

 **Investigation of the Psychometric Properties of the Milestones en français du Québec, a New Language Screener for French-Speaking Children Between 12 and 71 Months**

 **Investigations des propriétés psychométriques du questionnaire *Milestones en français du Québec*, un nouvel outil de dépistage des difficultés langagières pouvant être utilisé avec des enfants francophones âgés entre 12 et 71 mois**

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**Abstract**

Very few validated screening tools exist for Developmental Language Disorder in Canadian French. This article presents the steps of the development of a new screening questionnaire designed for children ranging in age from 12 to 71 months. Phase A describes how the questionnaire *Milestones en français du Québec* (MilBec) was elaborated based on the 26-item Dutch questionnaire by Luinge, Post, Wit, and Goorhuis-Brouwer (2006). The elaboration involved translation, adaptation and addition of items, as well as a cross-sectional pilot study with 26 participants aged 1 year ( $n = 9$ ), 3 years ( $n = 8$ ), and 5 years ( $n = 9$ ), leading to a revised version with 39 items. Phase B presents a cross-sectional study in which parents of 85 monolingual French-speaking children aged 12 to 71 months (17 participants per 12-month age group) filled out the MilBec. The correlation between MilBec score and age was extremely high for 12- to 39-month-old children ( $n = 42$ ;  $r = .92, p < .001$ ) and high for 40- to 71-month-old children ( $n = 43$ ;  $r = .60, p < .001$ ). High scores were observed from age 3 years and a ceiling effect was present at age 5. The MilBec’s internal consistency was very high (Cronbach’s  $\alpha = .967$ ). Further exploration of the MilBec’s psychometric properties, notably its screening accuracy using larger groups of children that are more representative of the general population including varied socioeconomic status and bilingual children, is warranted.

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### Abrégé

Très peu d'outils normés en français canadien sont disponibles pour le dépistage du trouble développemental du langage. Le présent article décrit la démarche ayant été utilisée pour développer un nouveau questionnaire de dépistage pouvant être utilisé avec des enfants âgés entre 12 et 71 mois. La phase A de l'article rapporte comment le questionnaire néerlandais composé de 26 items et créé par Luinge, Post, Wit et Goorhuis-Brouwer (2006) a été utilisé pour élaborer le questionnaire *Milestones en français du Québec* (MilBec). Le processus d'élaboration a consisté en la traduction, l'adaptation et l'ajout d'items, ainsi qu'en la réalisation d'une étude pilote transversale auprès de 26 participants âgés de 1 an ( $n = 9$ ), 3 ans ( $n = 8$ ) et 5 ans ( $n = 9$ ). Ce processus a mené à la création d'une version révisée comprenant 39 items. La phase B de l'article présente les résultats d'une étude transversale dans laquelle il a été demandé à 85 parents d'enfants francophones unilingues âgés entre 12 et 71 mois (17 participants par tranche d'âge de 12 mois) de compléter le MilBec. La corrélation entre l'âge des enfants et leur score au MilBec était extrêmement élevée pour la tranche d'âge 12–39 mois ( $n = 42$ ;  $r = 0,92$ ,  $p < 0,001$ ) et élevée pour la tranche d'âge 40–71 mois ( $n = 43$ ;  $r = 0,60$ ,  $p < 0,001$ ). Des scores élevés au MilBec ont été observés à partir de l'âge de 3 ans et un effet de plafond était présent à l'âge de 5 ans. La cohérence interne du MilBec était très élevée (alpha de Cronbach = 0,967). Ces résultats justifient une exploration plus approfondie des propriétés psychométriques du MilBec, notamment une exploration de la précision du dépistage à l'aide de groupes d'enfants plus nombreux et plus représentatifs de la population générale (p. ex. qui incluent des enfants bilingues et de statuts socioéconomiques différents).

This article presents the first steps undertaken to develop a parent questionnaire to screen for Developmental Language Disorder (DLD) in French-speaking children from the province of Québec, Canada. DLD occurs when the child's language skills are below age expectation and these lower skills impact on the child's life, either in his or her daily communications with others or school achievement. Furthermore, these difficulties are associated with a poor prognosis in the absence of appropriate intervention. If the child has another diagnosis known to cause lowered language skills (e.g., deafness, intellectual disabilities, autism spectrum disorder or other various syndromes), the child is said to have a *language disorder associated with X* (Bishop, Snowling, Thompson, Greenhalgh, & CATALISE-2 consortium, 2017). If the child has no such diagnosis, the child is said to have a *Developmental Language Disorder* even in the presence of co-occurring disorders (e.g., attention deficits, emotional disorders) or risk factors (e.g., parents with low level of education; Bishop et al., 2017). Other children may also have *Speech, Language and Communication Needs* when their language difficulties are related to a physical condition or a limited knowledge of the language of schooling (Bishop et al., 2017). The use of the term DLD instead of other commonly used terms like *Specific Language Impairment* and *Primary Language Impairment* has been strongly advocated to promote consistency; this article follows that recommendation. The prevalence rate of DLD (termed Specific Language Impairment in the cited studies) has been estimated to be around 7.4% for kindergarten children in the United States and found to be influenced by gender and parental education (Tomblin et al., 1997). It was reported to be as high as 9%–14% in a preliminary prevalence study conducted with 5-year-old francophone children in the province of Québec (Elin Thordardottir, 2010; Elin Thordardottir et al., 2003–2008). It is thus a commonly occurring disorder, making early identification crucial.

The goal of a language screening tool is to separate children into two groups: those receiving a score above the cutoff are considered “not at risk” of DLD, whereas those who fail the screening by receiving a score below the cutoff are considered “at risk.” The group of children failing a language screening then needs to be further tested by a Speech-Language Pathologist (S-LP) to rule in or rule out the presence of DLD. A multidisciplinary evaluation might be required to assess whether other developmental domains are involved. The new parent questionnaire introduced in this article was developed to screen preschool children for DLD.

There is currently no screening tool validated for French-speaking preschoolers living in the province of Québec,

Canada. This reflects the generalized lack of validated tools for this population (Garcia, Paradis, Sénécal, & Laroche, 2006; Gaul Bouchard, Fitzpatrick, & Olds, 2009; Monetta et al., 2016), a lack particularly important for children under the age of 4 years. Indeed, only two tools have been reported as having documented validity for French-speaking children in this age range in the province of Québec (Monetta et al., 2016), namely the parent-questionnaire *Les Inventaires MacArthur-Bates du développement de la communication* (Trudeau, Frank, & Poulin-Dubois, 1999) and *Échelle de vocabulaire en images Peabody* (Dunn, Thériault-Whalen, & Dunn, 1993), neither of which is a screening tool. In the province of Québec, S-LPs may consider using one of several available European screening tools in French, but these tools must also be assessed to determine if their content and norms are appropriate for French Quebecers. Indeed, Frisk et al. (2009) found that the cutoff scores of American screening tools must sometimes be modified to maximize their sensitivity and specificity when used with Canadian children. These authors suggested that these modifications might be required because of demographic and educational differences between the two countries. It is thus reasonable to assume that similar modifications might be required for European screening tools to be used in the province of Québec.

