none under 20. The correlation is positive (r=0.56) but rather low compared to the correlation with word recognition. Our expectation that a higher C-test score in Russian will predict a higher score in general understanding of Ukrainian is only moderately confirmed. There is a better correspondence between an individual's scores on the C-test and the word test than between an individual's scores on the C-test and the content test. If we compare the data in the two diagrams, we observe that the correlation is positive in both cases; however, the points are more scattered in Diagram 3 below than in Diagram 2 above. Ukrainian content scores present a relatively straight line, which suggests that differences in performance on the C-test do not affect the content scores in Ukrainian all that much.

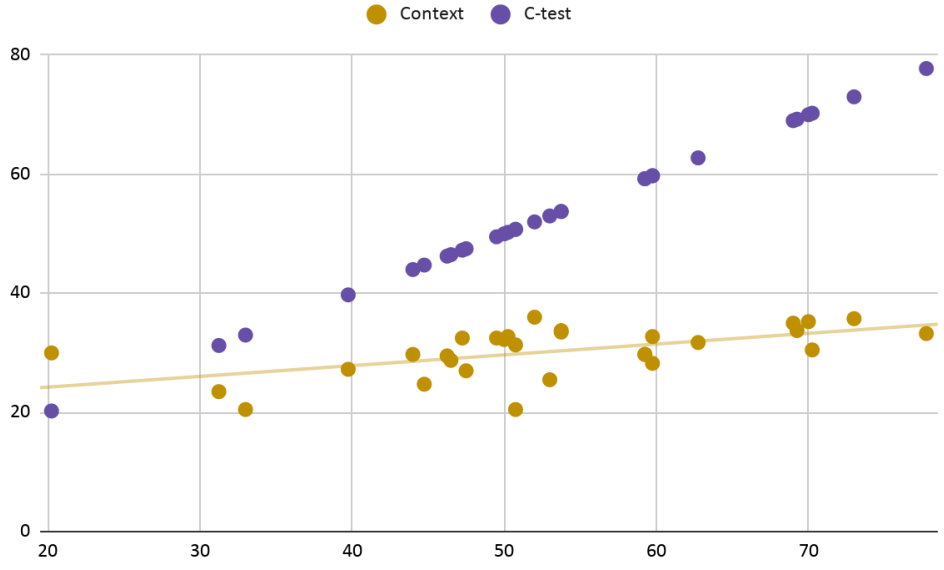

Diagram 3. Correlation between C-test results and content-related tasks in Ukrainian.

These findings support a previous investigation of understanding of Ukrainian by Estonians in Branets et al. (2020), which compared two L2 speaker groups with different proficiency levels. Estonians with B1 level, surprisingly, outscored participants with B2 level in understanding the context by 5.2%, while participants with B2 level outscored those with B1 by 4.64% on the recognition of separate words in Ukrainian. Branets et al. (2020: 15) suggested that extra-linguistic factors explained this difference: those with B1 had to try harder to compensate for their less advanced vocabulary knowledge. To summarise, linguistic similarities between Russian and Ukrainian provide a strong basis for Estonian speakers when it comes to understanding Ukrainian. All presented correlation coefficients between the C-test in Russian and Ukrainian tasks are positive. This correlation

is weakest for the content tasks, suggesting that C-tests are of relatively limited use in measuring overall language proficiency and that general receptive proficiency is driven by more than just lexical and grammatical knowledge. We discuss these implications below.

4.5 Discussion and conclusion

This paper reports on an empirical investigations of how useful it is to know an L2 when tasked with learning an L3 that resembles the L2. In a globalized world, the ability to make use of L2 knowledge when encountering new languages that have similarities with the L2 is a useful skill. We explored in particular whether the potential for L3 understanding in Ukrainian in these circumstances is simply a function of L2 proficiency in Russian by speakers of Estonian as L1. Our results show that how Estonians performed on a Russian L2 C-test has some predictive value for how they performed on the two Ukrainian tasks they carried out. As expected, they also showed that this predictive value was better for a word recognition task than for a task testing general understanding of Ukrainian texts. Since the C-test tests lexical and grammatical knowledge, this result suggests that speakers made use of more than just their lexical and grammatical knowledge of L2 Russian to understand L3 Ukrainian. This is in line with the results outlined in Swarte et al. (2013), who report that the influence of L2 proficiency on L3 understanding is smaller when words are placed in sentential contexts. Context provides additional clues for participants to identify the correct semantics, avoid false friends, etc. (ibid: 154–155). During the debriefing interviews our participants reported that sometimes they relied more on the context than on linguistic clues provided by their knowledge of Russian (Branets & Verschik, 2021).

We used the C-test because it is a commonly used tool for measuring L2 proficiency. The expectation that a higher score on the C-test would predict a higher score on the Ukrainian tasks was indeed confirmed. Participants who have trouble recognising which words need to be filled in in the Russian L2 C-test also had trouble with recognising the meaning of Ukrainian words, presumably because their limited lexical and grammatical knowledge of Russian interfered with their ability to use their Russian knowledge for deciphering the meaning of the Ukrainian words they encountered. The reason for this is suggested by the results of our analysis of the C-test errors, which showed there were four main categories of problem sources. First, words with low frequency, including idioms and figurative expressions, sometimes proved unfamiliar. Second, incorrect grammatical markers were added to correctly identified stems. Third, spelling errors led to lower scores. Finally, function words occasionally presented problems and then were not recognised at all. It is likely that these limitations also caused the participants problems when faced with unfamiliar Ukrainian, as the Ukrainian counterparts of the problematic lexical items and grammatical morphemes will also not be recognised easily or at all.

However, it is interesting that the correlation between C-test scores and overall Ukrainian text understanding was much lower than that between C-test score and Ukrainian word recognition. Presumably, this relates to the degree to which C-tests rely on lexical and grammatical knowledge. However, it also points to limitations of the degree to which traditional tests of linguistic proficiency can predict general receptive ability, operationalized here as general text understanding. Obviously, to learn a foreign language it is important to learn words and grammar, but there are other factors at play as well, and the difference between the two correlations points to that. If the lexical and grammatical knowledge tested by C-tests were all important, it should determine overall understanding as much as it does lexical and grammatical knowledge. Perhaps, when a learner is faced with input, the unrecognised details that grammar provides can often reliably be filled in on the basis of context and knowledge of the surrounding content words, or even be ignored without too many consequences. Recognising content words makes it possible to activate knowledge of the world, and bring it to bear on the current communicative situation one is in. Learners tend to attend to lexical items more than grammatical items, presumably because nouns carry more important value when you try to deduce the meaning of what you hear or read (Spada & Lightbown, 2008).

Of course, missing out on grammatical information can easily lead to comprehension problems, but in actual conversation these can be sorted out interactionally, especially if the degree of understanding is far from zero. As Firth and Wagner (1997: 288–289) pointed out, successful communication in a foreign language can be achieved even with limited communicative resources. Harmer (2001: 84–85), emphasising the communicative approach in language learning, encourages teachers to involve learners in natural communication, and treat successful communication as the target, rather than grammatically accurate language use. Our results support that general stance, since the correlation between C-test score and general understanding was not particularly high. From this perspective, successful understanding is likely to be boosted if the atmosphere is convivial and interlocutors are ready to help each other. This allows them to identify any emerging misunderstanding, and to practice ways of resolving the same. Branets et al. (2020) listed various extra-linguistic factors that affected understanding, such as exposure to Russian, exposure to different registers, experience with different multilingual situations, metalinguistic awareness, and language attitudes toward Ukrainian. It is likely that these factors help bring about the conviviality alluded to above. The current design, however, did not allow us to test this systematically, since it did not feature interactions in which participants had to actually converse with someone who was using Ukrainian. During the debriefing interviews, participants reported that it was familiarity with general knowledge and the context that helped them to comprehend Ukrainian texts better and recognise the unknown lexemes in Ukrainian by guessing or making assumptions that turned to be successful (Branets & Verschik, 2011).

Our results indicate that a C-test score does not predict a participant's ability to understand the Ukrainian texts very well, while it does do a good job of

predicting their recognition of individual Ukrainian words, a task that is arguably closer to what one is asked to do in a C-test. These findings suggest that more is needed than L2 lexical-grammatical knowledge to understand texts in an unfamiliar L3 that is typologically similar to the L2. C-test scores have a built-in bias towards grammatical accuracy and it is striking that the higher grammatical competence that a high score on the C-test implies does not automatically mean that participants understand the Ukrainian texts any better. Note, however, that the absolute scores on the general understanding task were quite high, so further research is needed to explore the relationships between lexical and grammatical knowledge and the ability to achieve general text understanding. This ties in with the debate in SLA research on how much importance should be given to grammar in language teaching. There is some evidence that suggests that a focus-on-forms approach is valid as long as it includes an opportunity for learners to practise behaviour in communicative tasks. Grammar instruction should take the form of separate grammar lessons (a focus-on-forms approach) but should also be integrated into communicative activities (a focus-on-form approach). An argument that cautions against too much explicit grammar teaching is that learners can and do learn a good deal of grammar without it being explicitly taught (Ellis, 2006). Research on immersion programmes (e.g., Genesee, 1987) also shows that learners in such programmes are able to develop the proficiency needed for fluent communication without any formal instruction in the L2.

Using an already existing multilingual repertoire as well as learning how to make use of the assistance interlocutors can provide each other, and how to enhance the learning possibilities this affords, are key factors in the learning process. We hope our study encourages further study that approaches language learning as learning how to communicate in a new context, rather than just the learning of words and grammar.

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CHAPTER 5. COMPREHENSION OF UKRAINIAN BY ESTONIANS VIA RUSSIAN: STRUCTURAL AND EXTRA-LINGUISTIC ASPECTS

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https://doi.org/10.22363/2687-0088-2021-25-4-1071-1102

ABSTRACT

This study explores how people use and expand their linguistic resources in the situation when they have some proficiency in L2 and try to understand L3 that is related to L2. The focus of the study is on the comprehension of Ukrainian by Estonian L1 speakers via their proficiency in Russian (L2). This situation is labeled as mediated receptive multilingualism. The aim of this research is to investigate the role of cross-linguistic similarity (objective or perceived, in the terms of Ringbom 2007) and extra-linguistic predictors of success in comprehension. In addition to measuring the success rate, we pay attention to the participant's perspective. The experiment was conducted with 30 speakers of Estonian as L1 and included a questionnaire, C-test in Russian, three Ukrainian texts with different groups of tasks, and debriefing. In this article, we focus on the task of defining Ukrainian words from the text and on debriefing interviews. The results showed that similarity, perceived or objective, is not the only decisive factor in facilitating understanding. The participants' explanations confirmed our previous findings that similarity, albeit important, is only partly responsible for successful comprehension. This became clear from the debriefing interviews. In many cases, the participants' choice was affected by a range of extra-linguistic factors: general knowledge, context, exposure to various registers of Russian, M-factor, metalinguistic awareness, and learnability. In some instances, context and general knowledge outweighed similarity. These findings show how similarity worked together with extra-linguistic factors in facilitating successful comprehension in challenging multilingual settings.

Keywords: mediated receptive multilingualism, comprehension, objective and perceived similarity, Ukrainian, Russian, Estonian

5.1 Introduction

In the contemporary world, people often need to communicate across linguistic and cultural boundaries without having a perfect command of a foreign language. Very often *English as a lingua franca* or any local *lingua franca* are not an obvious choice in many regions and communicative situations. Therefore, interlocutors employ different language modes in order to make communication happen. One of these is receptive multilingualism (RM) a mode of communication where passive understanding of an L2 suffices: all participants use their L1 while speaking to each other (Rehbein et al., 2012). This mode is mostly employed (and investigated) in the case of related languages (inherent RM, e. g. Estonian-Finnish) but also in communication between speakers of unrelated languages where the participants have at least a passive command of each other's language (acquired RM, e. g. Estonian-Russian).

The subject of this study is the comprehension of Ukrainian without previous exposure to it among Estonians with some proficiency in Russian. Estonian and Ukrainian are not related and no significant bilingual community speaking these languages exists (although there are indeed a few individual cases of Estonian-Ukrainian bilingualism); yet speakers of Estonian may be able to comprehend Ukrainian through the knowledge of Russian. Knowing Russian as L2 should help to cope with Ukrainian as L3: they belong to the same language family (East-Slavic), have a lot of typological and lexical similarity (62% similarity in lexical composition, Tyshchenko, 2010: 66). This mode of communication was termed "mediated receptive multilingualism," where understanding of L3 can be achieved through the medium of L2 closely related to L3 (Branets et al., 2020).

The comprehension of Ukrainian among speakers of Estonian via their varying levels of proficiency in Russian was first examined by Branets, Bahtina & Verschik (2020). They found that Estonians were quite successful in reading comprehension of Ukrainian without previous exposure to it. It was attested that, in addition to structural and material similarities between Russian and Ukrainian, there are a number of extralinguistic factors that affected understanding, such as metalinguistic awareness, previous exposure to Russian and to various registers thereof, experience in multilingual communication, learnability, and attitudes towards Ukrainian (Branets et al., 2020).

The role of material and structural similarity in comprehension between closely related languages has enjoyed a lot of scholarly attention in the field of RM (Gooskens, 2007a; Gooskens et al., 2008). Although similarity is highly relevant, there are other factors that may play a role, including experience in multilingual (or RM) communication, exposure to different varieties and registers (slang, regional dialects, colloquial speech; see Kaivapalu, 2015), general cognitive skills (posing a hypothesis, making the comparison), and individual linguistic trajectories (personal experience, communicative needs, repertoire, Blommaert & Backus, 2011). We agree with the view that language skills and language learning are shaped by use (meaning both active usage and passive exposure, see Barlow & Kemmer, 2000, Blommaert & Backus, 2011) and experience (Backus, 2014,

Bybee, 2010, Croft, 2001, Langacker, 1987, Quick & Verschik, 2019). In this study, we will analyse the participants' debriefing data where they explained their decisions. On the basis of these data, we were able to detect the participant's comprehension strategies that helped them to complete reading comprehension tasks in Ukrainian.

The aim of this paper is twofold. First, we investigate what role similarity (objective or perceived) played in the definition of Ukrainian words by speakers of Estonian in the reading comprehension experiment of Ukrainian. In addition, we focus on the participants' perspective of employing different linguistic resources that they may already have from the prior experience of communication in complex multilingual settings. This allows us to see the mechanism of how available linguistic resources are activated from a participant's perspective in a difficult multilingual situation.

Secondly, we explore what other factors, in addition to objective and perceived similarity, played a role. In our previous research on mediated RM, we found that proficiency in Russian in itself did not determine successful comprehension and provided a list of extra-linguistics factors that facilitate comprehension (Branets et al., 2020). In contrast to the previous study, here we examine only Estonians with Russian as L2 and do not include other groups such as Russian-dominant bilinguals, balanced Russian-Estonian bilinguals, etc. The number of Estonian as L1 speakers was increased from 20 to 30.

The paper is organized in the following way: first, we discuss theoretical premises of receptive multilingualism research with a focus on mediated receptive multilingualism. We will also provide a background on objective and perceived linguistic similarities and extra-linguistic factors. Then we describe the experimental design and the participants. After that, we proceed with our findings and data analysis. Finally, we complete the article with the main conclusions.

5.2 Theoretical considerations

The phenomenon of RM is covered by a variety of synonymous or near-synonymous terms in the literature: mutual intelligibility (Voegelin & Harris, 1951), semicommunication (Haugen, 1953; 1966; 1981), plurilingual communication (Lüdi, 2007), intercomprehension (Berthele, 2007), receptive multilingualism (Braunmüller, 2007, Zeevaert, 2004, Ten Thije & Zeevaert, 2007), *lingua receptiva* (LaRa) (*Lingua Receptiva,* 2021[7], Rehbein et al., 2012, Ten Thije et al., 2017). The main objective of RM is to activate linguistic, mental, interactional, and intercultural competencies of the interlocutor's passive language during RM interactions (Rehbein et al., 2012: 249).

Nowadays, many studies in RM theory as well as in language acquisition in general have shifted from "ideal bilingual," perfect command and productive

[7] http://www.luistertaal.nl/en/ (accessed 15 November 2021).

skills towards receptive skills, not necessarily perfect command, and to the purpose-based focus of reaching communicative goals in complex multilingual situations (Branets et al., 2020; Braunmüller, 2007; Ten Thije & Zeevaert, 2007; Zeevaert, 2004). Since successful communication is possible without "perfect" language use, communicative aspects of RM become central instead of formal aspects of language (Bahtina & Ten Thije, 2012).

The asymmetry between comprehension and production skills in receptive bilinguals has also been brought up in RM literature (Sherkina-Lieber, 2015). However, RM has the potential for interlocutors with asymmetrical competencies to be effective by using suitable communicative strategies in exolingual interactions (Lüdi, 2013). The potential of RM can be developed over time. Making full use of RM and of the resources that come with knowing another language takes time; continuing practice with the same interlocutors increases your common ground with them, and this makes you better at using effective communication strategies. The evidence of such processes was attested in the research of Czech-Croatian (Golubović, 2016) and Estonian-Russian-Ukrainian language constellations (Branets et al., 2020). In both studies, the respondents were divided into two groups: those who received instruction and those who did not. The results demonstrated a significant improvement in comprehension of the trained group. In addition, in the Estonian-Russian-Ukrainian constellation, the comprehension of three Ukrainian texts was tested while the texts were provided to participants in a different order. The participants' comprehension of the last text was always higher as they learned from one text to another and consequently applied more advanced strategies (Ibid). This suggests the language learning trajectory of RM or learnability.

Some researchers have paid particular attention to linguistic facilitators of comprehension in RM by controlling extra-linguistic factors (Härmävaara & Gooskens, 2019; Gooskens et al., 2015; Salehi & Neysani, 2017). The notion of objective and perceived linguistic similarity was brought up a number of times (Gooskens et al., 2008; Kaivapalu & Martin, 2017). Objective similarity (and difference) is the actual degree of correspondence between languages (Jarvis & Pavlenko, 2008: 177). In turn, the perceived similarity is defined as "what language learners perceive to be similar between languages" (Ringbom, 2007: 7). Perceived similarity does not always function in a positive way, but there also might be negative cases of understanding or misinterpretation.

Perceived similarity by language learners with a limited command of the target language is based on their L1 or other acquired languages, "especially if they are related to the target language" (Ringbom & Jarvis, 2009: 106). In our case, L1 Estonian (Finnic, Uralic) is non-related to L2 Russian and L3 Ukrainian (East-Slavic, Indo-European); however, interlocutors could rely on their knowledge of L2 Russian that could positively affect the comprehension of L3 Ukrainian and facilitate a possibility of the acquisition of Ukrainian. Our previous study has shown that the comprehension of Ukrainian by the participants with Russian as L1 differs from the participants with Estonian as L1: namely, the participants with Russian as L1 were better at understanding Ukrainian than the participants with

Estonian as L1. Yet, Russian-Estonian balanced bilinguals performed better than dominant Russian-speakers from Estonia, probably because of their higher metalinguistic awareness (Branets et al., 2020: 13–14).

As for extra-linguistic factors (social, individual, communicative, etc.), several authors mention attitudes, geographical distance, exposure, metalinguistic awareness, etc. (Gooskens, 2006; 2007b; Gooskens & Schneider, 2019; Kaivapalu, 2015; Schüppert & Gooskens 2011; Gooskens & van Heuven, 2020). The difference between perceived and objective similarities in comprehension experiments was also explained by the role of various non-linguistic factors. Kaivapalu (2015: 69) proposed a descriptive model of RM that, in addition to the degree of similarity between languages, includes such notions as various registers of L1 (colloquial usage, dialects, familiarity with slang and archaisms), metalinguistic awareness, general knowledge, random knowledge of some language items of the target language from the past, and the context. Several studies emphasized the important role of language variation that equips interlocutors with more advanced strategies of finding similarities between languages (Berthele, 2008; Gooskens & Heeringa, 2014; Kaivapalu & Maisa, 2017). For instance, in inter-Scandinavian communication, Norwegians understand Danish and Swedish better than Danes, and Swedes understand Norwegian due to exposure to Norwegian dialects. It was suggested that exposure to a vast range of varieties raised language awareness among Norwegians and consequently helped them to establish linguistic cues and find similarities between closely related languages (Gooskens & Heeringa, 2014). In addition to linguistic distance, Gooskens (2007a) highlighted the role of language attitudes (see also in Gooskens, 2006; Schüppert & Gooskens, 2011), contacts, and language experience with the language towards comprehension.

Various communication strategies in RM towards reaching comprehension have been attested, such as accommodation or reducing linguistic differences (Giles et al., 1991, Hlavac, 2014) or hearer's and speaker's metacommunicative practices that are provided naturally by the assistance of interlocutors to each other during a conversation in complex multilingual situations (Bahtina-Jantsikene & Backus, 2016). In RM, the context and multimodal elements of interaction play an important role (Härmävaara & Gooskens, 2019: 19; Muikku-Werner, 2014). In reading comprehension, participants mostly rely on linguistic similarities; however, when they cannot find them, they turn to the context. In such cases, the context functions as a so-called filter that helps participants to confirm or refute their assumptions (Kaivapalu, 2015; Kaivapalu & Muikku-Werner, 2010). Also, according to Grosjean (1998), the conversation topic within the context affects the language mode and the comprehension process.

In a narrow sense, a context may mean the plot, the topic, preceding and following words and sentences. Another type is a wider cultural context, for instance, accidental familiarity with Russian or Ukrainian songs, culture, traditions, and so forth. In a broader sense, a context may mean knowledge about the world, including specialized knowledge in a certain field, for instance, how social networks function.

Thus, even though linguistic factors play an important role in comprehension, extra-linguistic factors such as cognitive, sociolinguistic, and individual should not be disregarded as material, and structural similarity itself does not guarantee intelligibility (Bahtina-Jantsikene, 2013; Branets et al., 2020; Härmävaara, 2014; Kaivapalu, 2015; Muikku-Werner, 2013; Verschik, 2012).

5.3 Method and participants

A written comprehension experiment was carried out with 30 Estonian participants and consisted of a socio-linguistic questionnaire, a C-test in Russian (Grotjahn, 1987), several tasks for individual Ukrainian words (Shumarova, 2000), and a Ukrainian text as a whole (Gooskens, 2013). The experiments were followed by debriefing interviews. Each experiment lasted approximately two hours and was conducted individually with every participant with pen and paper.

5.3.1 Participants

30 Estonian speakers with language proficiency in Russian on a B1 or B2 level participated in a reading comprehension experiment. The experiment was conducted in 2017 and 2018 in Tallinn. All respondents were living in Tallinn at the time the experiment was carried out. The group comprised ten males and 20 females, aged from 22 to 59 years. In comparison to the data presented in (Branets et al., 2020), we have increased the number of Estonian as L1 speakers from 20 to 30 in order to provide more precise findings, and we are not taking into consideration the results obtained from other groups of participants.

The participants of the experiment were chosen based on their language proficiency in Russian (Branets et al., 2020). B1 and B2 proficiency in Russian was determined to be enough to be able to complete the Ukrainian test based on the pilot study and was tested with a C-test in Russian (Grotjahn, 1987).

Seven participants already have higher education, but most of them were university students at the moment of conducting the experiment. They study sociology, architecture, youth work, business administration, craft technologies, and design, recreation arrangement, dance and choreography, pedagogy, audiovisual media, social work, linguistics, administrative management, teaching, European languages, pharmacy, graphic design, anthropology, Asian studies, communication, physics, editing, music, and IT. It is evident that linguistics students have a higher degree of linguistic awareness than others, but there were only four such students among the participants, so we do not think they influenced the results.

5.3.2 Testing material and procedure

The testing material consisted of a questionnaire, C-test, three Ukrainian texts with tasks, and a debriefing. The questionnaire was used to establish the sociolinguistic

background of participants and their exposure to Russian and Ukrainian. It consisted of 16 questions and was modeled on the questionnaire used in a previous study by Bahtina-Jantsikene (2013) on the acquired Russian-Estonian receptive multilingualism (see more in Branets et al., 2020).

The C-test was indicated as an optimal cross-language test for measuring comprehension in the European language area (Gooskens & van Heuven, 2017). In our study, the C-test was used to test the participants' proficiency in Russian. It was developed according to the instructions presented by Grotjahn (1987) and evaluated on the basis of the scoring system proposed by Bahtina-Jantsikene (2013). The C-test comprised four short texts that were selected from different magazines. Every word was divided into two approximately equal parts, and the second part of every second word starting from the second sentence was deleted (see more in Branets et al., 2020). The participants' task was to fill in the gaps using the correct word based on the context and the required grammatical form. The participants were given 20 minutes to complete the task (5 minutes per each small text).

The main part of the experiment explored comprehension of Ukrainian texts at the B1 level. The texts were selected from the collection of texts for B1 learners of Ukrainian and belonged to different genres (artistic and media texts). The respondents received three Ukrainian texts arranged in a different order. They were requested first to read the text and then to complete the tasks which were the same for each text. The tasks for Ukrainian texts consisted of two parts: definition of individual words from the text (Shumarova, 2000) and tasks for the context comprehension (Gooskens, 2013; as we do not focus on this group of tasks in this article, see more in Branets et al., 2020). In this paper, we will focus on the first task (definition of individual words from the text). For this task, we selected 55 words (based on the classification below). The participants were asked to translate or to explain them in their own words. They were also able to rely on the context, as all the words from the definition task were highlighted in the text.

The words belong to three groups: (1) 36 words have Russian cognates with the same meaning (Ukrainian *знання* (*znannya*) 'knowledge', cf. Russian *знания* (*znaniya*) 'knowledge'); (2) 12 words that have Russian cognates with different meanings (Ukrainian *чоловік* (*cholovik*) 'man, husband', cf. Russian *человек* (*chelovek*) 'human') or cognates that belong to different registers, i.e., stylistically neutral in Ukrainian vs. colloquialisms, archaisms, regionalisms, etc. in Russian (Ukrainian *очі* (*ochi*) 'eyes', cf. Russian *глаза* (*glaza*) 'eyes' and Russian archaic/poetic *очи* (*ochi*) 'eyes'); (3) seven words that do not have Russian cognates (Ukrainian *цікавий* (*tsikavyi*) 'interesting' cf. Russian *интересный* (*interesnyi*) 'interesting'). Word recognition tasks included nouns, verbs, adjectives, adverbs, prepositions, and numerals. The same scoring system was applied as for the Russian C-test (more details are outlined in Branets et al., 2020):

– 1 point: an entirely correct answer (e.g., when a participant recognizes that Ukrainian *казка* (*kazka*) 'fairytale' as Estonian *muinasjutt* 'fairytale' etc.)

– 0.75 points: a correct definition presented in an incorrect grammatical form (e.g., Ukrainian *любляче* (*lyublyache*) 'loving' cf. Estonian *armastus* 'love' etc.)
– 0.5 points: almost correct meaning (e.g., *щодня (schodnya)* 'every day' as Estonian *päev* 'day' instead of correct *iga päev* 'every day')
– 0.25 points: a semantically related lexeme that fits the context but is incorrect (e.g., Ukrainian *сторінка (storinka)* 'page' as Estonian *sein* 'wall (on Facebook)'
– 0 points: a completely wrong answer (e.g., Ukrainian *розлучень (rozluchen')* 'divorce', genitive plural as Estonian *suhe* 'relationship') or no answer.

The last stage of our experiment was debriefing in order to collect the participants' comments and explanations and to detect the strategies they used. First, the participants were asked to describe their level of Ukrainian texts comprehension in their own words. Five participants decided to use percentages in order to describe their level of comprehension, i.e., "*I understood 60% of the meaning of the texts*". Then the tasks for each text were discussed separately. The participants were asked to explain why they gave their definition for each word and to retell the story of each text. In the end, they were asked which text and which group of tasks (for individual words or meanings) was easier for them to understand. It allowed us to check the learnability effect since we randomized the order of the texts. The duration of the debriefing varied from 10 to 20 minutes, depending on each participant.

5.4 Results

5.4.1 Self-evaluated comprehension

After completing the tasks, all the participants were asked to describe their understanding of the Ukrainian texts in their own words[8]. They reported a level of comprehension averaged at 62% (*SD* = 10.65). In general, the respondents did not expect to understand Ukrainian without previous exposure to it and were surprised by their results. The participants reported that they needed to read the text several times in order to understand it. One of the participants made a comment: *"After the first reading, the level of understanding was 10–20%, and after the second time the comprehension grew up to 60–70%"*. However, another participant said: *"The understanding depended on how many times I read the text. The first sentence was clear from the beginning. After the first reading, I already understood 50% of the text's meaning"*.

[8] 25 participants provided no comprehension estimates, and all the calculations in this subsection are based on responses by five participants.

5.4.2 Measured actual comprehension

The actual level of comprehension of Ukrainian separate words and context was established to be 70.55% (*SD* = 11.19), with averages for context understanding reaching higher than averages for the understanding of separate words (83.98% (*SD* = 4.08) and 61.76% (*SD* = 8.01), understanding of context and separate words respectively). More specifically, success in the word recognition task was calculated separately for each group of words that participants received for definition (see section 5.3.2) and is presented in Table 1.

Table 1. Level of success of different groups of words in the word recognition task

Name of the group of words	Number of words	Maximum number of points for 30 participants	Success score in points	Success rate in %	SD range
Cognates with the same meaning	36	1080 (36 × 30)	760.5	70.4%	7.57
Cognates with different meanings	12	360 (12 × 30)	193.75	53.82%	4.60
Unrelated words	7	210 (7 × 30)	64.75	30.83%	7.02
Mean score of understanding of separate words				61.76%	8.01

5.5 Analysis

The results show that the respondents with L1 Estonian were quite successful in understanding Ukrainian via their knowledge of Russian. Based on average percentages for self-reported text comprehension (62%) and measured success (70.55%), there was no significant discrepancy; however, the participants provided a slightly lower percentage for self-comprehension than the actual results showed. Furthermore, we will look more closely into the performance results of each separate group of words using the participants' comments and explanations. The last subsection will be dedicated to extra-linguistic factors.

5.5.1 Cognates with the same meaning

As expected, the success level of recognition of the words that are cognates and have the same meaning is the highest among other groups of words. In general, the comprehension of cognates was constructed on the objective similarity between Russian and Ukrainian. The participants' main strategy within this group of words was to find similarities with Russian and then to confirm their hypothesis with the context. Most of the results dealing with this group of words (see Table 1) were positive (70.4 %, see Table 1) and depended on the participants'

proficiency in Russian, context, and other factors, according to the information provided by the participants during the debriefing (see Branets & Backus, 2020 for a more detailed discussion of individual proficiency and test results).

Similarity ignored (with both positive and negative effects)

The following examples present the cases when the participants ignored the similarity even if it was obvious and instead turned to the context that in some cases was not helpful. For instance, when we review the answers on the Ukrainian word *життя* (*zhyttya*) 'life', we observe the following:

Table 2. Example 1. Similarity ignored between cognates with the same meaning

Ukrainian	Russian	answers	Correct Estonian
життя zhyttya 'life'	*жизнь zhyzn'* 'life'	*ühiskond* 'society'	*elu* 'life'
		elanike 'of residents'	

Even though the Ukrainian word is very similar to the Russian *жизнь (zhyzn')* 'life', in the first case, the participant's explanation was as follows: "*I did not look into similarities with Russian here and decided to get the meaning from the context and the word ühiskond 'society'* perfectly fits the context". In another case, the participant took into consideration only the similarity with Russian word *жители (zhiteli)* 'residents' and interpreted it as *elanike* 'of residents', yet failed to provide the correct definition. Concerning the recognition of this particular word in general, only one participant left a blank space, and twenty gave the correct definition *elu* 'life'. The other seven participants used different grammatical forms of *elu* 'life': eludes 'in the lives', *elama* 'to live', *eludele* 'to the lives', *eludesse* 'into the lives', *в жизни (v zhizni)* 'in life', *elus* 'alive' (used twice).

The same tendency when the participants relied more on the context was observed with other words but with a positive effect. For instance, for the definition of the Ukrainian word *вчитель* (*vchytel'*) 'teacher', two participants chose close but not entirely correct answers based on the context. Instead of giving a definition as 'teacher', one of the participants wrote *õpetatud mees* 'learned men' which basically corresponds to the meaning of 'teacher'. The same happened with the Ukrainian lexeme *казка (kazka)* 'fairytale' in seven participants: it is very similar to the Russian *сказка (skazka)* 'fairytale' but was interpreted as *lugu* 'story' or *jutuke* 'short story'. This word was recognised correctly by 27 participants. In both examples *вчитель* (*vchytel'*) 'teacher' and *казка (kazka)* 'fairytale', the lexical meanings of the definitions were very close to the target meanings.

The following definitions were given based on the context rather than similarity by two participants who provided similar answers in Table 3.

Table 3. Example 2. Similarity ignored between cognates with the same meaning

Ukrainian	Russian	answers	correct Estonian
донька don'ka 'daughter'	*дочка dochka* 'daughter'	*daam* 'lady'	*tütar* 'daughter'
		tütar 'daughter'	

In general, 26 participants provided the correct answer *tütar* 'daughter', two left an empty space, and two provided a totally incorrect meaning. Interestingly, out of 26 participants, two participants wrote two answers: *daam* 'lady' and *tütar* 'daughter'. The word *daam* 'lady' has a similar sound and meaning with the Russian *дама* (*dama*) 'lady' but has nothing to do with the Russian *дочка (dochka)* 'daughter'. These two participants explained in example 3 that, based on the context, they assumed that it should be a female and then arrived at the conclusion that it was 'daughter'.

Table 4. Example 3. Similarity ignored between cognates with the same meaning

"The Ukrainian *донька (don'ka)* 'daughter' is similar to the word *дочка (dochka)* 'daughter' in Russian but there is a possibility that it might mean something else, so I used the context to recognise it".

The level of exposure to Russian was indicated by the participants as one of the factors that helped them to understand the lexical items:

Table 5. Example 4. Similarity ignored between cognates with the same meaning

Ukrainian	Russian	answer	correct Estonia
тривога tryvoga 'anxiety', 'alarm'	*тревога trevoga* 'anxiety', 'alarm'	*hoiatus* 'warning'	*ärevus*, *rahutus* 'anxiety'

The respondent provided a definition to the word based on the Russian song about the war *Тревога, тревога (Trevoga, trevoga)* 'Alarm, alarm' where the word *тревога (trevoga)* had the meaning 'alarm'. However, in this particular context, the correct meaning was 'anxiety'. Five more participants interpreted this word as *häire* 'alarm'. In total, based on both similarities with the Russian word and the context, the lexeme was interpreted correctly only ten times (two times *mure* 'concern'; two times *ärevus* 'anxiety' and three times *тревога*[9] (*trevoga*) 'anxiety') by the respondents from the older group that had more exposure to Russian during the Soviet time.

