

ARTICLE

The impact of the Covid-19 pandemic on multilingual families in the Netherlands

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Abstract

As a result of the Covid-19 pandemic, public life in many countries ground to a halt in early 2020. The aims of this study were (i) to uncover the language practices of multilingual families during the pandemic, in general and especially regarding homeschooling; and (ii) to determine to what extent the changes in circumstance caused by the pandemic impacted children's language use and proficiency, and family well-being. Parents from 587 families completed an online survey for 1051 children. Data were analysed using ordinal logistic regression. Our results showed that for most children, there were no changes in language use, proficiency or well-being. When there were changes, these were more likely for (families with) preschool children. Using the heritage language for homeschooling (some or all of the time) did not have a negative impact on Dutch language proficiency, but it did have a positive impact on the heritage language proficiency.

Keywords: bilingualism; multilingualism; Covid-19 pandemic; homeschooling; language development

Introduction

As a result of the Covid-19 pandemic, public life in many countries ground to a halt in early 2020. Childcare and schools were closed, only key workers (e.g., health care professionals) were allowed to go to their place of work, and only essential shops remained open. Whilst the scope and duration of the restrictions varied from country to country, this unprecedented set of circumstances meant that in families around the world, many parents faced similar challenges. They suddenly found themselves caring for younger children full-time and/or supervising their older children's home-schooling activities. Contact with peers and with wider society was much restricted, and trips abroad were no longer possible. As a consequence, the language(s) which children heard, the contexts in which they used their language(s), and the people with whom they interacted also changed.

Whilst the impact of these sudden changes on the (language) development of young children has since been investigated (e.g., Hartshorne et al., 2021; Hopp & Thoma, 2020; Kartushina et al., 2022; Schuurman et al., 2021), the experience of multilingual families has received limited attention. In one of the few available studies, Serratrice and colleagues (2020) examined the impact of the pandemic on multilingual children in the UK and

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Ireland during the first few months of the first lockdown. In brief, they found that especially younger children experienced more opportunities to hear and use their heritage (or home) language or languages (HL), a finding which was replicated in a parallel study in Norway (García González et al., 2020).

This paper reports on a similar study conducted in the Netherlands in Spring 2021. Our goal was twofold: first, to uncover the language practices of multilingual families during the pandemic, in general and especially regarding homeschooling; and second, to determine to what extent the changes in circumstance brought about by the pandemic impacted children's language use and proficiency, and family well-being. Our decision to focus on these factors was motivated by the two pandemic studies in the UK and Norway available at the time and by research findings on bilingual language development more generally (e.g., Bohman et al., 2010; De Houwer, 2007; Hoff et al., 2012; Tsinivits & Unsworth, 2021).

Possible effects of the Covid-19 pandemic on multilingual families in the Netherlands

In this section, we review (largely) pre-pandemic research concerning the key factors in our study as background. In the Netherlands, schools and childcare centres closed on March 16th, 2020, and remained closed until May 11th, after which children were allowed to attend in smaller groups, until June 8th, when they fully re-opened and almost all restrictions were lifted. Restrictions were re-instated on November 13th, 2020, and schools closed again on December 20th for a second prolonged period until February 8th, 2021 (Rijksoverheid, 2022).

Languages (not) used in education

With relatively few exceptions, early childhood education and care (ECEC) and primary education in the Netherlands are largely monolingual. In most primary schools, use of another language of instruction is restricted to English, French or German and to a maximum of 15% of teaching time (see Goriot, 2019 for overview). The same three languages can be used as the language of instruction/communication for up to 50% of the time, as part of two national pilot schemes in a limited number of primary schools and ECEC centres (Aalberse et al., 2021; Jenniskens et al., 2020). Similarly, Dutch is the main language of instruction in secondary schools, except for foreign language classes and schools offering bilingual education. The Netherlands is also home to around 50 international schools offering education based on international (e.g., International Baccalaureate) or national (e.g., UK) curricula (International Schools Database, 2023). The main language of instruction in most of these schools is English.

In general, multilingual children's heritage (or home) languages (HLs) are rarely considered a vehicle for education in the Netherlands, even though research has found positive effects of multilingual practices in education on children's language development, their sense of empowerment, and their well-being (e.g., Creese & Blackledge, 2010). In recent years, however, there have been several successful initiatives which have contributed to an increasingly positive attitude towards the use of HLs at schools (e.g., the 3M project led by Joana Duarte).

Language use

Multilingual children's patterns of language use are positively associated with the amount of input they hear. For example, in a large-scale study in Flanders, Belgium, De Houwer

(2007) found that children growing up in families where both parents only used the HL were more likely to actively use that language than, for example, children growing up in families where one parent used the HL, either alone or in combination with Dutch (i.e., the majority language), and the other parent used Dutch only. In a recent study with families with bilingual toddlers, Verhagen et al. (2022) observed that rather than parental input patterns, it was overall amount of input which was crucial in predicting children's language use. In turn, language use has also been shown to be a positive predictor of (developing) language proficiency (Bohman et al., 2010).

Language proficiency

There is overwhelming evidence that individual differences in (developing) language proficiency are positively related to input quantity. This holds both when input quantity is aggregated across family members and/or input inside and outside the home (e.g., Hoff et al., 2012; Thordardottir, 2011), and when focussing on parental input alone (De Houwer, 2007; Unsworth et al., 2019). For example, Hoff and colleagues (2012) found that bilingual Spanish–English toddlers showed more advanced skills in English vocabulary and grammar the more input they heard in that language. The relation between input quantity at home and language proficiency is clearest for children's development in the HL (see Paradis, 2023 for a recent review of the relevant literature); results concerning the role of majority language input at home are mixed, with some studies finding no relation between majority language use at home and children's proficiency in the same language (e.g., Chodrogianni & Marinis, 2012).

In addition to parents, siblings are also important sources of language input in the home. The extant literature shows positive effects of input from older siblings on the language development of younger children in the majority language, which are often accompanied by negative (or no) effects on HL development (e.g., Bridges & Hoff, 2014; Rojas & Iglesias, 2013; Sorenson Duncan & Paradis, 2020; Tsinivits & Unsworth, 2021). For example, Tsinivits and Unsworth (2021) found that bilingual Greek–Dutch toddlers with older siblings heard and used more Dutch input at home and showed more advanced Dutch vocabulary and morphosyntax compared with first-born peers. In contrast, for Greek vocabulary and morphosyntax, there were no differences between children with and without older siblings.