The purpose of this study was to address the need for a French language screening tool validated in the province of Québec. Phase A presents the selection and adaptation procedures of a parent questionnaire to screen for DLD, as well as a cross-sectional study aimed at identifying elements from a pilot version of the adapted questionnaire that could be improved. Phase A concludes with the presentation of the final version of the questionnaire, the *Milestones en français du Québec* (MilBec; Paul & Elin Thordardottir, 2010). Phase B presents a cross-sectional study aimed at collecting preliminary data on the MilBec's psychometric properties from a small homogeneous group of monolingual French-speaking children.

### Phase A: Adaptation of the Parent Questionnaire Into French

#### Method

**Selection of the tool to adapt.** The first step was to determine whether an adaptation of an already existing screening tool was possible or if a new one should be created. To be considered a good candidate for adaptation, the language screening tool should have the following characteristics:

1. The content targets several language domains since DLD is characterized by heterogeneity in its

manifestation and can affect many domains of language (Bishop et al., 2017; Leonard, 2014).

**2.** The administration and scoring procedures should not require specialized training to maximize its potential use by preschool teachers and school-based personnel as well as health care professionals involved in monitoring children's development, whose implication in language screening has been recommended since the 1980s (King & Glascoe, 2003; Tervo & Balaton, 1980).

**3.** The administration and scoring time should be brief, ideally less than 10 minutes, to be adequate for large-scale screening. It must be noted that in order to be appropriate for large-scale screening, the screening tool also needs to be appropriate for the general population in regards, notably, to ethnicity and socioeconomic status (SES).

**4.** The targeted age range should cover a reasonably large one, bearing in mind that the need for a screening tool is the highest for children under 48 months. Indeed, as Monetta et al. (2016) reported, for children from the age of 4 years there are more French assessment tools validated in the province of Québec. The large age range and the short administration time were also considered important to reduce the cost and difficulty related to managing multiple versions of the tool.

**5.** If more than one screening tool was found, the screening tool with the best documented psychometric properties should be favoured. Parent questionnaires were considered particularly good candidates, as they usually entail no specialized training and have a reduced administration and scoring time. Furthermore, several studies support the validity of such measures in many languages for the purpose of documenting language development, thus allowing the identification of children whose development is slower than expected (e.g., Boudreault, Cabirol, Trudeau, Poulin-Dubois, & Sutton, 2007; Elin Thordardottir & Ellis Weismer, 1996; Klee et al., 1998; Marchman & Martinez-Sussmann, 2002).

A review of available European French screening tools was performed to compare their characteristics to the list of criteria. Several screening tools for young children were found (a Quebec French adaptation of the MacArthur-Bates Communicative Development Inventories by Fenson et al., 1993; *Dépistage et Prévention du Langage à 3 ans* introduced in Coquet & Maetz, 1997; *Langage et comportement-3 ans ½* by Chevrie-Muller, Goujard, Simon, & Approche neuropsychologique des apprentissages chez l'enfant, 1994; *Épreuves de repérage des troubles*

*du langage utilisables lors du bilan médical de l'enfant de 4 ans* by Roy, Maeder, & Alla, 1999; the *Batterie rapide d'évaluation des fonctions cognitives* introduced in Billard et al., 2001; *Bilan de santé évaluation du développement pour la scolarité 5-6 ans* introduced in Zorman & Jacquier-Roux, 2002; *Protocole d'Évaluation Rapide* by Ferrand, 2000), but these tools did not fulfill one or more of the targeted characteristics (see Vallée & Dellatolas, 2005, and Société Française de Pédiatrie, 2007, for more details on these tools). The criterion most often unfulfilled was the age range, with many tools targeting an age range of 3 to 9 months only.

Given that a suitable screening tool in French was not found, the second step was a search for screening tools from other languages that could be found in journal articles—and for which a translation of the items was available in French or English. A sixth criterion applied to those potential candidates: the items should mostly target general language milestones (e.g., the age at which babbling starts, the period when two-word combinations emerge, emergence of narrative skills), since their age of acquisition is quite stable cross-linguistically for young children (Slobin, 1969). An adaptation of a screening tool principally targeting such milestones was judged to likely be adequate in the new language.

The Dutch parent questionnaire presented in Luinge et al. (2006) possessed all the required characteristics. Indeed, this parent questionnaire fulfilled Criteria 1 and 6, with items targeting vocabulary, syntax, narrative skills, and phonological development for both the expressive and receptive modalities. The items were selected under a "unitary dimension" view of language (Luinge et al., 2006, p. 924), according to which a child who has difficulty in one language domain is expected to have difficulty in other language domains, either concurrently or later. Following this theoretical viewpoint, different language domains were thus targeted in the parent questionnaire. It also fulfilled Criteria 2, 3, and 4: it is filled out by the parent, has a short administration and scoring time, and is aimed at children between 12 and 71 months. It originally contained 26 yes/no items, asking if the child says/comprehends/uses certain linguistics elements. Regarding Criterion 5, since only one questionnaire was found, any positive documentation of the tool's psychometric properties would be considered as adequate. Luinge et al. (2006) reported a cross-sectional study of 527 Dutch-speaking children between 12 and 72 months from four regions of the Netherlands, from a variety of city sizes with a roughly equal number of boys and girls per age group. The authors performed an item analysis to identify the most adequate items for each of the five age

groups, leading to a final version with 14 items in total. A study with 98 participants that used the 14-item version of the questionnaire concluded that this parent questionnaire had a sensitivity of 94% and a specificity of 83% (Luinge, 2005), which are respectively considered as *good* and *fair* using the criteria proposed by Plante and Vance (1994). Although the validation of the questionnaire cannot be extended to any adapted version, it was hypothesized that the fact that the original version had documented validity increased the likelihood that an adapted version would also be valid. Finally, the questionnaire fulfilled Criterion 6, as the items were selected based on a literature review of language milestones of various English screening tools. Some items targeted skills that can be hypothesized to be relevant for any language, such as understanding two-word combinations and asking questions.

The original set of 26 items was kept for the adaptation for three reasons: (a) the differences between Dutch and French might influence which items are most adequate, (b) the difference between the two countries in terms of demographics and education might impact the value of the items, and (c) in the development of the original Dutch version, exclusion of items was performed before the questionnaire was tested on children with DLD. Thus, it is possible that some items from the original version would prove helpful to identify children with DLD or to characterize normal language development in French, even if they were not deemed necessary for characterizing normal language development in Dutch.

**Adaptation procedures.** The procedure to adapt the Dutch questionnaire to French involved four steps: (a) a translation and analysis of the original items to ensure their suitability in French; (b) a literature review to determine the necessity of adding items targeting language skills more specific to French; (c) whenever examples were provided in an item, a literature review was performed to select French examples representative of spontaneous utterances of francophone children; and (d) a review of the final items by native speakers of Québec French, not specialized in language development. The 29 items of the pilot version of the questionnaire are presented in Appendix A.

A direct translation of Dutch items into French was not always favoured because in some instances more casual vocabulary was considered preferable. For example, the direct translation of *speech* is *parole*, but this term is rarely used with this meaning by non-professionals. It was thus translated with *ce que dit votre enfant* [what your child says]. Once translated, each item was analyzed to make sure the target skill manifests in a similar way in both languages. In the Luinge et al. (2006) article, only the English

version of the items is presented, hence the comparison will be made using the English. For example, the irregular plural marking, which is targeted in one item, implicates a similar modification of the noun in both languages. For example, *mouse* becomes *mice* in English, just as *cheval* [horse] becomes *chevaux* [horses] in French. In contrast, if the regular plural marking had been targeted, it would not have been judged equivalent. Indeed, English requires the application of a rule (i.e., adding an -s morpheme at the end of the word). However, in French, the regular noun plural is marked by a change in the determiner preceding the noun, the -s found in writing at the end of the noun is silent (e.g., *le chat* /ləʃa/ [the cat] vs. *les chats* /ləʃa/ [cats]). Since all the items target language elements that manifest similarly in both languages, none were removed or modified based on this analysis.

