
Grammatical morphology in bilingual Williams syndrome: A single case study

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Abstract

Research on the effects of bilingualism on the cognitive and linguistic development of children with developmental disorders is crucial in informing and guiding clinical decision-making. However, bilingualism in the context of learning difficulties is poorly documented: studies generally focus on language impairment in absence of intellectual impairments. In the first study on bilingual language development in Williams syndrome (WS), we examine grammatical morphology in one 5-year-old child with WS growing up in the UK, bilingual in English and French from birth. WS is a rare genetic disorder associated with an uneven profile of language and cognitive skills, with severely impaired visuo-spatial cognition and relatively better language, though recent research reveals deficits in abstract relational vocabulary and later-developing aspects of grammar (Zukowski, 2001; XXX & XXX, 2007).

To gain a better picture of our participants' general skills, a battery of standardised language and cognitive assessments in English and French was administered, probing non-verbal reasoning (Matrices subtest of KBIT), verbal short term memory (number repetition from CELF-4/forward digit span from ELO), receptive and expressive vocabulary (BPVS-2/ELOLA; Renfrew WFVT/vocabulary subtest of N-EEL) and receptive and expressive grammar (subtests from CELF-4/ELO, N-EEL), in addition to the LITMUS sentence repetition tasks targeting syntax and morphology (English: Marinis et al, 2012; French: Prévost et al, 2012). The child was unable to provide a narrative sample in either of her languages, thus the data elicited from expressive grammar tasks were analysed in detail.

Results obtained from standardised tests indicate impairments in both vocabulary and grammar (with receptive vocabulary being strongest, in both French and English) and particularly non-verbal reasoning skills. The child's performance on verbal short term memory in both languages was unimpaired.

Qualitative analyses of the elicited utterances revealed comparable difficulties in the use of grammatical morphology in both of the child's languages, with tense marking morphemes posing considerably more difficulty than non-tense marking morphemes. In French, the morphemes marking tense, e.g. auxiliary verbs 'être/avoir' [est/a] were omitted significantly more than the preposition 'à', which is not related to tense, although it has the same form as the problematic 'à' in passé composé. In English, the present tense marker '-s' was omitted more frequently than the plural '-s'. This pattern is typical for WS: young English-speaking children with WS demonstrate considerable difficulties with tense marking (Peregrine et al, 2006), though their performance gets consistently better by teenage years (Clahsen & Almazan, 1998).

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Some of the errors observed in the data revealed difficulties that were language-specific: our participant rarely omitted determiners ‘le/la’, ‘un/une’, but often used an incorrect masculine (default) form in the context where the feminine form was required. Note that production of correct grammatical gender is reported to be problematic for monolingual French children with WS (Karmiloff-Smith et al, 1997), though other studies question this result (Monnery et al, 2002).

The observed patterns suggest that the participant was functioning typically for a young child with WS in both French and English, exhibiting relative strengths in receptive vocabulary but significant delays in her development of morphosyntactic knowledge in both languages. This result strongly suggests that bilingualism does not exacerbate the linguistic and cognitive difficulties in WS. Interestingly, our participant’s performance on a measure of verbal working memory was within the average range. While data from one participant are far from generalizable, this result could be interpreted as one beneficial consequence of bilingualism, in line with recent research demonstrating cognitive advantages of bilingualism related to working memory (e.g. Blom et al, 2014).

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