Multilingual children's (rates of) language acquisition are also positively associated with qualitative differences in exposure. Several studies have shown that the diversity and complexity of children's language experience, particularly in their HL, predicts language outcomes (e.g., Paradis, 2011; Sun et al., 2020). For example, Place and Hoff (2011, 2015) found that diversity in interlocutors was a predictor of bilingual Spanish–English toddlers' language scores in their HL (see also Gollan et al., 2015).

Family well-being

Research conducted prior to the pandemic has shown that well-being in bilingual families is positively associated with HL maintenance and balanced bilingualism (e.g., De Houwer, 2015; Müller et al., 2020). For example, Boutakidis et al. (2011) found that first- and second-generation immigrants in the US who were more proficient in their HL (i.e., Chinese or Korean) also reported having more respect for their parents (see also Oh & Fuligni, 2010). Similarly, positive associations have been established between HL maintenance and children's perception of their emotional relationship with their parent

(Tannenbaum & Howie, 2002), and between reciprocal language use (i.e., children and parents speaking the same language) and greater family cohesion (Tseng & Fuligni, 2000).

Summary

In sum, the relationship between language exposure, use and proficiency is complex and whilst we do not yet have a full understanding of the exact nature of these relations and the extent to which they are (mutually) causal, they are clearly interrelated (De Cat & Unsworth, 2023; Paradis, 2023). An opportunity to further explore these relations arose during the pandemic, and in particular during the lockdowns, when many multilingual families experienced abrupt changes in exposure and opportunities for use in Dutch and/or the HL(s). Homeschooling in the HL may also have contributed to different input than in normal circumstances. In the following section, we briefly review the emerging findings on the impact of the pandemic on (multilingual) families, before outlining the research questions and predictions for the present study.

The impact of the pandemic on (multilingual) families: initial findings

To the best of our knowledge, at the time of writing there are just three studies which have examined the impact of the pandemic on multilingual children's language use and proficiency. Serratrice and colleagues (2020) collected data from 761 families in the UK and Ireland from April to July 2020. The families were linguistically diverse, speaking 95 different languages alongside English, and parents came from a range of educational backgrounds. They were asked to rate a series of statements on a scale from 0 ('not at all important') to 100 ('very important'). Preliminary analyses revealed that on the whole, parents were not very concerned about the lockdown negatively influencing their children's proficiency in English (i.e., the school language) and that during the pandemic, younger children appeared to have more opportunities to use their (other) home language or heritage language (HL) than before (Hardach, 2020; Serratrice, 2020). Similar observations were made in a parallel study in Norway (García González et al., 2020). Follow-up interviews with a small group of parents in the UK suggested dramatic improvement in the HL for some children during the lockdown – for example, in relation to reading skills (Serratrice, 2020).

A more recent study by Sheng et al. (2021) confirmed this using objective as well as parental report data. The authors compared two groups of bilingual Mandarin–English children in the US ($n = 19$ per group), one tested before and the other during the pandemic, and matched on SES, length of exposure to English and age. The two groups only differed in the richness of their input in Mandarin, which was significantly higher for the children tested during the pandemic. More specifically, these children used Mandarin more frequently with friends and made more frequent use of digital devices for Mandarin language activities. The authors note that it is unclear whether this latter finding reflected a conscious decision to boost the HL or a more general trend observed during the pandemic for parents to use digital devices to keep children occupied (Hartshorne et al., 2021). There were no significant differences between the two groups in the richness of their English input or in their language use at home. Children's proficiency was tested in both languages using sentence repetition and sentence comprehension tasks. There were no group differences for English, but for Mandarin, the children tested during the pandemic scored significantly higher than the children tested before. In other words, there was a boost in HL proficiency without any concomitant decline in proficiency in the

majority language, suggesting that the parents in Serratrice et al.'s study were right not to be concerned in this regard.

The Covid-19 pandemic and the measures put in place as a result put pressure on families around the world. Both children and their parents needed to adapt to sudden changes in their daily routines, their movement was restricted, and social networks (at least physically) were confined to members of the same household. Parents faced serious and imminent danger, they had to deal with job-related pressures as well as difficulties and challenges in interactions with their children. Research conducted during the early stages of the pandemic showed that these circumstances had a negative impact on various aspects of children's and parents' psychological well-being. For example, in a large-scale study in Spain and Italy, Orgilés et al. (2020) found that parents reported changes in their children's emotional well-being (e.g., in their ability to concentrate; see also Xie et al., 2020). Nevertheless, in the same study, most families reported that family coexistence during the lockdown was easy or very easy.

At the same time, the pandemic has also been found to have a positive impact on children's well-being. For example, Romero and colleagues (2020) observed an increase in certain positive behaviours (i.e., prosocial involvement and social bonding) for some children. Similarly, positive effects on emotional well-being were reported for adults during the SARS epidemic in Hong Kong in 2003 (Lau et al., 2006). The survey used by Serratrice and colleagues included one statement about well-being ("More opportunities to use the other language(s) are a source of family well-being"), which was rated positively, especially amongst families with preschool-aged children. However, given that this statement does not explicitly relate well-being to the pandemic, interpreting this finding is difficult.

In sum, the available research suggests that the pandemic may have had positive effects on multilingual children's HL proficiency and use, without negatively impacting the majority language. Furthermore, there is evidence suggesting both (concomitant) negative and positive changes in children's and parents' well-being during the Covid-19 pandemic, although not specifically in multilingual families. However, there remain many other factors known to influence (multilingual) children's language development which may have changed during the pandemic (e.g., access to a variety of speakers, siblings) and which as a result may have affected children's language use, language proficiency, and well-being. In addition, we do not know how multilingual families approached homeschooling during school closures and to what extent homeschooling may have contributed to the changes in their children's language use, language proficiency, and well-being. The present study aimed to fill these gaps.

The present study

Our research questions were as follows:

1. Which language(s) did parents use when homeschooling their children, and why?
2. Was there a change in children's patterns of language use, their language proficiency in Dutch and the heritage language(s), and in family well-being during the pandemic?
3. If so, in what direction did any such changes take place, and which factors predicted them?

Since our first research question was descriptive, we did not have any specific hypotheses. Given the monolingual educational context (cf. §2.1), it is possible that parents who spoke

both the HL and Dutch opted to switch to Dutch whilst homeschooling. However, parents with little to no proficiency in Dutch had little choice but to use the HL or find alternative ways of helping their children.