The second step consisted of a literature review of French language development to determine if some important aspects of the French language, or some elements known to be particularly difficult for francophone children with DLD, should be targeted in new items. After a literature review of studies of French-speaking children with Specific Language Impairment (e.g., Elin Thordardottir & Namazi, 2007; Hamann et al., 2003; Jakubowicz, Nash, Rigaut, & Gérard, 1998) or *dysphasie* [dysphasia] (e.g., Roulet, 2007), three new items were created: gender agreement, the use of the object clitic, and subject omission.

The first of the additional items is related to the child's ability to make the correct gender agreement between a noun and its modifiers. In French, noun gender is marked on the accompanying determiner and, if present, adjective(s). The gender of the noun sometimes concurs with the referent's biological gender, as in *la fille* [the<sub>feminine</sub> girl<sub>feminine</sub>], but most often the referent does not have a biological gender, as in *un crayon* [a<sub>masculine</sub> pencil<sub>masculine</sub>]. Although gender agreement is an element acquired by children with typical development as early as 30–36 months for the *un/une* [a] contrast (Rondal, 2001), children with DLD between 6;11 and 11;3 have been reported to still make gender mistakes on the determiner or omit it (Roulet, 2007).

The second item targets the use of the object clitic, which is a pronoun placed between the subject and the verb used as a direct object complement. In a simpler syntactic structure, this complement would be placed directly after the verb, using a noun preceded by a determiner. For example, a typical sentence would be *Je veux la pomme* [I want the apple]. In a more complex syntactic structure where the direct object is pronominal, an object clitic is used and precedes the verb: *Je la veux* [I it want]. Evidence has been presented indicating that object

clitics are particularly difficult for school-aged children with DLD in an elicitation task (Hamann et al., 2003; Jakubowicz et al., 1998). However, Elin Thordardottir and Namazi (2007) found in a study with children between 37 and 54 months that the object clitic did not seem to be an area of particular difficulty for children with DLD in their spontaneous language. Although these findings are somewhat conflicting, the inclusion of the object clitic was deemed to be warranted in a pilot version of the questionnaire.

The last item assesses the use of the subject, which is obligatory in most contexts in French. This item was selected because some authors have concluded that school-age Francophone children with language delays performed less well than age-matched peers in this respect in elicited production (Jakubowicz et al., 1998), although another study reported no difference between groups in spontaneous production (Hamann et al., 2003). Furthermore, Elin Thordardottir and Namazi (2007) found that children with DLD between 37 and 54 months omitted the first person singular pronoun *je* [I] more often than did age-matched peers. The use of sentences without subjects is related to an immature sentence construction, occurring when the child uses infinitive verbs without a subject such as *aller là* [*go<sub>infinitive</sub> there*] (Elin Thordardottir, 2005; Hamann et al., 2003). French-speaking children are reported to use syntactic subjects most of the time at 2 years of age (Parsse & Le Normand, 2001) and person marking of the verb has been shown to be productive at that age (Elin Thordardottir, 2005). It is thus expected that this item will be reported as acquired for children as young as 2 years of age.

The third step consisted of the selection of examples to help parents understand the items. A literature review was performed to select examples representative of typical utterances of young French-speaking children. Various sources were consulted, notably Bassano (2000), Parsse and Le Normand (2001), Hickman (1997), and Rondal (2001). The final step consisted of the revision of the 29 items by two adult native French-speakers without experience in linguistics or in speech-language therapy, to ensure that the items are easily understandable. Based on the comments, any required modifications (e.g., correction of typing mistakes, reformulation of some sentences, and addition of some examples) were performed.

**Pilot testing of the parent questionnaire.** A cross-sectional pilot study with a small number of typically developing monolingual participants from three age groups was conducted to determine (a) whether the pilot version is easily understood by parents (i.e., whether the wording of the items is adequate, whether the examples chosen are

helpful to parents), (b) whether the items vary in difficulty, and (c) whether the questionnaire overall adequately captures different language skill levels in monolingual francophone children between 12 and 71 months.

**Participants.** The parents of 26 monolingual French-speakers participated in the study: nine children were between 12 and 23 months (1-year-old group), eight children were between 35 and 45 months (3-year-old group), and nine children were between 60 and 69 months (5-year-old group). All children had typical development (i.e., no diagnosis or parental concerns about the child's development or hearing). Maternal education level served as a measure of SES. Although this was not a goal in participant recruitment, all the participating parents were of relatively high SES: the mothers of 24 participants had attended university; the mothers of the remaining two children (one in the 1-year-old group, one in the 5-year-old group) had attended CEGEP. In the education system of the province of Québec, CEGEPs are postsecondary institutions providing a 2-year pre-university program, or a 3-year professional program; the first year of CEGEP is equivalent to Grade 12 in other Canadian provinces.

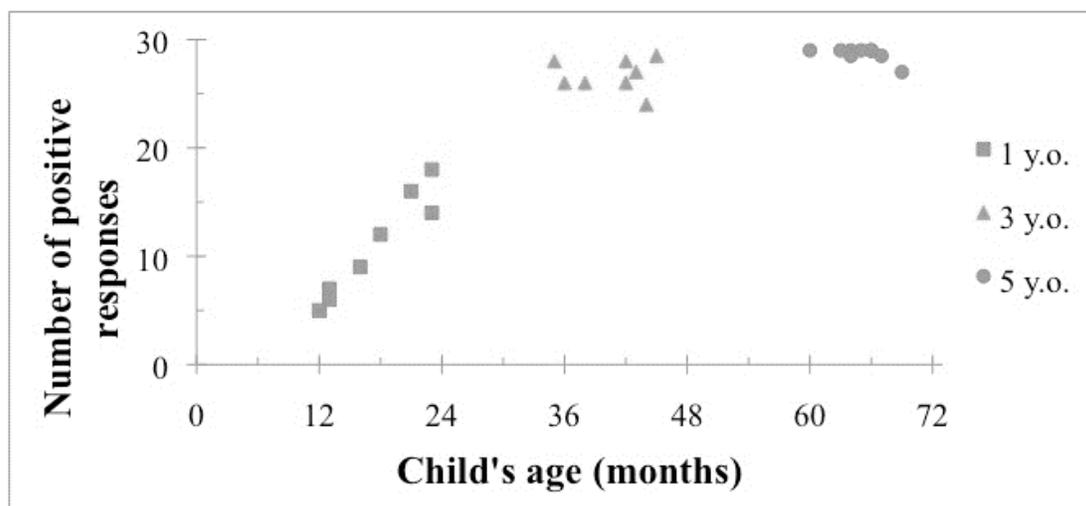
**Procedures.** The project was approved by the Institutional Review Board of McGill University (ethics approval #A05-E19-08B). The director of a Centre de la Petite Enfance sent a letter of invitation to participate in a study of French development to the parents of the children in the targeted age ranges; other participants were recruited by word of mouth. Parents who signed the consent form were asked to complete a background questionnaire about the child's development and other sociodemographic information, as well as the pilot version of the questionnaire with an added section for comments.

