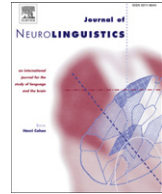




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# Foreign accent syndrome due to conversion disorder: Phonetic analyses and clinical course

Katarina L. Haley<sup>a,\*</sup>, Heidi L. Roth<sup>b</sup>, Nancy Helm-Estabrooks<sup>a</sup>,  
Antje Thiessen<sup>a,1</sup>

<sup>a</sup> Department of Allied Health Sciences, UNC School of Medicine, Chapel Hill, NC, USA

<sup>b</sup> Department of Neurology, UNC School of Medicine, Chapel Hill, NC, USA

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### ABSTRACT

We describe the case of a 36-year-old native speaker of English who began using a foreign accent after abrupt onset of problems involving multiple sensory and motor functions. Neurological and neuroradiological examinations were within normal limits and no organic explanation for the difficulties could be identified. After eight months, the patient made a full recovery, allowing a detailed comparison between the speech patterns displayed during the period of foreign accent and those of her typical speech. Perceptual and acoustic analyses showed specific changes in vowel and consonant production and in intonation and stress patterns during the accented speech. These changes were similar to those described in the literature for patients with foreign accent syndrome following left cerebral hemisphere lesions. A review of presenting symptoms and clinical course of our case, however, indicated strong evidence for a conversion disorder. This case demonstrates that a psychogenic etiology for foreign accent syndrome should sometimes be considered and that the prognosis for recovery, including spontaneous remission, may be good in such cases. Differential diagnosis between psychogenic and neurogenic etiologies is discussed relative to the case presentation, history, course, and recovery.

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\* Correspondence to: Katarina L. Haley, Ph.D., Division of Speech and Hearing Sciences, Department of Allied Health Sciences, 3124 Bondurant Hall, CB #7190, 321 S. Columbia Street, University of North Carolina, Chapel Hill, NC 27599, USA. Tel.: +1 919 966 9460; fax: +1 919 966 0100.

E-mail address: [khaley@med.unc.edu](mailto:khaley@med.unc.edu) (K.L. Haley).

<sup>1</sup> Present address: Department of Speech Pathology and Audiology, UNC Hospitals, Chapel Hill, NC, USA.

## 1. Introduction

### 1.1. Speech characteristics

The foreign accent syndrome (FAS) is an acquired speech disorder in which a native language user suddenly starts using prosodic and articulatory patterns that cause listeners to perceive a foreign-sounding accent. To date, approximately 50 cases of FAS have been published in scientific journals, with a dramatic increase in the proportion of cases published in recent years (9% prior to 1980; 11% 1980–1989; 25% 1991–2000; 55% 2001–2008). A review of these cases shows that the etiology and presenting symptoms of FAS are far from uniform. Despite good agreement among listeners that the accent sounds “foreign,” there is typically poor agreement as to the language associated with the accent (e.g., Blumstein, Alexander, Ryalls, Katz, & Dworetzky, 1987; Christoph et al., 2004; Gurd, Bessel, Bladon, & Bamford, 1988; Ingram, McCormack, & Kennedy, 1992). Detailed phonetic analyses of speech patterns have revealed allophonic variations that are atypical of the speakers’ native language, particularly in prosody and vowel quality, but the unavailability of similar measures from the individuals’ normal speech limits conclusions regarding the precise nature of the changes. In selected cases, preexisting audio recordings were available (e.g., Dankovičová et al., 2001; Gurd, Coleman, Costello, & Marshall, 2001), but the content could not be customized to the analysis needs. In other cases, a normal control speaker or published group data were used as a reference for unaccented speech (Blumstein et al., 1987; Coelho & Robb, 2001; Laures-Gore, Henson, Weismer, & Rambow, 2006; Miller, Lowit, & O’Sullivan, 2006; Varley, Whiteside, Hammill, & Cooper, 2006), an approach that does not account for individual dialectal or idiosyncratic articulatory and prosodic variations.

### 1.2. Etiology and clinical course

Recently, we (Albert, Haley, & Helm-Estabrooks, in preparation) reviewed 30 published cases of FAS for which neuroanatomical information on lesion localization was available. We found the most likely clinicoanatomical correlate to be a small lesion deep in left frontal white matter pathways, anterior and superior to the head of the caudate nucleus. In the majority of these cases, the etiology was stroke or traumatic brain injury and the foreign accent emerged as a transient stage of recovery following initial stages of muteness, nonfluent aphasia, apraxia of speech (AOS), and/or dysarthria. It is difficult to derive further clinical relationships from the FAS literature because information about the course, medical history, coexisting signs or symptoms, and intervention approaches has been incomplete.

A few published reports indicate that FAS can occur without organic etiology. Some of these cases differ markedly with regard to onset from those with confirmed brain lesions. For example, a foreign accent emerged in two individuals during exacerbation of a psychosis and in the context of delusions, hallucinations, and disordered thought processes (Reeves, Burke, & Parker, 2007; Reeves & Norton, 2001). In other cases with no evidence of neuropathology, psychogenic etiology of the FAS was more difficult to establish but seemed likely (Gurd et al., 2001; Poulin, Macoir, Paquet, Fossard, & Gagnon, 2007; Van Borsel, Janssens, & Santens, 2005). The speech characteristics in these cases were similar to those for individuals with documented brain lesions in that they included changes in prosody, vowel quality and duration, and allophonic consonant variations. Because very few detailed reports of FAS with possible psychogenic etiology have been published, and because the phonetic analysis has been limited in scope, it is critical to explore the phonetic speech characteristics in such cases in more detail.

In this report, we describe a case of FAS in which the etiology and evolution of the foreign accent were well documented and where detailed phonetic analyses were derived from identical speech samples with and without the accent. There was strong indication that the etiology was a conversion disorder. Six months after the onset of her symptoms, the patient made a complete recovery, allowing detailed phonetic comparison of identical speech samples produced with and without the foreign accent.

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