Regarding language use, we hypothesised that because children were likely spending more time at home with their HL-speaking parent(s), they would receive less input in Dutch and more input in the HL(s), compared to the pre-pandemic situation. More specifically, we hypothesised that children may switch to using the HL more often (Serratrice, 2020; Sheng et al., 2021), depending on how much HL input was available at home (i.e., from an HL-speaking parent and/or during homeschooling). For multilingual children in lockdown, the number of different speakers regularly providing input and opportunities for language use may have increased because most – if not all – family members were required to stay at home. Equally, it may (also) have decreased because contact with the wider HL-speaking family was limited due to travel restrictions. During the lockdowns, siblings were likely spending more time with each other than normal. This might also have changed the language(s) siblings typically used with each other.

With respect to language proficiency, we similarly hypothesised that children's HL proficiency would improve (Serratrice, 2020; Sheng et al., 2021), depending on whether HL input was available at home (i.e., from an HL-speaking parent and/or during homeschooling). In particular, we expected that being homeschooled in the HL(s) might provide children with different (and potentially richer) input in that language than normal, which would have consequences for their HL proficiency. Use of academic language usually involves different vocabulary and grammatical structures compared with the everyday conversations for which the HL is typically used (Cummins, 1979, 2000). Exposure to more complex syntax has been shown to be positively associated with young children's vocabulary skills (e.g., Rowe et al., 2017). Whilst the children in this earlier study were younger than the children needing homeschooling during the pandemic, it is still possible that exposure to more complex and/or different vocabulary and grammatical structures will have had a positive impact on children's HL development both generally and in terms of academic language skills. At the same time, children's Dutch proficiency may have stagnated or even have got worse, depending on whether Dutch language input was available at home (i.e., from a Dutch-speaking parent and/or during homeschooling).

Finally, for well-being, we had two contrasting hypotheses. On the one hand, more opportunities for HL use may have contributed to better family well-being (especially when an HL-speaking parent was at home). On the other hand, however, the stressful situation caused by the pandemic and all that this entailed may have had an overall negative effect on family well-being.

Method

Participants

Participants were 587 families with a total number of 1051 children.¹ The average number of children per family was 1.8 ($SD = 0.70$). Fifty-two families were one-parent households,

¹These figures and the descriptives given in this section include only those participants who completed the whole questionnaire. There were 391 parents who started the questionnaire but failed to complete plus a further 28 who were excluded because they did not consent ($n = 10$), because they did not live in the Netherlands ($n = 13$), or because they were not multilingual ($n = 5$).

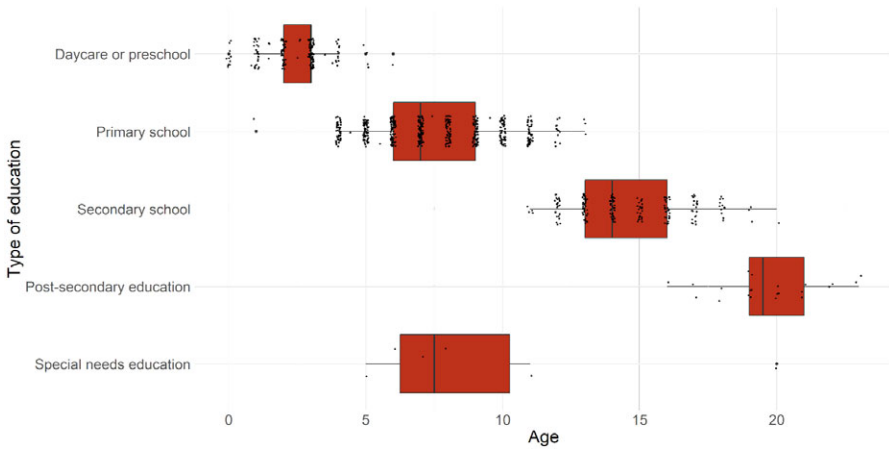


Figure 1. Distribution of children's ages organised by type of education.²

and 15 families had an additional adult living in the house (for example, a grandparent). There were families from each of the Netherlands' twelve provinces, but most resided in the *Randstad*, the large metropolitan region in the Western part of the country, and in the province *Noord-Brabant*, which includes the cities of *Eindhoven*, *Tilburg*, *'s Hertogenbosch* and *Breda*. These are all areas with relatively high levels of immigration. On average, two languages were spoken per family, and the number of languages spoken ranged from one to five. Including Dutch, there were 63 languages represented in our sample (see Supplementary materials, S2).

The children were of all ages, from babies to adult children still living at home ($M = 8.2$ years, $SD = 4.8$). Most of the children (177/196) younger than five years old attended childcare of some sort. Around half of the children in our sample ($n = 591$) attended primary school (see Figure 1). We excluded children older than 18 years ($n = 27$) from our analyses.

The vast majority of children attended regular Dutch-language school (77.2%, 776/1004), but some children attended bilingual English–Dutch or English-language education (international schools; $n = 191$); see Figure 2. There were also a handful of children in bilingual Frisian–Dutch or Frisian-language education ($n = 21$). Several children attended schools where other languages were used, such as Dutch Sign Language and Dutch or Dutch and German (combined into the 'Other' category here; $n = 16$).

Most parents (77.1%, 865/1122) in our sample were highly educated, having obtained a university degree or equivalent. Approximately 17.8% ($n = 200$) had attended post-secondary school education but not university, 4.4% ($n = 49$) secondary school, and 0.7% ($n = 8$) primary school. Most parents were able to speak and understand Dutch quite well or very well. There were, however, more than one hundred families where parents had limited or no proficiency in Dutch. See Figures 1 and 2 in the Supplementary Materials (S2) for further details.

²Several children are missing from this figure because it was unclear whether they attended any childcare or education ($n = 3$), and/or because parents indicated they did not ($n = 16$). Adult children are included here for the sake of completeness but excluded from further analyses.