Scoring of the parent questionnaire was performed by assigning a score of 1 to items answered *yes* by the parent and a score of 0 to items answered *no* or without answer, leading to a maximum score of 29. In three cases across two items (namely Item 25 on the use of object clitic and Item 27 on the use of adult-like sentence complexity), parents provided written comments on the questionnaire's margin that made their answer both *yes* and *no*. For these cases, a score of 0.5 was credited.

## Analyses and Results

**Developmental sensitivity.** The distribution of raw scores is shown in **Figure 1**. For the 1-year-old group, the scores increased systematically with age and no child reached the ceiling (i.e., none received a raw score of 28 or 29). Three of the eight children in the 3-year-old group were

Figure 1



The Raw Score of Each Child on the Pilot Version of the Parent Questionnaire as a Function of Age (max. score = 29).

at the ceiling. A ceiling effect was present for the 5-year-old group as most children (eight out of nine) reached the maximum score.

**Item difficulty.** In order to verify if the items varied in difficulty, the percentage of children per group who received a score of 1 was calculated for each item. The items were reordered based on a decreasing percentage of children receiving a score of 1 per age group (see **Table 1**). The easiest items ( $n = 3$ ) were scored 1 for all children and the intermediate items ( $n = 5$ ) were not scored as 1 for all children in the 3-year-old group, and were scored 0 for all children in the 1-year-old group. From these intermediate items, only one item was scored 0 by one participant in the 5-year-old group. There were no difficult items that would be scored 0 for most 3-year-old children and scored 1 by only a few of the 5-year-olds. The lack of sufficiently difficult items explains the presence of the ceiling effect observed for the 5-year-old group and that some 3-year-old children also reached the ceiling.

**Parents' comments.** Using the option provided at the end of the questionnaire, 17 parents indicated that it took less than 5 minutes to fill out the questionnaire, eight parents indicated that it took 5 to 10 minutes, and one parent took more than 15 minutes. Three parents indicated that the questionnaire was easy to fill out and not long to complete or both. Other comments were made regarding the formulation of some items; these are discussed in the next section.

### Revision of the Questionnaire

Analyses of these results pinpointed several elements that could be improved in the pilot version of the questionnaire. Different types of changes were performed: The first required changes to the wording and ordering of the questions, the second consisted of the addition of items, and the last affected the answer choices provided to parents.

**Wording and ordering of questions.** A few parents requested a clarification of the word *généralement* [usually] used with some items; it was thus changed to *plus de 75% du temps* [more than 75% of the time]. Item 27, "*Est-ce que votre enfant parle comme un adulte, en ce qui a trait à la complexité des phrases?*" [Does your child talk like an adult, in terms of sentence complexity?], was annotated relatively frequently, with many parents making a comparison to peers rather than to adults. Therefore, the item was changed to a broad evaluation of the child's language skills compared to peers: "*Est-ce que vous considérez que votre enfant a un langage suffisamment développé, en comparaison aux autres enfants de son âge?*" [Do you consider that your child's language skills are sufficiently developed compared to other children of the same age?]. Regarding one item on intelligibility, a parent pointed out that she was almost the only one to understand her child's speech. Because it was judged pertinent to have parents report on their child's intelligibility to an unfamiliar person, an additional item targeting the need for a parent to act as an interpreter for his or her child was added.

**Table 1**

The Number of Children Receiving a Positive Response for Each Item on the Pilot Version of the Parent Questionnaire, With the Items Reordered by Difficulty

Item number	1-year-old (n = 9)	3-year-old (n = 8)	5-year-old (n = 9)	Total (n = 26)
1	<b>9</b>	<b>8</b>	<b>9</b>	26
3	<b>9</b>	<b>8</b>	<b>9</b>	26
9	<b>9</b>	<b>8</b>	<b>9</b>	26
2	8	<b>8</b>	<b>9</b>	25
4	8	<b>8</b>	<b>9</b>	25
11	8	<b>8</b>	<b>9</b>	25
7	7	<b>8</b>	<b>9</b>	24
6	5	<b>8</b>	<b>9</b>	22
5	5	<b>8</b>	<b>9</b>	22
22	4	<b>8</b>	<b>9</b>	21
8	4	<b>8</b>	<b>9</b>	21
26	3	<b>8</b>	<b>9</b>	20
14	2	<b>8</b>	<b>9</b>	19
10	2	<b>8</b>	<b>9</b>	19
15	2	<b>8</b>	<b>9</b>	19
16	2	<b>8</b>	<b>9</b>	19
19	1	<b>8</b>	<b>8</b>	17
13	1	<b>8</b>	<b>9</b>	18
17	1	<b>8</b>	<b>9</b>	18
28	1	<b>8</b>	<b>9</b>	18
18	0	<b>8</b>	<b>9</b>	17
12	0	<b>8</b>	<b>9</b>	17
24	0	<b>8</b>	<b>9</b>	17
29	0	<b>8</b>	<b>9</b>	17
20	0	6	<b>9</b>	15
25	0	6	8.5	14.5
27	0	3.5	8.5	12
21	0	3	<b>9</b>	12
23	0	3	8	11

Note. Bold numbers indicate the items with a positive score for all children in a group. Italics indicate the items with partial credit.

Finally, additional examples were provided where some annotations indicated that they would be helpful. The items were reordered to present the easiest items first (see **Table 1**).

**Additional items.** In order to address the ceiling effect, additional items targeting elements acquired between 3 and 5 years of age were selected and introduced. The first item targeted the contracted articles (e.g., *du* instead of *de le*), an element specific to French. Although no study investigating

its use by children with DLD was found, the contracted article is reported to be acquired around the age of 4 years (Rondal, 2001); it is thus potentially useful to prevent some 3-year-old children from reaching the ceiling.

Eight additional items were added based on a review article by Sprenger-Charolles and Serniclaes (2003) on reading and writing acquisition in various languages, including French. These items targeted narration and

metalinguistic skills. Narrative development starts around age 3–4 years and is considered relatively mature at around 7–9 years (for a review, see Kao, 2015; Veneziano, 2016). There is a growing literature documenting difficulties of children with DLD on this type of task (e.g., Boerma, Leseman, Timmermeister, Wijnen, & Blom, 2016; Elin Thordardottir et al., 2011; Rezzonico et al., 2015), although studies also indicate that narrative ability is not highly sensitive to the presence of language impairment (e.g., Elin Thordardottir et al., 2011). Metalinguistic skills, including phonological awareness, typically start to develop at 4 years of age (for French, see Lefebvre, Girard, Desrosiers, Trudeau, & Sutton, 2008).

Finally, pre-reading skills were also targeted based on the work of Justice, Bowles, and Skibbe (2006) on print knowledge of 3- to 5-year-old anglophone children. Although print knowledge has been shown not to be directly related to oral language skills (McGinty & Justice, 2009), many children with DLD are reported to have difficulties in this area (Boudreau & Hedberg, 1999; Gillam & Johnston, 1985). Since both English and French have an alphabetic writing system, it was considered likely that these findings could be generalized to French.

