Développement phonético-phonologique en fulfulde et bambara d'enfants monolingues et bilingues : étude du babillage et des premiers mots

Cissé, I.A.H.

Summary

This descriptive and analytical study is based on two corpora of audiovisual data of monolingual and multilingual children's babbling and first words gathered in Mali during a period of nearly a year. It is concerned with fundamental discussions about the development and acquisition of language such as the issue of the presence or absence of evidence of early specialization in children at the babbling stage, the continuity between babbling and first words, and the emergence and development of phonology in children.

The findings indicate that there are differences between the development of vowel-like and consonant-like sounds in the babbling data. For vowel-like sounds, there is no evidence of early specialization as all children show a strong tendency to produce vowel-like sounds located in the lower left quadrant of the vowel space. This result is interpreted as a universal pattern in language development. Still at the babbling stage, children produce mostly plosive (labial or coronal) consonant-like sounds. This tendency, which is probably to be attributed to universal aspects of language development, coexists with evidence of early specialization. Indeed, focusing on places and manners of articulation of consonant-like sounds whose phonological status differ between Fulfulde and Bambara yields several patterns which have been identified and quantified. In Fulfulde, implosives and prenasals are phonological and very productive, while in Bambara implosives are unattested and prenasals restricted to a few lexemes. It appears that implosive productions are typical of children exposed to Fulfulde. As regards the prenasalised consonant-like sounds, they are attested in Fulfulde monolingual children, Bambara monolingual children and multilingual children exposed to at least the two languages. Thus, prenasalized productions in these children do not show, unlike implosive productions, early specialization in children's babbling. The hypothesis of a lack of control of the coordination between the velum and other articulators can be proposed to explain the presence of these prenasals in children's babbling. From a developmental perspective, plosive consonant-like productions precede nasal consonant-like productions, oral voiced plosives appear before the voiceless ones, voiceless fricatives precede voiced fricatives while prenasalized and implosive productions are not always and in all children's productions the last sounds to appear. As regards protosyllables, CV is the most common in children's babbling. CVC forms are attested in the productions of all children (in onset as well as final positions of sound sequences), even in the productions of children exposed to Bambara, a language in which there are no closed CVC syllables. The nature and frequency of syllabic structures of the target languages do not seem to influence children's output at this stage. The analysis of consonant-vowel co-occurrence patterns in protosyllables shows an overrepresentation of labial + central combinations and cases of coronal + anterior in monolingual as well as in multilingual children's productions. No change by age has been observed in these combinations' proportions. This lack of

developmental trend can be explained by the fact that the predicted associations are attested in Fulfulde and Bambara lexicons.

At the first words stage, central open vowels are the most common vowels in nouns produced by the children in this study. The emergence of nasality and vowel lengthening begin, in general, with the open central vowel and spread to [i] and [u]. Children's consonant inventories are dominated by anterior consonants (labials and/or coronals) and plosives. In general, voiced oral plosive consonants are produced before the unvoiced ones. The influence of target languages on children's productions could explain this fact as the voiced oral plosives are more frequent than unvoiced oral plosives in Bambara and Fulfulde lexicons. Another explanation could be a lack of control of the larynx: the sequences are produced entirely voiced without interruption of laryngeal vibration. It should also be noted that the voiceless fricatives are produced before the voiced ones (the latter being more complex to produce than the former). Consonantal nasality precedes vocalic nasality. Implosives and fricatives (although produced at the babbling stage) and the alveolar trill remain unstable and prone to substitution in the productions of children up to the age of 3. Consonants which emerge later in Bambara and Fulfulde children's productions and which remain unstable until about the age of 3 are the same as those which are acquired later and which remain unstable from an articulatory point of view by children in general. Analysis of phonetic approximations confirms that acquisition of control of vocal cords' vibration, the velum and quantity is still ongoing until the age of 3 in children exposed to Fulfulde and Bambara.

Disyllabic nouns dominate in all children's productions and at all developmental stages, yet in Bambara and Fulfulde lexicons trisyllabic lexemes are the most frequent. Therefore, the frequency of lexical units' syllabic structures as observed in the lexicon of the language of the environment does not influence the structure of nouns produced by the children.

Several observations based on phonetic units, quantified as part of this study, support the existence of a continuity between babbles and first words in children: the alternation consonant-vowel and the most common places and manners of articulation in children's productions at the babbling stage are also the most frequently found at the first words stage. The consonant-like sounds which are found less frequently in babbling (fricatives, trills, palatals) are those which are produced the least and are the most vulnerable to truncation and substitution in the first words. The study of phonological development in Fulfulde and Bambara shows that universal aspects (related especially to biomechanical and aerodynamic constraints) and specialization's indices coexist, even at the stage of first words.

This study also describes the multilingualism that prevails among some children's families in Douentza, a crossroads city for ethno-linguistic exchanges in central Mali. It shows in particular that children living in Douentza grow up in an environment characterized by a strong and dynamic linguistic diversity.

Multilingualism is a daily reality. Multilingual children (aged 6 to 12 months) participating in this study are comparable to Fulfulde and Bambara monolinguals of the same age at the babbling stage. However, at the first words stage, the bilingual child is different from monolingual children of the same age. That bilingual child's sound inventory is broader than the inventories of the monolinguals and is not yet completely tuned to the sound units of Fulfulde and Bambara.

This dissertation shows that Fulfulde and Bambara language development is both comparable to language development in other world languages and is influenced by the phonetic and phonological characteristics of the languages of the environment, including phonotax. It also shows the richness of the linguistic situation in Africa, a continent characterized by a high linguistic diversity and a widespread multilingualism just waiting to be explored from a developmental angle to improve our understanding of the emergence and development of child language.