[9] The participants were free to provide answers in the language they were comfortable with. Most of the participants (24) provided answers in Estonian, one in Russian, one participant provided answers in both English and Russian, three participants in Estonian and Russian, and one in Estonian and English.

The confusion caused by different inflections

When participants relied only on similarities, perceived or objective, between Russian and Ukrainian and could not understand the meaning of the words, did not implement any other strategies to identify the words, they often were not able to recognise the meaning of the words correctly. We observed that in most cases, the participants were challenged by the cognates in Russian and Ukrainian that have the same stem but different inflections. In such cases, these words became either unrecognisable for some participants (see Table 6) or were interpreted by words with other morphemes in Russian that have different meanings (see Table 7).

The Ukrainian item *щовечора (schovechora)* has the component *що- (scho-)* that means 'every' and stem *вечора (vechora)* that corresponds to the Russian *вечер (vecher*) 'evening'. This word was reported by 10 participants as unknown and defined five times with completely wrong meanings, for instance, *nõuanne* 'advice', *südametunnistus* 'conscience', *täiesti* 'completely', *совершенное* (*sovershennoe*) 'perfect', *pesema* 'to wash'. However, in nine cases, this word was recognised correctly by the participants, and in six cases partially (only the meaning of the stem: Ukrainian *вечора (vechora)* 'evening' cf. Russian *вечера (vechora)* 'of evening', for instance *õhtuti* 'in the evenings', *õhtu* 'evening', *õhtul* 'in the evening').

Table 6. Example 1. The confusion caused by different inflections between cognates with the same meaning

Ukrainian	Russian	answers	correct Estonian
щовечора schovechora 'every evening'	*каждый вечер kazhdyi vecher* 'every evening'	*каждый вечерь kazhdyi vecher'* 'every evening'	*iga(l) õhtu(l)* 'every evening'
		каждый вечер kazhdyi vecher 'every evening'	
		igal õhtul 'every evening'	
		õhtuti 'in the evenings'	
		õhtu 'evening'	
		iga õhtu 'every evening'	
		õhtul 'in the evening'	
		nõuanne 'advice'	
		südametunnistus 'conscience'	
		täiesti 'completely'	
		совершенное sovershennoe 'perfect'	
		pesema 'to wash'	

The next example (Table 7) presents the case when the Ukrainian word *йшли (jshly)*‘went’ that has a cognate in Russian *шли (shli)* ‘went’ was misinterpreted because of a slightly different form in Russian. It was confused with a similar sounding Russian word, derived from the same stem but with a different prefix: *нашли (nashli)* ‘found’. It was reported that this definition was given due to the similarities with Russian.

Table 7. Example 2. The confusion caused by different inflections between cognates with the same meaning

Ukrainian	Russian	answer	correct Estonian
йшли jshly ‘went’	*шли shli* ‘went’	*otsisid* ‘looked for’	*läksid* ‘went’

The Ukrainian word *сторінка (storinka)* ‘page’ appeared to be challenging for definition. Some participants that did not find similarities with the Russian *страница (stranitsa)* ‘page’, quite successfully used the context to derive the meaning.

Table 8. Example 3. The confusion caused by different inflections between cognates with the same meaning

Ukrainian	Russian	answers	correct Estonian
сторінка storinka ‘page’	*страничка stranichka* ‘page’	*lehekülg*, *leht* ‘page’	*lehekülg*, *leht* ‘site, page’
		sein ‘wall (on Facebook)’	*konto* ‘account’
		külg ‘side’	
		lugu ‘story’	

Even though the following versions of interpretation are not exactly correct, they would fit the context. More specifically, two participants defined this word as *sein* ‘wall’ and two as *konto* ‘account’ and explained that they were not able to find similarities with Russian and used the context. Both meanings suited well in the context (see examples 4 and 5 of Table 9).

Table 9. Examples 4–5. The confusion caused by different inflections between cognates with the same meaning

Example 4 “*I used the word sein ‘wall’ because in the next paragraph the statistics about Facebook was mentioned*”.
Example 5 “*The sentence started with ‘80% users’, and I assumed that the word means konto ‘account*”.

On the contrary, two respondents defined it as *külg* ‘side’ and two as *lugu* ‘story’ by looking into similarities with the Russian *сторона (storona)* ‘side’ and *история (istoriya)* ‘story’. However, both suggestions were not correct, which consequently affected the general understanding of the text in a negative way. In total, only six respondents answered as *lehekülg*, *leht* ‘page’.

Inability to recognize cognates

When the participants were not aware of a cognate in Russian and were not able to use the context, they experienced problems with providing a correct definition:

Table 10. Example 1. Inability to recognise cognates with the same meaning

Ukrainian	Russian	answers	correct Estonian
ніяк niyak ‘by no means’	никак nikak ‘by no means’	mitte kuidagi ‘by no means’	mitte kuidagi ‘by no means’
		kuidagi ‘somehow’	
		mitte ‘no’, ‘not’	
		mitte ükski ‘no one’	
		kunagi ‘once’	
		kuidagi ‘somehow’	
		mitte midagi ‘nothing’	
		mitte kedagi ‘nobody’	

Twelve participants provided the correct answer *mitte kuidagi* ‘by no means’, three participants defined it as *kuidagi* ‘somehow’. The rest were challenged to find similarities with Russian as well as support from the context and derived different answers based on the assumptions as listed in Table 8, which are not correct.

One more example of such occurrence is the Ukrainian lexeme *протягом (protyagom)* ‘during’ that turned out to be the most difficult to define. Although it is a cognate with the Russian *на протяжении (na protyazhenii)* ‘during’, it is rare in everyday colloquial speech and mostly used in written genres. Our participants did not have much exposure to written genres, i. e. to media, fiction, Russian internet sites, etc. Some assumptions were made that this word could mean *tõmme* ‘draw’ (noun) or *протягивать (protyagivat’)* ‘to stretch (out)’, based on the similarities with the Russian *тянуть (tyanut’)* ‘to pull’. Apparently, the participants recognised the stem (cf. *tõmbama* ‘to draw, to pull’), but here we deal with a conventionalized, grammaticalized metaphor in Russian/Ukrainian, the meaning of which is difficult to derive because the Estonian ‘during’ has a different underlying metaphor. The postposition *jooksul*, literally ‘in the run’, is derived from *jooks* ‘run’ (the allative case); similarly, *ajal* ‘at the time’ is derived from *aeg*

'time' (the allative case). One participant conveyed that his/her definition was based on the assonance with Russian *противно (protivno)* 'disgusting'. Another respondent suggested the English protect because it sounds similar, but neither of these meanings was correct.

Table 11. Example 2. Inability to recognise cognates with the same meaning

Ukrainian	Russian	answers	correct Estonian
протягом protyagom 'during'	*на протяжении na protjazhenii* 'during'	*tõmme* 'draw'	*ajal*, *jooksul* 'during'
		vaenlane 'enemy'	
		протягивать protyagivat' 'stretch'	
		противный protivnyi 'disgusting'	
		protect	

Table 12 presents the case where the impact of similarity together with the context was positive.

Table 12. Example 3. Inability to recognise cognates with the same meaning

Ukrainian	Russian	answers	correct Estonian
важливого vazhlyvogo 'important'	*важного vazhnogo* 'important'	*tähtis, oluline* 'important'	*tähtis, oluline* 'important'
		olulisemat 'more important'	
		kõige tähtsam 'most important'	

The Ukrainian word *важливий (vazhlyvyi)* 'important' was interpreted 20 times correctly. One participant recognised the word 'important' in a comparative form *olulisemat* 'more important' (partitive). The participant used partitive, an object case that corresponds to the accusative in Ukrainian, i.e., the grammatical form in which the word was presented in the text. Two more respondents identified it in the superlative form *kõige tähtsam* 'most important' due to the unfamiliar ending of *важливий (vazhlyvyi)* 'important'. Interestingly, in our previous study, the participants with L1 Russian and Russian-Estonian simultaneous bilinguals confused the meaning of this word with the paronym in Russian *вежливый (vezhlivyi)* 'polite' because the words look and sound alike. However, only one participant with L1 Estonian first wrote *вежливый (vezhlivyi)* 'polite' and then

crossed it out and gave a definition *важный (vazhnyi)* ‘important’ due to the confirmation from the context. It shows the difference between cognitive processes and strategies that are applied by L1 and L2 language speakers.

In some cases the participants provided false answers due to the so-called false friends with Russian, as in Tables 13 and 14.

Table 13. Example 4. Inability to recognise cognates with the same meaning

Ukrainian	Russian	answers	correct Estonian
перевіряти pereviryty ‘to check’	*проверить proverit’* ‘to check’	*tõlkima* ‘to translate’	*kontrollima* ‘to check’
		pöörduda ‘to turn to’	
		ette valmistama ‘to prepare’	
		ümber pöörata ‘to turn around’	
		proovile panema ‘to test’	

Only seven participants identified the word *перевіряти (pereviryty)* ‘to check’ correctly. Based on the perceived similarities with several Russian words, three respondents confused this word with the Russian *перевести (perevesti)* ‘to translate’; one respondent with the Russian *приготовить (prigotovit’)* ‘to prepare’; two participants suggested the Russian *повернуться (povernutsya)* ‘to turn around’. Two participants recognised it as *pöörduda* ‘to turn to’ that is not correct but fits the context, and two more participants as *proovile panema* ‘to test, to challenge’ (correct definition).

In the same vein, the lexeme *віддати (viddaty)* ‘to give away’ was in many cases confused with the Russian *видеть (videt’)* ‘to see’.

Table 14. Example 5. Inability to recognise cognates with the same meaning

Ukrainian	Russian	answers	correct Estonian
віддам viddam ‘to give away’	*отдам otdam* ‘to give away’	*nägin* ‘(I) saw’	*annan ära* ‘(I) give away’
		vaatama ‘to look’	

The Ukrainian *віддам (viddam)* ‘(I) will give away’ was defined by seven participants as *nägema* ‘to see’ or *vaatama* ‘to look’ due to the perceived similarity with the Russian *видать (vidat’)*, *видеть (videt’)* ‘to see’. At the same time, 16 respondents provided the correct answer as *annan ära* ‘(I will) give away’ based on the context.

5.5.2 Cognates with different meanings

This group presents less correct answers, as it includes cognates with different meanings or cognates that in Russian belong to different registers and are used with a different frequency than in Ukrainian. Within this group of words, more various strategies and factors came into play.

The positive role of context

Table 15 presents the Ukrainian word *мережа (merezha)* 'network' that has a cognate in Russian *мережка (merezhka)* 'a technique used in embroidery' with quite a different and rather specific meaning unknown even to many native speakers of Russian (unless they know something about embroidery). The chances that a B1 learner/user of Russian would have encountered this item are slim, so the respondents were unable to draw parallels with Russian:

Table 15. Example 1. The positive role of the context between cognates with different meanings

Ukrainian	Russian	Estonian
мережа merezha 'network'	*сеть set'* 'network'	*võrgustik* 'network'

20 participants understood the meaning correctly, based on the general knowledge about social media. Their explanations were as follows:

Table 16. Examples 2-5. The positive role of the context between cognates with different meanings

Example 2 *"I understood мережа (merezha) 'network' as it reminded me the word мир (mir) 'world' and then since it was used together with Ukrainian word соціальний (sotsial'nyj) 'social' that is similar to* *Russian социальный (sotsial'nyj) 'social', I figured out that it is võrgustik 'network".*
Example 3 *"I did not understand мережа (merezha) 'network' from the beginning, but somewhere at the end* *of the first paragraph because of the context I understood that it means võrgustik 'network".*
Example 4 *"I did not know this word at first, but then I found some information in the text about an account* *and FB, and I assumed that it might be võrgustik 'network".*
Example 5 *"I heard this word somewhere. I cannot remember where but I knew that it was võrgustik 'network".*

Table 17 demonstrates how the context outweighs perceived similarity.

Table 17. Example 6. The positive role of the context between cognates with different meanings

Ukrainian	Russian	answers	correct Estonian
увійти uvijty ‘to enter’	*войти vojti* ‘to enter’	*väljuma* ‘to leave’	*sissenema* ‘to enter’, ‘to log in’
		ära minema ‘to leave’	
		sissenema ‘to enter’, to log in’	
		vaatama ‘to look’	

Twelve participants confused *увійти (uvijty)* ‘to enter’, ‘to log in’ with the Russian *увидеть (uvidet’)*, *видеть (videt’)* ‘to see’ because it sounded similar. Eight participants defined it as *väljuma* ‘to leave’, ‘to log out’ because of the Russian *выйти (vyjti)* ‘to leave’, ‘to exit’, ‘to log out’, and three participants gave a definition as *ära minna* ‘to go out, to leave’ due to the Russian *уйти (ujti)* ‘to leave’. In this example, the perceived similarity with Russian had a negative effect as only two participants provided the correct answer and were asked to explain their decision:

Table 18. Examples 7–8. The positive role of the context between cognates with different meanings

Example 7 *“I wrote first ära minema ‘to go away, to leave’ because it was similar to the Russian уйди (ujdi)‘to go out, to leave’ but then I changed it to sisenema ‘to log in’ according to the context”.*
Example 8 *“I derived the meaning from the context as the next words were в свій аккаунт (v svij akkaunt)‘into your account’”.*

In both examples 7 and 8 (Table 18), the context outweighed the perceived similarity with Russian. These two factors could be considered as competing. This requires more research because we cannot say in which case exactly the context and general knowledge appear more relevant than similarity.

The same process was observed with the Ukrainian word *очі (ochi)* ‘eyes’ that has a cognate in the archaic Russian *очи (ochi)* ‘eyes’ that is used only in limited contexts (poetic, high style etc.). A stylistically neutral lexeme is *глаза (glaza)* ‘eyes’ (see also the discussion in Branets et al., 2020: 19).

Table 19. Example 9. The positive role of the context between cognates with different meanings

Ukrainian	Russian	answer	correct Estonian
очі ochi ‘eyes’	*глаза glaza* ‘eyes’	*silmad* ‘eyes’	*silmad* ‘eyes’

17 participants provided the correct definition. One participant provided the definition *очки (ochki)* ‘glasses’ based on linguistic similarity. Three participants mentioned that they knew this word from the well-known Russian song *Очи черные (Ochi chernye)* ‘black eyes’ and 14 mentioned that they turned to the Russian word *очки (ochki)* ‘glasses’ that has the same stem as the Ukrainian *очі (ochi)* ‘eyes’.

Table 20. Examples 10-11. The positive role of the context between cognates with different meanings

Example 10 *“At first I wrote prillid ‘glasses’ but then I figured out that these are silmad ‘eyes”.*
Example 11 *“I wrote prillid ‘glasses’ and it did not match the context, so I wrote silmad ‘eyes”.*

In both examples 10 and 11 (Table 20), the participants were searching for confirmation from the context instead of relying on similarity.

In Table 21, the Ukrainian lexeme *чоботи (choboty)* ‘boots’ has a Russian cognate *чоботы (choboty)* that means a certain kind of boots and is used in regional varieties. Thus, the range of meanings and connotations in the two languages differ:

Table 21. Example 12. The positive role of the context between cognates with different meanings

Ukrainian	Russian	answers	correct Estonian
чоботи choboty ‘boots’	*ботинки botinki* ‘boots’	*saapad* ‘boots’	*saapad* ‘boots’

This word was defined correctly by 21 participants. Most of them derived the meaning from the context. Some explained their choice with the similarity to the Russian stem *бот- (bot-)* in the word *ботинки (botinki)* ‘boots’ that appeared similar but is not a cognate. However, this accidental similarity helped the participants to find the correct meaning.

Difficult instances where the context does not help

The next Table 22 represents the definition of the superlative from the Ukrainian word *великий (velykyj)* ‘big’ that has a Russian cognate *великий (velikii)* ‘outstanding, great, famous’:

Table 22. Example 1. The difficult instance where the context did not help to recognise cognates with different meanings

Ukrainian	Russian	answers	correct Estonian
величезна velychezna ‘huge’	*огромная ogromnaya* ‘huge’	*suur* ‘big’	*tohutu* ‘huge’
		suurendama ‘to increase’	
		ületahtsustatud ‘overrated’	
		võimsus ‘power’	
		suurenenud ‘increased’, ‘augmented’	
		suursugune ‘majestic’	
		palju ‘many’	
		enamus ‘majority’	
		suurus ‘greatness’, ‘size’	

No one provided a correct definition for this word. Three participants recognised it as *suur* ‘big’, one as *suurendama* ‘to increase’ and one more as *ületahtsustatud* ‘overrated’ due to the similarity with the stem in the Russian *великий (velikii)* ‘outstanding, great, famous’, *увеличивать (uvelichivat’)* ‘to increase’, *преувеличивать (preuvelichivat’)* ‘to exaggerate’ respectively. One participant interpreted it as *võimsus* ‘power’, two as *suurenenud* ‘increased’, ‘augmented’ and one as *suursugune* ‘majestic’. The participant commented: *“I was familiar with this word from Russian fiction”*. Apparently, these respondents were more exposed to Russian and were likely to have encountered this word. Three respondents assumed that it could mean *palju* ‘many’; one suggested *enamus* ‘majority’. They explained their choice as the assumption that it could be a part of a measurement component. Three more participants suggested *suurus* ‘greatness’, ‘size’, so the suggestion in its first meaning ‘greatness’ is not entirely wrong (but the part of speech is incorrect). The participants mentioned that they did not use the context to define this particular word.

In Table 23, the meaning of the Ukrainian *одержати (oderzhaty)* ‘receive’ was derived from the Russian cognate *держать (derzhat’)* ‘to keep, to hold’ with a slightly different meaning. However, there is also a similar Russian lexeme *одержать (oderzhat’)* ‘to receive’ (derived from the same stem), but it is used only in fixed expressions like *одержать верх (oderzhat’ verh), одержать победу (oderzhat’ pobedu)* ‘to win’, ‘to overcome’ that are more typical of written genres. Apparently, the participants had not been exposed to this false friend.

Table 23. Example 2. The difficult instance where the context did not help to recognise cognates with different meanings

Ukrainian	Russian	answers	correct Estonian
одержати oderzhaty ‘receive’	*получить poluchit’* ‘receive’	*saada* ‘to receive’	*saada* ‘receive’
		omandama ‘to acquire’	
		võtta ‘to take’	
		hoidma ‘to keep’, ‘to hold’	

Ten respondents understood this word correctly. Four participants identified it as *omandama* ‘to acquire’ and two participants as *võtta* ‘to take’ that is somewhat similar to *saada* ‘to receive’. Four participants gave a definition as *hoidma* ‘to keep’, ‘to hold’ because of similarities with the Russian *держать (derzhat’)* ‘to keep’ that is not correct.

5.5.3 Unrelated words

When similarities with Russian were not available, participants applied different strategies in order to recognise the meanings of the words.

Context and knowledge of the world

In most cases, they were trying to understand the meaning from the context by using general knowledge of the world or assumptions. For instance, our next case presents the case when all the aforementioned strategies were implemented.

Most of the respondents found the meaning from the context: four respondents defined the word as *uurijad* ‘researchers’, eight participants as *teadlased* ‘scientists’, and one as *uurimus* ‘research’. In general, they explained that since this word was followed in the text by the verb *провели (provely)* ‘conducted’ that was easily recognisable due to similarities with the Russian *провели (proveli)* ‘conducted’, they assumed that it should be either researchers or scientists who conduct the research or the research itself that could be conducted. One participant recognised it as *psühholoogid* ‘psychologists’ because the next paragraph was about relationships.

Table 24. Example 1. Context, knowledge of the world and unrelated words

Ukrainian	Russian	answers	correct Estonian
фахівці fachivtsi ‘experts’	*эксперты eksperty* ‘experts’	*psühholoogid* ‘psycologists’	*eksperdid* ‘experts’
		faktid ‘facts’	*asjatundjad* ‘experts’
		uurijad ‘researchers’	
		teadlased ‘scientists’	
		uurimus ‘research’	
		ametniku ‘official’ (noun)	

One participant defined it as *ametnik* 'official' (noun) because the Ukrainian word *фахівці (fachivtsi)* 'experts' resembled the German das *Fach* 'speciality' which is etymologically correct because *фах (fach)* 'speciality', 'profession' is a German borrowing in Ukrainian. So, according to this logic, an official is someone who deals with a particular specialty. Of course, the respondents would not necessarily know this, but here the parallel is correct. One more participant did not write an answer but, during the debriefing, shared the following (see Table 25).

Table 25. Example 2. Context, knowledge of the world and unrelated words

"It reminded me of the word Fach 'specialty' from German, but I was not sure if I could use it in this case".

Two more participants relied on the similarities with the Russian *факты (fakty)* 'facts' or maybe also with the Estonian *faktid* 'facts', and consequently identified this word as *faktid* 'facts' that is incorrect.

Knowledge of other languages and meta-linguistic awareness

The previous example 2 in Table 22 demonstrates, in addition to other things, how knowledge of other languages may be useful, at least to some extent. According to the concept of foreign language mode (Selinker & Baumgartner-Cohen, 1995), language learners of L3 rely more on their knowledge of L2 rather than on L1 when they have high proficiency in L2. In the Estonian-Russian-Ukrainian comprehension experiment, the direction of lexical transfer was L2 to L3 in most cases, as expected. There are rare cases of transfer from L1 to L3. When the participants were not familiar with the word in Russian and were unable to establish connections from the context, they turned to search for help in their L1:

Table 26. Example 1. Knowledge of other languages, meta-linguistic awareness and unrelated words

Ukrainian	Russian	answer	correct Estonian
у колі и koli 'among'	*в кругу, среди v krugu, sredi* 'among'	*koolis, в школе* v shkole 'in school'	*hulgas, seas, keskel, vahel* 'among'

Three participants answered that they found *у колі (u koli)* 'among' similar to Estonian *koolis* 'in school' and two participants indicated that it was similar to both Estonian *koolis* 'in school' and Russian *в школе (v shkole)* 'in school'. In total, only eight participants provided the correct definition to this word from the context and structure of the sentence:

Table 27. Examples 2–3. Knowledge of other languages, meta-linguistic awareness and unrelated words

Example 2 *"I thought that it is seas 'among', like among the community of psychologists".*
Example 3 *"It fitted the context, as seas 'among' was the first word in the sentence and the next word was 'psychologists'".*

Two participants recognised this word as *vahel* 'between', 'among' that is also correct. One of them reported in Table 28 below.

Table 28. Example 4. Knowledge of other languages, meta-linguistic awareness and unrelated words

"I understood it as vahel 'between', 'among', as it was applicable to the context".

Table 29 represents the case when the meaning of the word was interpreted correctly only three times due to unrelated lexemes; however, due to their meta-linguistic awareness, all participants listed the correct part of speech, e.g. verb:

Table 29. Example 5. Knowledge of other languages, meta-linguistic awareness and unrelated words

Ukrainian	Russian	answers	correct Estonian
запитав запутав '(s/he) asked'	*спросил sprosil* '(s/he) asked'	*meelde tuletama* 'remind'	*küsis* '(s/he) asked'
		mõtleb üle 'thinks over'	
		vastas '(s/he) replied'	
		otsustas '(s/he) decided'	
		meenutas '(s/he)recalled'	
		mõtlema 'to think'	
		ütles '(s/he) said'	
		andis nõu '(s/he) gave advice'	
		lisan '(I) add'	

The word *запитав (zapytav)* 'asked' was interpreted 12 times as *vastas* 'replied' and three times as *ütles* 'said'. Even though the answer is not correct, it perfectly fits into the context, as well as the rest of the answers listed above.

One more example 6 (Table 30) is in line with the previous case:

Table 30. Example 6. Knowledge of other languages, meta-linguistic awareness and unrelated words

Ukrainian	Russian	answers	correct Estonian
цікавий tsikavyi 'interesting'	*интересный* interesnyi 'interesting'	*tähtis* 'important'	*huvitav* 'interesting'
		oluline 'important'	
		osaline 'partial'	
		uus 'new'	

Only one participant defined this word correctly. Five respondents recognised that it should be an adjective and provided definitions according to their assumptions: *tähtis*, *oluline* 'important'; *osaline* 'partial'; *uus* 'new' that are incorrect. One participant commented: *"I thought that it should be an adjective, and I found one that fits the context*". Another participant did not provide any definition but instead wrote '*adjective*'. In this case, the participants' strategy was first to establish which part of speech the word represented, and only then they formed their assumption about the meaning.

The participants were asked to define one lexical item that is an established common borrowing from English in Ukrainian, Russian, and Estonian and specific to social media.

Table 31. Example 7. Knowledge of other languages, meta-linguistic awareness and unrelated words

Ukrainian	English	Estonian
лайкнути laiknuty 'to like (on social media)'	to like	*meeldima, laikima* (colloquial) 'to like', 'to like (on social media)'

Only five participants did not recognise this word and commented: "*I knew this word as it is international but maybe because it is written in Cyrillic, I did not recognize it*". However, when this word was read out loud, the listener's perception skills were activated, and the word was recognised immediately. Naturally, the perception of items in another alphabet is slower. Thus, it might also be caused by the level of meta-linguistic awareness of the language structures.

5.6 The role of non-linguistic factors

Different extra-linguistic factors affected the success of comprehension. We have found numerous evidence from the participants' comments about the factors that helped them to cope with the task.

Exposure to Russian

In our previous study, we emphasized the importance of exposure to Russian based on the environment, professional activities, and individual level (Branets et al., 2020: 17–18; Branets & Bahtina, 2021). During the feedback session, the participants reported that such factors enhance their comprehension of Ukrainian (see Table 32 below).

Table 32. Examples 1–2. Exposure to Russian

Example 1 *"Because I use Russian at work, it was easy for me to understand the text".*
Example 2 "*I understood the texts very well because I use Russian quite often. I have many Russian friends".*

Exposure to registers in Russian

Exposure to different registers such as colloquial and regional registers as well as to high language style is beneficial in comprehending Ukrainian texts. Examples in Tables 19 and 23 above belong to the cases when the exposure to archaisms and regional registers respectively foster the comprehension process. See below Table 33 with some more comments from the participants.

Table 33. Examples 1–3. Exposure to registers in Russian

Example 1 *"I recognised хата (chata) 'house' because I heard a poem and a song in Russian with this word".*
Example 2 *"I understood батько (bat'ko) 'father' because of the word батя (batya) 'father'".*
Example 3 *"The word батько (bat'ko) 'father' is similar to батюшка (batyushka) 'priest'".*

Example 2 in Table 33 presents the case of the colloquialism *батя (batya)* 'father' that has different connotations (characteristic of uneducated speech or regional colloquial use, etc.) than the stylistically neutral *отец (otets)* 'father' (see also Branets et al., 2020: 18). In example 3 (Table 33), it resembles the colloquial name for orthodox priest *батюшка* (*batyushka*, could also have an archaic meaning of a father); common Standard Russian *священник (svyaschennyk)* 'priest'.

General knowledge

Different types of familiarity with the texts were detected depending on the field of occupation and background, general knowledge of the topic, or some individual factors. For example, the text about social media was easier for some participants that knew this topic well than other texts the topic of which was less familiar. Likewise, some participants reported that fairytales were more predictable for them than social media.

Table 34. Examples 1–3. General knowledge

Example 1 *"It is more like a standard text that you can find on the Internet, so when you read about social networks, you can predict what might be said there".*
Example 2 *"In other texts, I used more similarities with Russian, but in the social media text I used more context that was closer to daily life like in everyday use".*
Example 3 *"Fairytales were more predictable for me: a standard beginning of the story, typical characters like an old man and his daughter here, the traditional development of the story and a happy ending made it easy to understand".*

Learnability

The emergent nature of language acquisition was taken into account for our experiment. According to the usage-based approach, the participants learn about form and meaning "in use" on a daily basis (Tomasello, 2003). In our experiment, we have tested learnability by randomising the order of the texts and providing instructions about similarities and differences between Ukrainian and Russian (see more in Branets et al., 2020). We consider learnability as a general cognitive process of the development of explicit and implicit skills by participants. The respondents reported that they learned from one text to another, and in most cases, every next text was easier to understand (see Table 35).

Table 35. Examples 1–3. Learnability

Example 1 *"Repetitiveness of the words helped me to understand the third text best of all. Such words as no- nepue (po-pershe) 'first' etc. were repetitive. I got used to Ukrainian and understood how I need to work to understand it".*
Example 2 "*I understood the third text best of all because I learned from the two previous ones".*
Example 3 *"If I read a few more texts in Ukrainian, I will be able to understand Ukrainian perfectly".*

M-factor

Every learned language affects the understanding of another language and the mechanism of comprehension in general. Thus, M-factor was distinguished as one of the predictors of comprehension (Jessner 2014; Verschik, 2017). In addition, studies on crosslinguistic influence (CLI) have shown that every interlocutor's learned language has an impact on each other and might result in further language acquisition (Cenoz et al., 2001; 2003; Dewaele, 1998). All our participants were multilingual and spoke at least three languages. The respondents provided the following comments in Table 36 below.

Table 36. Examples 1–2. M-factor

Example 1 *"I am quite good at languages, and since I have experience with different languages (for instance, I also speak Finnish), it is easier to find similarities between languages and in every new language that I know. More of these connections are available especially if the languages are similar or belong tonthe same language family".*
Example 2 *"Finding similarities between Estonian and Finnish helped me to be creative in this task".*

Metalinguistic awareness

Metalinguistic awareness presents the ability of participants to grasp language categories and grammatical forms (Blees & Ten Thije, 2016). Examples in Tables 29 and 30 present the cases of raised metalinguistic awareness and understanding of the language systems. Below is the comment from one participant in line with developed metalinguistic awareness:

Table 37. Example 1. Metalinguistic awareness

"My main strategy was to find what part of speech the word belongs to by using my linguistic knowledge and context. Then I proceeded with the definitions".

Context

A study on the comprehension of Danish by Dutch speakers via their knowledge of German without previous exposure (Swarte et al., 2013: 153) has shown that the foreign language mode is smaller when words for the definition are placed in the context. In our study, we observed a tendency in the participants' strategies, namely, to turn more to the context when there are fewer similarities between Russian and Ukrainian. Generally speaking, the context played a key role and was a strong supporting factor to confirm the assumptions.

Language attitudes

Since 28 participants expressed positive attitudes and two participants were neutral towards Ukrainian, we were not able to test the role of language attitudes in our experiment.

5.7 Conclusions

The participants' comments in the debriefing interviews shed light on the comprehension process that is behind success results from the participants' perspective. We collected qualitative data on how the participants evaluate various factors and strategies that helped them to understand Ukrainian. Without the participants' explanations, we would not be able to determine how exactly objective and perceived similarity worked, nor to outline extra-linguistic predictors of success.

As expected, the similarity between various items in Ukrainian and Russian was both objective and perceived. In some cases, the participants were able to recognise the meaning of the words based only on similarity; however, when they were challenged by different inflections, false friends, cognates with a different meaning, unfamiliar words in Russian, etc., it turned out not to be enough to rely only on similarities. It became clear from the debriefing interviews that those who verified their assumptions on the basis of the context reached better results than those who did not. Also, in some cases, the context turned out to be more important than similarity.

At the same time, various extra-linguistic factors came into play. Exposure to Russian and frequency of use of Russian foster the comprehension of Ukrainian. Exposure to different registers and access to written registers, for instance, Russian fiction, colloquial Russian, significantly affected the comprehension success rate. General knowledge about specific domains or topics positively affected the performance results. The M-factor supported the participants in recognizing similarities between two languages via already existing RM experience in other language constellations. Raised metalinguistic awareness, or understanding a language system as such, contributed to the comprehension. Finally, the participants reported about their learning process when moving from one text to another by picking up different language items and developing more advanced strategies of understanding from one text to another. This is in line with our previous study (see Branets et al., 2020: 24) that demonstrated that the comprehension level of the last text was always higher, even though Ukrainian texts were presented in a different order among the participants.

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CHAPTER 6. THE ROLE OF LANGUAGE EXPOSURE IN MEDIATED RECEPTIVE MULTILINGUALISM

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ABSTRACT

In this study, we investigate the role of exposure to L2 Russian on comprehension of L3 Ukrainian by speakers of L1 Estonian, using the mediating knowledge of L2 Russian. The experiment involved 30 participants and the following materials: a questionnaire, C-test in Russian, word recognition and text comprehension tasks in Ukrainian. We demonstrate that in mediated receptive multilingualism medium to high levels of L2 exposure boost L3 comprehension regardless of measured L2 proficiency. However, exposure enhanced comprehension only on the word level and not on the text level, highlighting the importance of examining comprehension in a differentiated manner. The same restriction holds for targeted L2–L3 instructions, which were administered as a shortcut to increasing metalinguistic awareness between Russian and Ukrainian: these instructions improved L3 word level but not text level comprehension. Since in the absence of explicit instruction the role of exposure was more pronounced, we argue that exposure and instructions interact depending on the particular configurations of available resources, as language users attempt to understand another language. We conclude that exposure to medium language is a crucial factor that might significantly boost comprehension in the target language through increased metalinguistic awareness, either more directly or by creating opportunities for incidental learning.

Keywords: language exposure; metalinguistic awareness; incidental learning; formal instructions; mediated receptive multilingual- ism; Estonian; Russian; Ukrainian

6.1 Introduction

Multilingual acquisition is a dynamic and non-linear process that depends on a number of factors affecting what language users know and how they may apply this information to new contexts (Pearson et al., 1997; Herdina & Jessner, 2002; Eilers et al., 2006; David & Wei, 2008; Thordardottir, 2011; Bedore et al., 2012; Poulin-Dubois et al., 2013; Jessner, 2014; Deanda et al., 2016; Verschik,

2017, etc.). Communication is possible in multilingual circumstances even when only limited resources are available to interlocutors since learners' receptive and productive skills develop in different ways. In this study, we explore comprehension as a stage that may precede more encompassing linguistic competence. Extensive previous research on multilingualism asserts that even minimal exposure to target language, implicit knowledge of another language closely related to the target language, and perceived proximity between these languages jointly contribute to third language acquisition (in addition to the above cited works, also Gooskens, 2007a; Gooskens et al., 2008; Bahtina-Jantsikene, 2013; Swarte et al., 2013; Kaivapalu, 2015; Branets et al., 2020; Branets & Backus, 2020).

