Multilingual Assessment Instrument for Narratives (MAIN) adapted for use in Dutch

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This contribution provides an overview of the current state of affairs with respect to the Dutch version of the Multilingual Assessment Instrument for Narratives (MAIN). We describe properties of the Dutch MAIN, the creation of the Dutch MAIN, and the results of recent research with this new instrument to measure narrative competence.

1   Introduction

Narratives are an ecologically valid way to measure communicative competence in clinical and non-clinical populations (Botting, 2002). Narratives provide rich data that can be analyzed at different levels. At the macro level, they can vary in complexity which is reflected in the details of place and time that children include to describe the setting of a story, their use of goal-attempt-outcome sequences to structure an event, and their use of terms to describe the internal states of the protagonists in the story. Comprehension questions after a narration can be used to determine whether or not a child is able to make inferences. At the micro level, narratives provide information about a child's vocabulary and grammar.

Within the Cost Action IS0804 *Language Impairment in a Multilingual Society: Linguistic Patterns and the Road to Assessment*, a new narrative instrument has been developed for use in multilingual settings, the Multilingual Assessment Instrument for Narratives, abbreviated as MAIN (Gagarina et al., 2012, 2015), which has been revised in 2019 (Gagarina et al., 2019). In this contribution, we describe the creation of the Dutch MAIN (revised in 2020),

and give an overview of research with this new instrument. Prior to this, we explain some basic characteristics of Dutch.

2   Dutch

Dutch is a West Germanic language that resembles German and English. It is the official language in the Kingdom of the Netherlands, which consists of four constituent countries: the Netherlands, and the Caribbean countries Aruba, Curacao, and Sint Maarten. In the Caribbean countries, Dutch is spoken by a small minority of the population, despite its official status. In the Netherlands, Dutch is the sole official language. In the bilingual province of Fryslân, situated in the north of the Netherlands, it is one of two official languages (Dutch, Frisian). Outside of the Kingdom of the Netherlands, Dutch is an official language in Belgium, in addition to French and German, and in Surinam, where it is the only official language. Dutch is a fusional inflectional language. It does not have pro-drop. The basic word order is SOV, which is the word order in subordinate clauses. Main clauses show Verb Second, which is reflected in an SVO order and subject-verb inversion in case a constituent other than the subject is in first sentence position. Dutch attributive adjectives are placed in front of the noun and after the article.

3   Creating a Dutch MAIN version

Norm-referenced Dutch narrative instruments are part of standardized language test batteries, such as the *Taaltoets Alle Kinderen* (Language Assessment All Children; Verhoeven & Vermeer, 2001) or the *Renfrew Taalschalen Nederlandse Aanpassing* (Renfrew-Language scales Dutch Adaption; Van den Heuvel, Borgers, Ketelaars, & Jansonius, 2016). There are no norm-referenced multilingual narrative instruments in which children can be tested in Dutch as well as in their other language. MAIN has the potential to fill this gap.

In 2012, we created the first version of the Dutch MAIN which was a translation of the English version developed by Gagarina and colleagues (2012). In 2020, we adapted this version, following the revised protocol specified for the English MAIN. The Dutch MAIN, like all MAIN language versions, consists of four parallel stories (*Cat*, *Dog*, *Baby Birds*, *Baby Goats*) that have the same episodic structure but differ in protagonists and events. Each story is depicted by six full-colour picture sequences that represent the three-episode-structure of the story. For each story, ten comprehension questions address goals, internal states, and inferences. A production scoring sheet enables scoring 1) overall story structure based on 17 variables that measure specification of the setting, goals, attempts, outcomes, and internal state terms at initiating the event and as a reaction to the outcome, 2) goal-attempt-outcome sequences as a measure of the story's structural complexity, and 3) total number of internal state terms.

The instrument can be administered using three different procedures: model story, telling, or retelling. Model story refers to a procedure where the experimenter or clinician first

tells a story (e.g. *Cat*). After this model, a child is asked to tell a different story (e.g. *Baby Birds*). Telling refers to a procedure where a child tells a story without a model for that story, while retelling refers to a procedure where a child tells a story it is has just heard from someone else. Each procedure can be combined with the comprehension questions. In case multilingual children are tested, different stories should be used for their different languages. For example, in our research, using the model story procedure, we tested a bilingual Turkish-Dutch child in Turkish with a combination of *Cat* and *Baby Birds* and in Dutch with a combination of *Dog* and *Baby Goats*.

4   Summary of research with the Dutch MAIN

The Dutch MAIN has been used in research, and by speech-language therapists to support their diagnosis. In this section, we summarize the results of our research in the Netherlands for which we tested children at three points in time with one year in between each wave of data collection. We used the model story procedure and targeted narrative macrostructure. It is relevant to note that the Dutch version of MAIN together with a Frisian equivalent were also administered as part of the longitudinal research by Bosma (2017). In Bosma et al. (2017), MAIN narrative comprehension and production scores in Dutch and Frisian are included in a measure of language dominance, together with vocabulary and morphology measures.