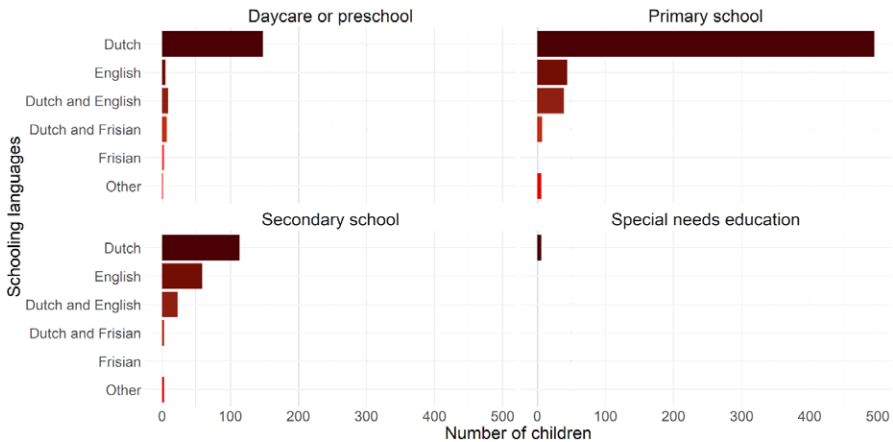


Figure 2. Language used in childcare and education. Number of children per language, organised by educational level.

Questionnaire

Parents completed a questionnaire using the online platform Qualtrics® (version March 2021). Questions targeted children’s proficiency in Dutch and the heritage language, parents’ proficiency in Dutch, children’s and parents’ language use, family well-being, how children were cared for and educated, and parents’ working patterns during the pandemic, as well as background information such as place of residence, number of people in the household, and parents’ level of education. The content of the questions was informed by available bilingual experience questionnaires (Q-BEx - De Cat et al., 2022; BiLEC - Unsworth, 2013) as well as initial research findings on the impact of the pandemic on multilingual children (Serratrice, 2020). Care was taken to ensure that all questions were formulated according to best practices from the field of psychometrics (Dillman et al., 2014). A combination of multiple-choice (as in (1)) and open-ended questions (as in (2)) was used.

- (1) How, if at all, has the pandemic changed **your children’s** language use when speaking to **you** compared to before?

My child speaks ...

a lot more Dutch and a lot less of the other language(s)

a little more Dutch and a little less of the other language(s)

No change

a little less Dutch and a little more of the other language(s)

a lot less Dutch and a lot more of the other language(s)

- (2) Please tell us more about any changes in language use in your family during the pandemic (if you wish).

The questionnaire was designed in English and translated into Dutch, and subsequently made available to parents in both languages. It took approximately 15 minutes to

complete. A full version of the questionnaire is available in the supplementary materials (S1) and the full dataset is available at [OSF](#).

Procedure

Data collection took place between March 23rd and May 7th, 2021. Participants were recruited using existing participant databases and social media (Facebook, LinkedIn and Instagram), including paid advertisements. The call for participation was made available in twelve different languages (Arabic, Mandarin Chinese, English, French, Frisian, German, Polish, Russian, Spanish, Tamazight, and Turkish). Criteria for participation were residency in the Netherlands and at least one child between the ages of 0 and 18 years. There were no restrictions on participation relating to (a)typical development.³ Upon completion, parents were offered the opportunity to participate in a prize draw to win one of twenty vouchers for an online store worth €25. The study was approved by the Ethics Assessment Committee of the Faculty of Arts and the Faculty of Philosophy at Radboud University, Nijmegen, the Netherlands.

Analysis

Our outcome variables (changes in language use, Dutch proficiency, HL proficiency, well-being) used an ordinal scale. We therefore analysed the data using ordinal logistic regression using the *polr* command in the MASS package (version 7.3-54, Venables & Ripley, 2002) in R (version 4.1-2, R Core Team, 2020).

We started by creating a base model with age as a predictor. For the analyses at child level (i.e., language use and language proficiency), age was operationalised as primary school (reference) vs. secondary school vs. preschool/childcare (i.e., *AgeEducationChild*). For the analyses at family level (i.e., well-being), we used preschool/childcare only (reference) vs. school-aged vs. preschool/childcare + school-aged (i.e., *AgeEducationFamily*).

We subsequently added our other variables of interest. For language use and language proficiency, these were the language(s) used by the parent(s) at home (i.e., *LangParentAtHome*: Dutch (reference) vs. HL vs. both) and whether the child had a sibling (i.e., *Sibling*: no (reference) vs. yes). Both variables were also tested in interaction with *Age*. The analyses on language use and proficiency were restricted to children attending Dutch-language childcare, primary or secondary school.⁴

For well-being between children and their parents, our variables of interest were whether the parent was at home (i.e., *ParentAtHome*: no (reference) vs. yes), the language(s) spoken by the parent (i.e., *LangParent*: Dutch (reference) vs. HL vs. both), as well as interaction between the two and with *Age*. For well-being between siblings, the variables of interest were *LangParentAtHome* and the language used between the siblings

³The rationale behind this decision was that we wanted our sample to be as representative as possible. We did not ask parents whether their child had a language impairment because (i) we were not specifically interested in any potential differences between typically-developing children and children with a language impairment, and (ii) we wanted to keep the number of questions as low as possible.

⁴We did this because for children attending an English-language or bilingual school, the 'other language(s)' in the answer option could refer to the heritage language or English. This makes the results more difficult to interpret.

(i.e., *LangSiblings*: Dutch (reference) vs. HL vs. both), as well as the interaction between the two. The analyses on family well-being included all children, irrespective of the language of schooling.

To examine the effect of the language(s) used in homeschooling on children's language use and proficiency, we re-ran the aforementioned analyses including the language used during homeschooling (i.e., *HomeSchoolLang*: Dutch (reference) vs. HL vs. both). For the analyses on well-being, this factor was tested by specifying whether the parent in question was involved in homeschooling (i.e., *Homeschooler*: no (reference) vs. yes), and subsequently adding interactions with *HomeSchoolLang* and *LangParent*.

The goodness of fit of each model was compared with the previous, simpler model (or an intercept-only model) using the *anova* function in the base package (R Core Team, 2020). The proportional odds assumption (also known as the assumption of parallel lines) was tested using the *brant* package (Schlegel & Steenbergen, 2020). Where relevant, models were re-levelled to test for differences between comparisons unavailable in the original model. Odds ratios can be interpreted in several equivalent ways, depending on how probability is defined and the direction of the odds (UCLA Statistical Consulting Group, n.d.). Wherever possible, we report results in terms of the interpretation which is the easiest to understand.

