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## Discussion

# Variation, implied pathology, social meaning, and the ‘gay lisp’: A response to Van Borsel et al. (2009)

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**Abstract**

This brief communication is a response to the article “The prevalence of lisping in gay men” (Van Borsel, J., De Bruyn, E., Lefebvre, E., Sokoloff, A., De Ley, S., & Baudonck, N. 2009. *Journal of Communication Disorders*, 42, 100–106). I argue aspects of that study’s design, measurement, and interpretation limit the strength of its authors’ conclusions that there is a higher incidence of lisping in gay men than in heterosexual men. Suggestions for further research are presented.

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Van Borsel et al. (2009) (henceforth ‘VB et al.’) report on an auditory-perceptual evaluation of the production of anterior alveolar sibilant fricatives in the speech of Belgian adults. Native-speaker transcriptions revealed a higher incidence of dental variants of alveolar sounds than apical variants in men who self-identify as gay. Though the authors concede that the origin of this group difference is unclear, they interpret it as empirical verification of the social stereotype that gay men lisp.

The authors are to be applauded for tackling the gnarly and potentially controversial topic of sexual orientation and speech, and for doing so using something approximating population-based sampling. The use of self-referred convenience-samples in previous studies has limited the conclusions that can be drawn. Indeed, many of the authors of those studies – including this author – acknowledge that fact. On the other hand, aspects of VB et al.’s data analysis and interpretation require comment. There is broad interest in this topic in the general population, and hence high potential for VB et al.’s study to be read and cited by scholars in other disciplines, and by a lay audience. The statement that 40% of gay men lisp has the strong potential to be interpreted by the media, and by our colleagues in related disciplines like biology, psychology, and cultural studies, as evidence that gay men’s speech is somehow impaired relative to heterosexual men’s speech. VB et al. provide no evidence to support this, and many of their findings suggest otherwise. Given the potential harm that might come from this interpretation, I regard it as crucial that readers reconsider some aspects of their article, and of this general area of inquiry, before they draw their own conclusions about the topic of fricative production and male sexuality.

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### 1. Acoustics and articulation: 'higher frequency' is not always 'more frontal'

The first critique is that there is one frank error in the authors' interpretation of the articulatory–acoustic relationships for /s/. The authors interpret the higher peak frequency of gay men's /s/ in Munson, McDonald, DeBoe, & White (2006) and Linville (1998) as indicating a more-anterior constriction for that sound and, by association, something closer to a frontally misarticulated /s/. This is incorrect. Jongman, Wayland, & Wong (2000) showed that /θ/, a sound anterior to /s/, has a significantly *lower* spectral mean than /s/, and that these sounds are most clearly differentiated in the second spectral moment (i.e., the spread of the distribution of energy in the fricative), not the spectral mean. This is further complicated by the fact that models of the articulatory–acoustic relationship for fricatives are much more complex than are the simple source-filter models that are successful in predicting vowel formants. Simply put, acoustic analyses of gay and straight men's speech provide no support that frontal variants are more prevalent in North American English-speaking gay men's speech. This includes the study by Munson and Zimmerman (2006), who make no claim that lisping is a marker of gay identity. That study did show that adult listeners perceive talkers as more gay-sounding when the stimuli over which they make these ratings contain frontally and dentally misarticulated variants of /s/ relative to ratings for stimuli that contain an apico-alveolar /s/; however, the stimuli that contained the frontal and dental /s/ variants were created acoustically, using the /s/ productions of a trained phonetician, combined with natural vocalic bases that had been produced by talkers who varied in their perceived sexual orientation. They also found that stimuli containing a token of /s/ with a high peak frequency and a highly negatively skewed spectrum elicited judgments of gay-soundingness that were statistically identical to those containing a frontal /s/. Based on these findings, I think that it is safe to claim that lisping is associated with GLB identities in the minds of listeners. However, Munson and Zimmerman provide no evidence that gay men are more likely to produce a frontal or dental /s/ than heterosexual men, or that the use of such a variant of /s/ is a marker of gay identity. The dissociation between the observed facts about /s/ variation and listeners' judgments led Munson and Zimmerman to hypothesize that the association between frontal /s/ and gayness is a stereotype about gay men. Admittedly, there is little documentation of this stereotype in research studies, though Madon (1997) does provide evidence that gay people believe that gay men speak in a 'soft voice' and they *reject* the propensity to speak in a 'deep voice'. Moreover, as Russo (1987) discusses extensively, this stereotype is robustly represented in media depictions of gay men.

