

MISCELLANY

A CASE OF DISTANT ASSIMILATION: /str/ → /ʃtr/

WHEN SOUND CHANGE INVOLVES ASSIMILATION, the typical case is one of contact assimilation: the sound that becomes similar to its neighbor is immediately contiguous to the latter. Assimilation at a distance does occur but is a relatively rarer phenomenon when it involves consonants; vowels assimilating to each other in neighboring syllables are quite common, a typical example being that of umlaut (cf. Hock 1986, 64).

The recent history of American English includes a sound change that seems to have gone unattested in the scholarly literature.¹ This is the change of /s/ to /ʃ/ before /tr/ (i.e., a PHONEMIC CHANGE), which involves a palatalization of the initial sound in the cluster /str/, typically in initial position but not exclusively. Thus, for instance, speakers who regularly manifest this pronunciation replace the Standard American English [s] of *strong*, *strategy*, *strength*, *Australia(n)*, *restrictive*, *interest rate*, *industry*, *extra*, and even *history* (when pronounced with syncope of the medial vowel) with [ʃ]. The degree of palatalization is not uniform, so that the phonetic realization can stop short of the full-fledged “phonetic power” of the American [ʃ] found in words like *short*, *shape*, *ash*, etc. (More about the phonetic details later.)

This phonemic change seems to be neither dialectal nor regional.² Over many months of listening to radio and television broadcasts and observing the pronunciation of speakers in the New York area, I have noted it as a regular trait in the speech of the following persons during their television appearances: Richard Nixon (miscellaneous sound bites); Howard P. (“Pete”) Colhoun (panelist on the PBS program *Wall Street Week*, 9 July 1993); Tracy Austin, Mary Carillo, John McEnroe (USA and CBS broadcasts of the US Open Tennis Championships, Aug.–Sept. 1993); Rick Barry, Hubie Brown (TNT broadcasts of NBA games, 1990–93 seasons); Dick Vitale (ESPN broadcasts of NCAA basketball games); and Cokie Roberts (regular panelist on ABC program *This Week with David Brinkley*).³ Based on their overall speech and what can be ascertained about their origins, these speakers are from California (Nixon and Austin), Flushing, Queens, New York (Carillo and McEnroe), New Jersey (Barry, Brown, Calhoun, and Vitale), and Washington, DC, by way of Louisiana (Roberts)—which suggests no obvious geographical pattern. Admittedly, this is a highly limited sample, but I have deliberately singled out public figures whose pronunciation is continuously open to observation by others who might wish to confirm for themselves the existence of this trait. I have also registered it among many other (nameless) speakers as a more or less regular phenom-

enon, and my southern correspondents in places like Birmingham, Alabama, have confirmed its incidence in that part of the country. Taking all this into account, I would venture to say that it is a general American innovation, and that it is gaining ground.

Such are the facts, to the extent that I am able to present them. What makes this case more interesting than the mere registration of a phonetic peculiarity is its phonological significance. But in order to understand the innovation from the point of view of the sound pattern of American English, we need to back up one step and ask several questions. Is the pronunciation of *strong*, for example, with [ʃ] instead of [s] properly an assimilation, let alone an assimilation “at a distance”? If so, what is being assimilated to what and in what phonological respect? Finally, in deciding these matters, are there special acoustic data concerning the phonetic realizations of /s/ and /t/ when these phonemes occur before /r/ that need to be taken into account? The questions are intertwined; consequently, my discussion will have to do a bit of zigging and zagging between them.

First some phonetic details. Judging by the evidence in Olive, Greenwood, and Coleman (1993, 279, 281), the cluster [str] seems to have a peculiar acoustic character. The center frequency of the frication noise of the /s/ moves down rapidly from the high value expected for /s/ (ca. 5 kHz) to a very low value (ca. 2 kHz or even less) right before the onset of voicing for /r/. And what is even more remarkable, there is often no abrupt cessation of the fricative noise (or none long enough to count as a stop), that is, it appears as if there really is no stop. Nevertheless, the uncharacteristically gradual amplitude change in the noise is apparently enough to cue to the listener the presence of the stop /t/. The spectrogram in Olive, Greenwood, and Coleman (1993, 281) shows this—but without any commentary in the accompanying text that recognizes the oddness of the realization of /t/.

This acoustic evidence suggests that the initial fricative—phonetically—could be a retroflex [ʂ], just as the voiced fricative noted above (n3) is probably the retroflex [ʐ]. The spectrogram in Olive, Greenwood, and Coleman (1993, 94, fig. 4.8), where the center portions of the voiced fricatives are shown, also makes it clear that retroflex [ʐ] and the sound [ʒ] are practically identical; this would presumably apply to their “voiceless” counterparts. In fact, judging by the spectrograms in Olive, Greenwood, and Coleman (1993, 173, fig. 6.26; 180, fig. 6.31), the retroflex realizations of /s/ are acoustically similar enough to be judged as fronted realizations of /ʃ/. In my own auditory perception of the speakers I heard, I can testify that I consistently heard varieties of [ʃ] and not retroflex [ʂ]. More importantly, none of this disturbs the status of [ʂ] as a realization of /ʃ/ and [ʐ] as a realization of /ʒ/.