Results

We first provide the descriptive results on homeschooling before presenting the analyses of language use, proficiency and family well-being.

Homeschooling

During the lockdowns, when childcare facilities and schools were closed, most preschool-aged children ($n = 83$) were cared for at home by family, though many (also) attended emergency care ($n = 48$) because their parents were essential workers (Figure 3, S2). In general, primary school children were either homeschooled by family members ($n = 418$) and/or they followed online classes ($n = 315$). Online classes were the main source of education for secondary school children ($n = 192$), with very few being homeschooled by family members ($n = 27$). For this reason, all analyses concerning the role of homeschooling include primary school children only (and only those attending Dutch-language education).

Parents helped with homeschooling in two thirds (269/408) of the families. Almost all children ($n = 391$) were supervised by one or both of their parents, most of whom ($n = 435$) were working from home (Figure 4, S2). Overall, just under half (45%; $n = 122$) of the families used both languages during homeschooling, whereas 84 (31%) opted for homeschooling in Dutch and 61 (23%) in the heritage language. Approximately one third (101/269) of families made a conscious decision about which language to use during homeschooling. Some parents reported that they saw no other choice but to use Dutch, whereas others said they wanted to avoid confusing their children. Some parents made choices based on their concern about their children's language proficiency. For others, one language was simply considered more important than the other. Several parents reported continuing to speak their own language during homeschooling (this could be a HL or Dutch), primarily for reasons of habit or ease, or because they did not speak Dutch at all or very well. For some, a lack of Dutch

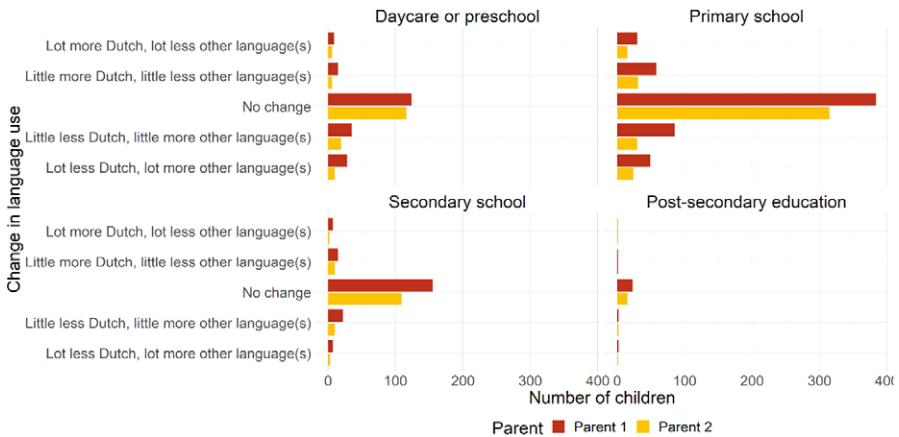


Figure 3. How children's language use changed when speaking to their parent(s), organised by age group.

proficiency was reason to leave homeschooling to the Dutch-speaking partner. Examples of parents' comments on the topic of homeschooling are given in the Supplementary Materials (S4).

Language use

We asked parents how, if at all, the pandemic had changed their child's language use when speaking to them. For most child-parent pairs ($n = 1241$), there was no change (Figure 3). There were however a substantial number of child-parent pairs whose language use did change: some child-parent pairs ($n = 206$) started using more Dutch and less of the other language(s), whereas others ($n = 329$) used less of the other language(s) and more Dutch. Given the relatively restricted variation in the data, our analyses combined the categories *little less* and *lot less*, and the categories *little more* and *lot more*.

When analysing all children (Tables 1a-c, S3), we found that the odds of using more Dutch and less HL (rather than no change or less Dutch and more HL) were 1.54 (95% $CI = 1.14, 2.09$) times greater for primary school children than for preschool-aged children, and 1.57 (95% $CI = 1.05, 2.35$) greater for secondary school children than for preschool-aged children. In other words, children in the youngest group were less likely to switch to Dutch than older children. Furthermore, children were more likely to change to using more Dutch and less HL when the parent(s) at home used both languages compared to when the parent(s) at home spoke the HL only ($OR = 1.68, 95\% CI = 1.30, 2.17$). Compared to children whose parent(s) at home spoke Dutch only, there was no such difference ($OR = 1.37, 95\% CI = 0.84, 2.21$).

When we restricted our analysis to children at primary school who were homeschooled (Tables 2a & 2b, S3; $n = 550$ child-parent pairs), the odds of using more Dutch decreased for children homeschooled in the HL some or all of the time compared with children homeschooled in Dutch only (Dutch only vs. HL only: $OR = 0.45, CI = 0.31, 0.67$; Dutch only vs. both languages $OR = 0.36, CI = 1.46, 4.88$). There were no significant differences between children homeschooled in both languages compared with children homeschooled in the HL only. In this analysis, the presence of a sibling was associated with decreased odds of using more Dutch ($OR = 0.60, CI = 0.38, 0.93$).

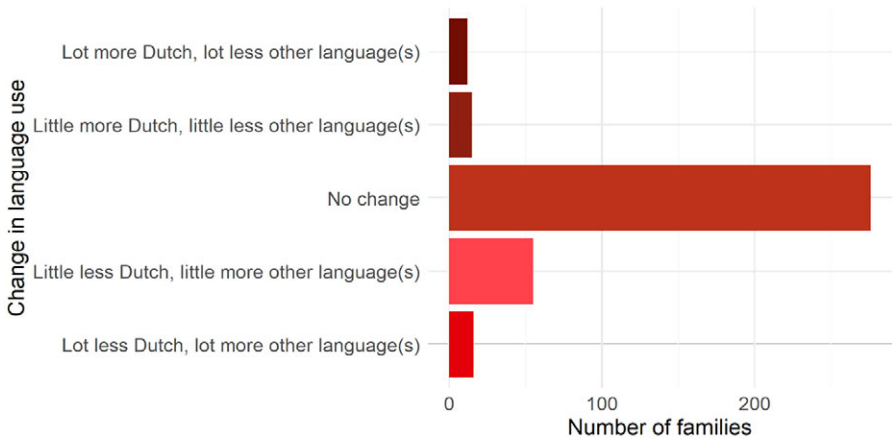


Figure 4. How language use among siblings changed.