**Answer choices.** Some parents signaled some degree of uncertainty about their answers by writing additional information beside their responses or by expressing it orally to the first author. Thus, the *yes-no* answer choices were replaced by a Likert-like scale with four options that were nonetheless scored dichotomously. The answers *oui* [yes] and *il me semble* [I believe so] were both scored as 1 point; the answers *je ne crois pas* [I don't think so] and *non* [no] were both scored as 0 point. This change was meant to give parents a means to express some level of uncertainty in their answers.

These modifications led to the addition of 10 items, inserted in the questionnaire based on the reported age of acquisition, leading to a total of 39 items. These 39 items can be described as 1 general item asking if the parent thinks their child's language is sufficiently developed for his/her age, 8 items on expressive vocabulary, 2 items on receptive vocabulary, 4 items on expressive vocabulary/syntax, 3 items on receptive vocabulary/syntax, 4 items on expressive syntax, 4 items on narrative abilities, 2 items on language use/communication, 5 items on phonology/articulation, 3 items on meta-linguistic knowledge, and 3 items on pre-reading skills. This final version of the adaptation was named the *Milestones en français du Québec* (MilBec; Paul & Elin Thordardottir, 2010), with *Milestones* referring to the title of the article presenting the original Dutch questionnaire. The MilBec can be found in Appendix B.

## Phase B: Preliminary Investigation of the MilBec's Psychometric Properties

The purpose of this second phase was to collect preliminary data, using a cross-sectional sample, about the developmental sensitivity of the MilBec for monolingual French-speaking children between 12 and 71 months and to assess its internal consistency. It was hypothesized that (a) there would be a linear relationship between MilBec score and age in months, when all participants were considered as a single group and (b) significant differences in mean scores would be found between successive age groups.

### Method

**Participants.** The parents of 85 monolingual French-speakers (44 boys, 41 girls) between 12 and 71 months participated in the study, with 17 participants per 12-month age group. Based on the background questionnaire, children were included in the study if they were exposed to another language for no more than 5 hours per week, they had no previous diagnosis, and their parents had no concern about their development or hearing. Maternal education served as a measure of SES. One child born prematurely was excluded from the study because of the specific risks to language development associated with prematurity in the preschool years (van Noort-van der Spek, Franken, & Weisglas-Kuperus, 2012). Two children were excluded because of serious parental concerns regarding language development. All participants were living in the province of Québec, mainly in the Greater-Montréal area ( $n = 69$ ). The data for 10 participants were extracted from an unpublished longitudinal study using the same version of the MilBec (Paul, 2016). For eight of these participants, the first data point was used; for the remaining two participants, the data point placing them in the 2-year-old group was used because this group had the lowest number of participants in the cross-sectional sample.

**Procedures.** The parents were invited to participate in a study on the validation of a parent questionnaire about language development via daycares, sports centres, school, and public billboards using e-mail, posters, or billboard postings. All parents signed the project's consent form, which was approved by the Ethics Board of the Centre de recherche interdisciplinaire en réadaptation du Montréal Métropolitain (ethics approval #CRIR-674-0112). After agreeing to participate, the parents filled out the MilBec and the background questionnaire using an on-line survey created with LimeSurvey ( $n = 39$ ) or a paper-pencil version ( $n = 46$ ), depending on their preference. The demographic questionnaire included questions about parental education level, the child's medical and

developmental history, and language use at home. All statistical analyses were performed using the French version of IBM Statistic SPSS version 23.

**Background variables.** The background questionnaire of the cross-sectional study asked for maternal education in years. For the 10 participants from the unpublished longitudinal study, maternal education was available in terms of the highest level of education completed. For them, a high school diploma was considered as 11 years of education and university-level as 16 years. For each of the five groups, average age and maternal education are reported in **Table 2**. A one-way ANOVA showed that the five groups did not differ significantly on maternal education,  $F(4, 79) = 0.30, p = .879$ . A one-way ANOVA confirmed that the five groups differed significantly on age in months,  $F(4, 80) = 447.22, p < .001$ , with post hoc Tukey tests showing that each group differed significantly from the others (all  $p < .001$ ).

**Analyses and Results**

**Developmental sensitivity.** The distribution of MilBec scores within each age group is shown using boxplots in **Figure 2**, the mean, standard deviation, and range of scores are presented in **Table 3**. The median and mean scores increase with age, with a greater group difference between the youngest groups than the oldest groups. The largest variability occurs at 2 years of age and the smallest at age 5. The mean and median are already high at age 3, with some children reaching the ceiling (i.e., a score of 38 or 39). For the 4-year-old group, an upper whisker of the boxplots is present and the standard deviation is similar to that of the younger groups, despite a high mean score and the fact that five children are at the ceiling. For the 5-year-old group,

the lack of the upper part of the boxplot, the low standard deviation, the fact that 11 of the 18 participants are at the ceiling, and the lowest score in this group is 36, which is also rather close to the maximum score, indicate the presence of a ceiling effect.

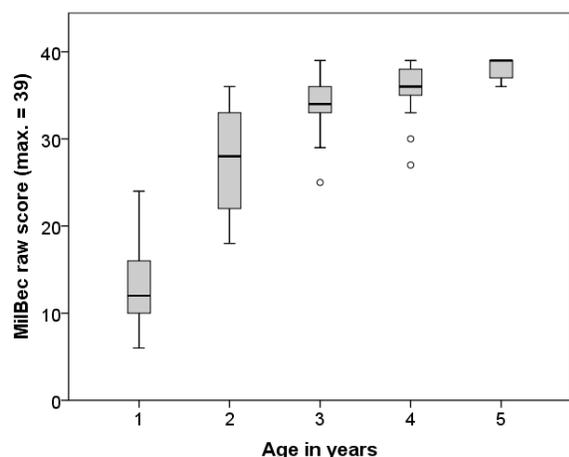
An ANOVA was performed to test for an age effect. A significant Levene test ( $p < .001$ ) indicated that the data violated the assumption of homogeneity of variance. Consequently, the Brown-Forsythe adjusted  $F$  test was used and showed a significant group difference,  $F(4, 50.024) = 97.98, p < .001$ . A post hoc Games-Howell test indicated that the 1-year-old group and the 2-year-old group were significantly different from all the other groups (all  $p$  values between  $<.001$  and  $.008$ ). The 3-year-old group was not significantly different from the 4-year-old group ( $p = .771$ ), but was significantly different from the 5-year-old group ( $p = .002$ ). The 4-year-old group was significantly different from the 5-year-old group ( $p = .023$ ).