4.1   *Clinical validity in bilinguals and monolinguals*

An important question that we investigated using the Dutch MAIN concerns the clinical validity of the instrument in both monolingual and bilingual populations: To what extent is MAIN sensitive to effects linked to bilingualism, such as limited exposure to the language in which the instrument is administered, and to effects of an inborn language impairment? To determine the clinical validity of MAIN, we used a four-group design with a monolingual TD (Typical Development), monolingual DLD (Developmental Language Disorder), bilingual TD, and bilingual DLD group. A study with children aged 5-6 years demonstrated that narrative macrostructure measured with a combination of MAIN production and comprehension is sensitive to DLD and not biased against bilingual children (Boerma, Leseman, Timmermeister, Wijnen, & Blom, 2016). Clinical accuracy improved when we restructured MAIN and distinguished between elements about internal states and elements related to basic episode structure. Internal state elements turned out to be more effective in differentiating between TD and DLD than basic episode structure elements. The overall classification accuracy was over 80%, and could be considered adequate. However, specificity in the monolingual group and sensitivity in the bilingual group only reached 79%. After restructuring MAIN, sensitivity and specificity reached levels above 80% in both the monolingual and bilingual group.

In a follow-up study, we investigated the clinical validity of MAIN in combination with two other instruments developed within the COST Action (Boerma & Blom, 2017), a Cross-Linguistic Nonword Repetition Task (also referred to as Quasi-Universal Nonword Repetition

Task or Q-U NWRT; Boerma, Chiat, Leseman, Timmermeister, Wijnen, & Blom, 2015), and a risk index based on parental report of early milestones and parental concern using the Questionnaire for Parents of Bilingual Children (PaBiQ; Tuller, 2015). The combination of these three instruments resulted in excellent diagnostic accuracy in monolingual and bilingual contexts. Another follow-up study examined the clinical validity of MAIN and nonword repetition at older ages (Boerma & Blom, in press). Clinical accuracy was the highest at age 5-6 years (wave 1), but it was still acceptable at age 6-7 (wave 2) and 7-8 year (wave 3). MAIN contributed to the classification at all three waves.

4.2   *Comprehension of stories versus words in bilingual and monolingual children*

Other questions that we addressed with the Dutch MAIN in a study by Blom and Boerma (in press) are: To what extent do bilingualism and input factors related to bilingualism impact on narrative comprehension? Is there a difference between children's understanding of stories and words in this respect? Larger gaps between monolinguals and bilinguals emerged for lexical compared to narrative comprehension, suggesting that narrative comprehension draws less on experience with a specific language than lexical comprehension does. Hardly any significant relations emerged between home input measured with the PaBiQ and narrative comprehension outcomes in the bilingual sample, except for language richness which was positively correlated with narrative comprehension in the Berber-Dutch subsample (but not in the Turkish-Dutch subsample). We replicated the observation that children performed better on questions after the story told by someone else (experimenter) than the story they told themselves (e.g. Maviş, Tunçer, & Gagarina, 2016; Otwinowska, Mieszkowska, Białecka-Pikul, Opacki, & Haman, 2018). In general, the comprehension questions were relatively easy for 5- to 8-year-old children, in particular for the monolinguals at all three waves, and for the bilinguals from wave 2 onwards (age 6-7 years). Similar high accuracies are reported for other MAIN versions (Bohnacker, 2016; Roch, Flores, & Levorato, 2016; Rodina, 2017; Otwinowska et al., 2018).

4.3   *Predictors and outcomes in monolingual children with and without DLD*

A third line of research that we have pursued (Blom & Boerma, 2016) concerns the following question: Is narrative macrostructure impacted by DLD and are differences between DLD and TD on narrative macrostructure related to linguistic factors, cognitive factors, or both? To answer this question, we analyzed wave 1 and wave 2 MAIN data from monolingual children with and without DLD. At wave 1, performance of the DLD group was at a lower level than performance of the TD group on both comprehension questions and overall story structure. At wave 2, the groups performed accurately and similarly on narrative comprehension. On story structure in narrative production, the TD group still outperformed the DLD at wave 2. Sustained attention ability mediated the relationship between group (TD, DLD) and narrative structure. Measures of vocabulary, grammar and verbal memory were not related to DLD children's lower performance on story structure.

5   Concluding remarks

The Dutch MAIN is a promising instrument for use in clinical settings with bilingual and monolingual children. From age 6-7 years, children are highly accurate at the comprehension questions, regardless of language status or impairment. For the age range we investigated, which spans from 5 to 8 years, narrative production measures show sufficient variation to distinguish between TD and DLD. For future use in clinical practice, it is important to provide transparent and easy-to-use scoring guidelines, as well as norm data.

6   References

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