We also examined language use amongst siblings. In most families ($n = 276$), there was no change (Figure 4). However, when a change did take place, more families reported that siblings used less Dutch and more of the other language when speaking to each other rather than the other way round. This pattern was more likely for siblings who normally used both languages in their communication with each other than for siblings who normally used either Dutch only ($OR = 0.28, CI = 0.13, 0.59$) or the HL only ($OR = 0.37, CI = 0.16, 0.79$); see Tables 3a & 3b, S3).

Language proficiency

We asked parents how, if at all, the pandemic had changed their child’s language proficiency in Dutch and the HL. For most children ($n = 412$), there was no change in either language (Figure 5). When there was a change, this differed across languages. For

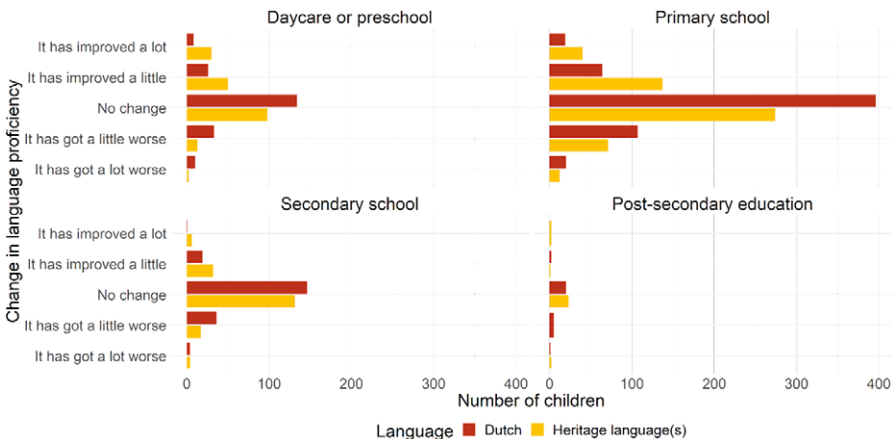


Figure 5. How children’s language proficiency in Dutch and the heritage language(s) changed, organised by age group.

Dutch, there were overall more children whose proficiency got worse ($n = 216$) than whose proficiency improved ($n = 139$) whereas for the HL, this pattern was reversed: there were overall more children ($n = 298$) whose proficiency improved than whose proficiency got worse ($n = 121$).⁵

In the analysis with all children (Tables 4a-b, S3), we found no significant effect of age on children's language proficiency in Dutch, but there was an effect of the language(s) spoken by the parent(s) at home: for children whose parent(s) at home spoke Dutch only, the odds of children's Dutch language proficiency improving (rather than not changing or getting worse) were 3.03 times greater ($CI = 1.54, 5.99$) than for children whose parent(s) at home spoke the HL only. This was also the case for children whose parent(s) at home spoke both languages ($OR = 2.99, CI = 2.14, 4.21$). There was no significant difference between the children whose parent(s) at home spoke both languages and those whose parents used Dutch ($OR = 0.99, CI = 0.51, 1.91$). Note, however, that the number of families where the language spoken by the parent(s) at home was Dutch ($n = 157$) was considerably lower than the number of families where the parent(s) at home used the other language(s) ($n = 391$) – hence, the larger confidence intervals. When the former group was removed, the same pattern of results was obtained for the Dutch-only and HL-only groups.

As for the analyses concerning language use, we analysed the data for the primary school children who were homeschooled separately. There were no significant effects of homeschooling language or of having a sibling on children's Dutch language proficiency.

For HL proficiency, there was a significant effect of age but not of the language(s) spoken by the parent(s) at home (Tables 5a & 5b, S3). More specifically, for primary school children the odds of their HL improving (rather than no change or getting worse) were around half ($OR = 0.51, CI = 0.35, 0.73$) of those of preschool-aged children. This was also the case for secondary school children ($OR = 0.43, CI = .27, 0.70$). There was no significant difference between the two school-aged groups ($OR = 0.85, CI = 0.57, 1.26$). Having a sibling did not have a significant impact on any changes in HL proficiency.

For homeschooled primary school children (Tables 6a & 6b, S3), the odds of an improvement in HL proficiency were 3.92 times greater ($CI = 1.86, 8.45$) for children homeschooled in the HL only than for children homeschooled in Dutch and 2.37 times greater ($CI = 1.46, 3.87$) for children homeschooled in both languages compared to the same group. There was no significant difference in HL proficiency between children homeschooled in Dutch only and those homeschooled in both languages ($OR = 0.60, CI = 0.29, 1.24$). There were no significant differences between children who had a sibling and those who did not.

Family well-being

We wanted to know how, if at all, the pandemic impacted relationships within the family. More specifically, we asked parents about their relationship with their child(ren), their children's relationship with other adults in the household (in almost all cases another parent⁶) and in families with more than one child, we asked about relationships between

⁵The numbers do not add up to the total number of children here because there were no data on proficiency change in the HL for 106 children.

⁶Fifteen families had another adult (other than a parent) living in the same household. For these families, the information given for *Parent 2* in Figure 6 includes this other adult.

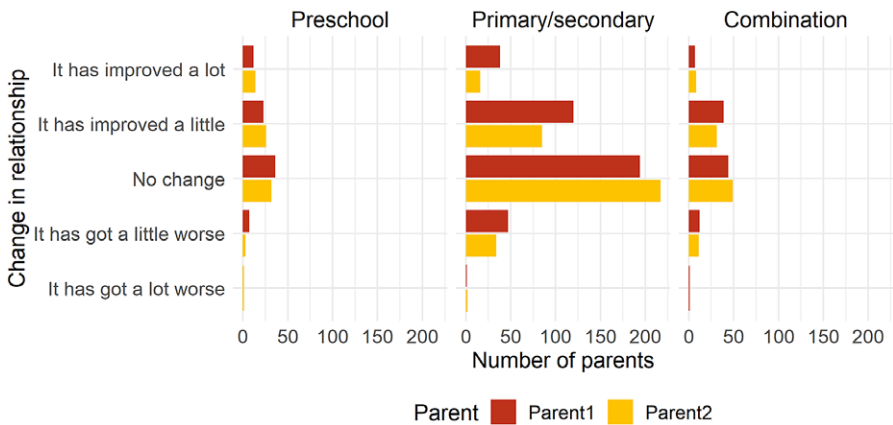


Figure 6. How children's relationships with their parents changed.

siblings. In approximately half of the families, the pandemic had no change on children's relationships with either of their parents (Figure 6). When there was a change, it was much more likely to be positive: for 38% of parents, their relationship with their child(ren) was reported as having improved a lot or a little, whereas for 11% of parents, this relationship had worsened.