The communication mode that was investigated in this study is receptive multilingualism (henceforth, RM) when interlocutors use their own language while speaking to each other (Rehbein et al., 2012). This mode is mostly employed (and studied) among speakers of related languages (i.e., inherent RM, such as Estonian-Finnish) or in situations of advanced bilingualism (i.e., acquired RM, such as Estonian-Russian). Estonian (Uralic, Finno-Ugric, Baltic-Finnic) and Ukrainian (Indo-European, East-Slavic) are neither related nor have a bilingual community speaking these languages. Nevertheless, speakers of Estonian may reach an understanding of Ukrainian through their knowledge of Russian (Indo-European East-Slavic). This is why the mode is termed "mediated receptive multilingualism" (Branets et al., 2020).

One aspect frequently discussed in relation to communicative success in receptive multilingualism is language proficiency. Branets and Backus (2020) in their study on the role of Estonian speakers' language proficiency in Russian in comprehension of Ukrainian, pointed out that linguistic proficiency in Russian helped the Estonian speakers to understand Ukrainian. However, the contribution of lexical and grammatical proficiency in Russian should not be overestimated when it comes to the general understanding of Ukrainian texts. Indeed, language proficiency tests capture only one aspect of linguistic proficiency, while there are also extra-linguistic factors that play a role as for example, language exposure (Branets & Backus, 2020; see also especially the studies conducted in the frame of the MICReLa project, such as Gooskens et al., 2015; Swarte et al., 2013; Gooskens & Heeringa, 2014; Schüppert & Gooskens, 2010, etc.). The same suggestion has been made in a series of other RM studies (Gooskens & Swarte, 2007; Verschik, 2012; Bahtina-Jantsikene, 2013; Berthele & Wittlin, 2013).

Branets et al. (2020) discussed different types of exposure to Russian in relation to understanding Ukrainian among Estonian speakers. The results of the Ukrainian comprehension tests were affected by four types of language exposure: a place of residence and its language environment, professional domain, a field of study or specialisation, and individual exposure and its frequency. The following pattern was observed: the increased use of Russian outside formal settings was positively correlated with successful completion of tests in Ukrainian, regardless of language proficiency in Russian (Branets et al., 2020: 17–18). This suggests that L2 Russian helps when it is used in everyday life and that language

proficiency represents only one aspect in a language user's toolkit, in addition to L2 exposure and possibly other factors that affect comprehension.

Mediated receptive multilingualism is gaining prominence in today's world as more people find themselves in situations when they need to understand a language that they have not learned before. We argue that mediated receptive multilingualism has the potential to facilitate such a learning process. Using experimental settings, we investigate implications of mediated receptive multilingualism on the example of L1 Estonian speakers attempting to understand L3 Ukrainian via their proficiency in L2 Russian (B1 and B2 proficiency levels) and explore which factors are beneficial for establishing various levels of comprehension (vocabulary vs general). In this paper, we specifically focus on language exposure as one of the factors that has the potential to improve comprehension on the word level and on the text level. We hypothesise that L2 exposure can further enhance metalinguistic awareness and through that increase language proficiency in the context of mediated receptive multilingualism. We also explore the impact of formal instruction on L2 Russian – L3 Ukrainian correspondence patterns, to establish whether people faced with such learning tasks in real life would benefit from some targeted language instruction.

The paper is organized in the following way: in the second section, we discuss existing literature on metalinguistic awareness, language exposure, and incidental versus formal learning. In the third section, we introduce our methodological design. In the fourth section, we present the data analysis and discuss to what extent and how implicit and explicit types of language exposure enhance understanding. Finally, we propose several research directions to further our understanding of language exposure in receptive multilingualism.

6.2 Factors affecting language learning

In research on multilingualism, language learning has been conceptualized as a complex dynamic process that among other factors relies on metalinguistic awareness – 'the ability to focus on linguistic form and to switch focus between form and meaning' (Jessner, 2008: 275). It is this skill that allows language users to understand a new language beyond already learned lexical forms and syntactic rules. It has been argued that the qualitative difference between monolingual, bilingual, and trilingual acquisition, each following category being more efficient in language learning than the preceding group, can be explained with varying degrees of metalinguistic awareness (e.g., De Bot & Jaensch, 2013; Herdina & Jessner, 2002). Multilingual language users reach an understanding of the target language by using available resources and switching between form and meaning to find similarities between languages (Jessner, 2014; Verschik, 2017). Such multilingual experience is a valuable source for creative production and increased cognitive processes (Kharkurin, 2012).

In the field of L2 acquisition, receptive bilingualism is defined not as a language mode but as individuals who can understand the language but not produce

it, with the focus on proficiency (Romaine, 1989; Sherkina-Lieber, 2015). Sherkina-Lieber (2020: 415–417) distinguishes between receptive bilinguals of mutually intelligible languages (with and without previous exposure) from bilingualism with acquired knowledge (heritage or L2 speakers). In the first group, comprehension without exposure depends on finding similarities between closely related languages, and correlates with linguistic distances while comprehension with exposure is more associated with acquired knowledge. She points out that exposure leads to a more naturalistic acquisition of L2. In the acquired group acquisition is expected to correlate with higher degrees of exposure and/or instruction, frequency of use, and proficiency.

Such awareness can be understood as a set of knowledge and skills that develop over time, based on prior linguistic and metacognitive knowledge. Some argue that the direct way of metalinguistic knowledge acquisition is through language use (e.g., Schwartz, 1993; Sharwood, 2004; Ellis, 2005). Others claim that formal instructions can help language learners develop metalinguistic skills through attention to relevant linguistic features in the input and through activating knowledge that is otherwise only partially available through exposure (e.g., De Bot & Jaensch, 2013; Sanz, 2000; Thomas, 1988). It has also been argued that awareness of the limited nature of available resources – such as low language proficiency, exposure, or familiarity with the task at hand – motivates language users to recruit more explicit strategies, including those that rely on metalinguistic awareness (Bahtina-Jantsikene & Backus, 2016). Achieving understanding in the context of limited common ground is a widespread way nowadays that is associated with knowing a language (Blommaert & Backus, 2011) or in our case with language learning. Understanding is managed without prior language instruction using linguistic resources language users already have (e.g., Estonians working in Ukraine who do not take a language course in Ukrainian). Learning has a practical motivation and needs to be done efficiently, which raises the importance of metalinguistic awareness.

Linguistic exposure takes different forms and creates various opportunities to facilitate language learning: language users may take an intense language class, actively participate in cultural activities in the target language or simply be members of a multilingual community and still benefit from a more passive exposure (e.g., Rice & Kroll, 2019 on positive cognitive effects of living in linguistically diverse contexts). In second language acquisition, exposure is known to improve comprehension and production across various aspects of language, ranging from morphosyntax to phonology (e.g., Gathercole, 2002; Pearson, 2002; Bybee, 2001; David & Wei, 2008; Poulin-Dubois et al., 2013). In studies of receptive multilingualism, the role of language exposure is understood to be quite straightforward: the more exposure the language user has to the target language, the better they should perform in comprehending the language. Although previous studies did not show any direct correlation between language exposure and intelligibility (see Gooskens, 2006; 2007b; Gooskens & Hilton, 2013), they still considered it as an influential factor. Another study showed that even very limited cross-linguistic exposure among six Slavic languages is positively correlated with

intelligibility in these languages (Golubović, 2016). This suggests that exposure is among the important predictors in receptive multilingualism.

Vocabulary development is claimed to be particularly responsive to exposure, as exposure can significantly improve comprehension on the word level (Thordardottir, 2011). Positive effects are observed even after limited cases of exposure to individual lexical items (Hulstijn et al., 1996; Rott, 1999; Webb, 2007). The results are particularly pronounced in experiments testing receptive word knowledge (Pellicer-Sánchez, 2016). Krashen (1982, 1994) and Truscott (1996, 1999) emphasize that even more formal aspects of language, such as grammar, can fully develop only through exposure to the language in a naturally occurring conversation. Kaivapalu (2015) emphasizes the positive role of exposure to different varieties and registers (slang, regional dialects, colloquial use, and archaisms) as resources for improving learning outcomes in receptive multilingualism.

Learning through exposure enjoys a considerable amount of scholarly attention in applied subdisciplines and is also discussed under the rubric of incidental learning (see Malone, 2018 for a detailed overview). The term is generally understood as learning without intention to do so (Bruton et al., 2011). In second language acquisition, incidental learning is also defined based on intention, however more narrowly, for instance, learning of a linguistic aspect without any intention of an upcoming test (e.g., Hulstijn, 2003; Dörnyei, 2009). It can also refer to the degree of consciousness involved in the process, creating a binary opposition between explicit and implicit learning (Ellis & Loewen, 2007). Incidental learning has also been discussed in relation to the acquisition of linguistic items in interaction (Brouwer et al., 2004; Brouwer, 2003) and as a by-product of learning about the content (Snow et al., 1992).

While formal instructions can be viewed as the opposite of incidental learning, DeKeyser (2003) suggests there is a more direct relationship between metalinguistic knowledge (more explicit) and spontaneous language use: formulaic knowledge gets entrenched through repeated practice and eventually becomes automatic (more implicit). Many researchers in the field of language learning emphasize the advantages of this kind of implicit learning (Doughty, 2003; Ellis, 2002; Norris & Ortega, 2000). Explicit attention to specific aspects of language is still claimed to have an immediate effect on language learning outcomes. Golubović (2016) studied the effect of explicit instruction in receptive comprehension in the Czech and Croatian in a pretest-post test design. The Czech experimental group received explicit instructions while the Croatian did not receive any instructions. The study proved that even a small amount of instruction could significantly increase comprehension: the instruction increased functional and perceived intelligibility of Croatian among Czech participants. Interestingly, participants were also able to transfer the acquired knowledge of written to spoken language (Golubović, 2016: 139–152).

Lightbown and Spada (1990) found a difference in language test performance between the groups of students based on the type of explicit instructions provided: focus on vocabulary increased overall comprehension whereas focus on grammar additionally increased accuracy. Language learners who perform well on language

tests do not necessarily perform well in communication or spontaneous speech and vice versa (Spada & Lightbown, 2008). These results are in line with studies on language acquisition among children (e.g., Harley & Swain, 1984; Swain, 1985; 1989) which demonstrate lower morphology and syntax accuracy among fluent learners in the formal settings compared to language learners immersed in the target language environment. In this context, instructions are the most effective when they combine focus on form and meaning (Spada & Lightbown, 2008).

Multimodal exposure, such as listening to a recording of a text while reading it (Shefelbine, 1990), can function as a supplementary strategy to enhance comprehension. Gooskens (2013) pointed out that text recordings in intelligibility tests activate participants' listening perception.

Given these recurrent factors of influence in language learning literature, the aim of this paper is to uncover more details about the potential of mediated receptive multilingualism for L3 learning. In the next sections, we will focus on the implications of language exposure onto different levels of comprehension as well as explore the interplay between exposure and formal instructions. To do so, we will address the following questions:

1. Based on the correlation between a C-test in L2 and exposure to L2, can we assume that these measures can be used interchangeably, or do they differ?
2. If L2 proficiency and exposure are not the same, what is the extent to which exposure to L2 can improve understanding on the word level and on the text level of L3?
3. What is the impact of formal instructions about L2–L3 correspondence and when? Is targeted language teaching something to be recommended to individuals faced with such learning tasks in real life?

6.3 Methodology and participants

The experiment consisted of four parts: a sociolinguistic questionnaire (Bahtina-Jantsikene, 2013), a C-test (Grotjahn, 1987), and a test battery for Ukrainian word recognition (Shumarova, 2000) and for overall meaning of Ukrainian texts (Gooskens, 2013). The experiments were followed by debriefing interviews to collect participants' comments and explanations (see more in Branets & Verschik, 2021). The experiment data is part of a larger study presented in Branets et al., 2020.

The participants were 30 speakers of Estonian as L1 with B1 and B2 proficiency of L2 Russian, 10 male, and 20 female, age ranging from 22 to 59 years. All participants had formal instruction in Russian and had language proficiency certificates on B1–B2 levels and/or were enrolled in language classes at the moment of conducting the experiment in 2017–2018. Most participants were Tallinn university students, seven of them already graduated (see more in Branets et al., 2020). None of the participants had regular direct exposure to Ukrainian, 17 participants reported listening to Ukrainian songs, having Ukrainian friends or relatives, rarely watching Ukrainian channels or checking Ukrainian social media.

Participants were divided into two groups: 10 participants received explicit instructions prior to being tested and 20 participants did not receive any instructions. The instructions included a presentation about similarities and differences between Ukrainian and Russian and audio recordings of the Ukrainian texts.

The questionnaire was developed based on the materials presented in the study on Estonian-Russian receptive multilingualism by Bahtina-Jantsikene (2013). A total of 16 questions were used to collect information about participants' socio-linguistic background. Apart from questions about gender, age, nationality, education, place of residence, languages spoken in the family, and proficiency in other languages, the questionnaire included information about exposure to Russian and to Ukrainian. Participants were asked to provide a self-evaluation of their proficiency in Russian on a Likert scale, ranging from one to five where 1 corresponds to "I understand, but I can't speak", 2 – "I speak, but I feel some difficulties", 3 – "I can understand everyday talk" 4 – "I speak and write freely" and 5 – "I am fluent in this language".

Participants were also asked about the nature of learning Russian, with an aim to capture the difference between formal and informal learning. Another section of the questionnaire was dedicated to self-reported exposure to Russian and focused on two areas: the frequency of using Russian ("Never", "Every year", "Every month", "Every week", "Every day") and the domain of language use ("At home", "At the university", "In social media: I read the magazine /the newspaper/ news /social media networks", "Free time"). The same questions were asked about exposure to Ukrainian and their language attitudes towards Ukrainian (see Annex 1).[10]

After completing the questionnaire all participants were invited to measure their Russian proficiency with a C-test. The C-test was developed in accordance with the instructions presented by Grotjahn (1987). It includes four short texts with five to six sentences each. Starting from the second sentence, the second half of every second word in the text was missing. The participants' task was to fill in the gaps using the correct lexical and grammatical form, only five minutes were allocated for the completion of each short text. The total number of lexical items is 80 per individual C-test (20 items per text, four texts in total). For the evaluation of the results, we applied a flexible scoring system that was implemented by Bahtina-Jantsikene (2013: 28). The examples of the scoring system were discussed in Branets & Backus (2020) and are presented below:

– 1 point: a fully correct answer (e.g., when a participant answered that **мо… mo…* corresponds to *море mor'e* 'sea');
– 0.75 points: a correct yet grammatically or semantically imperfect answer, or a near synonym that matches the context (**макое takoje* – SG, NEUT for такие *takije* – PL'such');

[10] Annex 1 to the article "The role of language exposure in mediated receptive multilingualism": socio-linguistic questionnaire. DataDOI. http://dx.doi.org/10.23673/re-295

– 0.5 points: a misspelled word, only approximating the target (e.g., **отдыхнут otdyhnut* for *отдыхать otdyhat'* 'to rest');
– 0.25 points: a semantically related but grammatically or contextually incorrect (e.g., **леченых lechenych* for *лечение lechenije* 'treatment');
– 0 points: an unrelated word or no answer (**браче brache* for *брачного brachnogo* 'marital').

The main part of the experiment focused on the tasks to measure 1) comprehension of Ukrainian words selected from the texts (Shumarova, 2000) and 2) understanding the meaning of the Ukrainian texts (Gooskens, 2013). In total, the participants received three Ukrainian texts with additional tasks. The first task was to provide definitions for the words highlighted in the text. There were 55 target words in total: 36 words were cognate words that have the same meaning in Russian, 12 were cognates that have a different meaning or belong to a different register, and seven words were unrelated to Russian. We used the same scoring system used throughout the project (for more examples, see Branets & Backus, 2020; Branets & Verschik, 2021):

– 1 point: an entirely correct answer (e.g., when a participant recognizes that Ukrainian *допомагають dopomagajut'* '(they) help' is the translation of Estonian *aitama* 'to help');
– 0.75 points: a semantically correct definition presented in an incorrect grammatical form or word class (e.g., *старість starist* 'old age' translated as *vana* 'old' instead of *vanadus* 'old age');
– 0.5 points: almost correct meaning (e.g., *важливого vazhlyvogo* 'important' translated as Estonian *kõige tähtsam* 'the most important' instead of correct *tähtis*, *oluline* 'important');
– 0.25 points: a semantically related lexeme that fits the context but is incorrect (e.g., Ukrainian *йшли jshly* 'were going' translated as Estonian *läks ära* 'went away');
– 0 points: a completely wrong answer (e.g., Ukrainian *вплив vplyv* 'influence' translated as Estonian *uurimus* 'research') or no answer.

General understanding was measured with a test battery consisting of 36 questions in total: 15 true or false questions (1 – correct answer; 0 – incorrect), 15 multiple choice questions (1 – correct; 0 – incorrect), and 6 open questions (1 – full answer; 0.75 – partial answer; 0.5 – many details left out; 0.25 – relevant but some incongruence with context; 0 – false or no answer). More details on the scoring system can be found in Branets et al. (2020: 11).

After all tasks were completed, the participants were interviewed to collect their feedback. The duration of each interview was 10–20 minutes and participants were prompted to share their experiences with regard to task completion. An overview of debriefing interviews is outlined in Branets & Verschik (2021).

6.4 Data

The analysis of the data was made using the SPSS Statistics program. All 30 participants with Estonian as L1 and formal instructions in L2 Russian were divided into three groups based on their reported language exposure: low exposure to Russian (1.8–2.4 points), medium (2.5–3.5 points) and high (3.6–4.5 points).[11] These three exposure-based groups were compared on the success rate of completing the C-test in Russian, recognition of Ukrainian words and understanding of the meaning of Ukrainian texts. We also tested the role of formal instructions together with language exposure across two groups of participants (one group that received instructions in Ukrainian prior to testing and another group that did not). The analysis was made using the one-way ANOVA analysis to compare the means of the groups and multiple linear regression to distinguish the most influential variables.

6.4.1 Language exposure to Russian and C-test in Russian

We compared the performance in the C-tests in Russian between three groups of participants based on their level of exposure to Russian: Group 1 with low exposure (n = 10, mean = 43.28 and SD = 11.66), Group 2 with medium exposure (n = 10, mean = 57.88, SD = 11.10) and Group 3 with high exposure (n = 10, mean 58.28, SD = 10.81). According to *ANOVA* analysis, the difference in C-test performance between the three groups is significant ($p < .01$). Based on the multiple comparisons between groups, both Group 2 ($p < .02$) and Group 3 ($p < .02$) are significantly better than Group 1. This suggests that low L2 proficiency and low L2 exposure are comparable.

However, the difference in performance in the C-test in Russian between Group 2 and Group 3 turned out to be not significant ($p > .99$), which suggests that medium and high levels of exposure to Russian have comparable impact on language proficiency tests. The minimum and the maximum values of the C-test performance of the Group 1 vary between 20.25 and 53.75 whereas Group 2 and 3 demonstrate less variation in that respect. Their minimum scores are 44.00 and 44.75 respectively but Group 2 has a higher value of the maximum score than Group 3 (77.75 and 73.00 respectively). These results suggest that L2 exposure alone cannot predict L2 proficiency (one of the most recurrent factors listed in RM research) and it is important to investigate the effect of exposure on direct success in mediated RM.

[11] Each exposure group included participants with both B1 and B2 proficiency in Russian. This paper considers the correlation between L2 proficiency and exposure. L2 proficiency as the primary factor is discussed elsewhere (see Branets et al., 2020; Branets & Backus, 2020).

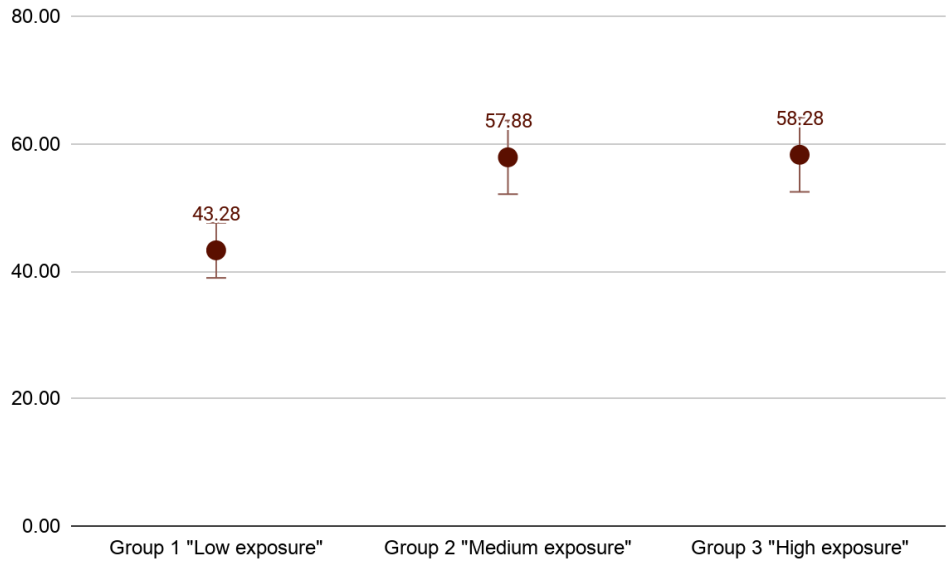

Diagram 1. C-test mean scores across three exposure levels groups (low, medium, high)

6.4.2 Language exposure and comprehension in Ukrainian

6.4.2.1 Exposure to Russian and word recognition in Ukrainian

The three exposure-based groups demonstrated the following success rate in the tests on Ukrainian word recognition: Group 1 (n = 10, mean = 27.65, SD = 8.96), Group 2 (n = 10, mean = 37.95, SD = 6.17), and Group 3 (n = 10, mean = 36.30, SD = 5.23). Group 2 with the medium language exposure has a higher mean score than Group 3 with the highest one. ANOVA analysis showed that the difference between these groups is significant ($p < .01$). According to Tukey HSD multiple comparison, there is also a significant difference in the performance between Group 1 and Group 2 ($p < .01$) and Group 1 and Group 3 ($p < .03$). However, the difference in performance between Group 2 and Group 3 is not significant and the distribution of the mean scores does not suggest a linear correlation between exposure and word level comprehension (see Diagram 2). Therefore, exposure to Russian has a direct influence on success rates in Ukrainian word recognition tasks. At the same time, no significant difference between medium and high exposure was determined, which suggests that even limited exposure to a medium language has a positive effect on comprehension in the target language.

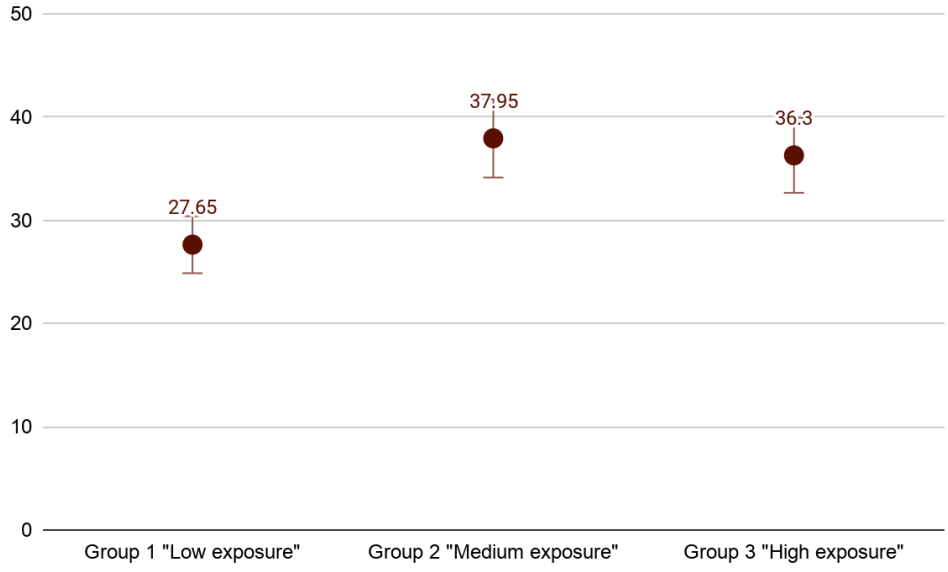

Diagram 2. Word recognition mean scores across three exposure levels groups (low, medium, high)

6.4.2.2 Exposure to Russian and understanding of the texts in Ukrainian

In regards to the language exposure to Russian and understanding of Ukrainian texts as a whole, the results are insignificant with almost equal distribution of text level success between the three groups: Group 1: $n = 10$, mean = 29.00, $SD = 4.59$; Group 2: $n = 10$, mean = 31.03, $SD = 4.57$; and Group 3: $n = 10$, mean = 30.67, $SD = 3.30$. Therefore, we can claim that exposure to Russian did not affect the overall understanding of Ukrainian texts, limiting its effect only to comprehension on the level of vocabulary.

6.4.3 Language exposure and instructions L2–L3

We examined the role of exposure to Russian on the C-test in Russian, word recognition and text comprehension tasks in Ukrainian across two conditions: Group A received instructions that explained the similarities and differences between Ukrainian and Russian (e.g., sound transformations, spelling, recording) and Group B received no such instructions.

6.4.3.1 Instructions, L2 exposure, and L2 proficiency

First, we compared the performance on the C-test in Russian between Group A and B and found no significant difference: Group A ($n = 10$, mean = 58.48, $SD = 10.09$) and Group B ($n = 10$, mean = 50.48, $SD = 12.93$) demonstrated comparable results, which guarantees that any correlations are due to instruction

mode and not the C-test. We also looked at the role of exposure to Russian on the C-test in Russian in the two groups separately. We found no significant correlations between C-test and language exposure in the group that received previous instructions ($p > .92$). This can be in part explained by the fact that all participants in this group happened to have a relatively high level of exposure to Russian (3.0–4.5, falling squarely into the medium and high exposure groups). However, we found a significant pattern between exposure and C-test performance in the group that received no instructions ($p < .01$). Once again, there was no significant difference determined between medium and high exposure groups. These results indicate that exposure leads to improved C-test results in Russian only in the no-instructions mode; in the instruction mode, the effect disappears.

6.4.3.2 Instructions, L2 exposure, and L3 word recognition

Next, we tested the difference between Group A ($n = 10$, mean = 38.88, $SD = 6.31$) and Group B ($n = 20$, mean = 31.51, $SD = 7.96$) in their recognition of Ukrainian words. It becomes apparent from looking at the minimum and maximum scores of both groups in this category (Group A: min = 27.75 max = 49.25; Group B: min = 15, max = 44.50) that Group A (with instructions) was significantly more successful than Group B ($p < .02$). We tested the role of language exposure in Ukrainian word recognition in these two groups separately: there was no significant correlation in the Group A ($p > .70$), which may have been due to insufficient exposure variation in the group (see sections 6.4.1 on C-test and 6.4.2 on instructions). The no-instruction Group B demonstrated a clear pattern suggesting a link between exposure and word level comprehension ($p = .052$).

6.4.3.3 Instructions, L2 exposure, and L3 texts understanding

Finally, we checked the importance of instructions on understanding Ukrainian texts between Group A ($n = 10$, mean = 30.23, $SD = 4.71$) and Group B ($n = 20$, mean = 30.24, $SD = 3.97$) and found no significant correlations between exposure and text level understanding, a result consistent with our findings on exposure: both factors exclusively improve word level comprehension in specific contexts.

6.5 Discussion

Research on language acquisition aims to establish factors that reliably predict language learning outcomes. One factor is pre-existing knowledge. When people start to learn a new language from scratch, there may be a lot of knowledge they already have and that can be pressed into service: general knowledge about a language, general experience with learning languages, and knowledge of L1 or

an L2 that may transfer to their knowledge of the new language. In this paper, we explored how exposure to the medium language, Russian, facilitates the comprehension of the target language, Ukrainian, in a series of experimental tasks. Other factors that we considered included the interplay between (implicit) exposure and (explicit) instructions to Ukrainian as well as success levels as defined by either word or text level comprehension tasks.

6.5.1 Correlation between exposure and proficiency in L2

The C-test in our study was designed primarily to measure grammatical and lexical knowledge, which is a proxy to measuring L2 proficiency that is often listed as one of the main factors in RM research. The correlation between exposure to Russian and performance in the Russian C-test is quite natural: exposure to a language increases one's proficiency and improves performance, including in the tests. Our data confirm that language exposure to Russian is directly associated with the results of the C-test in Russian, but mostly when both exposure and proficiency are low. Medium and high exposure groups had very similar C-test results and therefore cannot be used interchangeably. In other words, any correlations between exposure and successful comprehension cannot be attributed to L2 directly, which ratifies further investigation of the influence of exposure on comprehension.

6.5.2 Differential impact of L2 exposure on L3 word recognition and text understanding

Our data showed a correlation of language exposure to L2 Russian to understanding L3 words in Ukrainian. The word recognition task in Ukrainian was used to measure the potential of participants to recognize Ukrainian vocabulary relying on their proficiency in Russian. The correlation of language exposure to Russian and the outcome of the tasks of recognition of Ukrainian words is direct evidence of how mediated receptive multilingualism works: exposure to L2 Russian improves the level of recognition of words in L3 Ukrainian. Exposure to L2 Russian provides a base for learning a related L3 Ukrainian: some knowledge is acquired through exposure even if there was no explicit intention. Therefore, language exposure facilitates some types of incidental learning at the word level through a language medium.

All results discussed in this paper as well as other articles based on the same research project (Branets et al., 2020; Branets & Backus, 2020) are consistent in one aspect: there is a stark difference between L2 comprehension as measured on the vocabulary and on the overall level of understanding. We established no correlation between overall understanding of Ukrainian texts and exposure to Russian, which suggests there are other factors playing a role in overall comprehension. In this paper, exposure is broadly conceptualized as a context that creates opportunities for incidental learning. The fact that we see a correlation

between exposure and word level comprehension but not between exposure and text level comprehension raises the question of what particular linguistic knowledge can be acquired through exposure, especially when we talk about exposure to one language (L2) and mediated comprehension in another language (L3). Research on second language acquisition predicts different patterns for different levels of linguistic information acquisition, such as smaller units like certain morphemes and words being easier to acquire (e.g., the so-called bottleneck hypothesis); studies on receptive multilingualism suggest that understanding of larger units like texts relies on the broad understanding of the context that goes beyond lexical and grammatical knowledge (Muikku-Werner et al., 2012; Kaivapalu, 2015; Kaivapalu & Muikku-Werner, 2010). Our data confirm that exposure to Russian, at least at the levels present in the current participants, is beneficial for word level comprehension but insufficient for successful comprehension on the text level.

When we compared groups by exposure – low, medium, and high levels of exposure to Russian – the significance always occurred between low and medium and low and high and not between medium and high levels in both C-test performance and the recognition of Ukrainian words. This suggests that either exposure has a boosting effect from early on or that participants in this experiment were not sufficiently different from one another. As a matter of fact, no participants received a maximum score in terms of exposure: their contact with Russian was either infrequent or limited to one domain even in the high exposure group. Due to low variation present in the tested groups, we also were not able to test the different types of exposure in terms of varying degrees of formality, which would shed more light on the effects of more formal education as opposed to participatory practices in the medium language. However, the non-linear correlation between level of exposure and performance in the experiment suggests that there are additional factors that affect the relation between exposure and comprehension.

6.5.3 Impact of formal instruction about L2–L3 correspondence

Apart from language exposure, instructions present another potential source of learning that is more explicit and typically form-focused. In our study, we investigated the role of instructions together with language exposure to the C-test in Russian, Ukrainian words recognition, and understanding of Ukrainian texts among the two groups of participants: those who received previous instructions and those who did not. The group that received instructions showed no correlation of language exposure to Russian to any of the aforementioned tasks. This could be explained by the fact that participants had only medium and high levels of exposure and there were no participants with low levels of exposure. An alternative interpretation would be to treat exposure and instructions as factors that combined a ceiling effect: explicit instructions level out any implicit knowledge stemming from exposure, leading to all participants having comparable degrees of metalinguistic awareness. In line with that hypothesis, we identified evidence

for the beneficial effect of exposure in the group that did not receive instructions: exposure to Russian positively correlated with success in task completion of the C-test in Russian, Ukrainian words recognition but there was no correlation with understanding Ukrainian text as a whole. This might reiterate the fact that exposure becomes even more consequential when other factors facilitating comprehension are limited.

6.6 Conclusions

We started off with an assumption that factors affecting comprehension in mediated receptive multilingualism would also play an important role in L3 learning. We conclude that in mediated RM exposure to medium language is a crucial factor that might significantly boost comprehension in the target language through increased metalinguistic awareness, either more directly or by creating opportunities for incidental learning. Importantly, we see this effect in relation to both medium and high levels of exposure, but only on the word level and not the text level comprehension. Explicit instructions unequivocally lead to improved performance and in their absence, the role of exposure is even more pronounced. This further supports the general argument that contexts of limited common ground, characterized by low language proficiency and/or lack of formal instruction, make exposure and other similar factors of potential influence even more relevant for language users that recruit any available resources in their attempt to understand another language. While we were not able to obtain all answers about different types of exposure and comprehension due to some limitations of the research, we presented evidence to support the claim that partial language comprehension, a skill needed in many globalized settings, benefits from exposure, especially if that exposure includes opportunities for increasing metalinguistic knowledge, something people can be educated about and trained in. We suggest that such focused training could target not only word level but also general comprehension.

The study used limited data in terms of different configurations of language exposure and language proficiencies as well as exposure formality types, which makes it difficult to generate statistically significant observations on all subsets of questions. The following recommendations would be beneficial for future research. To better understand the nuanced interplay of exposure to Russian and comprehension in Ukrainian, it would be important to expand the pool of participants to incorporate all levels of exposure across all conditions (e.g., in the instruction versus no instruction conditions). It would also be crucial to recruit participants with full exposure to medium language: both frequent and not limited to one domain. Testing comprehension based on varying types of formality of exposure will shed more light on the effects of more formal learning as opposed to participatory practices and incidental learning in the medium language. Finally, we would suggest addressing the role of exposure beyond written comprehension by expanding language tests to communication-based tasks.