Visual inspection of the scatterplot showing the relation between age in months and MilBec scores indicated that the relationship was not linear (see **Figure 3**). Thus, a local regression (locally estimated scatterplot smoothing; LOESS) adjustment curve with the default Epanechnikov adjustment using 50% of the data points was performed on all the data since it can be used on empirical data to fit smooth curves without specifying an a priori relationship between the variables (Jacoby, 2000). Visual inspection of this LOESS curve indicated that the relationship between MilBec scores and age followed two distinct linear slopes—one for the younger children and one for the older children—with a relatively short period of transition around 40 months. The data were thus considered separately for the children between 12 and 39 months ( $n = 42$ ; mean age = 26.5,  $SD = 8.5$ ; mean MilBec

**Table 2**  
**Number of Participants, Age, and Maternal Education for Each Age Group**

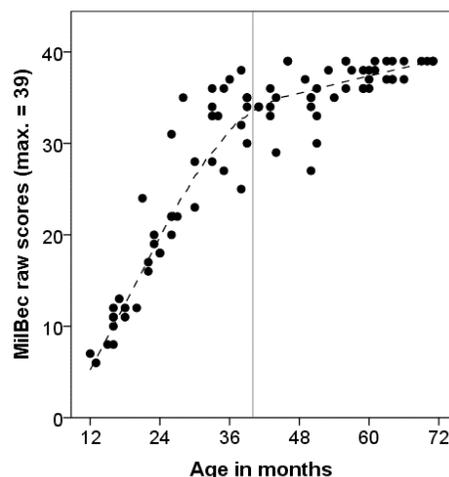
Group	n	Age (months)			Maternal education (years)		
		M	SD	Range	M	SD	Range
1-year-olds	17 (7 boys, 10 girls)	17.9	3.4	12–23	16.2	2.5	12–21
2-year-olds	17 (6 boys, 11 girls)	29.6	3.9	24–35	16.6	3.0	11–20
3-year-olds	17 (11 boys, 6 girls)	41.0	3.0	36–46	16.3	2.1	13–19
4-year-olds	17 (12 boys, 5 girls)	53.6	3.6	49–59	16.4	3.2	11–24
5-year-olds	17 (8 boys, 9 girls)	64.9	4.1	60–71	15.8	1.8	11–18

Figure 2



Boxplot of the *Milestones en français du Québec* (MilBec) Score per Age Group (max. score = 39). The median is shown as the line in the middle of the box, which itself indicates the range encompassing 50% of the scores; the whiskers show the range of the top and bottom 25% of the scores; the dots represent outliers.

Figure 3



Scatterplot of the *Milestones en français du Québec* (MilBec) Score as a Function of Age (max. score = 39). The dotted line indicates the LOESS adjustment curve. The vertical gray line at age 40 months indicates when the change in slope is judged to occur.

score = 22.6,  $SD = 10.0$ , range 6–38) and the children between 40 and 71 months ( $n = 43$ ; mean age = 56.0,  $SD = 9.0$ ; mean MilBec score = 36.4,  $SD = 2.9$ , range 27–39). Using Pearson correlations, the strength of the relationship between age and MilBec score was  $r = .92$ ,  $p < .001$ , for the younger group and  $r = .60$ ,  $p < .001$ , for the older group.

**Internal consistency.** A common way to measure the internal consistency of a scale is to use Cronbach's alpha ( $\alpha$ ), which reflects the average correlation between all the possible combinations of the two halves of the item list. A high internal consistency is considered evidence of construct validity. The internal consistency of the MilBec was calculated based on all 39 items, with a resulting  $\alpha = .967$ ; if any of these 39 items were to be removed, the new  $\alpha$  varied between .968 and .965. The removal of any of the 39 items would thus not improve the internal consistency of the questionnaire, even if two items (namely Item 3 and 5) showed no variability (i.e., all participants received a score of 1). Because of the different relationship between age and MilBec score for younger and older children, Cronbach's alpha was also calculated for each subgroup, with a resulting  $\alpha = .961$  for children between 12 and 39 months and  $\alpha = .763$  for children between 40 and 71 months. The analysis also showed that for the older group, in addition to the two items previously mentioned, 13 items had no variability across children.

## Discussion

The goal of this article was to present the steps that led to the creation of the MilBec, a new parent questionnaire that could eventually be used to identify children between 12 and 71 months at risk of having a developmental language disorder, as well as a preliminary investigation of its psychometric properties. The MilBec is an adaption of the Dutch parent questionnaire presented in Luinge et al. (2006) and includes 39 items targeting various language domains to mirror the heterogeneity of the manifestation of DLD (Bishop et al., 2017; Leonard, 2014). The items of the MilBec include an adaptation of the original items from Luinge et al. (2006), as well as additional items selected based on published research on the development of French by children with typical development and children with DLD.

The first phase of the article described the steps involved in the development and piloting of the questionnaire. The preliminary investigation of the psychometric properties of the MilBec reported in Phase 2 of the article focused mainly on the documentation of its developmental sensitivity and internal consistency for a group of monolingual French-speaking children between 12 and 71 months. The results on developmental sensitivity partly concurred with the hypotheses since scores increased with increasing age. However, the relationship

**Table 3****Milestones en français du Québec (MilBec) Score for Each Age Group**

Group	<i>n</i>	<i>M</i>	<i>SD</i>	Range
1-year-olds	17	12.8	4.9	6–24
2-year-olds	17	27.4	6.4	15–36
3-year-olds	17	34.1	3.6	25–39
4-year-olds	17	35.4	3.1	27–39
5-year-olds	17	38.1	1.1	36–39

was not linear across the entire age range, but instead indicated two subgroups with different slopes, with MilBec scores increasing linearly within each group. For children between 12 and 39 months there was a very strong correlation between age and MilBec score ( $r = .92$ ) and for children between 40 and 71 months the correlation was strong ( $r = .60$ ), despite a ceiling effect occurring for the 5-year-old group and the fact that some children in the 3- and 4-year-old groups also reached the maximum score. It is possible that the children's scores are generally high partly due to the high SES of their families since children from high SES tend to have higher language skills (Fernald, Marchman, & Weisleder, 2013; Hoff, 2006; Perkins, Finegood, & Swain, 2013). Another reason could be an insufficient number of sufficiently difficult items.

The second hypothesis, which stated that significant differences in mean score would be found between successive age groups, was also partially confirmed since the mean scores of each age group were significantly different from each other, with the exception of the 3- and 4-year-old groups which were not statistically different from each other. It is possible that the lack of a statistically significant difference between these groups is partially due to a lack of power, given the low sample size. It could also be related to the need for more advanced items. Whether this will render the MilBec inadequate as a language screening tool for children over the age of 40 months can only be established with the documentation of its diagnostic accuracy in a future study.

The internal consistency of the MilBec was found to be very high based on Cronbach's alpha ( $\alpha = .967$ ). Possible explanations for a very high Cronbach's alpha are a high number of items and the possibility that some of them are redundant and should be removed in a revised version of the questionnaire (Tavakol & Dennick, 2011). The ceiling effect observed for the 5-year-old group, and an

already high performance of some children in the 3- and 4-year-old groups, may also contribute to the very high internal consistency. The analysis pointed to two items that might be considered for removal in a revised version of the MilBec, as all participants received a score of 1. However, this finding would have to be replicated in a larger group of children more representative of the population also assessing whether children with DLD may obtain a score of 0 on these items. While these considerations warrant further examination, the results indicate that the questionnaire has adequate internal consistency.

The results indicate that the MilBec is understood by parents and that it is sensitive to language development in French-speaking monolingual children. The change in the slope describing the linear relation between age and MilBec score around 40 months, as well as a much higher number of items without variability for children between 40 and 71 months and a ceiling effect for the 5-year-old group, suggest that scores should be interpreted differently for the two age groups. For children under 40 months, it might be adequate to transform the raw score into a z score, whereas for older children it might be most adequate to only consider whether the score is above or below the cutoff value. It is also possible that because of the ceiling effect observed in the 5-year-old group and the similarity in performance between the 3- and 4-year-old children, the MilBec may not be able to achieve adequate specificity for the older children (i.e., that even children with DLD would receive a high score). This could only be established in a future screening accuracy study comparing the performance of children with and without DLD.