We first analysed the data from all age groups regardless of school language (Tables 7a-c, S3). For families with preschool-aged children only, the odds that parent-child relationships improved (rather than stayed the same or got worse) were 1.77 times ($CI = 1.27, 2.49$) greater than for families with school-aged children only. The same pattern was also observed when we restricted the analysis to children attending Dutch-language childcare or education only ($OR = 1.56, CI = 1.07, 2.28$). Note that it was not the case that families with school-aged children only were more likely to experience a decline in well-being; rather, for this group, there were comparatively more families where no change took place at all. Whether the parent in question was at home and which language they spoke were not significant predictors of family well-being. Whether the parent was involved in homeschooling was, however: the odds of the parent-child relationship improving were almost twice as much ($OR = 1.92, CI = 1.28, 2.89$) when the parent was involved in homeschooling (Table 8, S3).

When asked to provide further information about any changes in their relationships with their children, several parents commented that they felt more involved in what their children were doing at school and were also better able to follow their language development (in both languages). Some parents reported that the time they had spent together had brought them closer together as a family. At the same time, other parents reported that the difficulties they had experienced combining work and homeschooling had a negative effect on their relationship with their children. See parents' comments in S4 for further details.

We observed similar patterns for sibling relationships: in approximately half of the families ($n = 196$), the pandemic had no change on children's relationships with each other (Figure 7), and when there was a change, it was more likely to be positive. More specifically, sibling relationships worsened in 8% of families and improved in 40% of families.

Our analyses did not reveal any specific factors which predicted whether sibling relationships changed. When asked to provide further information about any changes

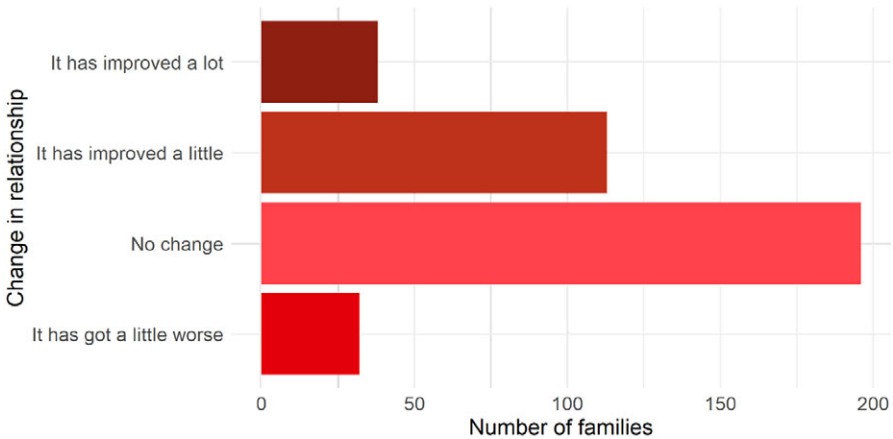


Figure 7. How children's relationships with their siblings changed.

in their children's relationships with each other, parents remarked either that siblings had become closer, were fighting more often, or both.

Discussion

This study investigated the impact of the Covid-19 pandemic on multilingual families in The Netherlands. Our results showed that for most children, there were no changes in language use, proficiency or well-being. This is reassuring: despite the upheaval the pandemic caused, for most families participating in our survey, this did not lead to any significant changes relating to their multilingualism. This may have been because for many children, family language practices were so well-established that they were impervious to change, the change in (language) circumstances were less severe than we hypothesized, and/or the lockdowns were not long enough to have any long-lasting impact (Orgilés et al., 2020). The observation that school closures apparently did not impact on children's Dutch language proficiency – as least not as it was measured here – is in line with findings from Hopp and Thoma (2020), who found no negative impact of said closures on foreign language learning at primary schools in Germany. Note, however, our participants were mostly highly educated. A recent study by Schuurman and colleagues (2021) suggested that children from disadvantaged backgrounds experienced learning losses of around two months during the first school closures (see also Engzell et al., 2021).

It is furthermore important to bear in mind that whilst our survey explicitly asked about changes in relation to the pandemic, no claims can be made about causal relations based on these data. In addition, we cannot know whether the changes experienced by some families may have happened anyway. Bearing these caveats in mind, we now review each of the factors found to predict changes in the families surveyed.

Homeschooling

Most primary school children attending Dutch-language education were homeschooled in the HL, either alone or alongside Dutch. We found that the language(s) used during

homeschooling was related to language use more generally. More specifically, children who were (also) homeschooled in the HL(s) were more likely to use more of the HL(s) when speaking to their parents compared to children who were homeschooled in Dutch only. This finding underscores the importance of language exposure for children's active language use (Verhagen et al., 2022).

The language(s) used for homeschooling were furthermore related to changes in language proficiency, but only in the HL. In other words, there is no reason to believe that using the HL rather than or in addition to Dutch had a negative impact on children's Dutch language proficiency. This is in line with translanguaging approaches (e.g., Creese & Blackledge, 2010). Using the HL for homeschooling did however have a positive impact on children's HL proficiency, as we predicted. This may constitute an effect of input quantity, but it is likely (also) an effect of input quality: the more varied and potentially complex language used for homeschooling (Cummins, 1979, 2000) may also have contributed to changes in proficiency (e.g., Rowe et al., 2017).

Most parents did not make a conscious decision about homeschooling language, nor were they provided with explicit instructions about how to approach this task as a multilingual family. To a certain extent, this is understandable, given the unprecedented situation in which we found ourselves back in March 2020. At the same time, this finding does reflect the more general tendency in Dutch education to ignore multilingual children's linguistic capabilities in their other language(s), or even see them as a problem. Our findings suggest that should there be any future lockdowns – and perhaps more generally – teachers may encourage parents to use the HL when interacting with their children during homeschooling without fearing that this will lead to a loss in Dutch language proficiency. At the same time, it is important to note that our study did not include any objective proficiency measures, nor did we track long-term effects of the pandemic on children's language learning and academic achievement more generally. Nevertheless, our findings will hopefully encourage teachers (and parents) to see the relevance of children's heritage language skills as (an active) part of their education.