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CHAPTER 7. LANGUAGE ATTITUDES AND COMMUNICATIVE SUCCESS: INSIGHTS FROM ESTONIAN-UKRAINIAN COMMUNICATION

This paper is to be submitted as:
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ABSTRACT

This study examines explicit and implicit language attitudes towards Russian and Ukrainian, and their role in Estonian-Ukrainian communicative success. Estonian and Ukrainian participants completed both the Implicit Association Test and the Matched-Guise Test and engaged in conversations using Receptive Multilingualism mode. The results revealed some differences in the Ukrainian participants' implicit and explicit evaluations of the two languages, whereas the Estonian participants showed a more consistent pattern. While explicit responses tended to favour Ukrainian, implicit measures were higher for Russian, possibly reflecting differences in linguistic competence. These findings suggest that implicit language attitudes offer valuable insights into unconscious evaluative processes and uncover deeper attitudinal biases. In Estonian-Ukrainian RM communication, participants were generally successful in understanding each other, with Estonians relying on their proficiency in Russian to comprehend Ukrainian. For the Ukrainian participants, *intelligence* in the Ukrainian guise and *normality* in the Russian guise showed a moderately strong positive correlation with communicative success, whereas no relation was found for Estonian participants. Although the correlational analyses between explicit and implicit attitudes and communicative success did not yield statistically significant results, the findings suggest that language attitudes may influence interaction success indirectly or in combination with other factors.

Keywords: Receptive Multilingualism, mediated Receptive Multilingualism, explicit language attitudes, implicit language attitudes, Estonian, Russian, Ukrainian.

7.1 Introduction

A recent notable example of substantial immigration to Europe, including Estonia, refers to the recent forced Ukrainian relocation. As of 2024, 44,480 Ukrainians arrived to Estonia since the Russian full scale invasion in early 2022 (Statistics Estonia, 14 May 2024). In total, 60,414 Ukrainians form a growing part of Estonia's population of 1.37 million, representing 4.4% of the total population.

Ukraine and Estonia share a history as part of the Soviet Union, and both became independence in August 1991. After the independence, Russian in Estonia, has shifted from a dominant to a minority language, with language policy and social attitudes promoting Estonian while in Ukraine, Russian remained widely used despite its declining status (Verschik, 2010). Not only Ukrainians but also Estonians faced the task of finding different ways to employ their linguistic repertoires and skills to navigate communication challenges encountered in interactions between each other.

In Ukrainian-Estonian interactions, English as a lingua franca may be the preferred choice for many Estonians, as it is the most widely spoken foreign language in Estonia, according to the 2021 census (Statistics in Estonia, 16 November 2022). For Ukrainians, Russian is often a language of higher proficiency due to the Russification policies and extensive exposure during the Soviet era. In Estonia, Russian as a foreign language is spoken by 39% of the population (2021 census) and is very often limited to specific linguistic environments, e.g., where Russian is predominant (Rannut, 2005), among the Russian minority, the older generation or in individual cases. While many Estonians may not actively use Russian, it is taught as an optional foreign language for seven to eight years in Estonian schools.

Ukrainian and Russian belong to the East Slavic branch of the Indo-European language, while Estonian belongs to the Finno-Ugric branch, Uralic languages. Since Russian and Ukrainian are typologically similar, genetically related, Ukrainians may employ Ukrainian (or a cluster of in-between Russian-Ukrainian varieties *surzhyk* (see more in Kapanov et al., 2025) when communicating with Estonians. In these interactions, Estonians could achieve understanding through their passive knowledge of Russian. A mode of communication in which interlocutors use their own languages while speaking to each other is called Receptive Multilingualism, henceforth RM (Rehbein et al., 2012). In Ukrainian–Estonian interaction, Estonians employ mediated RM (Branets et al., 2020), as comprehension is achieved through a third language typologically related to the target language, they understand Ukrainian via their knowledge of Russian. Ukrainians, in turn, rely on an acquired type of RM, drawing on their previously learned linguistic knowledge.

Previous investigations into Estonian-Ukrainian written comprehension have shown that Estonians were quite successful in understanding written Ukrainian via Russian (Branets et al., 2020). While linguistic similarities between Russian and Ukrainian play an important role, a number of extra-linguistic factors that affect comprehension were detected such as metalinguistic awareness, exposure to Russian, exposure to various registers, experience with multilingual situations, learnability, context, general, knowledge and learnability (Branets & Verschik 2021, Branets & Bahtina, 2021).

Language attitudes have been identified as a factor influencing comprehension in RM, with studies highlighting the link between language attitudes (implicit and explicit) and intelligibility (Gooskens, 2006; Schüppert & Gooskens, 2011; Schüppert et al., 2015; Hilton et al., 2022). Positive attitudes are most likely to

encourage interlocutors to make more effort to comprehend the language, while negative attitudes would not yield the same motivational effect.

Estonians are quite sympathetic towards Ukraine and the Ukrainian language. All participants in an experimental study conducted in 2019 reported positive or neutral attitudes towards Ukraine (Branets & Verschik, 2021). Since the beginning of Russian full-scale invasion in 2022, there has been a lot of attention and support provided to the Ukrainian refugees by Estonians. In turn, the language attitudes towards Russian are quite controversial among Estonians due to its common association with the Soviet Union (Ehala, 2011). In addition, the aggressive actions of the Russian Federation in 2022 increased negative attitudes towards the Russian language and culture (Dezi, 2025). Nevertheless, Ukrainian refugees in Estonia frequently use Russian to navigate daily life. They are also required to complete the adaptation and Estonian language learning programme on the A1 level.

In this contribution, I attempt to answer four research questions:

I. What is the success rate of Estonian-Ukrainian communication through RM, and how is it related to the time required to complete the task?
II. How does the success rate of Estonian-Ukrainian communication change between the two sessions?
III. What implicit and explicit language attitudes do Estonian and Ukrainian participants hold towards Russian and Ukrainian?
IV. How do implicit and explicit language attitudes correlate with communicative success in Estonian-Ukrainian interaction?

The hypothesis is that Ukrainians are expected to explicitly prefer Ukrainian speech for its social attractiveness while implicitly favouring Russian speech for its social status, either deeply rooted from the time when Russian was considered a prestigious language or as respondents' perceived competence in that language. Thus, there is expected to be a discrepancy between the outcomes of explicit and implicit assessments of language attitudes in the case of Ukrainians. On the contrary, Estonians are anticipated to demonstrate both explicit and implicit preferences towards Ukrainian speech and the opposite towards Russian. It is hypothesised to result from positive attitudes towards Ukrainians, influenced by a shared history and support for war refugees, alongside ongoing issues with the integration of the Russian-speaking minority. The correlation between language attitudes and communicative success aims to show how positive or negative attitudes impact communicative success by establishing a link between these two variables.

7.2 Theoretical background

7.2.1 Communication in Receptive Multilingualism

Receptive multilingualism (RM) is a communicative mode that prioritises achieving mutual understanding over "perfect" language proficiency (Braunmüller, 2007; Ten Thije & Zeevaert, 2007). Research shows that successful communication is possible even with limited linguistic competence through strategies such as comprehension checks, self-corrections, meta-communication, and accommodation techniques like code-switching and simplification (Firth & Wagner, 2007; van Mulken & Hendriks, 2015; Rehbein et al., 2012).

Rehbein et al. (2012) expanded the concept through *lingua receptiva*, viewing RM as a dynamic, collaborative process that activates interlocutors' "passive knowledge." Both speakers and hearers contribute equally, using inference-making and contextual knowledge to bridge understanding gaps (Sacks, 1985). Ten Thije's research (2010) on *Luistertaal* further conceptualises *lingua receptiva* as a practical and prospective model for European communication and education.

RM enables interlocutors with uneven multilingual competences to navigate exolingual interaction (Lüdi, 2013). Intelligibility can be asymmetrical (Gooskens, 2006; Härmävaara, 2022); in the Estonian-Ukrainian case, Estonians often rely on Russian proficiency to understand Ukrainian, while Ukrainians' comprehension of Estonian depends on prior exposure and use.

In RM, finding the common elements between languages has been claimed to facilitate mutual understanding (Härmävaara, 2014). Beyond linguistic similarity, factors such as metalinguistic awareness, multilingual experience, language attitudes, and exposure significantly influence understanding (Kaivapalu, 2015; Blommaert & Backus, 2011; Branets & Bahtina, 2021; Schüppert et al., 2015).

Communication in RM extends far beyond intelligibility, encompassing interaction, cognitive processes, and a wide range of linguistic and extra-linguistic factors. This paper investigates the potential of Estonian-Ukrainian communication, examining how some of the factors facilitate mutual intelligibility in spoken interaction. While comprehension is shaped by numerous factors, this study narrows its focus to explore the role of language attitudes in Ukrainian-Estonian communication.

7.2.2 Language Attitudes

Research in RM indicates that positive language attitudes enhance comprehension (Gooskens, 2006; Schüppert & Gooskens, 2011). A large-scale study by Gooskens and van Heuven (2020) across sixteen European languages confirmed this link but suggested that exposure may play a stronger role than attitude in predicting intelligibility. Similarly, Impe (2010) found that both implicit and explicit attitudes correlated with intelligibility, with implicit attitudes showing a stronger effect.

Implicit attitudes are automatic, subconscious reactions to objects, while explicit attitudes reflect conscious beliefs and stereotypes about a language (Levon et al., 2021; Pantos, 2019; Bishop et al., 2005). The social cognition model suggests that attitudes develop through two distinct mental processes: automatic, associative processing and deliberate, propositional processing (Pantos & Perkins, 2013).

This study measures language attitudes using the Matched-Guise Test (MGT) and the Implicit Association Test (IAT). The MGT, a classic tool for assessing attitudes toward linguistic varieties (Lambert et al., 1960), presents participants with bilingual speakers reading the same text in different languages or "guises." By rating each guise on different traits such as intelligence or friendliness (Osgood et al., 1957), participants reveal attitudes towards the languages rather than the speakers. Although often viewed as an implicit measure, the MGT actually captures explicit attitudes, as it elicits conscious evaluations even when participants are unaware their attitudes are being tested (Pantos, 2019). In this study, MGT included two bilingual speakers with their guises and was supplemented with explicit questions about the language itself. In addition, it is strategically positioned after the IAT and other questionnaire sections (Loureiro-Rodríguez & Acar, 2022).

Explicit attitudes often reflect stereotypes or socially desirable views that may differ from deeper, implicit attitudes influencing behaviour. The IAT measures such subconscious associations by recording reaction times when participants pair contrasting stimuli (Greenwald et al., 1998), for example, Russian vs Ukrainian with evaluative dimensions such as positive vs negative. It reveals strong evaluative associations stored in memory and deeply embedded implicit biases against particular groups (Rudman et al., 1999). Faster responses for one pairing indicate an implicit preference, expressed as a *D score* ranging from –2.0 to +2.0, where higher values reflect stronger bias (McKenzie & McNeill, 2023). In this study, I test language attitudes towards Russian and Ukrainian using the IAT to explore implicit preferences and potential biases held by participants.

Previous attitude studies show that implicit measures like the IAT often reveal low correlations with explicit self-report measures, particularly in socially sensitive areas such as racial and minority biases, highlighting a distinction between subconscious and conscious attitudinal processes (Hofmann, Gawronski, Gschwendner, Le & Schmitt, 2005; Lane, Banaji, Nosek & Greenwald, 2007). The implicit-explicit attitudinal discrepancy suggests that attitudes with high discrepancy are typically weaker and more open to change, whereas lower levels indicate stronger, more stable attitudes over time (Karpen, Jia & Rydell, 2012; Luttrell, Petty & Briñol, 2016). Exploring the consistency or discrepancy between implicit and explicit language attitudes is addressed in this article.

Using both explicit and implicit methods, I capture both conscious and subconscious attitudes to assess language attitudes towards Russian and Ukrainian. Additionally, I explore how these results correlate with communicative success, a connection previously examined only in relation to intelligibility (Impre 2010,

Debreczeni 2022). This study aims to offer broader insights into the impact of language attitudes on communication as a whole.

7.3 Procedure and Participants

The experiment involved 15 Ukrainian participants (11 females, 4 males; aged 18–38, *M* = 29.8) with B1-level Estonian proficiency and 13 Estonian participants (10 females, 3 males; aged 24–44, *M* = 33.7) with B1-level Russian proficiency. Ukrainians represented various regions with different language-dominant backgrounds. 14 identified Ukrainian and one *surzhyk* as their native language; at home, most spoke Ukrainian, four spoke Russian, and two *surzhyk*. All resided in Tartu, an Estonian-dominant environment (Rannut, 2005). The age of Estonian participants was selected to correspond with the Ukrainian participants, minimising the impact of extensive Sovietera exposure to Russian on language attitudes (Branets et al., 2020). Most had lived in Tartu for at least three years or longer; nine reported no knowledge of Ukrainian, and two could partially understand it through experience with Ukrainian and Polish languages. Participants were recruited through language courses, language cafés, and community events to ensure accurate language proficiency.

In the first part of the experiment, 13 Estonian speakers with passive proficiency in Russian and 15 Ukrainian speakers with limited proficiency in Estonian first completed the IAT online to assess implicit language attitudes towards Ukrainian and Russian. Immediately afterwards, they filled out an online questionnaire that included an integrated MGT to collect socio-linguistic background information and evaluate explicit language attitudes toward Ukrainian and Russian. The IAT test, together with a questionnaire, took approximately 30 minutes to complete.

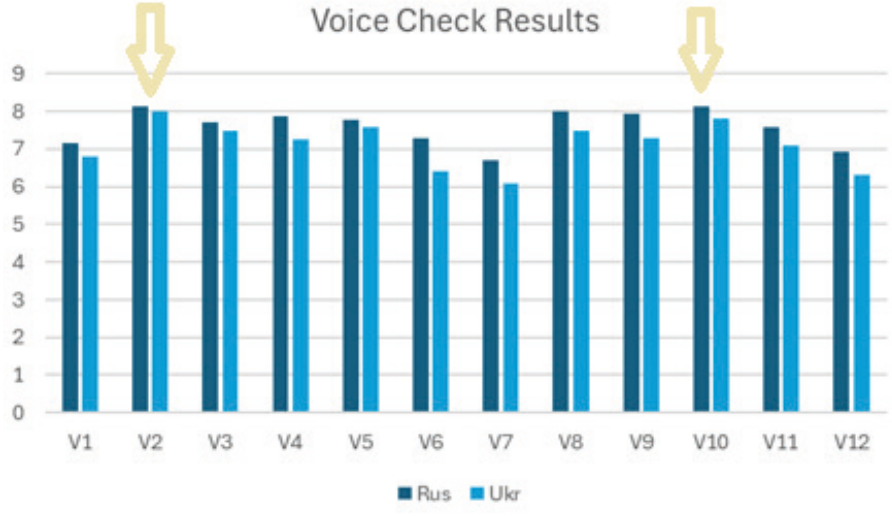
In the second part of the experiment, 11 Estonian and 11 Ukrainian participants were paired into 11 dyads for online interactions using two Map Tasks. Each dyad, consisting of one speaker from each group, communicated in their native languages via audio only and completed each task within 10 minutes. Ukrainians relied on passive knowledge of Estonian, while Estonians used their receptive skills in Ukrainian during mediated RM communication. Two sessions with tasks of equal complexity were randomised to test the learnability effect and conducted consecutively within one online meeting. After completing the tasks, participants submitted their results and were jointly debriefed. This part of the experiment lasted approximately 30–40 minutes.

7.4 Testing Language Attitudes

7.4.1 Native Sound Assessment

Before developing the MGT and the IAT, I conducted a sound assessment to ensure the bilingual speakers used in the recordings sounded native in both Ukrainian and Russian. Twelve audio fragments in each language were recorded by seven bilingual Ukrainian-Russian female speakers from various cities, including Odessa, Kyiv, Dnipro, Lviv, and one from Saint Petersburg. Fifteen native listeners (7 Ukrainians, 8 Russians) rated the clips for perceived nativeness (0–10) and identified the speakers' origins. The two bilingual speakers with the highest scores in both languages were selected for the main experiment: Voices 2 and 10, both 23-year-old females from predominantly Russian-speaking environments (Odessa and Donetsk). Voice 2 was also chosen for the IAT.

Table 1. The results of native sound assessment in Russian and Ukrainian.



Ten sentences from the expository text "The Story of Teddy Bear Niam-Niam" were selected for the voice line-up study. Both translations to Russian (*"История мишки Ням-Ням"*) and Ukrainian (*"Історія ведмедика Ням-Ням"*) were available on the website (Milupa website). Seven sentences were selected for the language attitude experiment, which were the most recognisable in each language (see Appendix J). Additionally, they were sent to a bilingual speaker of both Ukrainian and Russian to verify for semantic and linguistic accuracy.

7.4.2 The Implicit Association Test

The IAT test served as the first stage of the experiment, preceding the questionnaire with MGT and the Map Tasks. Participants accessed the IAT test through a provided link[12] and were instructed to select their preferred language of instruction (Estonian or Ukrainian). The aim of the research provided was intentionally generalised to avoid explicitly disclosing it.

The IAT measures associations between target stimuli (Ukrainian and Russian) and attribute stimuli (positive or negative). Participants categorise audio and visual stimuli by pressing assigned keys (e.g., Q or P), with pairings later reversed to test different associations. Faster and more accurate responses indicate stronger implicit links between categories, measured by response latency. For instance, quicker pairing of Ukrainian with positive suggests a more favourable implicit attitude towards Ukrainian. As these associations occur automatically, the IAT effectively captures subconscious attitudes beyond the reach of the MGT. For a detailed account of the assumptions behind the IAT, see McKenzie & McNeill (2023).

The target stimuli included seven audio recordings in each language produced by a female Ukrainian-Russian bilingual speaker who was selected based on native sound assessment from the same text (see Section 7.4.1.1). Some of the sentences were shortened so the target stimuli were max 3 seconds long each (see Appendix I). Each sentence included both cognates and non-cognates. Additionally, they were edited in Audacity for the same length (3 sec), loudness (8–10 dB), and tempo. Four participants (2 Ukrainian and 2 Estonian) took the pilot IAT prior to the main experiment.

Additionally, the test incorporated visual attribute stimuli consisting of four positive and four negative descriptors (Dekker et al., 2021). They included images of a sun, a happy smiley face, a thumbs-up gesture, a green checkmark, a raincloud, a sad smiley face, a thumbs-down gesture, and a red cross (Dekker et al., 2021, see Appendix H). The experiment was developed using PCIbex (Zehr & Schwarz, 2018) and tested by Debreczeni (2022) and Debreczeni et al. (2023). The main advantage of this software is that it is online, and participants can take the test from their computers or laptops without a researcher being present.

The structure of the IAT test was as follows: participants first completed an audio-only block (B1), followed by an image-only block (B2). These initial blocks served as practice rounds for the audio recordings and visual stimuli. Subsequently, two combined blocks (B3 and B4) incorporated both visual and audio stimuli. The first combined block (B3) served as a practice round to familiarise participants with the integration of both types of stimuli, while data for analysis was collected from the following block (B4). After completing these blocks, the language positions were reversed to test each language paired with different

[12] For Estonian participants: Version 1: https://farm.pcibex.net/r/emqUtX/ and Version 2: https://farm.pcibex.net/r/KvrYRV/ and for Ukrainian participants: Version 1: https://farm.pcibex.net/r/aLCUlg/ and Version 2: https://farm.pcibex.net/r/JcbTWv/

attribute categories, ensuring a comparison of response latencies (see Table 2). Block B5 allowed participants to practise the new key assignments only with audio stimuli, not with visual stimuli. Finally, the test concluded with two combined blocks (B6 and B7) featuring both audio and visual stimuli, with data for analysis collected from the B7 block. The order of the audio fragments and visual stimuli was randomised. When participants pressed the key within 400 ms, they immediately received feedback on their response (correct vs incorrect). After 1000 ms, the next stimulus appeared on the screen.

Table 2. Version 1 of the IAT test design.

Block	**Left-key response Q**	**Right-key response P**
1	Ukrainian voice fragments	Russian voice fragments
2	Negative images	Positive images
3	Ukrainian/Negative combined with image	Russian/Positive combined with image
4*	Ukrainian/Negative combined with image	Russian/Positive combined with image
5	Russian voice fragments	Ukrainian voice fragments
6	Russian/Negative combined with image	Ukrainian/Positive combined with image
7*	Russian/Negative combined with image	Ukrainian/Positive combined with image

Figure 1. Blocks 1 and 5: Audio fragments.

Figure 2. Block 2: Visual stimuli.

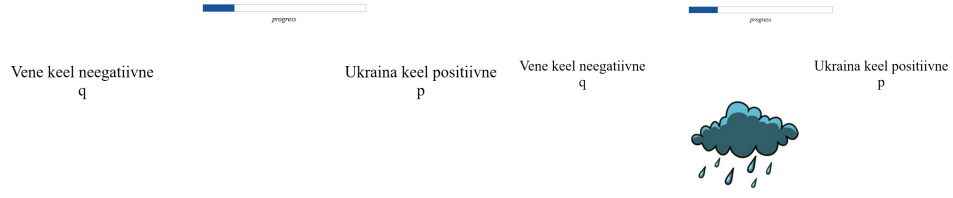


Figure 3. Blocks 3, 4, 6 and 7

The IAT test was presented in two versions: with the first block of Russian/ negative and Ukrainian/positive, and with Russian/positive and Ukrainian/ negative. During data analysis, response latencies from blocks B4 and B7 were compared. Shorter response latencies in these blocks indicated more positive attitudes toward the language.

7.4.3 Questionnaire[13]

The questionnaire was developed based on the questionnaire from a study on written comprehension of Ukrainian by speakers of Estonian (Branets et al., 2020). The questionnaire gathered biographic information and ethnolinguistic profiles: gender, age, education, ethnicity, place of residence, first language (L1), proficiency in other languages (L2), frequency of L2 use, level and domains of language exposure to Russian and Ukrainian (for Estonian speakers), and to Estonian (for Ukrainian speakers), formal instructions in Russian (for Estonian participants) and Estonian (for Ukrainian participants) and also language attitudes towards Ukrainian and Russian with the adapted MGT (see Appendix L and M). The questionnaire in Ukrainian comprised 25 questions, and in Estonian, 36 questions.

The questionnaires were provided in Estonian and Ukrainian, respectively. The text was verified by two translators who conducted separate translations. Their translations were then compared and reviewed to identify and resolve any differences or inconsistencies for semantic and stylistic nuances. This procedure ensured greater precision and alignment between the two versions.

7.4.4 Matched-Guise Test

To test explicit language attitudes, participants listened to recordings in both Ukrainian and Russian and responded to questions using a modified version of the MGT. This test formed the final section of a questionnaire completed immediately after the IAT. Participants were asked to answer questions regarding their impression of the speakers, as well as their direct attitudes towards Russian and Ukrainian.

The MGT used in this study includes one recording of the same expository text read by two bilingual speakers (matched guises) who were selected at the native sound check (see section 7.4.1.1). It was supplemented with recordings by two additional speakers (fillers) in Ukrainian and Russian to distract participants. Since the bilingual recordings were interspersed with the fillers, participants remained unaware that some recordings were by the same speakers (see Table 3).

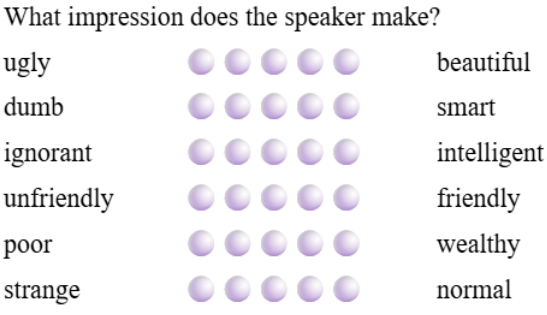
[13] The link to the questionnaire in Ukrainian can be found here: with MGT version 1: https://rug.eu.qualtrics.com/jfe/form/SV_bKlvXDqZ16WlQbk and with MGT version 2: https://rug.eu.qualtrics.com/jfe/form/SV_2gz4pOzVjBuOiKG and in Estonian with MGT version 1: https://rug.eu.qualtrics.com/jfe/form/SV_2lEaVAxQTzcmuUe and with MGT version 2: https://rug.eu.qualtrics.com/jfe/form/SV_ehd8Rmk81B2zuyG

The audio recordings were 5–6 seconds long (see Annex J). The test was presented in two different versions to the participants, where the recordings were randomised.

Table 3. Version 1 of the Matched-Guise Test Design.

#	**Ukrainian/Estonian participants**	**Language of the text**
1	Ukrainian Native Speaker (filler)	Ukrainian
2*	Ukrainian Bilingual person 1	Russian
3*	Ukrainian Bilingual person 2	Ukrainian
4	Russian Native Speaker (filler)	Russian
5*	Ukrainian Bilingual person 1	Ukrainian
6*	Ukrainian Bilingual person 2	Russian

The participants were instructed to rate speakers of Russian and Ukrainian with regard to the status dimension, represented by the traits intelligent, smart, and wealthy, and the solidarity dimension, encompassing the traits friendly, normal, and beautiful, using six 5-point Semantic Differential Scales (Osgood et al., 1957). Below is the Semantic Differential Scale provided for every text fragment.



Additionally, after listening to the clips, participants were asked to directly evaluate their attitudes towards Russian and Ukrainian for their beauty. Estonian participants were also asked to identify the language they heard to ensure that they knew what language they evaluated.

7.4.5 Testing Communicative Success

7.4.5.1 Map Task

To establish communicative success, data was gathered through online conversations using a "Map Task" (Garrod & Anderson, 1987), a method specifically designed to simulate goal-oriented dialogues reflective of real-life interactions

(Brown et al., 1984). Participants were provided with detailed instructions (see Appendix F and G) and identical maps, each displaying a different location of the speaker that only they could see (see Figure 4). They were allocated 10 minutes to identify each other's location on the map with cameras turned off. Ukrainian speakers were instructed to use Ukrainian, while Estonian speakers communicated in Estonian during the task. This was followed by the second identical session, using two maps different from those in the first session but of the same complexity. The maps were counterbalanced across sessions. In the first session, one interlocutor initiated the conversation, while in the second session, the other interlocutor took the lead. Roles, such as primary addressee and recipient, were randomly assigned to participants in each session (Goffman, 1981; Goodwin & Goodwin, 2004: 223–224).[14]

To draw the maps for the experiment, I first selected the most frequently used words from the *Frequency Dictionary of the Conversational and Everyday Style of Modern Ukrainian Language* (Buk, 2006) that can be placed on the map. It was established that the most highly ranked words in Ukrainian are compatible with other Slavic languages (Buk & Rovenchak, 2010). To ensure consistency across Ukrainian, Russian, and Estonian, the selection of frequently used words from Ukrainian was cross-referenced with an online *New Frequency Dictionary of Russian Vocabulary* (Lyashevskaya & Sharov, 2009) and further compared with the *Frequency Dictionary of Standard Estonian* (Kaalep & Muischnek, 2002). From this process, the 50 most commonly used nouns in all three languages that could be positioned on the map (e.g., tree, house, etc.) were selected (see Appendix E).

After the most common 50 noun words were selected, they were translated into Russian. Based on the similarities, they were divided into cognates with the same meaning, divergent cognates (words with similar etymological origins but different forms), and unrelated words (see Table 4). A total of 44 words were chosen to fit the urban context of the task and be effectively drawn on the city-themed map. Each map includes 26 cognates, 11 divergent cognates, and 7 unrelated words. Additionally, I incorporated colours and cardinal directions on the map. The terms for cardinal directions are unrelated across the languages, while most colour terms are cognates between Russian and Ukrainian, except for "red" (divergent cognate, see Table 4). Consequently, the use of colours and cardinal directions was randomised.

[14] Two pilot studies were conducted to improve the Map Task design. The first pilot, tested on two participants, included maps with discrepancies (some elements differed), but the task proved to be too complex to complete. Consequently, identical maps were implemented in the final design. The second pilot was tested with four participants. All participants successfully completed the task. First task was completed within mean 4.25 min and the second within mean 4.14.

Table 4. Examples of Word Categories Used in the Map Task.

Ukrainian	Russian	English	Category
будинок [budynok]	*дом [dom]*	house	unrelated
школа [shkola]	*школа [shkola]*	school	cognates
лікарня [likarnia]	*больница [bol'nits'a]* but old archaic *лекарь [lekar']*	hospital doctor	divergent cognates
червоний [chervonyi]	*красный [krasnyi]* *but old archaic червеный [chervenyi]*	red	divergent cognates

Figure 4. Map Task Version 1. Map Task for the Ukrainian participant.

Figure 5. Map Task Version 1. Map Task for the Estonian participant.

7.5 Results

7.5.1 Communicative Success in Mediated RM

Communicative success was measured along two parameters: correct identification of location for both interlocutors and the time required to complete the task. The total duration of 11 dialogues, with 2 sessions each, was 90.31 minutes. Mean conversation duration in the first session is 4.22 min (*SD* = 1.78 min) and in the second session, 3.95 (*SD* =1.78 min).

In the first session, five out of 11 dyads of participants successfully located each other. In four pairs, only one interlocutor managed to find the correct location, while in two pairs, neither participant did so. Successful dyads generally took longer to complete the task. Others completed it more quickly but identified an incorrect location either a completely different one or with a minor inaccuracy such as being across the street or on the opposite side of the building.

Table 5. Success rates and time needed to complete the Map Task 1.

Successful (*n* = 5)	Time *M* = 5.1 min	*SD* = 1.71 min
Partially Successful (*n* = 4)	Time *M* = 3.23 min	*SD* = 1.59 min
Failed (*n* = 2)	Time *M* = 3.68 min	*SD* = 0.60 min

In the second session, participants showed noticeable improvement both in terms of location identification and time efficiency. The general tendency was that dyads who performed successfully in the first session also did well in the second, with a few exceptions where one interlocutor failed to find the location of another speaker. Conversely, dyads who struggled in the first part of the experiment improved in the second session (see Table 6 for details). Time averages per success group were also lower, meaning both successful and partially successful dyads took less time to achieve their goals.

Table 6. Success rates and time needed to complete the Map Task 2.

Successful (*n* = 6)	Time *M* = 4.96 min	*SD* = 1.86 min
Partially Successful (*n* = 5)	Time *M* = 2.74 min	*SD* = 0.53 min

Regarding the participants' individual success rate, the pattern was the same. Six Estonian and eight Ukrainian participants successfully completed the first session, while five Estonian and three Ukrainian participants did not. In the second session, nine Estonian and eight Ukrainian participants completed the task correctly, while three Ukrainian and two Estonian participants did not complete the task correctly. In total, seven participants (five Estonian and two Ukrainian) improved their performance in the second round. Four participants (two Estonian and two Ukrainian) showed a decline – they were successful in the first round but

not in the second. Eleven participants remained consistent: ten maintained a positive outcome (five Estonian and five Ukrainian), and one Ukrainian participant consistently produced a negative result in both sessions.

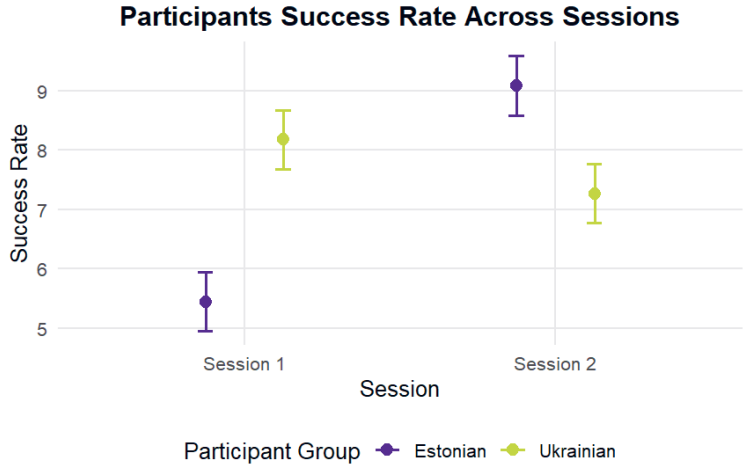


Figure 6. Participants' success rate across the sessions.

When comparing the two groups, there was a difference between the average success rates of Ukrainian and Estonian groups (Figure 5). Estonian participants improved rapidly in the second session, whereas Ukrainian participants, in contrast, did not show a similar improvement.

7.5.2 Language Attitudes results

7.5.2.1 MGT Results

In this section, I first discuss the differences between the two bilingual speakers whose guises were included in the MGT, based on the evaluations provided separately by Ukrainian and Estonian participants. Ukrainian participants evaluated bilingual speakers in Russian almost identical, with the only notable difference found for *beauty* ($p > .068$), where the second bilingual speaker was rated slightly lower than the first. As for bilingual speakers in Ukrainian, all *p*-values exceeded .05, indicating no statistically significant differences between the ratings of the two speakers. Among Estonian participants, evaluations of the two speakers in Russian were also largely consistent. For the Ukrainian guises, the observed differences between the two speakers were modest overall. The effect sizes (Cohen's $d = 0.3–0.6$) indicate medium effects for *beauty* ($d = 0.59$) and *cleverness* ($d = 0.49$). These results imply that participants tended to rate the second bilingual speaker in Ukrainian slightly higher in *beauty* and *cleverness* compared with the first.

Next, I address the MGT results obtained separately from Ukrainian and Estonian participants.

MGT Results for Ukrainian Participants

Ukrainian participants across all six traits showed consistently more positive attitudes towards the Ukrainian guise compared to the Russian one. The largest difference appeared in *friendliness* ($d = 0.68$), which was significant in language attitudes between Ukrainian and Russian ($t(29) = 3.71$, $p < .001$; Wilcoxon $W = 91.0$, $p < .0014$). *Cleverness* also revealed a clear preference for the Ukrainian guise ($d = 0.62$; $t(29) = 3.40$, $p < .002$; $W = 153.0$, $p < .003$), followed by *beauty*, which showed a moderate increase ($d = 0.53$; $t(29) = 2.91$, $p < .007$; $W = 106.5$, $p < .008$). Smaller yet significant improvements were also found for *intelligence* and *normality* ($d \approx 0.46–0.48$), indicating that the Ukrainian guise was perceived slightly more positively across these traits as well. Further details are illustrated in Figure 7.

Table 7. Summary statistics test comparing explicit attitude measures of Ukrainian and Russian by Ukrainian participants.

