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Past tense formation in Greek children with Williams syndrome

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Background

Psycholinguistic studies of past-tense forms in English and other languages have been the focus of a controversy on the role of morphological rules and computation for acquisition and processing of inflected word forms. In contrast to single-mechanism accounts (e.g. Plunkett and Marchman 1996) in which morphological rules do not play any direct role for acquisition or processing, dual-mechanism accounts (Clahsen 1999) claim that regular inflection is rule-based (e.g. -ed suffixation in English), whereas irregular forms (e.g. ate) are stored and retrieved from lexical memory. Research on developmental disorders offered new insights into the past-tense debate. Clahsen and colleagues have suggested that children with Williams Syndrome (WS) employ the morphological rules to compensate for irregulars in the lexical system yielding, for example, excessive rates of -ed overregularization (Clahsen and Almazan 1998). By contrast, Thomas *et al*. (2001) have argued against that view and have claimed instead that language is broadly delayed in WS and develops under a "different set of constraints" from normal.

This study examines regular/irregular contrasts in Greek children. Past-tense formation in Greek interacts with aspectual distinctions yielding perfective (simple past) or imperfective (past continuous) forms. Within the perfective past tense, the so-called sigmatic forms involve -s suffixation which is regarded as rule-based process in the adult language. Thus, from Clahsen and colleagues' findings on English-speaking children with WS, we hypothesized that Greek children with WS are unimpaired in sigmatic past-tense formation and overapply the -s suffixation rule in circumstances in which non-sigmatic past-tense forms are required in the adult language.

Materials and methods

Five WS subjects aged 10.5–16.11 (Mean: 12.8 SD: 2.6) participated in the study. Their mental age was calculated on the basis of the Greek version of WISC-III test and ranged from 4.3 to 10 (Mean: 5.7 SD: 2.2). The WS data were compared to data from 99 controls, six groups of typically-developing (TD) children in the age of 3–8 and a group of adults. An elicited judgment task supported by pictures, the Perfective Past Tense Test (PPTT, Clahsen and Stavrakaki 2004), was performed with all participants. The test involves 20 existing verbs, 20 novel verbs which rhyme with the existing ones, and 10 novel non-rhyming verbs in which two puppets manipulated by the experimenter provide either a sigmatic or a non-sigmatic past-tense form for novel verbs and either a perfective past-tense form (half of which were sigmatic) or an imperfective one for existing verbs. Children were asked to choose the correct response by pointing to one of the puppets or to provide an alternative past-tense form.

Results

The results can be summarized as follows:

(i) On existing verbs, the WS groups exhibited a preference for perfective past tense forms, parallel to mental age (MA) controls.

(ii) For novel verbs (non-rhymes and non-sigmatic verbs), the WS group exhibited a clear preference for sigmatic past tense forms performing at the same level as the adult group and significantly above TD children matched for mental age.

(iii) For novel non-sigmatic verbs, non-sigmatic past-tense forms were significantly less often chosen than for existing non-sigmatic verbs in both the WS and the MA

control groups, indicating that non-sigmatic do not productively generalize to novel verbs.

Discussion

From these findings, we conclude that the linguistic system of children with WS does not have a functional structure different from normal or that it reflects atypical developmental forms (contra Thomas *et al*. 2001). Instead, we argue that the linguistic performance of subjects with WS reflects the architecture of the normal system, but with a strong reliance on the computational rule-based system of language.

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