Research in Developmental Disabilities 30 (2009) 1523–1540

Contents lists available at ScienceDirect

Research in Developmental Disabilities

Gender attribution and gender agreement in French Williams syndrome

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ARTICLE INFO

Article history:
Received 23 July 2009
Accepted 25 July 2009

Keywords:
Language development
Williams syndrome
Morphosyntax
Grammatical gender

ABSTRACT

Previous studies on grammatical gender in French individuals with Williams syndrome (WS) have led to conflicting findings and interpretations regarding keys abilities—gender attribution and gender agreement. New production data from a larger WS sample (N=24) showed that gender attribution scores in WS participants exactly mirrored those of controls: all groups overwhelmingly relied on the masculine as the default gender. WS participants' agreement scores were far lower than those of CA-controls though not significantly below those of MA-controls. They also did not improve with age, which might suggest a permanent disability in this area.

1. Introduction

Previous studies on grammatical gender in French individuals with Williams syndrome (WS) have shown a state of conflicting findings and diverging interpretations similar to the one seen in the broader area of research in WS morphosyntax (for reviews, see Brock, 2007; Martens, Wilson, & Reutens, 2008; Mervis, 2006). Depending on the study, or commentaries on the same study, key abilities in grammatical gender – gender attribution and gender agreement – have been claimed to be either both impaired (Karmiloff-Smith et al., 1997), both spared (Monnery, Seigneuric, Zagar, & Robichon, 2002) or, else, dissociated, with agreement being spared and attribution being impaired (Clashen & Almazan, 1998).

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doi:10.1016/j.ridd.2009.07.019

We first show that the controversies actually stem from a number of intricate technical and conceptual problems, ranging from the coding schemes to the kind of legitimate inferences one can draw from production data to the background theoretical account of French gender acquisition. We then report new production data re-assessing French WS grammatical gender abilities on the basis of a larger sample.

1.1. Previous studies on grammatical gender in French WS

Karmiloff-Smith et al. (1997) compared 14 WS aged 9.0–22.6 to 18 controls aged 4.6–5.1. Participants should produce NPs (comprising a gender-marked determiner, a noun and a gender-marked colour adjective) to describe actions performed on two identical, but differently coloured, pictures of objects or animals. The experimenter first provided the name of each picture *via* a determiner–noun pair and asked participants to repeat it accurately. In four conditions, the determiner was a gender-marked indefinite article. The noun could be either real or invented and the gender value of the noun ending either corresponded or was opposite to the gender of the article (concordant *vs*. discordant conditions). In a fifth condition, a gender-neutral numerical adjective was used, making nonce noun endings the only available cues to gender. In all conditions, scoring decisions were such that both the determiner and the adjective gender forms should fit the gender of the noun, as defined by the experimenter. In conditions 1–4, the correct attribution choice should be the one based on the gender of the article provided by the experimenter. In condition 5, it should be the one fitting the probabilistic gender value of noun endings.

A first analysis of data from conditions 1–4 (Fig. 3, p. 252) showed that WS participants' rates of gender errors were significantly higher than controls' in each condition, especially in the concordant and discordant nonce nouns conditions (respectively, 29% *vs*. 2.5%, and 48% *vs*. 4.5%). Restricting the database to full NPs, a second analysis assessed participants' ability to make the adjective agree with the article. Results were re-arranged into two main conditions (real nouns *vs*. nonce nouns), collapsing in each main condition the data from the concordant *vs*. discordant conditions (Fig. 4, p. 253). Both groups demonstrated very low agreement error rates (below 10%) in the real word condition. Agreement errors rates were higher in both groups in the nonce word condition but WS were found to be far worse than controls (respectively, 37% *vs*. 14%). In condition 5, where nonce nouns endings were the sole cues to gender, WS were at chance level (53% errors), and significantly worse than controls (22%, Fig. 5, p. 253).

Because 'WS participants did very poorly on assigning concordant grammatical gender markers across several noun phrase elements' (p. 254), Karmiloff-Smith et al. claim to have demonstrated 'within-dissociations in the use of morphosyntactic rules' (p. 256) in this syndrome. While WS participants easily learn article/noun pairs by rote (hence their relatively low error rates in the ''real word'' conditions), 'they only weakly extract the underlying system of morpho-phonological oppositions on word endings' (p. 256).

Clashen and Almazan (1998: 171–172) argued for an alternative interpretation of these findings. First, because neither controls nor WS can memorize all combinations between determiners, nouns and adjectives and because all participants achieved high accuracy scores in the real word conditions, 'the morphosyntactic rules governing gender concord in French must be available to the WS participants in the same way as to the unimpaired controls' (p. 172). Second, and consequently, WS difficulties elsewhere in the task must be due to 'the assignment of gender to nonce nouns, particularly on the basis of word endings of nouns' (p. 172). This latter kind of ability should best be implemented as associative processes rather than as morphosyntactic rules. Thus, the distinction between rule-based grammar *vs*. lexical based grammar would provide the best account of these French WS gender data

Monnery et al. (2002) compared 10 WS participants aged 5.6–21.4 with 24 controls aged 4.9–6.1. Gender attribution abilities were assessed through an explicit categorization task where participants should guess the most suitable indefinite article for a series of real or invented nouns. A separate elicited production task, similar to the condition 5 in Karmiloff-Smith et al. (1997), probed participants' agreement abilities. Both tasks used the same linguistic material, which comprised a set