Dimen-sions	Attitude measure	RUS *M*	RUS *SD*	UKR *M*	UKR *SD*	*M* diff	*t*(df)	Test-statistic (*W*)	*p*	Effect size (Cohen's *d*)
Solidarity	beauty	3.17	0.99	3.87	0.87	0.70	2.91	106.5	0.007	0.532
	normality	3.70	1.26	4.37	0.92	0.67	2.61	102	0.014	0.477
	friendliness	3.03	1.07	3.90	0.89	0.87	3.71	91	0.001	0.677
Status	cleverness	3.17	1.12	4.00	0.94	0.83	3.40	153	0.002	0.621
	intelligence	3.17	1.09	3.83	0.91	0.67	2.52	150	0.017	0.461
	wealth	2.87	0.94	3.63	0.76	0.77	3.10	121	0.004	0.565
Direct evaluation		3.00	1.47	4.93	0.25	1.93	5.037	91	0.0001	1.839

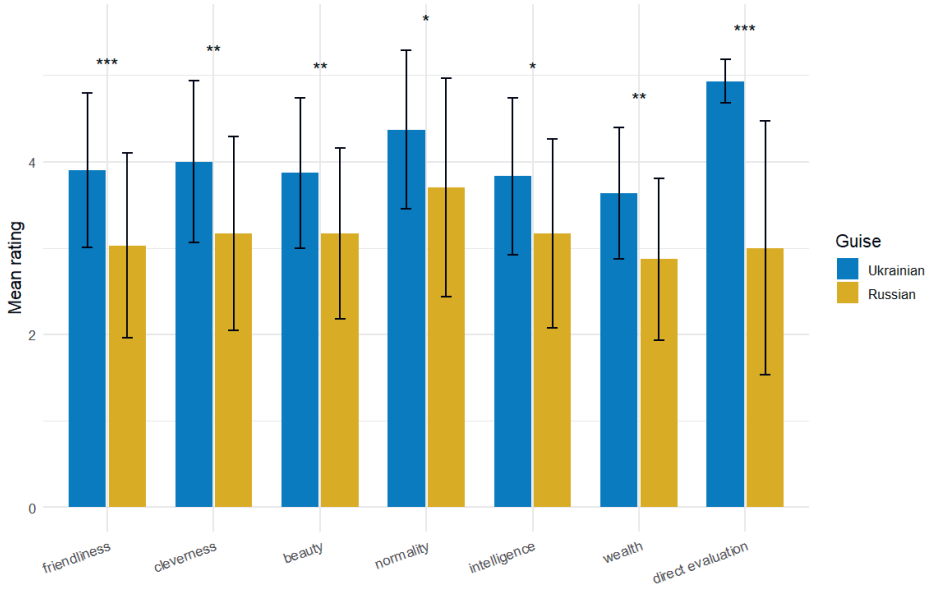


Figure 7. Overview distribution of explicit attitudes ratings towards Russian and Ukrainian by Ukrainian participants.

As for the direct evaluation of Ukrainian and Russian, Ukrainian participants gave a preference towards Ukrainian, and the difference with Russian was large and statistically significant, both parametric $t(14) = 5.04$, $p < .001$ and non-parametric (Wilcoxon $W = 91$, $p < .001$).

Table 8. Summary statistics test comparing explicit language attitudes measures of Ukrainian and Russian by speakers of Estonian.

Dimen-sions	Attitude measure	RUS *M*	RUS *SD*	UKR *M*	UKR *SD*	*M* diff	*t*(df)	Test-statistic (*W*)	*p*	Effect size (Cohen' s *d*)
Solidarity	Beauty	3.50	0.91	3.88	0.86	0.395	1.92	46	0.067	0.376
	Normality	3.12	1.11	3.23	1.03	0.125	1.36	12	0.185	0.267
	Friendliness	4.08	0.80	4.42	0.64	0.356	2.09	63	0.047	0.409
Status	Cleverness	3.65	0.89	4.00	0.85	0.35	1.98	54	0.059	0.388
	Intelligence	3.77	0.95	4.19	0.94	0.42	2.52	87	0.019	0.494
	Wealth	3.19	0.57	3.23	0.59	0.04	0.57	4	0.574	0.112
Direct evaluation		3.92	0.86	4.00	0.71	0.08	0.32	3.5	0.753	0.098

MGT Results for Estonian Participants

Estonian participants across all measures tended to evaluate the Ukrainian guise more favourably than the Russian guise, although the magnitude and significance of these differences varied across traits. For *beauty*, the Ukrainian guise received slightly higher ratings (*M*diff = 0.39, $p > .067$, $d = 0.38$), indicating a small, non-significant effect consistent with the general pattern observed for other solidarity-related traits. Similarly, *friendliness* showed higher ratings for the Ukrainian guise (*M*diff = 0.35, $p > .047$, $d = 0.41$), marking the only solidarity trait approaching statistical significance and suggesting that listeners perceived the Ukrainian speaker as somewhat friendlier. Status-related evaluations also favoured the Ukrainian guise, with a moderate and significant effect for *intelligence*, whereas wealth showed little to no difference between the two. Among the examined dimensions, *intelligence* reached statistical significance ($p < .019$), while *friendliness* ($p < .047$) and *cleverness* ($p > .059$) were borderline significant. 88.2% of Estonian participants identified the language they listened to correctly (Ukrainian or Russian).

Estonian participants directly evaluated the Ukrainian and Russian languages almost equally, with no significant difference found between them, although Ukrainian received slightly higher ratings. The effect size was very small ($d = 0.10$), indicating that participants perceived both guises equally positively overall (see Table 8 and Figure 8 for the reference).

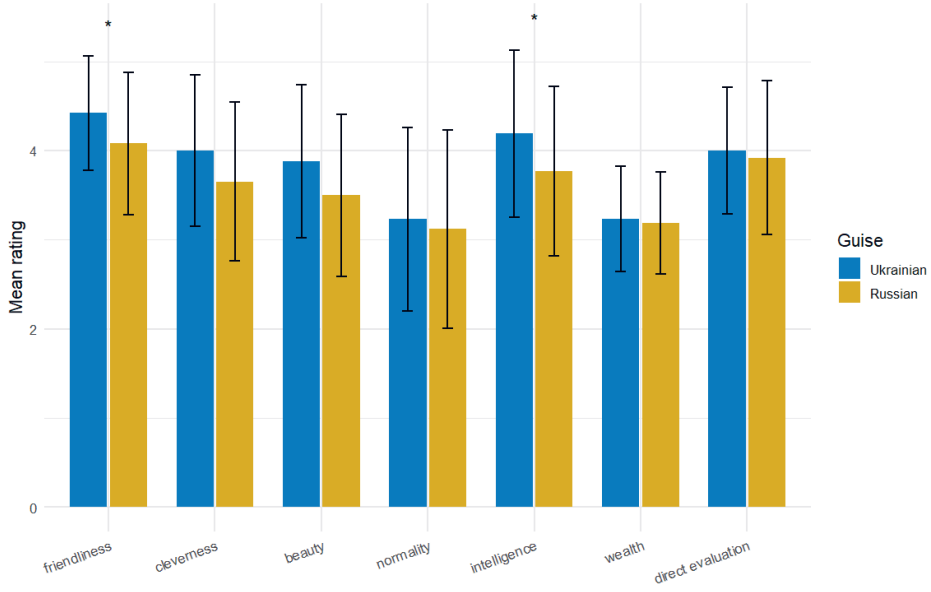


Figure 8. Overview distribution of explicit attitudes ratings towards Russian and Ukrainian by Estonian participants.

Comparison of MGT Results between Estonian and Ukrainian Participants

Finally, I compared language attitudes towards the Ukrainian and Russian guises between Estonian and Ukrainian participants. For the Ukrainian guise, the overall ranking patterns were highly similar, with both groups evaluating the Ukrainian more positively than the Russian. However, Ukrainian participants rated the trait of *normality* substantially higher ($M = 4.31$) than Estonian participants ($M = 3.23$), resulting in a large and highly significant effect ($p < .001$, $d = –0.93$). They also evaluated *friendliness* more favourably ($M\text{diff} = 0.58$, $p > .026$, $d = 0.47$), indicating that Ukrainian listeners perceived the Ukrainian guise as warmer and more relatable than Estonian listeners. The rest of the traits were evaluated as nearly similar. For the Russian guise, Estonian participants gave slightly higher ratings than Ukrainian participants overall. The only trait showing a significant difference was *friendliness* ($p < .001$, $d = –0.93$), with Estonians evaluating the Russian guise as noticeably friendlier. No significant differences were found for the remaining traits. In turn, Ukrainian participants evaluated the *normality* of Russian slightly higher than Estonian participants ($d = 0.30$).

7.5.2.2 IAT Test Results

The implicit language attitudes were assessed using the IAT, where positive D-scores reflect more positive implicit attitudes, whereas negative D-scores indicate more negative attitudes.

IAT Results for Estonian Participants

Estonian participants showed comparable implicit evaluations of the Ukrainian and Russian, although slightly faster associations were observed between Ukrainian stimuli and positive attributes, indicating a slightly more positive attitude towards Ukrainian (although it did not reach significance). For the Ukrainian guise, the mean *D*-score was 0.16 ($SD = 0.57$), $t(12) = 0.99$, $p > .34$). Similarly, for the Russian guise, the mean D-score was 0.11 ($SD = 0.50$), $t(12) = 0.78$, $p > .45$).

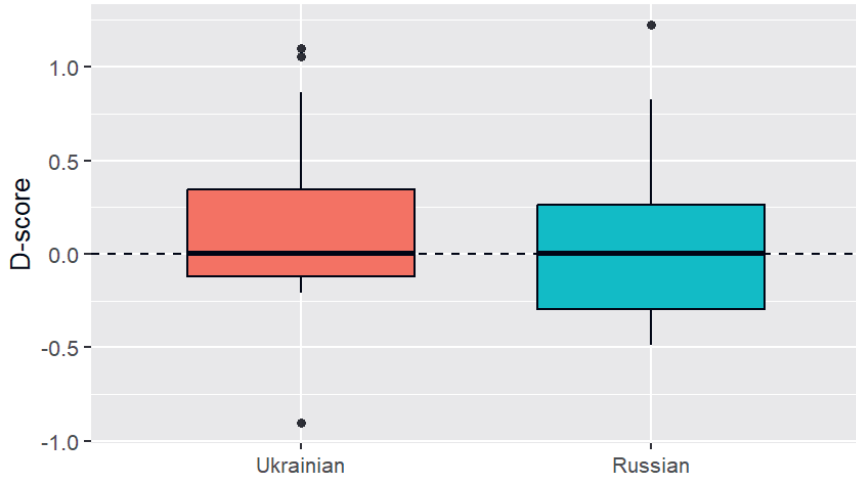


Figure 9. Dispersion of D-Scores (Implicit Attitudes) towards Russian and Ukrainian by Estonian participants.

IAT Results for Ukrainian Participants

As for the Ukrainian participants, the mean D-score was 0.01 (SD = 0.41), $t(15)$ = 0.10, p > .93) in language attitudes towards Ukrainian, suggesting that participants did not exhibit a significant implicit preference or bias towards or against Ukrainian. For the Russian guise, the mean D-score was 0.18 was also not statistically significant (SD = 0.45), $t(15)$ = 1.64, p > .12). However, it is slightly higher, suggesting a weak tendency towards a more positive implicit evaluation of Russian.

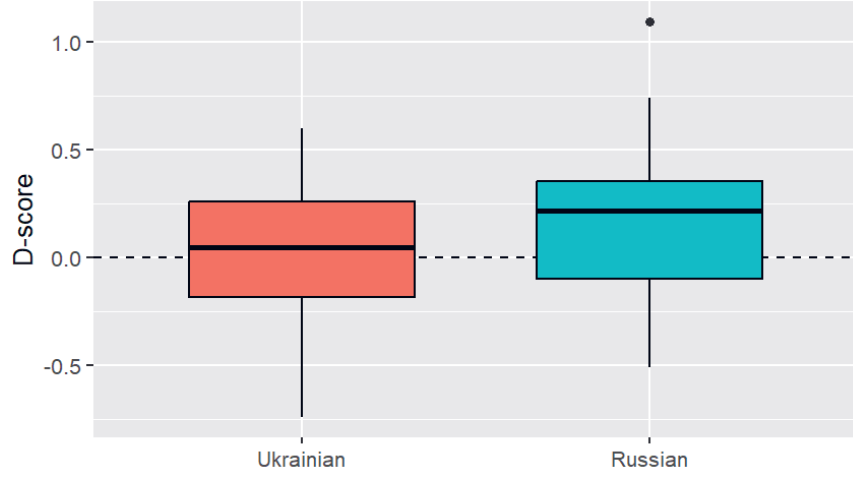


Figure 10. Dispersion of D-Scores (Implicit Attitudes) towards Russian and Ukrainian by Ukrainian participants.

An independent samples *t*-test revealed no statistically significant differences in D-scores between the two participant groups. For the Ukrainian guise, the mean difference between Ukrainian participants (M = 0.01, SD = 0.41) and Estonian participants (M = 0.16, SD = 0.57) was not significant, $t(21.36) = -0.78$, $p > .45$), although Estonian participants showed slightly higher scores on average. Similarly, for the Russian, the difference between Ukrainian (M = 0.18, SD = 0.45) and Estonian participants (M = 0.11, SD = 0.50) was also non-significant, $t(24.29) = 0.42$, $p > .68$), although Ukrainian participants received higher scores, suggesting a preference towards Russian.

7.5.3. Correlation between Language Attitudes and Communicative Success[15]

Multiple linear regression analyses were conducted to determine whether explicit (MGT) or implicit (IAT) attitudes better predicted communicative success. Separate models were run for Ukrainian and Estonian participants and for attitudes towards Ukrainian and Russian languages.

For Ukrainian participants, the model based on attitudes towards Russian explained 87.2% of the variance in communicative success. In contrast, the model for attitudes towards Ukrainian explained 83.3% of the variance.

For the Estonian participants, none of the predictors reached statistical significance. The model for attitudes towards Russian explained approximately 68% of the variance in communication outcomes. The model for attitudes towards Ukrainian failed to account for a meaningful proportion of variance, and no predictors were significant.

Kendall's Tau correlation tests were subsequently performed to examine the relationship between attitudes and communicative success. The correlation between implicit attitudes (D-scores) towards Russians and communicative success showed a weak negative trend, whereas stronger implicit associations towards Ukrainians were linked to slightly higher communication scores; however, neither relationship was statistically significant ($p > 0.31$). Among Ukrainian participants, correlations between communicative success and attitudes towards Ukrainian ($\tau = 0.114$, $p > 0.6$) and Russian ($\tau = 0.023$, $p > 0.93$) were both weak and non-significant.

Table 9. The correlation of the IAT results with the communicative success.

Participants	Attitudes towards	Tau τ	Z	p
Estonian	Russian	–0.306	–1.189	0.234
	Ukrainian	0.262	1.019	0.308
Ukrainian	Russian	0.023	0.087	0.931
	Ukrainian	0.114	0.436	0.663

[15] In this analysis, we included only participants who took part in both parts of the experiment.

In the MGT results, with Ukrainian participants only, the trait of *intelligence* towards Ukrainian showed a marginally significant positive correlation with communicative success ($\tau = 0.537$, $p = 0.051$), aligning with the regression results and suggesting that participants who perceived Ukrainians as more intelligent tended to communicate more successfully. For Russian, *normality* displayed a moderately strong positive trend ($\tau = 0.53$, $p = 0.058$), indicating that perceiving Russians as more 'normal' might relate to higher communicative success, though this association remained marginally significant (see Table 10 for the details).

Table 10. The correlation of the MGT results with the communicative success.

Participants	Attitudes towards	Measure	Tau τ	p
Estonian	Ukrainian	Intelligence	0.000	1.000
		Friendliness	–0.175	0.549
		Wealth	0.000	1.000
		Beauty	0.071	0.794
		Cleverness	–0.024	0.930
		Normality	0.000	1.000
	Russian	Intelligence	–0.255	0.342
		Friendliness	–0.266	0.332
		Wealth	0.000	1.000
		Beauty	–0.050	0.858
		Cleverness	–0.263	0.335
		Normality	–0.076	0.786
Ukrainian	Ukrainian	Intelligence	0.537	0.0506
		Friendliness	0.126	0.651
		Wealth	0.199	0.472
		Beauty	0.378	0.175
		Clever	0.299	0.280
		Normality	0.024	0.929
	Russian	Intelligence	0.049	0.858
		Friendliness	0.370	0.178
		Wealth	0.227	0.416
		Beauty	0.222	0.422
		Clever	0.121	0.658
		Normality	0.529	0.0577

For Estonian participants, there were no significant correlations between communicative success and any of the attitude dimensions towards either the Ukrainian or Russian guises. All Kendall's Tau values were close to zero, indicating no meaningful relationship across all language attitude traits and communicative success.

7.6 Discussion and Conclusions

First, I empirically explore online spoken interaction in the mode of mediated RM between Estonian native speakers with Russian passive language proficiency and Ukrainians with limited knowledge of Estonian. The results demonstrated that communication between Ukrainian and Estonian participants is possible through RM, despite the lack of experience of the participants with it. While Ukrainian participants needed to understand Estonian directly through their knowledge of the language (acquired RM), Estonian participants were able to comprehend Ukrainian via their knowledge of Russian, using the mediated type of RM. In the first session, participants completed the communication tasks with 45.5% being fully successful, 36.4% partially successful, where one participant located the target while the other did not, and 18.2% failed interactions, in which neither interlocutor was able to identify the other's location.

Next, I analysed the progression of communicative success between two sessions of the same complexity that are following each other. Although the Map Tasks were counterbalanced, participants performed notably better in the second session, achieving 54.5% fully successful and 45.5% partially successful outcomes. These results are consistent with previous studies on written comprehension, which also reported improved performance in the later stages of the task, reflecting the implicit effect of learnability (Branets et al., 2020). The findings suggest that participants engaged in an implicit learning process resembling predictive and adaptive mechanisms described in cognitive linguistics (Clark, 2013). Their comprehension improved through the continuous adjustment of expectations and interpretations in line with contextual input and adaptive optimisation strategies (Kleinschmidt & Jaeger, 2015).

As the results indicate, the study has certain limitations, which may be attributed to the fact that participants in the study did not always achieve full success, as shown in the results, might be due to their limited familiarity with RM and the lack of sufficient common ground with their interlocutors. Nevertheless, progress was observed from the first to the second session, suggesting that participants adapted after their initial interaction. Previous studies have reported positive outcomes when the use of RM was explicitly agreed upon and systematically practised in academic settings (Ribbert & Ten Thije, 2007). Further conventionalisation of RM and its more frequent use in naturally occurring conversations could therefore enhance communicative effectiveness and lead to improved outcomes.

When examining the performance of each group separately (Estonian vs. Ukrainian), I found that the Estonian participants improved their individual communicative success in the second session, whereas Ukrainian participants, conversely, showed a decline in performance. Estonian participants relied on their knowledge of Russian to understand Ukrainian, and with repeated exposure, this mediated comprehension likely improved as they became more familiar with the Ukrainian language. The Ukrainian participants, however, had to rely directly on their knowledge of Estonian, which may have offered fewer linguistic cues for improvement, potentially leading to fatigue or reduced accuracy in the second session. In addition, Estonian participants may have developed more effective communicative strategies by the second session and gained a clearer understanding of how mediated RM operates. Previous studies reported that participants with limited grammatical or lexical competence compensated by actively using and eliciting meta-communicative devices (MCDs), particularly when anticipating communicative difficulties (Bahtina-Jantsikene & Backus 2016). In a follow-up study it would advisable to analyse communicative strategies that were used in Estonian-Ukrainian interactions to shed more light on communicative strategies.

Implicit attitudes reveal unconscious and automatic reactions, whereas explicit attitudes reflect more deliberate and socially mediated evaluations shaped by conscious beliefs and social stereotypes. Testing both explicit and implicit language attitudes offers a comprehensive understanding of participants' language attitudes. In this study, implicit and explicit language attitudes towards Russian and Ukrainian were examined among Ukrainian and Estonian participants, and the hypothesis regarding the differences in implicit and explicit attitudes towards the two languages was confirmed. Ukrainian participants explicitly preferred Ukrainian speech for its perceived social attractiveness and status, while implicitly favouring Russian speech, which can be associated with higher linguistic competence. Russian was imposed in Ukraine during the Soviet period and held a higher status than Ukrainian for an extended time (Verschik, 2010), resulting in a generally high level of Russian language proficiency among Ukrainians. Although the Ukrainian participants in this study (aged up to 38 years) did not experience extensive exposure to Russian during the Soviet era, it is reasonable to assume that their linguistic proficiency influenced their implicit attitudes. The IAT is based on the principle that people respond faster and more accurately to stimuli that are strongly associated in memory (De Houwer et al., 2009). Accordingly, it may be suggested that faster reactions were linked to the participants' greater proficiency in Russian, particularly if it was the language used at home during childhood or within their surrounding linguistic environment.

In terms of explicit language attitudes, Ukrainian participants evaluated Ukrainian speech highly across all evaluative traits except for *richness*, while Russian received higher ratings on the trait of *normality*. Although Ukrainian participants implicitly showed a preference for Russian over Ukrainian, they appeared to compensate for this by assigning higher explicit ratings to Ukrainian.

This pattern is consistent with findings from a study on Korean-accented American English, in which participants who held more negative implicit attitudes expressed more favourable explicit evaluations towards the Korean-accented speaker (Pantos & Perkins, 2013).

Estonian participants displayed both explicit and implicit preferences for Ukrainian speech and expressed more negative attitudes towards Russian. Estonian participants rated Ukrainian speech as more *beautiful, intelligent,* and *clever*, while their evaluations of *normality* and *richness* were similar for both languages. Interestingly, that both languages were rated very highly in terms of *friendliness* by Estonian participants.

Finally, I explored the role of language attitudes towards Russian and Ukrainian in Estonian-Ukrainian RM by examining the correlation between language attitudes and the success rate of the communication experiment. A Kendall's Tau correlation test revealed that the traits of *intelligence* in Ukrainian and *normality* in Russian were marginally significant predictors of communicative success among Ukrainian participants. No correlation was found for implicit language attitudes within the Ukrainian group. For the Estonian group, no significant correlations emerged between explicit and implicit attitudes. Nevertheless, in relation to Russian, the regression model indicated that implicit language attitudes contributed most to improved comprehension across all explicit attitude traits, although this effect did not reach statistical significance.

The lack of significant correlations may indicate that language attitudes do not directly influence intelligibility but instead exert their effect through other mediating factors. Golubović (2016: p. 125) similarly observed that language attitudes may play a greater role in motivation than in intelligibility, suggesting an indirect rather than a direct relationship. This observation aligns with earlier research highlighting that language attitudes constitute an essential component of motivational frameworks in language acquisition (Dörnyei, 1998).

It is also plausible that language attitudes interact with other factors whose influence may overshadow their individual effect. For example, a comparable dynamic may exist between language attitudes and exposure, as shown in a study of sixteen European languages from the Germanic, Romance, and Slavic groups, where language attitudes were found to be moderated by the extent of language exposure (Gooskens & van Heuven, 2020).

One final explanation concerns the multifaceted nature of communication itself, which extends far beyond intelligibility and encompasses a range of linguistic, pragmatic, and social dimensions. Communicative competence entails not only linguistic knowledge but also the ability to apply sociocultural conventions appropriately (Long, 1981: 275; Block, 2003: 61). Successful communication requires pragmatic language use and the deployment of communicative strategies to establish common ground with the interlocutor (Clark, 1996). Measuring communicative success, however, remains a complex task. It may therefore be assumed that, within the broad spectrum of linguistic, extralinguistic, communicative, and individual factors, language attitudes influence communicative success indirectly or in interaction with other factors.

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CHAPTER 8. GENERAL DISCUSSION AND CONCLUSIONS

The aim of this dissertation is to investigate the potential of mediated RM between the genetically unrelated and typologically different Ukrainian and Estonian, with understanding facilitated through a mediating language that is closely related to the target, in this case, Russian, given its typological proximity with Ukrainian. First, I examined the comprehension of written Ukrainian by Estonian L1 speakers. The analysis revealed several linguistic and extra-linguistic factors influencing comprehension, including proficiency in Russian, perceived and objective similarities, availability of explicit instructions outlining differences and similarities between the languages, and exposure to Russian. Additional factors such as metalinguistic awareness, exposure to different registers, general knowledge, context, and experience in multilingual communication also emerged as relevant. Second, I investigated language attitudes towards Russian and Ukrainian among both Ukrainians and ethnic Estonians. Finally, I conducted a communication experiment between Ukrainians and Estonians using RM and explored the role of language attitudes in determining communicative success.

This dissertation starts with rethinking the concept of RM by addressing the frequent misalignment between mutual intelligibility, the individual ability to recognise and employ linguistic similarities, and mutual understanding as the final outcome of interaction. While typological similarities are important, it is ultimately the individual who, through metalinguistic awareness, mobilises plurilingual resources during interaction or text comprehension (Bahtina-Jantsikene, 2013; Gooskens & van Heuven, 2017). Much of the existing research on RM has operated under the assumption that typological material similarity ensures comprehension and communicative success, paying comparatively little attention to the creativity and communication strategies interlocutors employ to reach understanding, focusing mostly on asymmetry. This dissertation builds on studies that have shown that similarity and typological proximity alone do not guarantee comprehension (Verschik 2012; Bahtina-Jantsikene 2013; Muikku-Werner 2013; Härmävaara 2014; Kaivapalu 2015), and argues for a broader perspective that integrates individual, interactional, and contextual factors into the study of RM.

This Chapter summarises and discusses the results presented in Chapters 3–7, along with methodological considerations and directions for future research.

8.1 Ukrainian-Estonian Mediated Receptive Multilingualism

Chapter 2 provides an overview of the theoretical background on RM, with a particular focus on its mediated type. It outlines the key linguistic factors, such as objective and perceived similarities between languages and language proficiency, as well as extra-linguistic factors, including language exposure to Russian, the learnability effect, language attitudes, metalinguistic awareness, the role of the context and general knowledge, etc. Furthermore, it gathers investigations of

comprehension both in written text and in actual communicative interaction. This chapter establishes the theoretical foundation for the entire thesis and provides the framework for the analyses presented in the subsequent chapters.

In Chapter 3, the authors measured the comprehension of Ukrainian written text by 20 L1 speakers of Estonian. The findings showed that Estonian participants with no prior exposure to Ukrainian were able to comprehend Ukrainian written texts by drawing on their knowledge of Russian, a mode of communication referred to as mediated RM. Participants performed considerably better in text comprehension (83.98%, *SD* = 4.08) than in the word recognition task (61.76%, *SD* = 8.01), suggesting a stronger reliance on contextual cues rather than individual lexical items. The Estonian participants themselves reported that they understood 62% (*SD* = 10.65) of the Ukrainian tasks. Most of the participants did not expect to understand Ukrainian without prior exposure and were surprised by the level of comprehension they achieved. Notably, the self-reported comprehension was lower than the measured actual comprehension. This discrepancy indicates that the participants may have underestimated their actual comprehension, reflecting limited confidence in whether they had correctly identified cross-linguistic similarities between Ukrainian and Russian.

The qualitative analysis revealed that Estonian participants, while drawing on linguistic similarities between Russian and Ukrainian, were also strongly influenced by extra-linguistic factors such as exposure to Russian and its various registers, metalinguistic awareness, and M-factor, motivation, and language attitudes towards Ukrainian, and finally by the explicit and implicit instructions or learnability.

The analysis of language exposure in Estonia revealed a clear pattern based on the linguistic environment in which the participants lived. These environments differ across the country, being either Russian-speaking or Estonian-speaking. (Rannut, 2005: 31–34). It was found that the environment with more exposure to Russian generally influenced participants' comprehension of Ukrainian, with the exception of older individuals who had extensive exposure to Russian during the Soviet period. Additionally, Estonian participants tended to understand texts more successfully when the content was closer to their professional or academic field. Professional background appeared to influence exposure to and use of Russian; however, its impact on the comprehension of Ukrainian varied across individuals. For instance, participants who regularly interacted with clients in Russian reported greater exposure to different registers, although this effect was more individual than systematic. Because certain registers in Russian, such as archaic or high style, or conversely, colloquial and pejorative varieties, have Ukrainian cognates with neutral connotations, exposure to these different registers showed that they enhance comprehension in Ukrainian. For example, the Russian word *очи* (*ochi,* 'eyes'), used in poetic or archaic style, has a cognate in Ukrainian *очі* (*ochi*, 'eyes'), which may aid comprehension, whereas the common modern Russian equivalent is *глаза* (*glaza*, 'eyes'). However, the Russian word *очки* ('glasses') is derived from the same stem. Participants who

knew this cognate from songs or literature, or who associated it with the word *очки* (*ochki*, 'glasses'), recognised it correctly.

Metalinguistic awareness is a key mechanism enabling participants to connect linguistic systems and draw parallels between related languages, even without explicit instruction. It allows multilingual individuals to identify cross-linguistic correspondences, focus on relevant patterns, and disregard unfamiliar elements that do not hinder overall comprehension. The findings suggest that multilingual experience fosters the development of such awareness, enhancing participants' ability to recognise similarities and transfer knowledge across languages. Although this process remains largely implicit and warrants further investigation, the results indicate that prior experience with related languages, such as Estonian and Finnish, may facilitate comprehension of other language pairs like Russian and Ukrainian. This highlights the potential of metalinguistic awareness as a transferable cognitive skill that supports RM communication and suggests a promising direction for future research.

Motivation proved to be an important factor influencing participants' comprehension of Ukrainian texts, driven not by instrumental goals but by sociopolitical interest and access to Ukrainian media. It is important to note that this experiment was conducted before the full-scale Russian invasion of Ukraine in 2022. All participants displayed positive or neutral attitudes towards Ukrainian, which closely aligned with their motivation, as the two constructs are inherently interrelated. Participants with lower confidence but higher motivation achieved better comprehension results, whereas overconfidence based on perceived similarity between Ukrainian and Russian occasionally hindered performance. Similarly, Mustajoki (2021) notes that miscommunication often arises from the *common ground fallacy*, when interlocutors falsely assume shared knowledge or understanding and therefore neglect to adjust their messages to the recipient's perspective.

In the same Chapter, learnability was identified as a key factor in mediated RM. Estonian participants who received prior instructions achieved higher comprehension of Ukrainian texts, with a mean success rate of 74% (SD = 21.38) compared to 57% (SD = 11.72) in the uninstructed group, underscoring the importance of explicit learning. Participants who received prior linguistic instructions achieved significantly higher word-level comprehension ($F(1, 18) = 4.415$, $p = .50$) than those without instructions. At the same time, the significance was not found at the text level. Participants without instructions also showed significant progress, improving their performance across successive texts (text 2: $M = 72.3$, $SD = 12.87$; text 3: $M = 83.2$, $SD = 13.47$), demonstrating implicit learnability. This indicates that participants actively expand their linguistic resources and develop strategies as they engage with new texts. Comprehension, therefore, arises from the interaction between shared sense knowledge grounded in prior experience and established sense, meaning constructed dynamically during communication (Liu & Liu, 2017). Overall, the findings confirm that mediated RM can function as an effective bridge in the early stages of acquiring a new language, particularly when contextual support is available.

In Chapter 4, the role of linguistic proficiency was examined in greater detail with a sample of 30 Estonian L1 participants. Before the main experiment involving a Ukrainian text, participants completed a C-test designed to assess their level of proficiency in Russian. The overall success rate on the Russian C-test performance among Estonian participants was 66% (*SD* = 12.9). It was assumed that the types of errors made in Russian would likely carry over to the comprehension of Ukrainian. Therefore, the authors analysed the C-test errors to identify which aspects of Russian posed the greatest challenges for L2 speakers and were thus less likely to support L3 comprehension in Ukrainian. The lowest-scoring items were mainly lexical words that participants were unfamiliar with, either due to their low frequency or their association with specialised semantic domains. Some items created confusion because of phonological or lexical overlap with Estonian, leading to incorrect assumptions about meaning (false friends).

Russian proficiency correlated strongly with performance on both Ukrainian tasks (word recognition and overall text comprehension), although the relationship was more pronounced for word recognition than for text comprehension. These findings suggest that although Russian proficiency strongly predicts the comprehension of a typologically related L3 such as Ukrainian, it does not, on its own, fully explain comprehension outcomes, especially at the level of text understanding. Estonian participants effectively used their Russian knowledge to identify individual Ukrainian words; however, their understanding of complete texts depended more on contextual interpretation, world knowledge, and familiarity. These findings show that comprehension in RM extends beyond lexical and grammatical competence and is shaped by cognitive and pragmatic strategies that enable learners to infer meaning beyond structural similarities.

Following this in Chapter 5, the authors looked into the role of cross-linguistic similarity, both objective or perceived (Ringbom, 2007). The analysis is based on data from the previous experiment, with the focus on word definition tasks. In this task, participants achieved the highest scores for cognates with the same meaning (70.4%, *SD* = 7.57), lower scores for divergent cognates (53.82%, *SD* = 4.60), and the lowest scores for unrelated words (30.83%, *SD* = 7.02). A qualitative analysis of the results revealed several consistent patterns. For cognates with the same meaning, three main tendencies emerged: (i) similarity was sometimes overlooked, leading to both correct and incorrect interpretations; (ii) differing inflections caused confusion; and (iii) some cognates were not recognised at all. In the case of divergent cognates, context often supported comprehension, although not always successfully. For unrelated words, participants relied primarily on contextual cues, general knowledge, and knowledge of other languages, demonstrating an increased level of metalinguistic awareness. For example, the Ukrainian word *фахівці* (*fakchivtsi*, 'experts') corresponds to *эксперты* (*eksperty*, 'experts') in Russian and *eksperdid* ('experts') in Estonian. Participants, however, often interpreted it contextually as *uurijad* ('researchers'), *teadlased* ('scientists'), *uurimus* ('research'), or *psühholoogid* ('psychologists').

The findings indicate that although linguistic similarity contributed to comprehension, it was not the main factor determining success. For example, in many

cases, perceived similarity outweighed objective similarity, and participants relied less on linguistic form and more on contextual and cognitive strategies. Participants' reflections suggested that a combination of extra-linguistic influences, such as contextual cues, prior knowledge, familiarity with various registers, metalinguistic awareness, and learnability, often played an equal or greater role in supporting understanding.

In Chapter 6, the authors discussed the role of exposure to Russian on comprehension of Ukrainian by speakers of L1 Estonian. First, we tested the relationship between different levels of language exposure (from low to high) and the C-test, which measured the language proficiency in Russian. The results have shown a clear association between exposure to Russian and language proficiency in Russian (low exposure $M = 43.28$, $p < .01$, medium $M = 57.88$, $p < .02$ and high $M = 58.28$, $p < .02$). Lower exposure and lower proficiency showed a stronger relationship, suggesting that limited L2 proficiency and limited L2 exposure are more closely interconnected.