The next issue that needs examining is the type of assimilation involved in the change of /str/ → /ʃtr/. Is it really nonadjacent or noncontact assimilation, that is, assimilation “at a distance”? It is important to start out by emphasizing that this a triconsonantal cluster, not simply the combination /tr/. Now, it has been fairly well documented (e.g., Read 1971) that initial /tr-/ and /dr-/ clusters in North American English tend to be affricated; the variant of /tr-/ is sometimes transcribed as [tʃr-] but is probably more accurately [tʃr-], where the usual aspiration of the stop is replaced by the fricative (cf. the center of frequency of the noise as at or below 2 kHz in Olive, Greenwood, and Coleman 1993, 279). Thus the /s/ before the cluster /tr/ might be thought to be assimilating to the immediately contiguous retroflex [t]. (The phonetic cluster [str-] does not become [ʃtr-] because of the well-known effect of initial-sibilant-plus-stop to deaspirate the stop.) But this would be a false conclusion because it would be based on ignoring the highly significant fact that the pertinent discussion in Olive, Greenwood, and Coleman (1993, 278–83) nowhere speaks of affrication, only of unaspiration of [t] in /str/ clusters. There is thus an important difference between initial /tr/ clusters and /str/: it is only in the former case that affrication occurs. Moreover, the difference between initial [tr] and [str] is clear from the delayed voice-onset time of the latter (281, fig. 8.45) vis-à-vis the former (279, fig. 8.44).⁴

We can thus safely conclude that /t/ undergoes no change *QUA PHONEME* regardless of the degree of retroflexion of [ʃ] or [t], or of the deaspirate character of [t] before [r]: /t/ remains /t/ before /r/ after /s/ no matter what the phonetic characteristics of [t] are here. More importantly, we can now at least answer the question of adjacency (type of assimilation), which will be provided in specific phonological and general semiotic terms more fully below, by stipulating that since /t/ remains /t/ and can, therefore, not figure in the assimilation of /s/ to /r/, if assimilation it be then it is not an example of contact assimilation but of assimilation at a distance.

Returning to the main issue and summarizing: (1) the environment of the change is /str/, no innovating American English pronunciation having been observed in /st/ clusters lacking /r/; and (2) /t/ undergoes no change in the cluster. The upshot is this: /s/ changes to /ʃ/ owing to the presence of /r/. Parenthetically, there is a relevant phonetic similarity between [ʃ] and [r]: although the latter is a sonorant and the former an obstruent, they are both palatal—even though the retroflex American [r] is produced further front toward the alveolar ridge than is [ʃ].⁵

To stop at a putative phonetic explanation, however, is to miss a much larger generalization about the significance of the innovation for an understanding of phonological structure. The palatalization of /s/ before /tr/ is not just a peculiarity of present-day American English; it is an illustration of

a general semiotic principle, according to which relations between sign values on the paradigmatic level are mirrored (diagrammatized) by relations on the syntagmatic level.⁶

Like all phonological systems, American English has variation rules that assign phonetic properties to phonemes. Besides producing complementary distributions of nonphonemic properties, variation rules correlate the complementary phonetic values with specific contexts. In this latter respect, such rules follow the principle of MARKEDNESS ASSIMILATION, according to which marked values are assigned to marked contexts and unmarked values to unmarked contexts. This can be seen as the working of the diagrammatic nature of language structure: similarity (equivalence) relations at the level of markedness are reflected in contiguity relations at the level of phonetic realization. Variation rules, in other words, are more than mere generalizations of the phonetic substance of a language. In their semiotic function as diagrams, they produce distributional patterns which carry information about the specific character of the phonological system.

Given this perspective on language structure, the case of assimilation that has been our focus is to be understood not as a phonetic phenomenon *tout court* but rather as a functional manifestation of the relations that define the phonology of those speakers who innovate by pronouncing [ʃtr] instead of [str]. More concretely, this pronunciation is an implicit "assertion" on their part that in their grammar /r/, being [+ interrupted], is marked with respect to the opposition INTERRUPTED VERSUS CONTINUOUS—exactly the same way that [ʃ], being [+ compact], is marked with respect to the opposition COMPACT VERSUS DIFFUSE. The marked character of /r/ is prompted and confirmed phonetically, of course, by its high degree of retroflexion in American English.⁷

By way of contrast, it should be noted that the cluster /spl/ does not give rise to a new sequence [ʃpl]: this pronunciation is simply not extant in accounts of American English. The markedness-theoretic explanation of the nonoccurrence of [ʃ] for [s] here would be exactly parallel to that of its occurrence in /str/: /s/, being [– compact], is unmarked for compactness—just as /l/, being [+ continuous], is unmarked for continuousness. This would still admittedly leave unexplained the steady maintenance of [s] in /spr/, except that the /t/ of /str/, being [+ acute], is marked with respect to the opposition GRAVE VERSUS ACUTE, whereas the /p/ of /spr/, being [– acute], is unmarked with respect to this opposition. I would surmise, therefore, that /str/ lends itself to realization as [ʃtr] while /spr/ remains unaltered also due to the phonological value of /t/ and /p/.