### 2. Measuring articulation: beyond transcription

Having said that, it is quite striking that VB et al. found differences in alveolar consonant production between gay and heterosexual men. The difference between this finding and others' earlier work may be wholly attributable to the use in the current study of something more closely approximating population-based sampling. There is, however, one alternative possibility that must be explored before we can conclude this with confidence, namely, that the differences relate to how production accuracy was measured. The two individuals who coded the data were blind to the talkers' self-stated sexual orientation. However, numerous studies – many of which VB et al. cite in their paper – have shown that listeners use many acoustic cues to ascertain talkers' sexual orientation, such as the fundamental frequency and resonant frequencies of vowels. It is possible that although the coders were blind to the talkers' sexual orientation, there were sufficient vocalic cues to at least some of the talkers' sexual orientation causing the coders to perceive the talkers as gay or straight, thereby affecting how these talkers' fricatives were coded. A recent study by Munson (2009) showed that listeners' identification functions of a synthetic /s/–/θ/ continuum were shifted when the formants in vocalic base to which the continuum was appended were shifted higher. Work by Schellinger, Meyer, Munson, Edwards, & Beckman (2009) demonstrated that individuals' ratings of the accuracy of natural /s/ and /θ/ tokens can be biased experimentally when listeners are led to make different assumptions about the talkers who produced them (in that case, assumptions about the talkers' age and overall speech-production ability). The easiest way to address this would be to supplement the impressionistic transcriptions with detailed acoustic analyses.

### 3. Pathology, variation, and social meaning

Imagine that VB et al. did complete such an acoustic analysis and found that the gay talkers in their study are indeed producing alveolar sounds that are demonstrably more dental than their heterosexual counterparts. This still could not

be taken as unambiguous evidence that gay people lisp. The problem comes when we consider what it actually means to lisp. In speech-language pathology, the term *lisp* was used historically to describe misarticulations (e.g., Van Riper, 1937), where *misarticulation* implies an error, that is, a production resulting from a deficit in one or more of the basic cognitive-linguistic, perceptual, and motor skills that support successful acquisition of the ambient language. But distinctive variants of /s/ are not always errors. A perfect illustration of this is given by Stuart-Smith's (2007) study of phonetic variation as it relates to sex, age, and social class in speakers of Glaswegian English. Stuart-Smith showed that younger, working-class girls produced a markedly retracted variant of /s/ than younger, middle-class girls, or middle-aged women of both social classes. Does this indicate a misarticulation of /s/? It is impossible to assess with the data that Stuart-Smith present, but it would be remarkable if the incidence of errors of /s/ were perfectly stratified along gender, class, and age lines. It would also be remarkable if these were errors, as they are completely unlike the errors that typically developing English-acquiring children make. It is more likely that the variation reflects something related to young working-class girls' production of variants of /s/ that code their membership in that social group, a process we can call *social-indexing*. This is not an isolated example. A similar situation surrounds labiodental variants of /r/ in variants of English spoken in the United Kingdom (Foulkes & Docherty, 2000). There is evidence that certain social groups use a variant of /r/ that is at least superficially similar to the variants that are produced by children who misarticulate that sound. As with Stuart-Smith, the strong social stratification suggests that these sounds are likely not to arise because of the mechanisms that underlie /r/ misarticulation in children with speech delays, but reflect instead talkers' tacit or overt social-indexing. The social-indexing functions of phonetic variants are often language-specific, as shown by Van Bezooijen's (1995) study of the relationship between f0 and perceived speaker attributes in Japan and the Netherlands.

Consider these findings in light of VB et al.'s result. VB et al. suggest that these are developmental misarticulations which never normalize. If this is true, then we are faced with the hard-to-explain fact that an enormous proportion of the gay population – 40+% – have disordered speech. We are also faced with the discrepancy between this research and the smaller, convenience-sample studies done by Linville, Munson et al., and others on English speakers.