### Limitations

Among the limitations of this study is the small sample size. In the cross-sectional study, group sizes of 17 or more are adequate for this preliminary study, but a larger

sample is clearly required for a better representation of the population and for increased statistical power. A second limitation of the sample is that the parents are all of relatively high SES. In a study with a small sample size, homogeneity in background variables is beneficial as it prevents the effect under test (here, the effect of age) to be overshadowed by other variables. At the same time, such homogeneity lessens the sample's representativeness of the more general population. Therefore, further larger scale study of the MilBec will need to include diverse SES levels.

Further, the possible effect of schooling on the children's success on some items should also be assessed for older children, particularly for the items that target metalinguistic skills and pre-reading knowledge, which are explicitly taught in kindergarten. Future analyses based on a larger sample size should also investigate the potential effect of gender on the children's performance. Indeed, early language development may be different between boys and girls, with a slight advantage for girls (Wallentin, 2009), particularly between 17 and 28 months, where the expressive skills of French-speaking girls were found to be slightly better on the MacArthur Communicative Development Inventories (Bouchard, Trudeau, Sutton, Boudreault, & Deneault, 2009).

## Conclusion

The creation and validation process of a new assessment tool is long and requires the documentation of various elements, including the ease of use by the persons who will complete it, and documentation of its validity, reliability, and diagnostic accuracy. As more information on an assessment tool is available, decisions can be made about whether the tool is adequate for its purpose and whether it can be revised to improve its value as a clinical tool. The preliminary results reported here are promising. The MilBec is currently used in different research projects to further document its psychometric properties, notably with bilingual and monolingual children with and without DLD.

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**Appendix A**  
**Pilot Version of the Parent Questionnaire**

	oui	non
<b>1.</b> Est-ce que votre enfant produit une variété de sons qui ressemblent à des consonnes et des voyelles?	<input type="checkbox"/>	<input type="checkbox"/>
<b>2.</b> Est-ce que votre enfant dit « maman » ou « papa »?	<input type="checkbox"/>	<input type="checkbox"/>
<b>3.</b> Est-ce que votre enfant comprend la signification de « non »?	<input type="checkbox"/>	<input type="checkbox"/>
<b>4.</b> Est-ce que votre enfant produit quelques mots (simplifiés ou non)? (p. ex. <i>ati</i> pour « partie »; <i>la</i> pour « lait »; <i>non</i> )	<input type="checkbox"/>	<input type="checkbox"/>
<b>5.</b> Est-ce que votre enfant peut identifier une ou plusieurs parties du corps? (p. ex. en répondant à des questions du type « Où est ton nez? »)	<input type="checkbox"/>	<input type="checkbox"/>
<b>6.</b> Est-ce que votre enfant dit environ 10 mots différents?	<input type="checkbox"/>	<input type="checkbox"/>
<b>7.</b> Est-ce que votre enfant peut pointer certains objets que vous nommez?	<input type="checkbox"/>	<input type="checkbox"/>
<b>8.</b> Est-ce que votre enfant peut combiner deux mots? (p. ex. <i>veux biberon</i> ; <i>là bobo</i> ; <i>dedans chien</i> )	<input type="checkbox"/>	<input type="checkbox"/>
<b>9.</b> Est-ce que votre enfant comprend des demandes simples de deux mots? (p. ex. « viens manger »; « assis-toi »)	<input type="checkbox"/>	<input type="checkbox"/>
<b>10.</b> Est-ce que votre enfant fait des suites de trois mots? (p. ex. <i>veut monter Grégoire</i> ; <i>pas mettre ça</i> ; <i>moi goûter fraises</i> )	<input type="checkbox"/>	<input type="checkbox"/>
<b>11.</b> Est-ce que votre enfant comprend des phrases de trois-quatre mots? (p. ex. « touche pas à ça »; « sur la table »; « attends ton tour »)	<input type="checkbox"/>	<input type="checkbox"/>
<b>12.</b> Est-ce que votre enfant fait des phrases complètes de trois ou quatre mots? (p. ex. <i>on dirait une fille</i> ; <i>il criait tout le temps</i> ; <i>raconte une histoire</i> )	<input type="checkbox"/>	<input type="checkbox"/>
<b>13.</b> Est-ce que votre enfant nomme correctement certaines couleurs?	<input type="checkbox"/>	<input type="checkbox"/>
<b>14.</b> Est-ce que votre enfant pose des questions?	<input type="checkbox"/>	<input type="checkbox"/>
<b>15.</b> Est-ce que votre enfant utilise le bon ordre des mots dans ses phrases?	<input type="checkbox"/>	<input type="checkbox"/>
<b>16.</b> Est-ce que votre enfant mentionne le sujet dans ses phrases, c'est-à-dire est-ce qu'il indique qui fait l'action? (p. ex. <i>Martin</i> dans « Martin va à la piscine »; <i>tu</i> dans « Tu viens ? »)	<input type="checkbox"/>	<input type="checkbox"/>
<b>17.</b> Est-ce que votre enfant utilise des mots qui qualifient/décrivent d'autres mots? (p. ex. <i>grande</i> et <i>rouge</i> dans « grande maison rouge »)	<input type="checkbox"/>	<input type="checkbox"/>

## Pilot Version of the Parent Questionnaire

	oui	non
<b>18.</b> Est-ce que votre enfant peut répéter une histoire en se basant sur des images?	<input type="checkbox"/>	<input type="checkbox"/>
<b>19.</b> Est-ce que votre enfant raconte spontanément des événements de sa journée? (p. ex. quelque chose qui est arrivé à la garderie)	<input type="checkbox"/>	<input type="checkbox"/>
<b>20.</b> Est-ce que votre enfant utilise le masculin et le féminin correctement la majorité du temps?	<input type="checkbox"/>	<input type="checkbox"/>
<b>21.</b> Est-ce que votre enfant utilise généralement le pluriel correctement? (p. ex. yeux/œil; chevaux/cheval)	<input type="checkbox"/>	<input type="checkbox"/>
<b>22.</b> Comprenez-vous environ la moitié (50%) de tout ce que votre enfant dit?	<input type="checkbox"/>	<input type="checkbox"/>
<b>23.</b> Est-ce que votre enfant utilise correctement les passés composés irréguliers? (p. ex. couru; mis; pris)	<input type="checkbox"/>	<input type="checkbox"/>
<b>24.</b> Est-ce que votre enfant fait de longues phrases avec plusieurs verbes? (p. ex. <i>Quand le soleil se couche, il fait noir; Maman dit tu dois venir</i> )	<input type="checkbox"/>	<input type="checkbox"/>
<b>25.</b> Est-ce que votre enfant remplace parfois le mot qui désigne un objet par un pronom? (p. ex. <i>la</i> dans « Je la veux », au lieu de dire « Je veux la pomme »)	<input type="checkbox"/>	<input type="checkbox"/>
<b>26.</b> Comprenez-vous environ les trois quarts (75%) de tout ce que votre enfant dit?	<input type="checkbox"/>	<input type="checkbox"/>
<b>27.</b> Est-ce que votre enfant parle comme un adulte, en ce qui a trait à la complexité des phrases?	<input type="checkbox"/>	<input type="checkbox"/>
<b>28.</b> Est-ce que votre enfant comprend des consignes à deux étapes ou plus? (p. ex. « Tu dois ranger tes jouets avant d'aller jouer dehors »)	<input type="checkbox"/>	<input type="checkbox"/>
<b>29.</b> Comprenez-vous la quasi-totalité (près de 100%) de tout ce que votre enfant dit?	<input type="checkbox"/>	<input type="checkbox"/>

**Appendix B**  
**« Milestones » en français du Québec (MilBec)**  
**Pour dépister les difficultés langagières des enfants de 12 à 71 mois**

Nom de l'enfant : \_\_\_\_\_ Genre :  masculin  féminin

Date de naissance (jj-mm-aaaa) : \_\_\_\_\_ Âge (mois) : \_\_\_\_\_

Complété le (jj-mm-aaaa) : \_\_\_\_\_ Par :  mère  père  autre \_\_\_\_\_

Consignes : Indiquez « oui » si la réponse est vraie présentement ou l'était lorsque votre enfant était plus jeune.

