



Developmental Proper Name Anomia

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Introduction

The ability to accurately and efficiently retrieve proper names is of great importance in human communication. There is much evidence supporting the claim that proper and common names are retrieved via distinct processes, including compelling cases of acquired proper-name anomia without common-name anomia (e.g., Cohen et al., 1994; Otsuka et al., 2005; Semenza & Zettin, 1988,1989) and the opposite dissociation (Martins & Farrajota, 2007). This study is the first in-depth report of cases of developmental proper-name anomia and examines in detail the nature of the impairment, its locus in the name retrieval process and sheds a light on specific aspects of proper-name retrieval process.

Methods

The participants were ten individuals aged 30-49, who reported considerable difficulties in retrieving people's names since childhood. Proper-name retrieval was assessed using a person-picture naming task (155 items) and naming-to-definition tasks (46 items), both adapted to the age-group of the participant (as persons whose faces and names are familiar to 30 year-olds are not the same as the ones known to 49 year-olds). Faces the participant reported were unfamiliar were removed from further analysis; retrieval failure was only coded in case the participant knew the person but could not retrieve their name. Common-name retrieval was assessed from picture (193 items, Biran & Friedmann, 2005) and from definition (33 items). Performance was compared to aged-matched controls (N=39) using Crawford & Howell's t-test (1998) and a dissociation analysis (Crawford & Garthwaite, 2005).

Results

Six participants (see Figure 1) showed selective developmental proper-name anomia. Their proper-name retrieval was significantly below the control group ($p < .05$), and their common-name retrieval was within the control level. They showed a classical dissociation between these tasks ($p < .05$) and were further tested for the extent and functional locus of their proper-name deficit, retrieval of semantic information from different modalities and more. The difficulty was mostly consistent in different input and output modalities and in verbal fluency tasks.

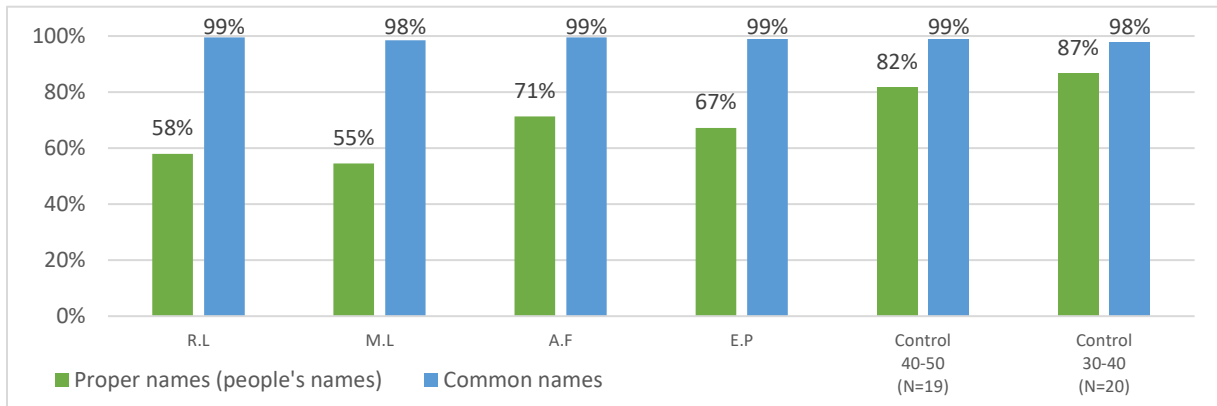


Figure 1. Results in common and proper name retrieval for participants and control group

In the fluency tasks (retrieval within one minute), all the proper-name anomia participants performed below the control group in retrieving celebrity names by profession but were at or above control average in common-names (animals and vehicles), with significant interaction group*task ($p < .001$). They performed similarly to controls in the retrieval of names by group (e.g., Italian names) and as poor as controls when retrieving names by their meaning (e.g., names of people that are flower names-daisy).

Many Hebrew names are also common-names (“Gal Gadot” means “wave, river-banks”), which allowed us to compare the participant’s retrieval (in picture naming and naming to definition tasks) of the same phonological sequence as a proper-name and as a common-name. They were significantly better at retrieving the same phonological-sequence as a noun than as a name (Table1).

M.L.	A.F.	E.P.	R.L.	A.A.
0.002	0.031	0.002	0.031	0.002
(N=14)	(N=14)	(N=16)	(N=11)	(N=14)

Table 1. McNemar test results comparing the retrieval of the same phonological sequence as a noun and as a name

All six participants were able to access specific semantic knowledge about a person, while unable to access their name. Reading of irregularly-written names showed pseudohomophone-name effect, indicating ability to access the phonological lexicon containing people’s names. Together these findings point to a name-specific deficit in the access from the person-specific semantics to the name in the phonological lexicon.

Conclusions

The results highlight a scarcely-reported developmental difficulty in retrieving people's names, with intact common name retrieval. The data further shows a dissociation between the retrieval of the exact same phonological sequence as a name and as a common noun. The results indicate the separate processing of name and noun retrieval.

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