The other possibility is that these variants are part of a speech style that serves a social-indexing function specific to the linguistic and the cultural context that Van Borsel and colleagues studied (Dutch speakers in Belgium). The study of phonetic variants that convey social categories or speaker attributes is a burgeoning area of inquiry, sometimes referred to as *sociophonetics* (see Hay & Drager, 2007, for a review). The conjecture that the variants noted in the gay men serve a social-indexing function is consistent with the finding that the incidence of non-canonical /s/ variants in VB et al.'s sample is stratified by one macrosociological category known to affect normal linguistic variation, age. These variants are also stratified by one local variable, their course of study at university, a finding reported by Van Borsel, Van Rentergem, & Verhaeghe (2007). This kind of stratification is the hallmark of normal sociolinguistic variation.

#### 4. The pitfalls of using read speech

There is another more-basic possibility that also warrants investigation. There is ample evidence that /s/ varies substantially within individuals for reasons that have nothing to do with misarticulation. Consider Maniwa, Jongman, & Wade's (2009) study of the acoustics of fricatives spoken in conversational and intentionally clear-speech styles. Maniwa et al. found that clear-speech tokens of /s/ were louder, longer, and had higher peak frequencies than those in conversational speech styles. Similar results for a different set of talkers are presented by Munson, Ferguson, & Connealy (2009). The samples that VB et al. analyze are of read speech. It is possible that the gay men in their study used a clearer speech style, which would have affected the variants of /s/ they produce. Simply put, these variants may have had no relationship to social identity, but may have simply been due to group differences in the use of clear-speech variants. This is supported by Munson et al.'s (2009) finding that male talkers, even those who are rated as very heterosexual sounding, are rated to sound gayer when they produce an intentionally clear-speech style. There is also a third logical possibility, namely, that gay male speech styles incorporate features of the clear-speech style that individuals use to enhance intelligibility.

This possibility would be testable only by pairing analyses of read speech with rigorous analyses of socially situated naturalistic speech. Such a finding would be consistent with the argument that Munson, McDonald et al. make about the distinctive variant of /s/ that is associated with perceived sexual orientation in English. Those authors made the argument that the distinctive /s/ was a reflection of a clear-speech style, rather than a reflection of sexual orientation

*per se*. Subsequent work by Podesva (2006, 2007) suggests that this characterization is perhaps overly simple, and that the clear-speech style itself might convey different social meanings (like ‘erudite’, ‘competent’ or ‘prissy’) in different social contexts, a hypothesis that itself warrants further investigation. Podesva’s conclusions come from intensive ethnographic work examining socially situated speech. Clearly, understanding the role that phonetic variants play in a language cannot be accomplished without carefully studying their meanings. This requires the integration of diverse research traditions and methods.

## 5. Conclusion: a new approach is needed

For far too long, the different disciplines that are concerned with linguistic variation (principally speech-language pathology, sociolinguistics, experimental phonetics, and psycholinguistics) have ignored each others’ work (see discussion in Munson, 2007). Theories of language development and language use are moving toward a consensus that grammatical generalizations about language are abstracted over real-world language use. For these theories to move forward, it is critical that we develop an increasingly sophisticated understanding of why and how language varies. We can accomplish this if people who study variation find common ground in the methods and measures they use to understand variation, including studies of the cognitive-linguistic and perceptual-motor bases of variation (from speech-language pathology), the social causes and consequences of variation and the assessment of social meaning (from sociolinguistics), and detailed instrumental ways of tracking variation in production and comprehension (from experimental phonetics and psycholinguistics). Recent years have seen promising work on all fronts (e.g., Babel, 2009; Campbell-Kibler, 2009; Drager, 2008; Kohnert & Windsor, 2004; Kraljic, Brennan, & Samuel, 2008; Staum Casasanto, 2008; Windsor & Kohnert, 2004). Studies of sexual orientation and speech, including the study reported by VB et al., have the potential to advance our understanding of variation if the researchers who conduct them step out of the comfort zone of the familiar paradigms of their academic disciplines and consider the many perspectives needed to understand variation. By doing any less, we run the risk of at best continuing the status quo, and at worst propagating misleading information.

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