Parental input patterns

Parental input patterns predicted changes in language use. When children's language use changed, it was in favour of the HL, and only when the parent(s) at home used both languages compared to when the parent(s) at home spoke the HL only but not when compared to when parent(s) at home spoke Dutch only. Note that having a parent at home who used both languages could mean one of two things: either the parent(s) at home used both Dutch and the HL(s), or there was both a Dutch-speaking parent and an HL-speaking parent at home.⁷ In either case, this finding is in line with previous research showing a similar relation between family language patterns and children's active use of the HL (De Houwer, 2007). Most children showed no change in their language use. This might be because the simultaneous effects of spending more time with HL speakers at home and more restricted access to the wider HL-speaking family neutralised each other.

Parental input patterns also predicted changes in children's proficiency in Dutch. More specifically, when parents spoke Dutch – either alone or alongside the HL – children were more likely to use more Dutch compared with parents who spoke the HL only. For

⁷ It is not possible to distinguish these two groups because the number of children per cell is too low to conduct the required statistical analyses.

the HL, no such effect was observed, contrary to our hypothesis. This result is unexpected, in the sense that previous research has found the relation between input quantity at home and language proficiency to be strongest for children's development in the HL (Hammer et al., 2012; Rojas & Iglesias, 2013) with mixed findings for the majority language.

Siblings

In some families there was a change in language use between siblings. As predicted, this change was in favour of the HL, and the likelihood of such a change was greatest for siblings who under normal circumstances used both languages when speaking to each other rather than either the HL or Dutch. In other words, the observed changes for language use between siblings were quantitative rather than qualitative in nature. Having a sibling was also a significant predictor of children's language use, again favouring the HL.

There are a number of explanations for these effects. First, many of the families in our study only used the HL at home. In such families, parents are often invested in maintaining the heritage language and culture (Park & Sarkar, 2007). Older children often address their younger siblings in the HL during family conversations involving both parents and younger siblings, whereas when siblings interact alone, they tend to use the majority language (Kheirkhah, 2016). In the context of the pandemic, (some) siblings may have spent less time alone and more time with at least one parent, leading to more HL use than was normally the case. Second, for most children, access to the Dutch-speaking contexts of school and childcare was restricted and this will likely have prevented siblings, especially older siblings, from "bringing the school language home with them" (Bridges & Hoff, 2014; Tsinivits & Unsworth, 2021). Finally, given that most siblings included a preschool-aged child, and these younger children were more likely to switch to using the HL, this may have influenced their older siblings' behaviour.

Family well-being

When families reported a change in well-being, this was mostly positive, in line with some of the previous findings on well-being in the context of a(n inter)national health crisis (Hiraoka & Tomoda, 2020; Lau et al., 2006; Marchetti et al., 2020; Romero et al., 2020). Interestingly, parent-child relationships were more likely to improve when the parent in question was involved in homeschooling. One explanation for this finding is that spending more time together and parents engaging (perhaps more than usual) with children's schoolwork led to more social bonding (Romero et al., 2020).

Families with preschool-aged children were more likely to report an improvement in family well-being than families with school-aged children only. Relatively speaking, the proportion of families with preschool-aged children who experienced an improvement in family well-being was greater than the proportion of families with older children with such an experience. Families with older children were more likely to report no change at all. Similar age effects were observed for well-being in families in Spain during the early stages of pandemic (Romero et al., 2020). This effect may be due to younger children needing more attention and support than school-aged children and hence for this age group, it might have been easier to spend more quality time together, which ultimately led to an improvement in well-being for many (cf. Romero et al., 2020, however, who found that younger children exhibited more behavioural problems). Furthermore, compared

with older children, preschool children may have been less aware of the seriousness of the situation and its wider impact. Whilst almost all parents faced practical challenges, parents in higher-income families and with higher levels of education – which were most families in this study – were likely more able to cope (Bol, 2020; Schuurman et al., 2021), not least because they were able to work from home.

Age

A number of the changes observed were more likely for preschool-aged children than school-aged children. Preschool children were more likely to change to using less Dutch and more of the HL when speaking to their parents. This is in line with the preliminary findings from the UK study on the impact of the pandemic on multilingual families (Serratrice et al., 2020). For many of the preschool-aged children, childcare was their main source of Dutch. This meant that when childcare was closed during the lockdowns, much (if not all) of their Dutch input was lost. For school-aged children, this was different because even if they could not attend school physically, they still had to complete schoolwork, which for most children was in Dutch. This is a likely explanation for the group differences we observed in HL use.

For children in Dutch-language education, an improvement in HL proficiency was also more likely to be reported for preschool-aged children than for older children. Again, it is likely that any reduction in children's exposure to Dutch during the lockdowns was greatest for the youngest children. Given that this likely also meant a concomitant increase in the amount of exposure to the HL, it is perhaps unsurprising that these children's HL proficiency was more likely to improve. In the early years, there is of course also more room for improvement as children are still in the process of acquiring language. Several parents reported that the lockdown meant that they found new activities to do with their children and this will likely have meant children were exposed to new words in their HL, which may have helped them to progress in that language. Indeed, in a large-scale, multi-country study on the impact of the pandemic on the language development of monolingual children, Kartushina et al. (2022) observed greater gains in expressive and receptive vocabulary for children whose parents read more to them and who had less passive screen exposure. Taken together, these findings underscore the importance of providing a rich language environment for the HL especially in the younger years if this language is to develop adequately.

Conclusion and implications

Our findings suggest that despite the upheaval the pandemic involved, patterns of language use, proficiency, and well-being in the multilingual families participating in this study remained stable. Where changes were observed, our findings underscore the importance of providing a rich language environment for the heritage language especially in the younger years if this language is to develop adequately. Furthermore, with respect to homeschooling, our findings suggest that there is no reason for parents to feel obliged to homeschool in the school language for the sake of their child(ren)'s proficiency in this language. In light of this finding, it would be helpful if teachers provided parents with explicit instructions when it comes to their language use whilst helping children with schoolwork (during any future lockdowns and more generally).

Supplementary material. The supplementary material for this article can be found at <http://doi.org/10.1017/S0305000923000715>.

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- SU: conceptualization, methodology, formal analysis, resources, writing – original draft, supervision, project administration;
- CvD: methodology, formal analysis, investigation, writing – editing and review;
- MvdA: methodology, formal analysis, investigation, visualization, writing – editing and review;

Competing interest. The authors declare none.

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