**Questionnaire – Merci de répondre à toutes les questions**

Comme le même questionnaire est utilisé pour tous les enfants, il est normal que les enfants plus jeunes aient une majorité de réponses négatives.

	oui	il me semble	je ne crois pas	non
1. Est-ce que vous considérez que votre enfant a un langage suffisamment développé, en comparaison aux autres enfants de son âge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Est-ce que votre enfant produit, ou produisait quand il était petit, une variété de sons qui ressemblent à des consonnes et des voyelles?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Est-ce que votre enfant comprend la signification de « non »?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Est-ce que votre enfant comprend des consignes simples de deux mots? (p. ex. « viens manger »; « assis-toi »)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Est-ce que votre enfant dit « maman » ou « papa »?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Est-ce que votre enfant produit quelques mots (simplifiés ou non)? (p. ex. <i>ati</i> pour « partie »; <i>la</i> pour « lait »; <i>non</i> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Est-ce que votre enfant comprend des phrases de trois ou quatre mots? (p. ex. « touche pas à ça »; « sur la table »; « attends ton tour »)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Est-ce que votre enfant vous montre du doigt les objets qui l'intéressent?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Est-ce que votre enfant peut identifier une ou plusieurs parties du corps? (p. ex. répond à des questions du type « Où est ton nez? »)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Est-ce que votre enfant dit environ 10 mots différents?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Est-ce que votre enfant peut combiner deux mots? (p. ex. <i>veux biberon</i> ; <i>là bobo</i> ; <i>dedans chien</i> ; <i>papa parti</i> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Questionnaire – Merci de répondre à toutes les questions**

Comme le même questionnaire est utilisé pour tous les enfants, il est normal que les enfants plus jeunes aient une majorité de réponses négatives.

	oui	il me semble	je ne crois pas	non
12. Comprenez-vous environ la moitié (50%) de tout ce que votre enfant dit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Comprenez-vous environ les trois quarts (75%) de tout ce que votre enfant dit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Est-ce qu'il vous est inutile de « traduire » ce qu'a dit votre enfant pour qu'une personne non familière le comprenne, plus des trois quarts (75%) du temps?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Est-ce que votre enfant fait des suites de trois mots? (p. ex. <i>veut monter Grégoire; pas mettre ça; moi goûter fraises</i> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Est-ce que votre enfant pose des questions (avec des phrases complètes ou non)? (p. ex. <i>Papa parti?; est où Maman?; pourquoi?</i> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Est-ce que votre enfant fait toujours ses phrases avec les mots dans le bon ordre?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Est-ce que votre enfant mentionne le sujet dans ses phrases, c'est-à-dire est-ce qu'il indique qui fait l'action? (p. ex. <i>Martin</i> dans « <i>Martin va à la piscine</i> »; <i>tu</i> dans « <i>Tu viens?</i> »)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Est-ce que votre enfant raconte spontanément des événements de sa journée? (p. ex. quelque chose qui est arrivé à la garderie)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Est-ce que votre enfant nomme correctement certaines couleurs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Est-ce que votre enfant possède dans son vocabulaire trois mots ou plus qui qualifient ou décrivent d'autres mots? (p. ex. <i>grande</i> et <i>rouge</i> dans « <i>grande maison rouge</i> »; <i>très</i> dans « <i>très vite</i> »)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Est-ce que votre enfant comprend des consignes à deux étapes ou plus? (p. ex. « <i>Tu dois ranger tes jouets avant d'aller jouer dehors</i> »)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Est-ce que votre enfant fait des phrases complètes de trois ou quatre mots? (p. ex. <i>on dirait une fille; il criait tout le temps; raconte une histoire</i> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Est-ce que votre enfant peut répéter une histoire en se basant sur des images?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Est-ce que votre enfant fait de longues phrases avec plusieurs verbes? (p. ex. <i>Quand le soleil se couche, il fait noir; Maman dit : « tu dois venir »</i> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Comprenez-vous la quasi-totalité (près de 100%) de ce que votre enfant dit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Est-ce que votre enfant utilise le masculin et le féminin correctement la majorité du temps? (p. ex. <i>la pomme; la gentille fille; un tapis; le beau chien</i> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Questionnaire – Merci de répondre à toutes les questions**

Comme le même questionnaire est utilisé pour tous les enfants, il est normal que les enfants plus jeunes aient une majorité de réponses négatives.

	oui	il me semble	je ne crois pas	non
<b>28.</b> Est-ce que votre enfant remplace parfois le mot qui désigne un objet par un pronom? (p. ex. <i>la</i> dans « Je la veux », au lieu de dire « Je veux la pomme »)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>29.</b> Est-ce que votre enfant utilise le pluriel correctement plus de 75% du temps? (p. ex. yeux/œil; corail/coraux)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>30.</b> Est-ce que votre enfant utilise correctement le passé composé des verbes irréguliers fréquemment utilisés? (p. ex. <i>couru; mis; pris</i> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>31.</b> Est-ce que votre enfant utilise les articles contractés correctement plus de 75% du temps? (p. ex. <i>du pour de le; au pour à le</i> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>32.</b> Est-ce que votre enfant commente parfois la similitude entre des mots liés par le sens? (p. ex. <i>la robe fleurie a des fleurs; la feuille est lignée parce qu'elle a des lignes</i> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>33.</b> Est-ce que votre enfant est capable de trouver des mots qui riment? (p. ex. <i>moufette va avec toilette; chat va avec rat; tapis va avec souris</i> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>34.</b> Est-ce que votre enfant est capable de trouver des mots commençant avec le même son? (p. ex. <i>part va avec petit; lapin va avec loupe; manteau va avec melon</i> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>35.</b> Est-ce que votre enfant informe plus de 75% du temps du lieu et des personnes impliquées de manière suffisante, lorsqu'il raconte un événement de sa journée?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>36.</b> Est-ce que votre enfant indique clairement plus de 75% du temps dans quel ordre les événements se sont déroulés, lorsqu'il raconte une histoire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>37.</b> Est-ce que votre enfant peut réciter l'alphabet sans erreur plus de 75% du temps?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>38.</b> Est-ce que votre enfant est capable de reconnaître plus de 3 mots écrits? (p. ex. son nom; papa; maman; marque de commerce)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>39.</b> Est-ce que votre enfant regarde un livre en le tenant à l'endroit, en commençant au début et en tournant les pages une à la fois, plus de 75% du temps?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Sous-totaux</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Nombre de « oui » et de « il me semble » \_\_\_\_\_