Next, we examined the relationship between language exposure to Russian and performance in the Ukrainian word recognition tasks. The results showed significant differences between the low- ($M = 27.65$) and medium-exposure groups ($M = 37.95$, $p < .01$) and between the low- and high-exposure groups ($M = 36.30$, $p < .03$), indicating that even moderate contact with the mediating language can enhance comprehension at the lexical level. However, no significant association was found between language exposure and overall comprehension of Ukrainian texts, suggesting that exposure to Russian influenced understanding only at the vocabulary level rather than at the level of general text comprehension.

Following this, the role of language exposure on comprehension was analysed in groups with and without prior instructions. No significant association was found between C-test results and language exposure in the instructed group ($M = 58.48$), while a significant relationship emerged in the uninstructed group ($M = 50.48$, $p < .01$). These results indicate that the effects are not cumulative, suggesting that explicit instructions about cross-linguistic similarities and differences may, to some extent, substitute for natural exposure by making insights explicit that learners might otherwise acquire implicitly.

When examining the relationship between language exposure and performance on the Ukrainian word definition task, no association was found with the results of the group that received instructions ($M = 38.88$, $p > .70$), whereas a moderate association emerged with the results of the uninstructed group ($M = 31.51$, $p = .052$). This indicates a link between language exposure in Russian and word recognition in Ukrainian among participants who did not receive prior instructions. However, no effect was observed between Russian language exposure and overall Ukrainian text comprehension in either group.

These results indicate that regular contact with the mediating language strengthens grammatical and lexical proficiency and supports incidental learning across related languages. However, this effect was not observed at the text level, suggesting that understanding larger linguistic units relies on broader contextual and cognitive factors beyond lexical similarity. When comparing groups with

different degrees of exposure, significant differences appeared only between low and medium or low and high exposure levels, implying that even limited exposure provides a substantial boost, while additional contact yields diminishing returns. Formal instruction, in turn, appeared to neutralise differences in exposure, likely due to a ceiling effect where explicit guidance compensates for varying degrees of implicit learning. Overall, these findings highlight that while exposure enhances vocabulary-level comprehension in mediated RM, successful text-level understanding depends on a complex interplay of linguistic, metalinguistic, and experiential factors.

Chapter 7 reports on language attitudes towards Ukrainian and Russian by Ukrainians and Estonian participants and communication in RM. The results revealed clear differences in language attitudes between the two groups. Ukrainian participants explicitly preferred Ukrainian speech for its social attractiveness and status but demonstrated an implicit preference for Russian, associating it with higher linguistic competence. In their explicit evaluations, they rated the Ukrainian guise highly across all traits except *richness*, while they evaluated Russian as having higher *normality*. In contrast, Estonian participants displayed both explicit and implicit positive attitudes towards Ukrainian. Explicitly, they evaluated Ukrainian speech as more *beautiful*, *intelligent*, and *clever*, while rating *normality* and *richness* similarly for both languages. Overall, these findings indicate that explicit and implicit attitudes measure different dimensions. Implicit attitudes represent unconscious, automatic responses, whereas explicit attitudes involve conscious, reflective evaluations influenced by personal beliefs and social norms. Using both measurements provides a comprehensive overview of language attitudes.

The communication between Ukrainian and Estonian speakers is possible through RM, even without prior experience using it. Estonian participants effectively employed mediated RM, relying on their knowledge of Russian to understand Ukrainian, while Ukrainian participants relied on their acquired knowledge of Estonian. A comparison of the two Map Task sessions revealed clear progress across dyads: in the first session, 45.5% of interactions were fully successful and 36.4% partially successful, and 18.2% unsuccessful, whereas in the second session, 54.5% were fully successful and 45.5% partially successful. This suggests the learning trajectory in the communication task. Regarding individual group outcomes, Estonian participants demonstrated clear improvement in the second session, indicating a possible implicit learning effect. In contrast, Ukrainian participants' performance declined, a tendency that requires further investigation through a detailed analysis of communicative strategies. Successful dyads typically took longer to complete the task, while faster pairs often chose incorrect or slightly misplaced locations.

When examining the link between language attitudes and communication, weak positive correlations were found among Ukrainian participants between communicative success and explicit evaluations of *intelligence* in Ukrainian ($\tau = 0.537$, $p = 0.051$) and *normality* in Russian ($\tau = 0.53$, $p < .058$). In contrast, no significant correlations emerged for the Estonian participants. Overall, the

findings suggest that successful multilingual interaction depends not only on language attitudes but also on a broader set of factors, which attitudes may influence either directly or in interaction with other variables.

To conclude, comprehension in mediated RM is shaped by an inventory of linguistic and extra-linguistic variables. Among the linguistic factors, Russian proficiency, perceived and objective similarities between Russian and Ukrainian, were found to facilitate comprehension. Extra-linguistic factors included exposure to Russian, including exposure to different language registers, context, learnability, language attitudes, experience in multilingual communication, metalinguistic awareness, and general knowledge.

The results highlight that mediated RM presents a learning trajectory and facilitates some types of incidental learning through a language medium. Successful understanding can occur even with limited linguistic resources when participants engage actively with the context and draw on their broader multilingual repertoires. This underscores the importance of integrating communicative practice into language pedagogy and of viewing language learning not merely as the acquisition of grammar and vocabulary, but as the development of strategies for effective communication in new linguistic environments.

8.2 Methodological Considerations

When investigating mutual intelligibility, researchers employ a range of methodological approaches depending on the research questions and the degree of relatedness between the languages under study (Gooskens, 2013). In this PhD thesis, several complementary methods were employed to address these research aims. These included a C-test to assess Russian language proficiency; a word definition task, as well as listening and text comprehension tasks in Ukrainian; self-reported comprehension, IAT to measure implicit language attitudes; MGT to assess explicit attitudes; and a series of Map Tasks used to conduct the communication experiment. The order is presented in the same way as the experimental designs.

The C-test is a widely recognised tool for assessing overall language proficiency, as it effectively measures both lexical and grammatical knowledge. In this thesis, it was employed to evaluate participants' L2 Russian proficiency, based on the assumption that higher proficiency would facilitate comprehension of Ukrainian. The results revealed a strong correlation between C-test performance and Ukrainian word recognition but a weaker relationship with overall text comprehension. This indicates that grammatical knowledge alone is not sufficient for understanding an unfamiliar yet related language. Instead, successful text comprehension depends on broader communicative and contextual skills. These findings align with SLA research emphasising that grammar instruction should be complemented by communicative practice, since grammatical knowledge can also be acquired implicitly through meaningful language use. Although the C-test

is often claimed to measure overall comprehension, it appears to be more suitable for assessing vocabulary knowledge.

Both self-reported comprehension (asking participants how well they think they understand a language) and actual comprehension (testing their understanding) can be applied in RM studies. Actual, or *functional intelligibility,* can be tested in various ways (Gooskens, 2024). In this study, both word definition and overall text comprehension were tested. The word definition task is one of the most established tools for assessing comprehension. It was adapted for this thesis, and words were placed in the context, providing a more naturalistic evaluation of understanding. As proficiency was assessed through a bridging language (Russian-Ukrainian), participants were able to draw on contextual cues and interlingual associations to interpret meaning, making this test particularly effective in the context of mediated RM. Similarly, the text comprehension tasks were modelled on standardised language testing formats and included open, multiple-choice, and true/false questions. To further support comprehension, a listening task was incorporated to activate listening perception, particularly relevant given the difference in alphabets between Estonian and Ukrainian. The results indicated that comprehension of the texts improved when the listening task was accompanied by explicit instructions (see Chapter 3). The open questions proved difficult to evaluate and considerably increased the overall duration of the experiment. It is therefore recommended to replace open questions with a brief text retelling task, which would provide more structured and comparable insights into participants' comprehension.

The simplest way to measure *judged* or *estimated intelligibility* is to ask participants to indicate how well they believe they understand a language or a sample produced in it (Haugen, 1966). This approach provides a quick and straightforward estimate of intelligibility. In mediated RM, this method was administered after the test, as participants had no prior knowledge of the target language. Based on the present findings, it is recommended to prepare a short post-test questionnaire with targeted questions to obtain more precise evaluations.

The IAT in this thesis was implemented using the open-science platform PCIbex Farm, which enabled the test to be conducted online and streamlined both the procedure and participant recruitment. The platform made it possible to combine visual and auditory stimuli while eliminating the need for the researcher's presence, thereby enhancing the validity of measuring implicit language attitudes by minimising potential external influence. At the same time, the test required certain methodological refinements to improve its validity. While the test randomises stimuli, it does not currently randomise block order. Testing two versions with alternating block sequences, such as "Russian-negative/ Ukrainian-positive" and the reverse, helps minimise systematic bias and improve the reliability of the findings. Accordingly, two versions of the test were prepared in different orders to reduce potential language bias. However, technical limitations arose, as the test was not compatible with all browsers: in some cases, it failed to load entirely, while in others it stopped midway, preventing the audio

stimuli from playing. These issues could negatively affect data quality if participants attempted the test multiple times across different browsers and could also hinder recruitment if some participants chose to withdraw.

Although the MGT is traditionally used to measure implicit language attitudes, in this thesis, it was employed to assess explicit attitudes. Two bilingual speakers served for four guises (two in Ukrainian and two in Russian) except for the fillers, and the test included direct questions about language attitudes. The MGT was incorporated into the sociolinguistic questionnaire that was administered immediately after the IAT. When I compared the evaluation of the two bilingual speakers, minimal differences were found. Among Ukrainian participants, only *beauty* was nearly significant ($p < .068$), while all other traits showed no statistical difference ($p > .05$). For Estonian participants, modest medium effects were observed for *beauty* ($d = 0.59$) and *cleverness* ($d = 0.49$), indicating a slight preference for the second bilingual speaker in Ukrainian. Although indirectly, with appropriate adjustments, this method can effectively be used to measure explicit language attitudes.

The Map Task is an effective tool for measuring communicative success and has been adapted from the study by Bahtina, Ten Thije, and Wijnen (2013: 166). In this thesis, the maps were supplemented with real-life landmarks to stimulate more natural, context-based interactions and encourage participants to employ a broader and more varied vocabulary. To enhance the task design, it is recommended to include multiple possible routes to the target meeting point, enabling a more nuanced assessment of comprehension and communicative strategies. Participants could also be asked to draw their final location after completing the task to verify their understanding of both the route and the meeting point. Developing a dedicated digital programme for this test would further streamline the process, automate result collection, and ensure greater accuracy in evaluating communicative success. Finally, the evaluation of communicative success can be improved by implementing a clearer and more systematic scoring system with well-defined criteria, ensuring greater consistency and objectivity in assessing participants' communicative performance.

8.3 Scientific Relevance and Contribution to Society

Studying multilingualism is particularly crucial today, as an increasing number of people around the world use more than one language or language variety in their daily lives. Approaching it from a usage-based perspective highlights the central role of language use and cognitive processes in shaping linguistic knowledge. By emphasising frequency of language usage, patterns of interaction, and contextual factors, this framework explains how multilingual speakers build, adapt, and restructure their repertoires. It further offers valuable insights into cross-linguistic influence, communicative strategies, and the development of communicative competence in real-life multilingual settings.

Multilingualism encompasses various communication modes, one of which is RM. Importantly, communication in RM highlights not only the role of the speaker but also the active involvement of the hearer (Rehbein & Kameyama, 2004). RM can be effectively used in complex multilingual situations where interlocutors lack full knowledge of each other's languages, as well as for fostering further language learning. Mediated RM extends this concept by enabling interaction between speakers of unrelated languages and expanding opportunities for multilingual communication.

The current PhD project aims to advance theory formation on communicative competence by bringing in a third, bridging perspective, that of how people use and expand their communicative resources, including their L+ skills, in achieving communicative success. The focus is on how people cope in situations where their ability to communicate efficiently is challenged due to limited resources: for instance, when they are confronted with a language they do not fully speak. In such contexts, they may draw on relevant linguistic resources they already have, as well as on the assistance people naturally provide one another in communicatively demanding settings.

According to the European Union's language policy, linguistic diversity should be promoted across all Member States, alongside the fostering of intercultural dialogue throughout the EU (European Parliament, March 2025). Research on multilingualism and its diversity in Europe was boosted in 2006 with the major European projects on multilingualism, including *Language Dynamics and Management of Diversity* (DYLAN), *Languages in a Network of European Excellence* (LINEE). In 2007, the European Commission recommended studying RM (European Union. Promoting multilingualism in the EU). Following the European Commission's new agenda on multilingualism, many projects appeared with a focus on RM and communication strategies. The first project in 2007 was EuroCom which promoted intelligibility between closely related languages among speakers of Scandinavian, Romance, and Slavic languages (see more about the EuroCom project in Chapter 2.2).

Building on European language policy objectives and given the limited extent of interlingual communication within the EU, scholars have recommended a critical examination of the limitations of ELF and the exploration of RM as a viable alternative. In response, in 2010, the project investigated Finnish and Estonian comprehension and communication, and the *Receptive Multilingualism: Mutual Intelligibility of Closely Related Languages* project (REMU) was established. Later, in 2011, the *Mutual Intelligibility of Closely Related Languages* project (MICReLa) was launched to investigate receptive multilingualism among closely related languages in Europe. This project allowed speakers to interact using their native languages while developing a passive understanding of their interlocutor's language. Within this project, 16 languages in three language groups – Germanic, Slavic, and Romance – were investigated. Unfortunately, Ukrainian was not a part of this project, and only the West and South Slavic languages were investigated. Since then, several projects have focused on RM in

the context of Dutch and English, focused on employee and student representation (2019–2022), and a communicative receptive approach to language learning and mutual understanding in multilingual academic contexts (2023–2027). Estonian (Finnic, Uralic) and Ukrainian (East Slavic) have not been studied together; instead, they were examined separately within different projects (Ukrainian in EuroCom and Estonian in REMU) or in individual studies, such as research on Russian-Estonian RM (Bahtina-Jantsikene, 2013) and Polish-Ukrainian-Russian RM (Rehbein & Romaniuk, 2014). See Chapter 2 for further details.

Extensive research in the Nordic context has demonstrated that intelligibility in RM is relatively high between closely related languages, and studies on communication have confirmed that this mode of interaction is not only possible but effective. Estonia, with its small population of 1.37 million people of which 84% speak Estonian, provides a particularly interesting setting for applying RM as a tool to promote the Estonian language. RM could serve as a means of strengthening the role of Estonian by facilitating communication between speakers of Estonian and other languages without full proficiency in Estonian and instead of switching to English. Moreover, incorporating RM into language policy could contribute to the promotion and functional expansion of the Estonian language, while simultaneously enhancing motivation for its acquisition among speakers of other languages.

The full-scale Russian invasion of Ukraine has triggered a significant wave of Ukrainian refugees across Europe, creating new social and linguistic realities. As Ukrainians integrate into host societies and acquire local languages, new multilingual constellations are emerging that will likely result in future generations of heritage speakers. This widespread migration has placed Ukrainians in contact with numerous languages across Europe, making the study of these interactions both timely and essential. Given the language's historically marginalised status, RM offers a valuable approach to promoting Ukrainian and supporting its use in new sociolinguistic contexts. Examining language attitudes can shed light on the integration process of Ukrainians, particularly their motivation to comprehend and acquire new languages. In Estonia, where the Russian minority has long faced challenges of integration, the question of how newly arrived Ukrainians will integrate into society is especially relevant.

RM supports future language acquisition by allowing learners to draw on their existing linguistic resources and to build receptive skills that can later develop into productive competence. In this thesis, both implicit and explicit effects of instructions were observed. In the written text comprehension experiment, participants consistently performed better in the second part of the experiment, gradually picking up words and meanings from earlier tasks. Explicitly, even brief instructions highlighting the differences and similarities between Russian and Ukrainian significantly improved comprehension, with the instructed group outperforming those who did not receive such guidance (see Chapter 3, Section 3.4.2.5 for details). As for the communication experiment, this thesis consisted of two communication sessions that were counterbalanced. The second part of the

experiment was completed with higher communicative success (for details, see Chapter 7, Section 7.6.1). A clear learnability effect was observed between the two sessions, as participants improved their performance over time. This finding suggests that RM can directly facilitate language learning by enhancing comprehension through repeated exposure and interaction.

While traditional bilingual education has often emphasised a monolingual approach in the classrooms where minorities are acquiring dominant languages, emerging approaches such as translanguaging are creating new opportunities for plurilingual classroom practices. RM holds considerable learning potential and, together with other communicative modes within the interactional domain, should be further explored and normalised. Since RM is often perceived as impolite unless its use is socially conventionalised, fostering such conventions could promote greater flexibility and reduce communicative pressure. At the same time, this approach offers the dual benefit of strengthening individual linguistic entrenchment through exposure and encouraging societal-level conventionalisation of multilingual practices. RM encourages learners to exploit cross-linguistic similarities, to recognise cognates, and to rely on contextual cues, thus fostering strategies that are transferable to further language learning. Nonetheless, the extent to which RM contributes to the development of productive skills remains uncertain, underscoring the importance of empirical evidence. This thesis therefore, aimed to contribute to addressing this gap by examining how RM functions in practice, what kind of implicit and explicit learning processes it supports, and how it can be integrated into plurilingual education.

To sum up, RM contributes to the promotion of linguistic diversity and serves as a valuable tool for preserving lesser-used languages or language varieties. This project serves as a further development of the study, as it introduced mediated RM, where the language can be understood via learned language using the plurilingual resources that can result in language learning. The findings have important implications not only for language teaching and learning but also for language policies.

8.4 Conventionalisation of Receptive Multilingualism

Few RM studies focus on how people develop this mode's potential over time (Härmävaara 2022). Making full use of RM and of the resources that come with knowing another language takes time; continuing practice with the same interlocutors increases your common ground with them, and this makes you better at using effective communication strategies. RM is more likely to occur in contexts where speakers from different linguistic communities cooperate regularly and over longer periods of time (Ribbert & Ten Thije, 2007: 77). Future research could focus on whether repeated experience with RM enhances multilingual competence. This question is important because much of the existing literature has concentrated on mutual intelligibility, while paying less attention to the pragmatic and discursive strategies through which speakers maximise understanding

despite limited proficiency. Further investigation is needed to determine whether the positive effects of RM accumulate as it becomes conventionalised as a mode of communication, and this project attempts this.

On a broader scale, RM should be considered as a potential alternative to ELF. RM should not be viewed as a single strategy to be used in isolation; it can be effectively combined with other communicative strategies such as code-switching, accommodation to the interlocutor's speech, clarification of meaning, or metalinguistic commentary (Bahtina-Jantsikene, 2013; Härmävaara, 2022). Its successful implementation, however, relies not only on linguistic, communicative variables and a range of extra-linguistic factors, but also on supportive institutional and policy frameworks. RM is more likely to be adopted when groups are balanced in number and status, yet formal language policies play a decisive role in shaping communicative practices – though participants may still choose to deviate from them (Lüdi, 2007). This highlights the importance of developing language policies that recognise and promote RM as a legitimate and sustainable mode of communication.

Research indicates that RM requires speakers to actively draw on their plurilingual repertoire (Massakowa, 2014), which may facilitate SLA and enhance productive skills. Exploring how RM can contribute to the systematic development of plurilingual resources in explicit language instruction (Backus et al., 2013) is therefore highly valuable.

The findings in this thesis suggest that communicative performance in RM improves with familiarity and repeated interaction, even when interlocutors initially lack experience using this mode of communication. Similar observations have been made in previous research, where the explicit and systematic practice of RM led to greater mutual understanding and smoother interaction among participants (Ribbert & Ten Thije, 2007; Bahtina-Jantsikene & Backus, 2016). Additionally, RM is not perceived as impolite and can, in fact, align with linguistic purism and support various language policy orientations (Bilaniuk, 2010). Overall, these results indicate that regular exposure and the use of RM in naturally occurring interactions can significantly enhance communicative effectiveness, promoting conventionalisation of RM.

8.5 Key Considerations

To address the final question concerning the extent to which linguistic and extralinguistic factors influence the comprehension of Ukrainian by speakers of Estonian, I outline several reflections below.

At the initial stage of this PhD project, it was hypothesised that a higher level of Russian proficiency would be necessary for Estonian participants to comprehend Ukrainian. However, the results of the first comprehension experiment revealed that, although linguistic proficiency remains an important factor, comprehension largely depends on participants' ability to recognise linguistic similarities and make informed inferences. Participants who reported greater

motivation performed better on the comprehension task than those with higher Russian proficiency. It seems that language proficiency plays a role up to a certain threshold, after which other factors, such as language exposure, language attitudes, contextual cues, metalinguistic awareness, language attitudes, learnability, M-factor, and previous knowledge, become more influential.

Typological similarity is a key factor enabling mediated RM to occur through the structural proximity between Russian and Ukrainian. However, typological similarity alone cannot fully account for comprehension; rather, it interacts with a range of individual, cognitive, and extralinguistic factors that collectively shape understanding. The Estonian participants provided examples where structural similarity was disregarded in favour of prior knowledge, exposure to different registers or contexts, learnability, and metalinguistic awareness. It is important to note that when the task is not presented in isolation, participants relied on a broader spectrum of factors, which often outweighed similarity as reported in this thesis.

Language exposure may occur across various domains, including language environments, cultural activities, television, and social media, or any other form of contact with the language that can contribute to exposure. While exposure to Russian was confirmed as an important factor in the recognition of Ukrainian words, its combined influence with other factors remains unclear. In this study, language exposure alone had a significant effect on recognising Ukrainian words; however, when it was combined with explicit language instructions, this effect was no longer significant. These findings indicate that the effects are not cumulative and that explicit instructions may, to some extent, compensate for language exposure by explicitly articulating the knowledge that learners would otherwise develop through exposure. In conclusion, this thesis suggests that increased exposure to Russian significantly facilitates L3 comprehension in Ukrainian on the word level, even when overall proficiency in L2 Russian is limited.

When examining language attitudes, the main hypothesis was confirmed for both Estonian and Ukrainian participants. The results showed that while Ukrainian participants explicitly favoured Ukrainian for its social attractiveness and status, they implicitly favoured Russian. In social psychology, competence as the evaluative dimension refers to perceived ability and capability, while social attractiveness refers to friendliness and warmth (Fiske et al., 2007). Since Russian held a dominant and imposed status during the Soviet era, Ukrainian participants typically demonstrate high proficiency in the language. Consequently, Russian remains deeply embedded at an unconscious level, particularly in contexts where its use has been, or continues to be, considerable, even if language practices may have shifted since the Russian full-scale invasion. Given that the participants, all aged under 38, had limited exposure to Russian during the Soviet period, it can be suggested that higher proficiency in Russian may lead to faster reactions and associations in the IAT test. When participants hear a language that is more accessible to them, or that they use more frequently in different domains, for example, at home, they may associate it faster with positive attributes than a

language they use less often. Further empirical investigation is required to confirm and better understand this potential relationship.

In the case of the relationship between language attitudes and communicative success, it remains unclear whether these attitudes influence comprehension directly or indirectly, for instance, through other factors such as motivation. The evidence remains inconclusive whether this relationship mirrors the pattern observed for language exposure, where its effect on comprehension varies depending on the combination of interacting factors. Another point discussed in previous studies concerns the direction of cause and effect. Positive attitudes may not necessarily lead to greater communicative success; rather, increased contact with a language may foster more positive attitudes toward it (Schüppert & Gooskens, 2011).

As for learnability, it proved to have a strong impact at both implicit and explicit levels, helping participants with lower language proficiency to perform better. This was evident from participants' ability to implicitly pick up language items from one text to another or to improve their strategies across communicative sessions. At the same time, participants who received explicit instructions performed better with the word definition task. These findings suggest that RM follows a learning trajectory and contributes to incidental learning while implicitly providing support for formal learning.

To sum up, factors such as explicit instructions, task repetition, and motivation benefit participants with lower proficiency or limited exposure. This pattern suggests a two-tier model of extralinguistic factors that influence comprehension in different ways. The first tier includes motivation, exposure to Russian (including different registers), contextual understanding, learnability (both implicit and explicit), and metalinguistic awareness, all of which have a direct impact on comprehension. The second tier comprises factors such as language attitudes, experience in multilingual communication, and general knowledge, which function as supportive mechanisms influencing comprehension indirectly.

Comprehension in mediated RM appears to be more complex, as it occurs through a mediating language and consequently, offers a deeper understanding of the mechanisms underlying comprehension. It relies on participants' ability to identify relevant linguistic cues and mobilise all available linguistic resources. Moreover, Estonian-Ukrainian communication through mediated RM showed potential and can reveal more about how linguistic, extralinguistic, cognitive, and interactive factors interact and shape comprehension and communicative success.

8.6 Limitations and Future Research

Future research on RM should move beyond its current concentration on the Nordic context and expand to a wider range of languages and language varieties. The concept of mediated RM, in particular, offers promising potential for extrapolation to unrelated language pairs in different regions. This thesis demonstrates that even unforeseen language constellations can function successfully.

This thesis showed that L1 Estonian speakers can comprehend written Ukrainian texts through their knowledge of Russian by utilising both linguistic and extralinguistic variables. It also demonstrated that, in RM communication, Estonian and Ukrainian participants were able to establish common ground and reach communicative demands. While this thesis has demonstrated that linguistic proficiency and both objective and perceived similarities are important, there remains a wide spectrum of extra-linguistic factors to be explored in a more controlled manner. These include exploring further the role of language attitudes, language exposure, instructions, metalinguistic awareness, the M-factor or multilingual experience, as well as the role of context, motivation, etc. More variety of methods could be implemented. For instance, when examining metalinguistic awareness, it is possible to design the experiment in such a way that participants are instructed to provide explicit comments on the task while completing it. I would also recommend investigating language exposure further. Within Estonia, for example, it would be valuable to compare RM in Tallinn and Tartu, where the dominant linguistic environments differ, particularly in relation to Russian, in order to assess how language exposure shapes communicative outcomes.

Given the scope of this research and the limited scale of the experiments, future studies should be conducted on a larger scale to ensure the broader applicability of the findings. Another important avenue for further research concerns the conventionalisation of RM. More longitudinal studies are needed to explore how RM develops as a sustained mode of communication and how repeated interaction contributes to the establishment of mutual understanding.

Although this thesis included communication tasks, it did not systematically examine meta-communication strategies in multilingual interactions. Future research should therefore focus on strategies such as accommodation, repair, and other metalinguistic resources that speakers employ to overcome communicative challenges. I also recommend replicating the study with a larger sample size. A greater number of participants would not only enhance the reliability of the findings but also offer stronger statistical validity and a more nuanced interpretation of the results.

It is also important to consider the role of non-linguistic factors such as pragmatic cues, contextual awareness, and gestures. As the present experiment simulated a phone-call setting, future research could explore communication in more naturalistic interactional contexts to examine how these additional modalities influence mediated RM.

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SUMMARY IN ENGLISH

This dissertation examines the potential of *mediated* Receptive Multilingualism (RM) between typologically distant and genetically unrelated languages, with the focus on the case of Ukrainian and Estonian. In this mode, understanding is facilitated through a third, mediating language that is typologically close to the target language, in this case, Russian, which shares significant structural similarities with Ukrainian. The study explores how Estonian L1 speakers comprehend Ukrainian with the help of Russian and identifies linguistic and extralinguistic factors influencing this process. It examines both comprehension of written texts and spoken interaction.

The experimental investigations were conducted both before and after the full-scale Russian invasion of Ukraine in 2022, allowing observation of sociolinguistic changes within the Ukrainian community in Estonia. The study used a mixed-methods approach that combined quantitative and qualitative analyses based on questionnaires, Russian language proficiency tests, Ukrainian comprehension tasks at word and text levels, participants' self-reports, language attitude measures, and communicative tasks to provide a comprehensive account of mediated RM in practice.

Results revealed that Estonian participants, despite having no prior exposure to Ukrainian (before 2022), could successfully comprehend written texts, performing better at text-level understanding than at word recognition. Participants often underestimated their own comprehension, which was largely supported by exposure to Russian, multilingual experience, metalinguistic awareness, learnability, and motivation.

Exposure to Russian played a key role in comprehension: participants from Russian-speaking regions or those using Russian professionally demonstrated higher levels of understanding. Familiarity with non-standard registers, such as colloquial or high styles, also supported comprehension of Ukrainian. A strong correlation was found between exposure to Russian and proficiency in Russian; however, this link was more pronounced among participants with lower exposure and proficiency, implying that even limited exposure provides a substantial boost in comprehension. When tested alongside instruction, language exposure proved significant only for the uninstructed group of Estonian participants, indicating that formal instruction can compensate for limited exposure when these factors interact.

Exposure to Russian improved recognition of Ukrainian words but not full-text comprehension, showing that vocabulary-level understanding benefits from exposure, whereas broader text interpretation relies more on contextual and cognitive processes. Even limited exposure proved beneficial, though higher language exposure to Russian showed diminishing returns in this study. When language exposure was tested with Estonian participants who received instructions and those who did not, a strong relationship emerged only with the results of the uninstructed group and only for the Ukrainian word recognition task. When

instructions were introduced, exposure had less impact, suggesting that formal instructions were overtaking the role of the exposure when the factors were combined. These results indicate that regular contact with the mediating language strengthens grammatical and lexical proficiency and supports incidental learning across related languages.

The study also examined the role of linguistic proficiency in Russian on understanding Ukrainian. The analysis of errors in the Russian proficiency test showed that unfamiliar or low-frequency lexical items and false friends caused the most confusion, highlighting areas that can affect understanding of Ukrainian. It was detected that Russian proficiency had a stronger impact on Ukrainian word recognition than on text comprehension. These findings show that comprehension in RM extends beyond lexical and grammatical competence and is shaped by cognitive and pragmatic strategies that enable individuals to grasp meaning beyond structural similarities.

Cross-linguistic similarity, both objective and perceived, supported comprehension but was not decisive; perceived similarity often outweighed objective resemblance. As expected, cognates were understood best, followed by divergent cognates and, lastly, unrelated words. The analysis showed that even for cognates with the same meaning, participants sometimes overlooked similarity, were confused by differing inflections, or failed to recognise them altogether. Divergent cognates were often understood through contextual support, though not always accurately. For unrelated words, participants relied mainly on context, general knowledge, and other languages, demonstrating higher metalinguistic awareness. The analysis showed that context and other extra-linguistic factors sometimes outweighed linguistic similarity.

The findings identified learnability as a key factor in mediated RM. Participants who received prior instruction demonstrated higher comprehension, highlighting the value of explicit learning. However, uninstructed participants also improved across successive texts, indicating implicit learning and strategy development as a result of more exposure to Ukrainian.

Metalinguistic awareness emerged as a crucial mechanism enabling participants to link related languages, recognise patterns, and filter irrelevant differences. Motivation was largely socio-cultural, with curiosity about Ukrainian media and culture linked to higher comprehension, while overconfidence in perceived similarity between Russian and Ukrainian reduced success. In this study, motivation was closely intertwined with language attitudes.

Language attitudes towards Russian and Ukrainian by Ukrainian and Estonian participants were explored after 2022. Ukrainian participants explicitly preferred Ukrainian speech for its social attractiveness and status but demonstrated an implicit preference for Russian, associating it with higher perceived competence. In their explicit evaluations, they rated the Ukrainian guise highly across all traits except *richness*, while they evaluated the higher *normality* of Russian. In contrast, Estonian participants displayed both explicit and implicit positive attitudes towards Ukrainian. Explicitly, they evaluated Ukrainian speech as more *beautiful, intelligent*, and *clever*, while rating *normality* and *richness* similarly for both languages.

Overall, these findings indicate that explicit and implicit attitudes measure different dimensions. Implicit attitudes represent unconscious, automatic responses, whereas explicit attitudes involve conscious, reflective evaluations influenced by personal beliefs and social norms. Using both measurements provides a comprehensive overview of language attitudes.

In communicative interaction, Estonian and Ukrainian speakers successfully achieved understanding through RM. Estonians relied on Russian to comprehend Ukrainian, while Ukrainians drew on their knowledge of Estonian. Having prior experience in multilingual environments may have equipped participants with communicative strategies to compensate for limited fluency. More successful pairs typically invested more time negotiating meaning, suggesting that mutual understanding is achieved through active engagement rather than speed. As for the communication success across the session, participants improved from one session to another, showing a higher success rate in the second session. Finally, a weak but notable relationship between language attitudes and communication among Ukrainian participants was found. Those who rated Ukrainian speech as more *intelligent* or Russian speech as more *normal* tended to perform better in communicative tasks. No such relationship was found among Estonian participants.

In conclusion, this dissertation demonstrates that mediated RM enables successful understanding and interaction between speakers of typologically distant languages and unrelated languages. Comprehension in mediated RM is shaped by an inventory of linguistic and extra-linguistic variables. Among the linguistic factors, Russian proficiency, perceived and objective similarities between Russian and Ukrainian, were found to facilitate comprehension. Extra-linguistic factors included exposure to Russian, including exposure to different language registers, context, learnability, language attitudes, experience in multilingual communication, metalinguistic awareness, and general knowledge. The results highlight that RM has a learning trajectory that promotes incidental language acquisition and the development of multilingual competence.

KOKKUVÕTE EESTI KEELES

Vahendatud retseptiivne mitmekeelsus: edutegurid keeleõppe soodustamisel

Väitekiri uurib vahendatud retseptiivse mitmekeelsuse (RM) potentsiaali keelte näitel, mis on tüpoloogiliselt kauged ja ei ole geneetilises suguluses, keskendudes ukraina ja eesti keelele. RM suhtlusrežiimis toetub arusaamine kolmandale, vahendava keelele, mis on tüpoloogiliselt sihtkeelele lähedane – antud juhul vene keel, mis jagab ukraina keelega märkimisväärseid struktuurseid sarnasusi. Uurimus analüüsib, kuidas eesti emakeelega kõnelejad mõistavad ukraina keelt vene keele toel, ning kirjeldab keelelisi ja keleväliseid tegureid, mis seda protsessi mõjutavad. Vaadeldakse nii kirjalike tekstide mõistmist kui ka suulist suhtlust.

Katsed viidi läbi nii enne kui ka pärast Venemaa 2022. aasta täiemahulist sissetungi Ukrainasse, mis võimaldas jälgida sotsiolingvistilisi muutusi Eesti ukrainlaste kogukonnas. Uurimistöös kasutati kombineeritud meetodit, ühendades kvantitatiivse ja kvalitatiivse analüüsi, mis tugines küsimustikele, vene keele oskuse testidele, ukraina keele mõistmise ülesannetele sõna- ja tekstitasandil, osalejate järelarutelule, keelehoiakute mõõdikutele ning suhtlusülesannetele, et pakkuda terviklikku ülevaadet vahendatud RM-i toimimisest toimimisest.

Tulemused näitasid, et hoolimata ukraina keelega varasema kokkupuute puudumisest (enne 2022. aastat) suutsid eestikeelsed osalejad kirjalikest tekstidest edukalt aru saada, saavutades paremaid tulemusi tekstitasandi mõistmisel kui sõnade äratundmisel. Osalejad alahindasid sageli kui palju nad aru saavad. Arusaamist toetasid eelkõige kokkupuude vene keelega, mitmekeelsuse kogemus, metakeeleline teadlikkus, õpiefekt ja motivatsioon.

Kokkupuude vene keelega mängis arusaamises võtmerolli: osalejad, kes olid pärit venekeelsetest piirkondadest või kes kasutasid vene keelt tööalaselt, näitasid kõrgemat mõistmise taset. Mittestandardsete registrite, nagu kõnekeel või kõrgstiil, tundmine toetas samuti ukraina keele mõistmist. Leiti tugev seos vene keelega kokkupuutumise ja vene keele oskuse vahel, kuid see seos tuli selgemalt välja nende osalejate puhul, kelle kokkupuude ja oskus olid madalamad, mis viitab sellele, et isegi vähene kokkupuude suurendab arusaamist märkimisväärselt. Enne uurimuses osalemist selgitati ühele rühmale vene ja ukraina keele erinevusi ja sarnasusi. Kahe rühma võrdlemisel osutus keeleline kokkupuude oluliseks vaid juhendamata eestikeelsete osalejate rühmas, mis osutab, et eelnev õpetus võib piiratud kokkupuudet kompenseerida.

Kokkupuude vene keelega parandas ukrainakeelsete sõnade äratundmist, kuid mitte tervikteksti mõistmist, mis näitab, et sõnavara tasandil arusaamise jaoks on vene keelega kokkupuutest kasu, samas kui laiem teksti tõlgendamine tugineb rohkem kontekstuaalsetele ja kognitiivsetele protsessidele. Ka piiratud kokkupuude vene keelega osutus kasulikuks, aga kokkupuute suurenemine ei toonud selles uurimuses lisatulu. Kui keelelist kokkupuudet hinnati eelnevalt juhendatud ja juhendamata eestikeelsete osalejate puhul, ilmnes tugev seos üksnes juhendamata rühma tulemustega ja ainult ukrainakeelsete sõnade äratundmise ülesandes. Üks rühm sai ülesande täitmist seletusi vene ja ukraina keele erinevuste ja sarna-

suste kohta, teine mitte. Mida rohkem õpetusi ja juhiseid üks rühm sai, seda väiksemat rolli mängis varasem kokkupuude vene keelega. Need tulemused näitavad, et vahendava keelega regulaarne kokkupuude tugevdab grammatika- ja sõnavaraoskust ning toetab juhuslikku õppimist sugulaskeelte vahel.

Uurimus vaatles ka vene keele oskuse rolli ukraina keele mõistmisel. Vene keele oskuse testi vigade analüüs näitas, et suurimat segadust põhjustasid tundmatud või madala kasutussagedusega leksikaalsed üksused ning virvasõnad. See tõi esile valdkonnad, mis võivad mõjutada ukraina keele mõistmist. Leiti, et vene keele oskus mõjutas tugevamalt ukraina sõnade äratundmist kui tekstist arusaamist. Need tulemused näitavad, et RM-i puhul ulatub arusaamine üle leksikaalse ja grammatilise pädevuse piiri ning seda kujundavad kognitiivsed ja pragmaatilised strateegiad, mis võimaldavad mõista tähendust ka struktuuriliste sarnasuste piiridest kaugemal.

Keeltevaheline sarnasus – nii objektiivne kui ka tajutud – toetas arusaamist, kuid ei olnud määrav; sageli osutus tajutud sarnasus olulisemaks kui tegelik struktuurne ja materiaalne lähedus. Nagu oodata võis, mõisteti kõige paremini ajalooliselt samast tüvest pärit sõnu, neile järgnesid eri tähendustega sama päritolu sõnad ning viimasena mitteseotud sõnad. Analüüs näitas, et isegi sama tähendusega ajalooliselt samast tüvest pärit sõnade puhul jätsid osalejad mõnikord sarnasuse märkamata, segadusse ajasid erinevad käändevormid või ei tuntud sõnu üldse ära. Eri tähendustega sama päritolu sõnade mõistmisel toetuti sageli kontekstile, ent mitte alati edukalt. Mitteseotud sõnade puhul tugineti peamiselt kontekstile, maailmateadmisele ja teistele keeltele, mis näitas kõrgemat metakeelelist teadlikkust. Analüüs osutas, et mõnikord kaaluvad kontekst ja muud keelevälised tegurid keelelise sarnasuse üles.

Tulemused tõid vahendatud RM-i ühe võtmetegurina esile õpiefekti. Keelelist juhendamist saanud osalejate puhul võis näha paremat arusaamist, mis rõhutab otsese õppimise väärtust. Samas paranes ka juhenduseta osalejate sooritus järjestikuste tekstidega, mis viitab kaudsele õppimisele ja strateegiate kujunemisele tänu suuremale kokkupuutele ukraina keelega.

Metalingvistiline teadlikkus osutus oluliseks mehhanismiks, mis võimaldas osalejatel seostada sugulaskeeli, märgata mustreid ja filtreerida ebaolulisi erinevusi. Motivatsioon oli valdavalt sotsiokultuuriline: suurem huvi ukraina meedia ja kultuuri vastu oli seotud parema arusaamisega, samas kui liigne enesekindlus vene ja ukraina keele tajutud sarnasuse suhtes vähendas edukust. Käesolevas uuringus oli motivatsioon tihedalt põimunud keelehoiakutega.

Eestlastest ja ukrainlastest osalejate keelehoiakuid vene ja ukraina keele suhtes uuriti pärast 2022. aastat. Ukrainakeelsed osalejad eelistasid oma otsestes hinnangutes ukraina keelt selle sotsiaalse atraktiivsuse ja staatuse tõttu, kuid ilmutasid kaudset eelistust vene keelele, seostades seda kõrgema arusaamatu. Otsestes hinnangutes hindasid nad ukraina keelt kõrgelt kõigi omaduste osas, välja arvatud *rikkus*, samas kui vene keele puhul tajuti suuremat *tavapärasust*. Eestikeelsed osalejad seevastu väljendasid nii otseseid kui ka kaudseid positiivseid hoiakuid ukraina keele suhtes. Otseselt hinnates pidasid nad ukraina keelt *ilusamaks, intelligentsemaks* ja *vaimukamaks*, samal ajal kui *tavapärasust* ja

rikkust hinnati mõlema keele puhul sarnaselt. Üldiselt näitavad tulemused, et otsesed ja kaudsed hoiakud mõõdavad erinevaid dimensioone. Kaudsed hoiakud peegeldavad teadvustamata, automaatseid reaktsioone, samal ajal kui otsesed hoiakud hõlmavad teadlikku, refleksiivset hindamist, mida mõjutavad isiklikud uskumused ja sotsiaalsed normid. Mõlema mõõtmisviisi kasutamine võimaldab saada keelehoiakutest tervikliku ülevaate.

Suulises suhtluses saavutasid eesti ja ukraina keelt kõnelevad osalejad RM-i kaudu edukalt vastastikuse arusaamise. Eestikeelsed osalejad kasutasid ukraina keele mõistmiseks vene keelt, ukrainlased aga toetusid oma eesti keele oskusele. Varasem kogemus mitmekeelses keskkonnas võis varustada osalejaid suhtlus-strateegiatega, mis aitasid piiratud keeleoskust kompenseerida. Edukamad paarid panustasid tavaliselt rohkem aega tähenduse läbirääkimisse, mis viitab sellele, et vastastikune arusaamine saavutatakse pigem aktiivse kaasatuse kui kiiruse kaudu. Seansside lõikes osalejate kommunikatiivne edukus paranes – teises seansis saavutati kõrgem tulemus kui esimeses. Leiti ka nõrk, kuid märkimisväärne seos keelehoiakute ja suhtlusedu vahel ukrainakeelsete osalejate seas. Need, kes hindasid ukraina keelt intelligentsemana või vene keelt tavapärasemana, said suhtlusülesannetes paremini hakkama. Eestikeelsete osalejate puhul sellist seost ei ilmnenud.

Kokkuvõttes näitab väitekiri, et vahendatud RM võimaldab tüpoloogiliselt kaugete ja mitte suguluses olevate keelte kõnelejate vahel edukat arusaamist ja suhtlust. Arusaamist vahendatud RM-i puhul kujundab hulk keelelisi ja keele-väliseid tegureid. Keeleliste tegurite seas toetavad mõistmist vene keele oskus ning vene ja ukraina keele tajutud ja objektiivsed sarnasused. Keeleväliste tegurite hulka kuuluvad kokkupuude vene keelega (sealhulgas eri keele-registritega), kontekst, õpiefekt, keelehoiakud, kogemus mitmekeelses suhtluses, meta-keeleline teadlikkus ning üldteadmised. Tulemused toovad esile, et RM-il on oma õpitrajektoor, mis soodustab juhuslikku keeleomandamist ja mitmekeelsuse arengut.

NEDERLANDSE SAMENVATTING

Gemedieerde receptieve meertaligheid:
factoren van geslaagde ondersteuning voor taalverwerving

Dit proefschrift onderzoekt het potentieel van gemedieerde receptieve meertaligheid (RM) tussen typologisch verre en genetisch niet-verwante talen aan de hand van het Oekraïens en het Ests. Bij gemedieerde RM wordt begrip vergemakkelijkt via een derde, bemiddelende taal die typologisch verwant is aan de doeltaal – in dit geval het Russisch, dat aanzienlijke structurele overeenkomsten vertoont met het Oekraïens. Het onderzoek richt zich op hoe moedertaalsprekers van het Ests het Oekraïens kunnen begrijpen met behulp van het Russisch als mediërende taal, en welke linguïstische en extralinguïstische factoren dit proces beïnvloeden. Zowel het begrip van geschreven teksten als van gesproken interactie wordt onderzocht.

De experimentele onderzoeken werden uitgevoerd vóór en na de grootschalige Russische invasie van Oekraïne in 2022, waardoor sociolinguïstische veranderingen binnen de Oekraïense gemeenschap in Estland konden worden waargenomen. Het onderzoek maakt gebruik van een mixed-methods benadering, waarin kwantitatieve en kwalitatieve analyses worden gecombineerd op basis van vragenlijsten, toetsen voor Russische taalvaardigheid, begrijpend lezen van Oekraïense woorden en teksten, zelfrapportages van deelnemers, metingen van taalattitudes en communicatieve taken. Deze aanpak biedt een uitgebreid beeld van gemedieerde RM in de praktijk.

De resultaten tonen aan dat Estse deelnemers, ondanks het ontbreken van eerdere blootstelling aan het Oekraïens (voor 2022), in staat waren geschreven teksten met succes te begrijpen. Ze presteerden beter op tekstniveau dan op woordherkenning. Deelnemers onderschatten vaak hun eigen begrip, dat grotendeels werd ondersteund door blootstelling aan het Russisch, meertalige ervaringen, metalinguïstisch bewustzijn, leerbaarheid en motivatie.

Blootstelling aan het Russisch speelde een sleutelrol in het begrip: deelnemers uit Russischtalige regio's of degenen die Russisch professioneel gebruikten, vertoonden een hoger begrip. Vertrouwdheid met niet-standaard registers, zoals spreektaal of formele stijlen, ondersteunde eveneens het begrip van het Oekraïens. Er werd een sterke correlatie gevonden tussen blootstelling aan en taalvaardigheid in het Russisch; dit verband was echter sterker bij deelnemers met minder blootstelling en een lagere taalvaardigheid, wat suggereert dat zelfs beperkte blootstelling een aanzienlijke bijdrage levert aan begrip. Wanneer blootstelling werd vergeleken met formele instructie, bleek dat instructie de invloed van blootstelling kon compenseren, vooral bij deelnemers zonder voorafgaande training.

Blootstelling aan het Russisch beïnvloedde de herkenning van Oekraïense woorden positief, maar niet het tekstbegrip. Dit toont aan dat het woordenschatniveau profiteert van blootstelling, terwijl tekstbegrip meer afhankelijk is van contextuele en cognitieve processen. Zelfs beperkte blootstelling bleek nuttig, hoewel een hogere mate van blootstelling afnemende meeropbrengsten liet

zien. Wanneer instructie werd toegevoegd, verminderde de invloed van blootstelling, wat aangeeft dat formeel onderwijs de rol van blootstelling kan overnemen.

Het onderzoek analyseerde ook de rol van Russische taalvaardigheid bij het begrijpen van het Oekraïens. Foutenanalyses in de Russische taaltoets toonden aan dat onbekende of weinig voorkomende woorden en valse vrienden de meeste verwarring veroorzaakten. Russische taalvaardigheid had een grotere invloed op woordherkenning dan op tekstbegrip. Deze bevindingen tonen aan dat begrip binnen RM verder reikt dan lexicale en grammaticale kennis en wordt beïnvloed door cognitieve en pragmatische strategieën waarmee sprekers betekenis afleiden voorbij structurele overeenkomsten.

Crosslinguïstische gelijkenis, zowel objectief als subjectief waargenomen, ondersteunde het begrip, maar was niet doorslaggevend; perceptie van gelijkenis woog vaak zwaarder dan feitelijke overeenkomst. Cognaten werden het best begrepen, gevolgd door afwijkende cognaten en ten slotte niet-verwante woorden. Deelnemers vertrouwden bij onbekende woorden vooral op context, wereldkennis en andere talen, wat een hoog metalinguïstisch bewustzijn aantoont. Context en extralinguïstische factoren bleken soms belangrijker dan linguïstische gelijkenis.

Leerbaarheid kwam naar voren als een sleutelfactor in gemedieerde RM. Deelnemers die vooraf instructie ontvingen, behaalden hogere scores, wat het belang van expliciete aandacht onderstreept. Toch verbeterden ook deelnemers zonder instructie na verloop van tijd, wat wijst op impliciet leren en strategieontwikkeling via meer blootstelling aan het Oekraïens.

Metalinguïstisch bewustzijn bleek een cruciaal mechanisme om verwante talen te koppelen, patronen te herkennen en irrelevante verschillen te filteren. Motivatie was grotendeels sociaal-cultureel van aard: nieuwsgierigheid naar Oekraïense media en cultuur hing samen met beter begrip, terwijl overmatige zelfverzekerdheid over de gelijkenis tussen Russisch en Oekraïens het begrip juist verminderde. Motivatie was in dit onderzoek nauw verweven met taalattitudes.

Taalattitudes ten opzichte van het Russisch en het Oekraïens werden onderzocht bij Oekraïense en Estse deelnemers na 2022. Oekraïense deelnemers gaven expliciet de voorkeur aan Oekraïense spraak vanwege sociale aantrekkelijkheid en status, maar vertoonden impliciet een voorkeur voor het Russisch, dat zij associeerden met hogere competentie. Estse deelnemers hadden zowel expliciet als impliciet een positieve houding tegenover het Oekraïens. Zij beoordeelden sprekers van het Oekraïens als *mooier*, *intelligenter* en *slimmer*, terwijl de beide talen vergelijkbaar scoorden voor *normaliteit* en *rijkdom*. Deze resultaten tonen aan dat expliciete en impliciete attitudes verschillende dimensies meten: impliciete attitudes weerspiegelen onbewuste, automatische reacties, terwijl expliciete attitudes bewuste en sociaal beïnvloede beoordelingen weergeven. Het combineren van allebei, impliciet en expliciet, biedt een vollediger beeld van taalattitudes.

In communicatieve interactie slaagden Estse en Oekraïense sprekers erin om via RM wederzijds begrip te bereiken. Esten gebruikten Russisch om Oekraïens

te begrijpen, terwijl Oekraïners hun kennis van het Ests inzetten. Ervaring in meertalige omgevingen hielp deelnemers om communicatieve strategieën te ontwikkelen die beperkte taalvaardigheid kon compenseren. Succesvolle paren besteedden doorgaans meer tijd aan het onderhandelen over betekenis, wat suggereert dat begrip ontstaat door actieve betrokkenheid en niet door vloeiendheid. Het communicatieve succes groeide van sessie naar sessie, met betere resultaten in de tweede ronde. Een zwakke maar noemenswaardige relatie was zichtbaar tussen taalattitudes en communicatieve prestaties bij Oekraïense deelnemers: degenen die Oekraïens als *intelligenter* of Russisch als *normaler* beoordeelden, presteerden beter in communicatieve taken. Bij Estse deelnemers werd geen dergelijk verband gevonden.

Concluderend laat dit proefschrift zien dat gemedieerde RM wederzijds begrip en interactie mogelijk maakt tussen sprekers van typologisch verre en genetisch niet-verwante talen. Begrip in RM wordt gevormd door een combinatie van linguïstische en extralinguïstische variabelen. Tot de linguïstische factoren behoren Russische taalvaardigheid en waargenomen evenals objectieve gelijkenissen tussen Russisch en Oekraïens. Extralinguïstische factoren omvatten blootstelling aan het Russisch (inclusief verschillende registers), context, leerbaarheid, taalattitudes, ervaring met meertalige communicatie, metalinguïstisch bewustzijn en algemene kennis. De resultaten benadrukken dat RM een leertraject vertegenwoordigt dat incidentele taalverwerving en de ontwikkeling van meertalige competentie bevordert.

CV

Anna Branets was born on 7 May 1989 in the Kyiv region of Ukraine. In 2011, she graduated with a bachelor's degree with honours from Taras Shevchenko National University of Kyiv, where she also completed her master's studies in 2013, graduating with honours and specialising in Linguistics.

Anna was awarded an Erasmus Mundus scholarship and spent the years 2015–2017 at Tallinn University, conducting research on RM in the Estonian-Ukrainian context. In 2017, she received the Estophilus scholarship and spent one semester at the University of Tartu. In 2018, she undertook a one-month research visit to Tilburg University, where she collaborated with Prof. Ad Backus and prepared her PhD proposal.

In 2019, Anna began her PhD studies at the University of Tartu, and in 2022 she joined the University of Groningen as part of a double degree programme. Anna participated in numerous international and local conferences and summer schools. In 2022, she conducted a three-month research visit to the University of California, Los Angeles (UCLA), USA. In 2026, Anna was appointed Post-doctoral Research Fellow in Multilingualism at the Department of Language and Culture, Centre for Language, Brain & Learning (C-LaBL), at UiT The Arctic University of Norway.

ELULOOKIRJELDUS

Anna Branets sündis 7. mail 1989 Ukrainas, Kiievi oblastis. 2011. aastal lõpetas ta kiitusega Kiievi Taras Ševtšenko nimelise Rahvusülikooli bakalaureuseõppe ning 2013. aastal samas ülikoolis ka magistriõppe, samuti kiitusega, spetsialiseerudes lingvistikale. Anna pälvis Erasmus Munduse stipendiumi ja viibis aastatel 2015–2017 Tallinna Ülikoolis, kus ta viis läbi uurimistööd RM-i kohta Eesti-Ukraina kontekstis.

2017. aastal pälvis ta Estophiluse stipendiumi ning veetis ühe semestri Tartu Ülikoolis. 2018. aastal sooritas ta ühekuulise uurimisvisiidi Tilburgi Ülikoolis, kus ta tegi koostööd professor Ad Backusega ja valmistas ette oma doktoritöö projekti. 2019. aastal alustas Anna doktoriõpinguid Tartu Ülikoolis ning 2022. aastal liitus ta topeltdiplomi programmi raames Groningeni Ülikooliga.

Anna on osalenud arvukatel rahvusvahelistel ja kohalikel konverentsidel ning suvekoolides. 2022. aastal tegi ta kolmekuulise uurimisvisiidi California Ülikooli Los Angelesese kampusesse (UCLA), Ameerika Ühendriikidesse. 2026. aastal nimetati Anna mitmekeelsuse järeldoktoriks Norra Arktika Ülikooli (UiT) keele ja kultuuri osakonnas, Centre for Language, Brain & Learning (C-LaBL).

APPENDIXES

Appendix A

C-test in Russian

Lugupeetud osaleja,
Antud uurimuse viib läbi Tallinna Ülikooli, lingvistika osakonnas õppiv külalisdoktorant. Eesmärk on uurida seda, kuidas mingil määral vene keelt oskavad eestlased suudavad mõista ukrainakeelset teksti. Teile antakse 4 teksti vene keeles. Täitke lüngad, iga teksti täitmiseks antakse maksimaalselt 5 minutit.
Täname Teid koostöö eest!

C-test

Täitke lüngad

Изумительной красоты остров Искья в Тирренском море – прославленный курорт у западного побережья Италии. Это и отдых, и лече…, и возможность боль… культурной прогр…. Остров Искья – од.. из трех глав… и живописных остр…. в Неаполитанском зал…. Это пейз…, цитрусовые рощ.., роскошные терра…. с видом на мо.., цветочные аром… и вкус древн… кулинарных трад…. Но глав… здесь – минера….. вода, лечебные гря.. и целебные терма….. источники, кото… обладают богат… минералами.

Старинная китайскай легенда гласит, что душа спящего первого императора Цинь Шихуанди построила Великую китайскую стену. Согласно леге… душа взле…. на Лу.. и оттуда брос… взгляд н. Землю. С космич….. высоты Китай показ…. ей мален…. кусочком зем.. И тогда ду.. императора реш… построить сте.., чтобы отгоро….. вновь созда…. страну о. варварского ми.. Десять ле. два миллиона чело… строили вруч… самое гиган….. сооружение, созданное человеком.

Брачный договор может быть заключен как до бракосочетания, так и после него. То ес.., в тот мом…, когда пар.. еще не дум… о разрыве отнош…., но хоч.. урегулировать св.. материальное имуще…. в случае разв… Брачный дого… необходимо подпи…. у нотариуса, ли.. тогда он явля…. действительным. Соста… его помо… адвокат. Не вс. супруги согл…. на подписание брач…. договора. Делать ли эт.. или надея… на лучшее — личный выбор каждого.

Психологи утверждают, что полноценную разгрузку человеку могут дать только путешествия. Регулярные поездки да.. человеку ощущ…. счастья, нов.. впечатления и хоро… настроение. Он. расширяют круго…., делают внутр..…. мир чело…. богаче. Мож.. прочитать мно.. книг о раз… странах, н. только пос.. путешествия зна… останутся в пам… навсегда. Человека дел… счастливым так... вещи: люб…, интересная раб… и возможность путешес….

Appendix B

Questionnaire in Estonian for comprehension experiment

Küsimustik

Lugupeetud osaleja,

Antud küsimustik on osa projektist, mida viib läbi Tallinna Ülikooli lingvistika külalisdoktorant. Eesmärk on uurida seda, kuidas mingil määral vene keelt oskavad eestlased suudavad mõista ukrainakeelset teksti. Esialgu küsime 17 küsimust emakeel(t)e ja keeleoskuse kohta. Selle küsimustiku täitmiseks kulub 5 kuni 10 minutit. Kogu informatsioon jääb konfidentsiaalseks! Isiklikku informatsiooni ei levitata, eksperimendi tulemusi kasutatakse anonüümsel kujul ja ainult teaduslikel eesmärkidel. Täname Teid koostöö eest!

1. Sugu_____
2. Sünniaasta_____
3. Rahvus_____
4. Haridus/Eriala ülikoolis_____

_____

5. Millist keelt peate emakeeleks? Võite nimetada mitut.
   a) Eesti;
   b) Vene;
   c) muu (d)_____

6. Juhul, kui kasvasite üles mitmekeelses perekonnas, nimetage palun koduseid keeli. Kui ei, minge 3. küsimuse juurde.

_____

7. Mis keeli valdate ja mis tasemel? Täpsustage.

Keel	Räägin vabalt	Räägin ja kirjutan vabalt	Suudan igapäevasest jutust aru saada	Räägin, aga tunnen mõnda raskused	Saan aru, aga ei oska rääkida

8. Kas keegi Teie perest räägib vene keelt? Täpsustage kes.

a) Jah _____
b) Ei.

9. Mis on Teie vene keele oskuse tase?

a) B1;
b) B2;
c) C1.

10. Kus Te õppisite vene keelt?

a) Koolis;formal
b) Ülikoolis;formal
c) Ei ole õppinud.did not study

11. Kui tihti Te kasutate vene keelt?

	Iga päev	Iga nädal	Iga kuu	Iga aasta	Mitte kunagi
Kodus					
Ülikoolis					
Sotsiaalmeedias: loen lehti / ajakirjandust / uudiseid/ sotsiaalvõrgustikke					
Vabal ajal					
Üldiselt					
Muu					

12. Kas Teil on ukrainlasi peres? Kui jah, siis täpsustage kes.

a) Jah_____
b) Ei.

13. Kas Te olete kunagi kasutanud ukraina keelt?

a) Jah, praktilise otstarbega;
b) Ise ei kasutanud, aga olen kuulnud ning tundsin keele ära;
c) Mitte kunagi.

14. Kas Te puutute kokku ukraina keelega?

	Sageli	Harva	Väga harva	Mitte kunagi
Kodus				
Sugulastega				
Sõpradega				
Sotsiaalmeedias: loen lehti / ajakirjandust / uudiseid/ sotsiaalvõrgustikke				
Kuulan Ukraina laule				
Üldiselt				

15. Kas Te olete kunagi käinud Ukrainas?

a) Jah, mitmeid kordi;
b) Jah, üks või mittu korda;
c) mitte kordagi.

16. Kuidas Te suhtute Ukrainasse?

a) positiivselt;
b) neutraalselt/ei huvita;
c) negatiivselt.

Järgnevalt tahaksime viia läbi eksperimendi, et uurida ukraina teksti mõistmist ning seejärel viia läbi intervjuu, et koguda rohkem teavet. Siin pole õigeid ega valesid vastuseid. Tähtis on Teie arvamus. Osalemine on vabatahtlik!

17. Kas Te sooviksite ka edaspidi eksperimendis osaleda?

a) Jah;
b) Ei;
c) Võib-olla.

E-mail:_____

Appendix C

Questionnaire in Russian for comprehension experiment

Анкета
Уважаемый участник!

Данный опросник – это часть исследования, которое проводится приглашенным докторантом-лингвистом в Таллиннском университете. Цель исследования заключается в том, чтобы изучить насколько эстонцы, которые знают русский язык, способны понять украинский текст. Сначала мы зададим 17 вопросов о родном языке (языках) и языковых навыках. Данная анкета займет у Вас 5–10 минут. Все данные конфиденциальны: персональная информация не будет распространяться, экспериментальные данные будут использоваться в анонимной форме только для научных целей. Благодарим Вас за сотрудничество!

1. Пол_____

2. Год рождения_____

3. Национальность_____

4. Образование/специализация в университете _____

_____

5. Какой язык является для Вас родным? Можно назвать больше одного.

а) эстонский;

б) русский;

в) другие_____

6. В случае, если Вы выросли в многоязычной семье, пожалуйста, назовите языки, которыми Вы пользуетесь дома. Если нет, то переходите к третьему вопросу.

_____

7. Какими языками Вы владеете? Укажите.

Язык	Говорю свободно	Говорю и пишу свободно	Могу понять повседневный разговор	Говорю, но чувствую некоторые трудности	Понимаю, но не могу говорить

8. Говорит ли кто-то из Вашей семьи на русском языке? Укажите кто.

а) да_____

б) нет

9. Какой у Вас уровень владения русским языком?

а) B1

б) B2

в) C1

10. Где вы учили русский язык?

а) в школе;

б) в университете;

в) не учил.

11. Как часто Вы используете русский язык?

	Каждую день	Каждый неделю	Каждый месяц	Каждый год	Никогда
Дома					
В университете					
В СМИ: читаю газеты/ прессу/ новости/ социальные сети					
В свободное время					
В общем					
Другое					

12. Есть ли у Вас украинцы в семье? Если да, то укажите кто.

а) да_____

б) нет

13. Использовали ли Вы когда-то украинский язык?

а) да, для практических целей;

б) не использовал, но слышал и узнаю его;

в) никогда.

14. Сталкиваетесь ли Вы с украинским языком?

	Постоянно	Редко	Очень редко	Никогда
Дома				
С родственниками				
С друзьями				
В СМИ				
Слушаю украинские песни				
В общем				

15. Были ли Вы когда-то в Украине?

а) да, был много раз;

б) да, один или несколько раз;

в) ни разу.

16. Как Вы относитесь к Украине?

а) позитивно;

б) нейтрально / не интересуюсь;

в) негативно.

В дальнейшем мы хотели бы провести эксперимент для изучения понимания украинского текста и после этого собеседование для сбора более подробной информации. Не будет правильного или неправильного ответа. Важно только Ваше мнение. Участие добровольное.

17. Хотели бы Вы поучаствовать в данном эксперименте?

а) да

б) нет

в) возможно

E-mail:_____

Appendix D

Three Ukrainian tasks

ТЕКСТ № 1

I. Lugege tekst läbi

Українська казка

Жив в одному селі чоловік, і був у нього син. Якось батько говорить йому: – Слухай, сину! По-перше, живи так, щоб у кожному селі в тебе була хата, по-друге, щоб кожного дня нові чоботи і по-третє, щоб з тобою всі люди вітались. Задумався син над батьківськими словами, а потім запитав: – Як це, батьку, я можу збудувати в кожному селі хату, купувати щодня нові чоботи й примусити всіх зі мною вітатися? Засміявся старий і каже: – Це дуже легко, синку! Буде в кожному селі добрий товариш – буде й своя хата. Щоб кожного дня були нові чоботи, треба їх щовечора чистити, і вранці вони будуть як нові. І вставай, сину, рано – раніше за всіх – і йди на роботу, і працюй, а коли люди будуть іти на роботу, то всі будуть з тобою вітатися.

II. Seletage või tõlkige allajoonitud sõnad tekstis

1. Казка – _____

_____

2. Чоловік – _____

_____

3. Батько –_____

_____

4. Говорить – _____

_____

5. Чоботи – _____

_____

6. Запитав – _____

_____

7. Купувати – _____

_____

8. Засміявся – _____

_____

9. Щовечора – _____

_____

10. Кожному – _____

_____

11. Іти – _____

_____

12. Раніше – _____

_____

13. Хата – _____

_____

III. Otsustage, kas järgmised väited on õiged või valed

	ÕIGE	*VALE*
14. Isa räägib oma pojale, kuidas on õige elada.	____	____
15. Isa elab linnas.	____	____
16. Esimese asjana ütles isa pojale, et tal oleks palju saapaid tööl.	____	____
17. Poeg arvas, et isa ütles esimese asjana, et too peab ehitama maja igas külas.	____	____
18. Teise asjana ütles isa, et pojal oleks palju raha.	____	____

IV. Leidke õige vastus

19. Mida ütles isa oma pojale teise asjana?

a) Et pojal oleksid uued saapad iga päev;

b) Et pojal oleksid uued riided iga päev;

c) Et pojal oleks uus naine iga päev.

20. Mida poeg arvas selle kohta, mida isa ütles teise asjana?

a) Et isa tahab, et poeg abielluks;

b) Et isa tahab, et poeg ostaks uued saapad iga päev;

c) Et isa tahab, et poeg peseks saapaid iga päev.

21. Mida isa pidas silmas rääkides teisest asjast?

a) Et poeg ostaks uued saapad iga päev;

b) Et poeg peseks saapaid igal õhtul, et hommikul saapad oleksid nagu uued;

c) Et poeg peseks saapaid iga hommik.

22. Miks isa ütles, et kõik inimesed tervitaksid poega?

a) Et poeg töötaks linnas;

b) Et poeg tõuseks vara üles;

c) Et poeg tõuseks üles varem kui teised ja läheks tööle.

23. Mida poeg arvas selle kohta, mida isa ütles kolmanda asjana?

a) Et ta sunniks inimesi teda tervitama;

b) Et ta peaks vara üles tõusma ja minema tööle;

c) Et ta elaks õnnelikku elu.

V. Vastake küsimustele teksti põhjal

24. Mida isa tahtis, et poeg teeks?

_____
_____
_____

25.Mida isa lõpuks ütles?

_____
_____
_____

ТЕКСТ № 2

I. Lugege tekst läbi

Соціальні мережі

За останнє десятиліття соціальні мережі міцно увійшли в наше життя. Сьогодні складно знайти людину, яка не була б зареєстрована хоча б в одній з них. У колі психологів ведуться дискусії з приводу впливу соцмереж на психіку людини. Одні вважають, що соціальні мережі допомагають не тільки підтримувати зв'язки зі знайомими та друзями, але також зав'язувати ділові контакти і швидше дізнаватися важливі новини. Інші вважають, що соцмережі викликають залежність, «вбиваючи» величезну кількість часу, відволікаючи від важливих справ. Часто буває так, що людина, спілкуючись з віртуальними знайомими, забуває про реальність.

Фахівці провели дослідження на тему впливу соціальних мереж на життя людини. Виявилося, що всі соцмережі влаштовані так, що користувач просто не може не перевіряти своєї сторінки. Якщо протягом якогось часу у нього немає можливості увійти в свій аккаунт, з'являється тривога: а раптом хтось написав повідомлення? А може, з'явився цікавий запис і я не встиг його лайкнути? 80% користувачів зізналися, що не можуть залишити без уваги свою сторінку хоча б на добу.

Нерідко проведення часу в соціальних мережах призводить до невмотивованих ревнощів. Більше того, соціальні мережі часто стають причиною реальних розлучень! Наприклад, у Великій Британії популярний у всьому світі Фейсбук став причиною 1 з 3 розлучень, а в США – 1 з 5.

Також соціологи встановили, що соцмережі часто стають причиною поганого настрою. Людина розглядає чужі сторінки, які викликають у неї дві емоції – смуток і заздрість.

Якщо Ви помітили, що соцмережа забирає багато часу, просто контролюйте себе і не дайте затягнути себе в «павутину».

II. Seletage või tõlkige allajoonitud sõnad tekstis

1. Десятиліття –_____

_____

2. Мережа –_____

_____

3. Життя –_____

_____

4. Вплив – _____

_____

5. Зареєстровано – _____

_____

6. У колі – _____

_____

7. Людина – _____

_____

8. Допомагають – _____

_____

9. Зав’язувати – _____

_____

10. Буває – _____

_____

11. Віртуальний – _____

_____

12. Фахівці – _____

_____

13. Увійти – _____

_____

14. Тривога – _____

_____

15. Лайкнути – _____

_____

16. Сторінка – _____

_____

17. Ревнощі – _____

_____

18. Розлучень –_____

_____

19. Величезна – _____

_____

20. Протягом – _____

_____

21. Цікавий – _____

_____

22. Настрій – _____

_____

23. Дві –_____

_____

III. Otsustage, kas järgmised väited on õiged või valed

	ÕIGE	*VALE*
24. Psühholoogidel on erinevad arvamused sotsiaalvõrgustike mõju kohta.	____	_____
25. 80% kasutajatest ei suudaks ilma, et vaataks sotsiaalvõrgustikke vähemalt kord päevas.	_____	_____
26. Tänu sotsiaalvõrgustikele inimesed abielluvad.	_____	_____
27. Sotsiaalvõrgustikud kutsuvad esile õnne ja rõõmu emotsioone.	_____	_____
28. Sotsiaalvõrgustike tõttu on inimestel sageli halb tuju.	_____	_____

IV. Leidke õige vastus

29. Psühholoogid arvavad sotsiaalvõrgustikest positiivselt, sest

a) kontaktid võõraste inimestega ja võimalus tutvuda uute inimestega;

b) kontaktid sõprade ja tuttavatega, ärikontaktid ning teatakse tähtsaid uudiseid;

c) kontaktid sugulastega, kui nad on kauges linnas või maas.

30. Psühholoogid arvavad sotsiaalvõrgustikest negatiivselt, sest

a) sõltuvus sotsiaalvõrgustikest, kisub eemale tähtsatest asjadest, võtab palju aega;

b) sotsiaalvõrgustikud mõjuvad halvasti inimorganismile ja psüühikale;

c) Internetis on väga palju informatsiooni, mis raskendab elu.

31. Kui inimesed ei saa kontrollida oma sotsiaalvõrgustikke, siis nad on mures. Miks?

a) sest nad võivad mööda lasta olulist informatsiooni Internetis;

b) sest keegi kirjutas sõnumi või postitas midagi huvitavat ega ei jõudnud panna *like*'i;

c) sest 80% inimesi on üksildased ning neil ei ole kellega suhelda.

32. Facebook põhjustas

a) Inglismaal ühe kolmest suhtest ja Ameerikas ühe viest suhtest;

b) Inglismaal ühe kolmest lahutusest ja Ameerikas ühe viiest lahutusest;

c) Inglismaal ühe kolmest pulmast ja Ameerikas ühe viiest pulmast.

33. Milliseid emotsioone see põhjustab, kui inimesed vaatavad võõraid lehekülgi Internetis?

a) üllatus ja hirm;

b) igavus ja laiskus;

c) kurbus ja kadedus.

V. Vastake küsimusele teksti põhjal

34. Mis Te arvate, kas see tekst toetab psühhologide positiivset või negatiivset vaadet sotsiaalvõrgustike kohta? Miks?

_____

_____

35. Mida lõpuks soovitatakse tekstis?

_____

_____

ТЕКСТ № 3

I. Lugege tekst läbi

Давня казка

В одному невеликому місті в Центральній Азії жив старий вчитель. Коли він був молодим, він день і ніч учився, тому що думав, що найважливіша річ у світі – це знання. Коли він став дорослим, він зрозумів, що, окрім знань, у світі є ще багато важливого, наприклад, дім, діти, сім`я. А на старість він зрозумів, що найважливіше – це чисте і любляче серце людини та її очі, котрі спокійно і радісно дивляться на світ. У вчителя було багато учнів, і він давав їм не тільки знання, але навчав їх любові, чесності, щирості та вірності. Учні вірили своєму вчителю і хотіли завжди бути такими, як він. Щодня учні приходили до свого вчителя, але йшли вони до нього не тільки для того, щоб одержати нові знання. У вчителя була донька, красива, як сонце. Усі юнаки хотіли їй сподобатися, мріяли оженитися на ній. А старий вчитель ніяк не міг вибрати одного зі своїх учнів, ніяк не міг вирішити, хто б міг стати для його доньки кращим чоловіком. Одного разу вчитель вирішив перевірити своїх учнів. Він зібрав їх і сказав: – Я бачу, що всі ви хочете одержати любов моєї доньки. Я віддам її за того з вас, кому вона сама віддасть своє серце. Я раджу вам: візьміть у себе вдома найгарніші речі і подаруйте їх своїй любій. Наступного дня учні подарували дівчині багато дорогих гарних речей, які взяли вдома. І тільки один юнак не подарував нічого. – Учителю! – сказав він. – Якщо я зараз без дозволу батьків візьму вдома найдорожчі речі, то не зможу потім зробити чесними своїх дітей. Слова цього юнака дуже сподобались дівчині та її батькові, і він став чоловіком доньки старого вчителя.

II. Seletage või tõlkige allajoonitud sõnad tekstis

1. Вчитель – _____

_____

2. Важливого – _____

_____

3. Старість – _____

_____

4. Любляче –_____

_____

5. Очі – _____

_____

6. Дивляться –_____

_____

7. Знання – _____

_____

8. Вірності –_____

_____

9. Щодня – _____

_____

10. Йшли – _____

_____

11. Одержати – _____

_____

12. Донька – _____

_____

13. Юнаки –_____

_____

14. Ніяк – _____

_____

15. Вибрати – _____

_____

16. Чоловіком – _____

_____

17. Перевірити – _____

_____

18. Віддам – _____

_____

19. Візьміть – _____

_____

20. Подаруйте – _____

_____

II. Otsustage, kas järgmised väited on õiged või valed

	ÕIGE	*VALE*
21. Vana õpetaja elab väikses linnas Aasias.	_____	_____
22. Kui ta jäi vanaks, sai aru, et kõige tähtsam maailmas on abikaasa ja töö.	_____	_____
23. Õpetajal on väga palju lapsi ja õpilasi.	_____	_____

24. Ta tahtis, et tema tütar abielluks väga ilusa mehega. _____ _____

25. Ta ütles, et kõik mehed, kes tahavad abielluda
tema tütrega, peavad kinkima talle kõige ilusama asja kodust. _____ _____

IV. Leidke õige vastus

26. Mida vana õpetaja tegi, kui ta oli noor?

a) õppis kõik päevad ja ööd;

b) jalutas oma sõpradega;

c) aitas oma vanemaid.

27. Kui ta sai täiskasvanuks, siis sai aru, mis on veel oluline maalimas?

a) õpingud ja teadmised;

b) maja, lapsed ja pere;

c) tema õpilased.

28. Kui ta jäi vanaks, mida ta hakkas hindama kõige rohkem?

a) inimese puhast ja armastavad südant ning tema silmi;

b) eredat mõistust ja head mälu;

c) väga palju vaba aega.

29. Mis ta õpetas oma õpilastele?

a) tarkust, headust, elu, usku;

b) lugemist, kirjutamist, ilusat kõne;

c) armastust, ausust, siirust ja lojaalsust.

30. Miks õpilased käisid iga päev õpetaja juures?

a) Nad tahtsid õppida väga palju;

b) Nad tahtsid abielluda tema tütrega;

c) Nad tahtsid õpetajaga aega veeta.

V. Vastake küsimusele teksti põhjal

31. Mida ütles õpetaja oma õpilastele seoses tema tütre abiellumisega?

_____

_____

32.Miks üks noormees ei kinkinud midagi õpetaja tütrele? Kas see noormees abiellus õpetaja tütrega?_____

_____

Appendix E

Stimulus list used for the Map Tasks

№	Ukrainian	Russian	Frequency (ipm)	Rank	Estonian	Cognate Status	English
1	будинок	дом	792.6	118	maja	unrelated	house
2	автівка, автомобіль	машина	490.4	187	auto	unrelated	car
3	вода	вода	484.8	191	vesi	cognate	water
4	двері	дверь	450.8	210	uks	cognate	door
5	стіл	стол	402.5	237	laud	cognate	table
6	вулиця	улица	337.8	292	tänav	cognate	street
7	дорога	дорога	330.1	300	tee	cognate	road
8	школа	школа	316.0	315	kool	cognate	school
9	вікно	окно	280.8	370	aken	cognate	window
10	ліс	лес	211.5	512	mets	cognate	forest
11	ферма	ферма	202.6	543	farm	cognate	art
12	поле	поле	180.2	619	väli	cognate	field
13	церква	церковь	178.6	628	kirik	cognate	church
14	банк	банк	178.1	629	pank	cognate	bank
15	дерево	дерево	171.9	659	puu	cognate	tree
16	літак	самолёт	166.1	686	lennuk	divergent cognate	plane
17	кафе	кафе, кафетерий	156.9	737	kohvik	cognate	cafee
18	магазин	магазин	147.2	794	pood	cognate	shop
19	камінь	камень	131.9	910	kivi	cognate	stone
20	річка	река	131.0	916	jõgi	cognate	river
21	гора	гора	115.5	1040	mägi	cognate	mountain
22	корабель	корабль	112.5	1072	laev	cognate	ship
23	лікарня	больница	96.6	1263	haigla	divergent cognate	hospital
24	поїзд	поезд	93.3	1312	rong	cognate	train
25	університет	университет	93.3	1313	ülikool	cognate	university
26	виставка	выставка	89.9	1360	näitus	cognate	exhibition
27	поліція	милиция	89.9	1361	politsei	divergent cognate	police
28	музей	музей	87.0	1420	muuseum	cognate	museum
29	риба	рыба	86.0	1436	kala	cognate	fish
30	дах	крыша	85.0	1456	katus	unrelated	roof
31	драбина	лестница	83.1	1492	trepp	divergent cognate	ladder

32	ресторан	ресторан	79.3	1562	restoran	cognate	restaurant
33	парк	парк	69.5	1739	park	cognate	park
34	готель	гостиница	68.9	1754	hotell	divergent cognate	hotel
35	міст	мост	65.4	1838	sild	cognate	bridge
36	автобус	автобус	64.8	1862	buss	cognate	bus
37	пам’ятник	памятник	63.8	1892	monument	cognate	monument
38	бібліотека	библиотека	57.7	2059	raamatukogu	cognate	library
39	озеро	озеро	54.9	2166	järv	cognate	lake
40	собака / пес	собака	209.6	457	koer	cognate	dog
41	площа	площадь	132.7	809	väljak	cognate	square
42	завод	завод	124.5	875	tehas	cognate	factory
43	станція	станция	123.4	884	jaam	cognate	station
44	сад	сад	118.1	929	aed	cognate	garden
45	клуб	клуб	94.9	1164	klubi	cognate	club
46	залізниця	вокзал	63.6	1760	raudteejaam	unrelated	railway station
47	замок	дворец	88.9	1245	loss	divergent cognate	castle
48	кущ	куст	108.0	1017	põõsas	cognate	bush
49	пісок	песок	55.3	2150	liiv	cognate	sand
50	корова	корова	93.2	2051	lehm	cognate	cow

Colours

Ukrainian	Russian	Estonian	Cognate Status	English
червоний	красный	punane	cognate (archaic)	red
синій	синий	sinine	cognate	blue
зелений	зелёный	roheline	cognate	green
жовтий	жёлтый	kollane	cognate	yellow
чорний	чёрный	must	cognate	black
білий	белый	valge	cognate	white

Cardinal Directions

Ukrainian	Russian	Estonian	Cognate Status	English
схід	восток	ida	divergent cognate	east
південь	юг	lõuna	divergent cognate	south
північ	север	põhja	divergent cognate	north
захід	запад	lääs	divergent cognate	west

Appendix F

Instructions in Ukrainian for the Map Tasks

Шановний учаснику!
Будь ласка, уважно ознайомтесь з інструкцією перед початком завдання.
Не соромтеся задавати питання до початку експерименту.

Інструкція:

1. Відкрийте файл — ви побачите мапу міста.
2. Знайдіть свою локацію, позначену як "Ти знаходишся тут".
3. Ваш співрозмовник має таку саму мапу, однак Вам невідома його локація, а йому Ваша.
4. Ваше завдання:
   a. з'ясувати, де знаходиться співрозмовник
   b. домовитися про місце зустрічі та розказати Вашому співрозмовнику, як йому найзручніше дістатися туди.
5. Використовуйте свою рідну мову (українську) у спілкуванні з співрозмовником. Ваш співрозмовник, у свою чергу, використовуватиме естонську мову.
6. Перед початком експерименту вимкніть камеру та імітуйте телефонну розмову.
7. Почніть завдання з опису місця, де ви перебуваєте.
8. На виконання завдання у вас є максимум 10 хвилин. Чим швидше ви його виконаєте — тим вище буде ваше місце в рейтингу. Учасники, які виконають завдання найшвидше, отримають призи.
9. Скажіть стоп, коли Ви закінчите.

Друга частина

1. Тепер виконайте ту ж саму вправу, але з іншими мапами.
2. Умови гри залишаються незмінними:
   вам потрібно з'ясувати місце знаходження одне одного та домовитися про зустріч.
3. Завдання слід виконати якнайшвидше — максимальний час на виконання: 10 хвилин.
4. Цього разу завдання починає той співрозмовник, який не починав першу частину. Тобто, якщо у першій частині ви починали розмову, тепер починає інший учасник.

Appendix G

Instructions in Estonian for the Map Tasks

Lugupeetud osaleja,
Palun tutvuge hoolikalt juhistega enne ülesande alustamist.
Kui miski jääb ebaselgeks, ärge kartke esitada küsimusi enne eksperimendi algust.

Juhised:

1. Avage fail — ekraanile ilmub linnakaart.
2. Leidke oma asukoht, mis on tähistatud tekstiga "Sina oled siin".
3. Teie vestluspartneril on sama kaart, kuid teie ei tea tema asukohta ja tema ei tea teie oma.
4. Teie ülesanne on:
   a. välja selgitada, kus asub teie vestluspartner;
   b. leppida kokku kohtumispaik ning anda vestluskaaslasele teada, kuidas tal on sinna kõige mugavam jõuda.
5. Kasutage suhtluses oma emakeelt (eesti keelt). Teie vestluspartner kasutab suhtluses ukraina keelt.
6. Enne eksperimendi algust lülitage kaamera välja ja jäljendage telefonikõnet.
7. Alustage ülesannet oma asukoha kirjeldamisega.
8. Ülesande täitmiseks on teil maksimaalselt 10 minutit. Mida kiiremini ülesande lõpetate, seda kõrgem koht edetabelis. Kõige kiiremad osalejad saavad auhindu.
9. Ütle Stopp, kui olete valmis.

Teine osa

1. Nüüd korrake sama ülesannet, kuid kasutades teisi kaarte.
2. Mängu tingimused jäävad samaks:
   teie ülesanne on välja selgitada teineteise asukoht ja leppida kokku kohtumispaik.
3. Püüdke ülesanne täita võimalikult kiiresti — maksimaalne lubatud aeg on 10 minutit.
4. Seda osa alustab osaleja, kes ei alustanud esimest osa. Teisisõnu: kui teie alustasite vestlust esimeses osas, siis nüüd alustab teie partner.

Appendix H

Map Tasks for Ukrainian Participants

Appendix I

Map Tasks for Estonian Participants

Appendix J

Sentences for the Voice Stimuli for the IAT test

Ukrainian	Russian
У лісі жив-був маленький ведмедик.	В лесу жил-был маленький мишка.
Ведмедик полюбляв ласувати фруктами та злаками.	Мишка был любителем фруктов и злаков.
Він став справжнім фахівцем у харчуванні для малюків.	Он стал настоящим экспертом в питании для малышей.
Він був дуже добрим та неймовірно мудрим ведмедиком.	Он был очень добрым и невероятно мудрым мишкой.
Лісові мешканці завжди пригощали його чимось смачненьким.	Лесные жители всегда угощали его чем-нибудь вкусным.
Найкраща їжа це та, що смачна і не шкодить здоров'ю.	Самая лучшая еда – это та, что вкусная и не вредит здоровью.
Він куштував найсмачніші страви в різних країнах.	Он пробовал самые вскусные блюда в разных странах.

Appendix K

Sentence selection for the MGT test. The sentence in bold received the highest ranking and was therefore included in the MGT test.

UKR	RUS
У лісі жив-був маленький ведмедик.	В лесу жил-был маленький мишка.
Ведмедик дуже полюбляв ласувати фруктами та злаками і любив смачно поїсти.	**Мишка был большим любителем фруктов и злаков и любил вкусно покушать.**
Ведмедик став справжнім експертом у харчуванні для малюків.	Мишка стал настоящим экспертом в питании для малышей.
Він був не тільки дуже добрим, але і дуже мудрим ведмедиком.	Он был не только очень добрым, но и очень мудрым мишкой.
Лісові мешканці завжди пригощали ведмедика різними овочами та фруктами, щоб він ріс великим і сильним.	Лесные жители всегда угощали мишку различными овощами и фруктами, чтобы он рос большим и сильным.
Найкраща їжа це та, в якій ідеально поєднується приємний смак і користь для організму.	Самая лучшая еда – это та, в которой идеально сочетается приятный вкус и польза для организма.
Він обійшов 60 (шістдесят) країн світу і в кожній куштував найкращі дитячі кашки, суміші, пюре та печиво.	Он обошел 60 стран мира и в каждой пробовал самые лучшие детские кашки, смеси, пюре и печенье.

Appendix L

Visual attribute stimuli for the IAT Test by Dekker et al. (2021)

Negative Attribute Stimuli

Positive Attribute Stimuli

Appendix M

Questionnaire and the MGT test in Estonian from Qualtrics.

Q1 Sisestage siia esimeses osas kopeeritud number (teie anonüümse osaleja number).

_____

Q2 Kas teil on äsja tehtud ülesande kohta mõtteid või soovite anda selle kohta tagasisidet?

_____

Q3 Kas teil on kuulmisprobleeme?
- o Jah (1)
- o Ei (2)

Q4 Enne küsimustikule vastamist tuleb kontrollida, kas kuulete helisalvestist. Palun veenduge, et teil on olemas kõrvaklapid, heli esitamist võimaldav seade ning viibite keskkonnas, kus saate heliklippe segamatult kuulata.

Q5 Sugu
- o Mees (1)
- o Naine (2)
- o Muu (3)
- o Ei soovi vastata. (4)

Q6 Kui vana te olete? Sisestage ainult number (nt 21, 36)

_____

Q7 Eriala (üli)koolis

_____

Q8 Mis on teie rahvus?

_____

Q9 Millisest Eesti linnast või maakonnast te pärit olete?

_____

Q10 Kui elate mujal, palun vastake järgmiselt: kus te praegu elate ja kui kaua olete seal elanud?
- ▢ Tartu (1) _____
- ▢ Tallinn (2) _____
- ▢ Viljandi (3) _____
- ▢ Narva (4) _____
- ▢ Pärnu (5) _____
- ▢ Rakvere (6) _____
- ▢ Võru (7) _____
- ▢ Muu (palun täpsustage) (8)

_____

Q11 Mis keelt peate emakeeleks? Võite nimetada mitu keelt.

- ▢ Eesti (1)
- ▢ Vene (2)
- ▢ Muu(d) (palun täpsustage) (3)

_____

Q12 Mis keelt (keeli) te kodus räägite?

- ▢ Eesti (1)
- ▢ Vene (2)
- ▢ Muu(d) (palun täpsustage) (4)

_____

Q13 Mis keeli valdate ja mis tasemel? Täpsustage.

	Keeleoskuse tase
Eesti (9)	▼ Räägin keelt vabalt. (1 ... Ei oska. (6)
Vene (1)	▼ Räägin keelt vabalt. (1 ... Ei oska. (6)
Inglise (2)	▼ Räägin keelt vabalt. (1 ... Ei oska. (6)
Ukraina (3)	▼ Räägin keelt vabalt. (1 ... Ei oska. (6)
Muu (palun täpsustage) (4)	▼ Räägin keelt vabalt. (1 ... Ei oska. (6)
Muu (palun täpsustage) (5)	▼ Räägin keelt vabalt. (1 ... Ei oska. (6)
Muu (palun täpsustage) (6)	▼ Räägin keelt vabalt. (1 ... Ei oska. (6)
Muu (palun täpsustage) (7)	▼ Räägin keelt vabalt. (1 ... Ei oska. (6)
Muu (palun täpsustage) (8)	▼ Räägin keelt vabalt. (1 ... Ei oska. (6)

Q14 Mis keeles toimus teie õppetöö koolis?

- ▢ Eesti (1)
- ▢ Vene (2)
- ▢ Muu(d) (palun täpsustage) (3)

_____

Q15 Kus õppisite vene keelt? Võite märkida mitu kohta.

- ▢ Kodus (1)
- ▢ Lapsepõlves vene lastega mängides (2)
- ▢ Koolis võõrkeelena (4)
- ▢ Ülikoolis (5)
- ▢ Kursustel (6)
- ▢ Keelekeskkonnas viibides (7)
- ▢ Filmide, laulude, popkultuuri kaudu (8)
- ▢ Muu (d) (palun täpsustage) (3)

_____

Q16 Kui kaua olete vene keelt õppinud?

o Kuud (16) _____

o Aasta(t) (17) _____

Q17 Kui tihti te kasutate vene keelt?

	Mitte kunagi (1)	Harva (2)	Mõnikord (3)	Sageli (4)	Pidevalt (5)
Kodus (1)	o	o	o	o	o
Ülikoolis / tööl (2)	o	o	o	o	o
Sugulastega (3)	o	o	o	o	o
Sõpradega (4)	o	o	o	o	o
Uudiste lugemine ja suhtlus sotsiaalvõrgustikes (5)	o	o	o	o	o
Filmide vaatamine ja laulude kuulamine (6)	o	o	o	o	o
Muu (täpsustage) (7)	o	o	o	o	o

Q18 Kas keegi teie perest räägib vene keelt? Täpsustage, kes.

o Jah (1) _____

o Ei (2)

Q19 Kas teie peres on ukrainlasi? Täpsustage, kes.

o Jah (1) _____

o Ei (2)

Q20 Kas olete kunagi käinud Ukrainas?

o Jah, mitu korda (1)

o Jah, üks kord (2)

o Mitte kordagi (4)

Q21 Kas olete kunagi kasutanud ukraina keelt?

o Jah, praktilisel eesmärgil (1)

o Ise ei ole kasutanud, aga kui kuulen, siis tunnen keele ära (2)

o Mitte kunagi (4)

o Muu (palun täpsustage) (5)

_____

Q22 Kas puutute kokku ukraina keelega?

	Mitte kunagi (1)	Harva (2)	Mõnikord (3)	Sageli (4)	Pidevalt (5)
Kodus (1)	o	o	o	o	o
Ülikoolis / tööl (2)	o	o	o	o	o
Sugulastega (3)	o	o	o	o	o
Sõpradega (4)	o	o	o	o	o
Uudiste lugemine ja suhtlus sotsiaalvõrgustikes (5)	o	o	o	o	o
Filmide vaatamine ja laulude kuulamine (6)	o	o	o	o	o
Muu (täpsustage) (7)	o	o	o	o	o

Q29 Palun kuulake helifaili: Millise mulje jätab teile salvestuses kuuldav kõneleja? Ta tundub

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Harimata	o	o	o	o	o	Haritud
Ebasõbralik	o	o	o	o	o	Sõbralik
Vaene	o	o	o	o	o	Rikas
Inetu (ebameeldiv)	o	o	o	o	o	Ilus (meeldiv)
Rumal	o	o	o	o	o	Tark
Kummaline	o	o	o	o	o	Tavaline

Q30 Mis keelt te just kuulasite?
- o Ukraina (1)
- o Vene (2)

Q27 Palun kuulake helifaili: Millise mulje jätab teile salvestuses kuuldav kõneleja? Ta tundub

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Harimata	o	o	o	o	o	Haritud
Ebasõbralik	o	o	o	o	o	Sõbralik
Vaene	o	o	o	o	o	Rikas
Inetu (ebameeldiv)	o	o	o	o	o	Ilus (meeldiv)
Rumal	o	o	o	o	o	Tark
Kummaline	o	o	o	o	o	Tavaline

Q28 Mis keelt te just kuulasite?
o Ukraina (1)
o Vene (2)

Q25 Palun kuulake helifaili: Millise mulje jätab teile salvestuses kuuldav kõneleja? Ta tundub

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Harimata	o	o	o	o	o	Haritud
Ebasõbralik	o	o	o	o	o	Sõbralik
Vaene	o	o	o	o	o	Rikas
Inetu (ebameeldiv)	o	o	o	o	o	Ilus (meeldiv)
Rumal	o	o	o	o	o	Tark
Kummaline	o	o	o	o	o	Tavaline

Q26 Mis keelt te just kuulasite?
o Ukraina (1)
o Vene (2)

Q23 Palun kuulake helifaili: Millise mulje jätab teile salvestuses kuuldav kõneleja? Ta tundub

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Harimata	o	o	o	o	o	Haritud
Ebasõbralik	o	o	o	o	o	Sõbralik
Vaene	o	o	o	o	o	Rikas
Inetu (ebameeldiv)	o	o	o	o	o	Ilus (meeldiv)
Rumal	o	o	o	o	o	Tark
Kummaline	o	o	o	o	o	Tavaline

Q24 Mis keelt te just kuulsite?
o Ukraina (1)
o Vene (2)

End of Block: Block 2

Q33 Palun kuulake helifaili: Millise mulje jätab teile salvestuses kuuldav kõneleja? Ta tundub

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Harimata	o	o	o	o	o	Haritud
Ebasõbralik	o	o	o	o	o	Sõbralik
Vaene	o	o	o	o	o	Rikas
Inetu (ebameeldiv)	o	o	o	o	o	Ilus (meeldiv)
Rumal	o	o	o	o	o	Tark
Kummaline	o	o	o	o	o	Tavaline

Q34 Mis keelt te just kuulasite?
o Ukraina (1)
o Vene (2)

Q31 Palun kuulake helifaili: Millise mulje jätab teile salvestuses kuuldav kõneleja? Ta tundub

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Harimata	o	o	o	o	o	Haritud
Ebasõbralik	o	o	o	o	o	Sõbralik
Vaene	o	o	o	o	o	Rikas
Inetu (ebameeldiv)	o	o	o	o	o	Ilus (meeldiv)
Rumal	o	o	o	o	o	Tark
Kummaline	o	o	o	o	o	Tavaline

Q32 Mis keelt te just kuulasite?
o Ukraina (1)
o Vene (2)

Q35 Palun hinnake ukraina keele ilu alljärgneva skaalaga.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Inetu	o	o	o	o	o	Ilus

Q36 Palun hinnake vene keele ilu alljärgneva skaalaga.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Inetu	o	o	o	o	o	Ilus

Q69 Kui soovite osaleda eksperimendi järgmises osas, palun jätke oma kontaktandmed. Pärast teise osa läbimist täname teid väikese kingitusega teie aja ja panuse eest.

Appendix N

Questionnaire and MGT test in Ukrainian from Qualtrics

Q1 Введіть тут номер, який Ви щойно скопіювали в першій частині (ваш номер анонімного учасника).

_____
_____

Q2 Чи Ви маєте якісь коментарі щодо завдання, яке Ви щойно виконали?

_____
_____

Q3 У Вас є проблеми зі слухом?
- o Так (1)
- o Ні (2)

Q4 Перш ніж розпочати опитування, важливо, щоб Ви могли прослухати аудіозапис. Переконайтеся, що у вас є навушники, пристрій, який може відтворювати цей аудіозапис, і що Ви перебуваєте в середовищі, де можете спокійно прослухати ці аудіокліпи.

Q5 Ваша стать:
- o Чоловіча (1)
- o Жіноча (2)
- o Інше (3)
- o Відмовляюсь відповідати (4)

Q6 Скільки Вам років? *Введіть лише число (наприклад, 21, 36)*

_____

Q7 Професія / Спеціалізація в навчальному закладі

_____

Q8 Яка Ваша національність?

_____

Q9 Вкажіть, будь ласка, з якого Ви міста чи області України.

_____

Q10 Де Ви зараз проживаєте в Естонії?
- o Тарту (1)
- o Таллінн (2)
- o Вільянді (3)
- o Нарва (4)
- o Пярну (5)
- o Раквере (6)

o Виру (7)
o Інше (вкажіть, будь ласка) (8)

_____

Q11 Яка Ваша рідна мова або мови? Можете вибрати декілька.
- ▢ Українська (1)
- ▢ Російська (2)
- ▢ Суржик (3)
- ▢ Інша (і) (вкажіть, будь ласка) (4)

_____

Q12 Якою мовою Ви спілкуєтесь вдома?
o Українська (1)
o Російська (2)
o Суржик (3)
o Інша (вкажіть, будь ласка) (4)

_____

Q13 Будь ласка, зазначте, якими мовами Ви володієте, та оцініть рівень знання кожної з них:

	Рівень володіння
Українська (4)	▼ Вільно володію мовою (1 ... Не володію (6)
Російська (2)	▼ Вільно володію мовою (1 ... Не володію (6)
Естонська (1)	▼ Вільно володію мовою (1 ... Не володію (6)
Англійська (3)	▼ Вільно володію мовою (1 ... Не володію (6)
Інша (вкажіть, будь ласка) (5)	▼ Вільно володію мовою (1 ... Не володію (6)
Інша (вкажіть, будь ласка) (6)	▼ Вільно володію мовою (1 ... Не володію (6)
Інша (вкажіть, будь ласка) (7)	▼ Вільно володію мовою (1 ... Не володію (6)
Інша (вкажіть, будь ласка) (8)	▼ Вільно володію мовою (1 ... Не володію (6)
Інша (вкажіть, будь ласка) (9)	▼ Вільно володію мовою (1 ... Не володію (6)

Q14 Якою мовою проводилося навчання у Вашій школі або університеті?
- ▢ Українською (1)
- ▢ Російською (2)
- ▢ Іншою (вкажіть, будь ласка) (3)

_____

Q15 Як часто Ви використовуєте українську мову в повсякденному житті?

	Ніколи (1)	Рідко (2)	Іноді (3)	Часто (4)	Постійно (5)
Вдома (1)	o	o	o	o	o
В університеті / на роботі (2)	o	o	o	o	o
З родичами (3)	o	o	o	o	o
З друзями (4)	o	o	o	o	o
Читаю новини / у соціальних мережах (5)	o	o	o	o	o
Дивлюсь фільми / слухаю пісні (6)	o	o	o	o	o
Інше (уточніть) (7)	o	o	o	o	o

Q16 Як часто Ви використовуєте російську мову в повсякденному житті?

	Ніколи (1)	Рідко (2)	Іноді (3)	Часто (4)	Постійно (5)
Вдома (1)	o	o	o	o	o
В університеті / на роботі (2)	o	o	o	o	o
З родичами (3)	o	o	o	o	o
З друзями (4)	o	o	o	o	o
Читаю новини / у соціальних мережах (5)	o	o	o	o	o
Дивлюсь фільми / слухаю пісні (6)	o	o	o	o	o
Інше (уточніть) (7)	o	o	o	o	o

Q17 Як часто Ви використовуєте естонську мову в повсякденному житті?

	Ніколи (1)	Рідко (2)	Іноді (3)	Часто (4)	Постійно (5)
Вдома (1)	o	o	o	o	o
В університеті / на роботі (2)	o	o	o	o	o
З родичами (3)	o	o	o	o	o
З друзями (4)	o	o	o	o	o
Читаю новини / у соціальних мережах (5)	o	o	o	o	o
Дивлюсь фільми / слухаю пісні (6)	o	o	o	o	o
Інше (уточніть) (7)	o	o	o	o	o

Q21 Прослухайте аудіофайл: Як звучить мовець у цьому записі?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Неосвічена	o	o	o	o	o	Інтелігентна
Непривітна	o	o	o	o	o	Привітна
Бідна	o	o	o	o	o	Заможна
Некрасива	o	o	o	o	o	Гарна
Дурна	o	o	o	o	o	Розумна
Дивна	o	o	o	o	o	Нормальна

Q20 Прослухайте аудіофайл: Як звучить мовець у цьому записі?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Неосвічена	o	o	o	o	o	Інтелігентна
Непривітна	o	o	o	o	o	Привітна
Бідна	o	o	o	o	o	Заможна
Некрасива	o	o	o	o	o	Гарна
Дурна	o	o	o	o	o	Розумна
Дивна	o	o	o	o	o	Нормальна

Q19 Прослухайте аудіофайл: Як звучить мовець у цьому записі?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Неосвічена	o	o	o	o	o	Інтелігентна
Непривітна	o	o	o	o	o	Привітна
Бідна	o	o	o	o	o	Заможна
Некрасива	o	o	o	o	o	Гарна
Дурна	o	o	o	o	o	Розумна
Дивна	o	o	o	o	o	Нормальна

Q18 Прослухайте аудіофайл: Як звучить мовець у цьому записі?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Неосвічена	o	o	o	o	o	Інтелігентна
Непривітна	o	o	o	o	o	Привітна
Бідна	o	o	o	o	o	Заможна
Некрасива	o	o	o	o	o	Гарна
Дурна	o	o	o	o	o	Розумна
Дивна	o	o	o	o	o	Нормальна

Q23 Прослухайте аудіофайл: Як звучить мовець у цьому записі?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Неосвічена	o	o	o	o	o	Інтелігентна
Непривітна	o	o	o	o	o	Привітна
Бідна	o	o	o	o	o	Заможна
Некрасива	o	o	o	o	o	Гарна
Дурна	o	o	o	o	o	Розумна
Дивна	o	o	o	o	o	Нормальна

Q22 Прослухайте аудіофайл: Як звучить мовець у цьому записі?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Неосвічена	o	o	o	o	o	Інтелігентна
Непривітна	o	o	o	o	o	Привітна
Бідна	o	o	o	o	o	Заможна
Некрасива	o	o	o	o	o	Гарна
Дурна	o	o	o	o	o	Розумна
Дивна	o	o	o	o	o	Нормальна

Q24 Будь ласка, оцініть красу української мови за наступною шкалою.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Негарна	o	o	o	o	o	Гарна

Q25 Будь ласка, оцініть красу російської мови за наступною шкалою.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Негарна	o	o	o	o	o	Гарна

Q54 Якщо Ви бажаєте долучитися до наступної частини експерименту, залиште, будь ласка, свої контакти (ім'я та електронну адресу або телефон). Після проходження другої частини ми віддячимо Вас за витрачений час.

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