While /str/ realized as [ʃtr] may still only be an innovative trait in the grammar of a minority of speakers, with uncertain prospects of surviving as

a social fact, it is just such cases of spontaneous diagrams—icons of relation—that corroborate the systematic character of the linguistic system. And as a corollary, it is in their diagrammatic/iconic character that an explanation of their existence is uniformly to be sought.

NOTES

1. I have been unable to find any reference to it, nor have the two correspondents I consulted whose responses are excerpted in n2. It should be borne in mind that the term CHANGE is not strictly appropriate to the phenomenon at issue since this word ought to be reserved for an innovation that has ceased to be an individual trait and become a social fact. For a discussion of the labels CHANGE, INNOVATION, and DIACHRONIC CORRESPONDENCE, see Andersen (1989).

2. Butters (1993) has noticed it in the pronunciation of Senator Jesse Helms as well as of other North Carolinians and therefore “tend[s] to think of it as a dialectal feature of South/South Midland speech.” Frederic Cassidy (1993) is “cautious about giving it a regional label” and has “taken it to be an individualism but it may well be more than that—it may be regional. Broadly speaking, it’s more likely to be Southern than Northern.” Cassidy also offers the information that this palatalization “occurs commonly in Jamaica, West Indies, when speakers of the creole patois are going up the social scale.” I am most grateful to both scholars for their help in commenting on this peculiarity.

3. On 31 October 1993, Roberts pronounced the combination *is trying* with a “voiced” [ʒ], i.e. [-ʒtr-]. From a typological standpoint, this sort of sequence, where a media obstruent can occur immediately before a tenuis, shows that in the English system protensity (tense versus lax) and not voicing is the relevant distinctive feature. Cf. n5.

4. Apart from the logical mistake involved in extending the affrication of initial [tr] to the cluster at issue, even phonetically why should medial [t] before [r] necessarily behave like initial [tr]? The bald assumption that it ought to be so is what leads to the assertion of nonadjacency. Now it is true that Jones (1962, 165), in discussing British English, not only makes the *tr* of *tree* into an affricate but on the next page (§627) includes *straight* and *entrance* as examples of affrication. But none of this is evidence of phonemic nonadjacency. All of Read’s data (13–16) pertain exclusively to INITIAL [tr] clusters, even though his statement is categorical (“there is no unaffricated [tr] cluster,” 15). Here I think Jones is inaccurate even for British English.

5. An interesting parallel example might be the pronunciation of *Israel* in the speech of some (older?) Americans, e.g., the late TV commentator Eric Sevareid, with [ʒ] instead of standard [z]. Here the assimilation is of the contact variety, and the realization is “voiced” (actually: lax) before the sonorant [r].

6. A prominent Jakobsonian idea, first launched under the label “poetic function” in Jakobson (1960), significantly revised in Shapiro (1980), then renamed (typically, without any acknowledgement of its prior revision) the “Projection Principle” in Andersen (1991). The strictly phonological and phonetic instantiation of this principle, called “markedness assimilation,” was originally brought to light in Andersen (1968) and extended in Andersen (1972). In what follows, I rely on

these publications, along with Andersen (1979), for the conceptual framework of my analysis.

7. Some phonologists continue to think that the American /r/ is a vowel, not a consonant. This wrong-headed view is stated, for example, in Jakobson, Fant, and Halle (1963, 22), where "the so-called 'continuant r'" of English Received Pronunciation is said to be "actually a non-syllabic vowel," and this definition is extended even to /r/ in strong position, i.e., before stressed vowel. Although there may be phonetic and phonological reasons for regarding consonantal [r] to be related to the retroflex vowel in words like *purr*, the analogy to the glides /w/ and /j/ does not hold. While related to /u/ and /i/, respectively, as their possible phonetic variants, nonsyllabic [w] and [j] remain just that—phonetic realizations of /u/ and /i/, not phonological glides, which are defined as nonconsonantal and nonvocalic—even though QUA PHONETIC ENTITIES they may coincide with the realizations of the phonemes /w/ and /j/. Apropos of Jakobson, it should be noted that by the end of his career, and after a parting of the ways with Halle, Jakobson came back to a perfectly sensible view of things: "the existence of a unitary genus 'liquid' cannot be doubted, despite the efforts of some critics to deny all propinquity between the various exponents of r" (Jakobson and Waugh 1979, 88). The demand that there be a defense of the notion that the English /r/ is [+interrupted] in any real, empirically determined sense is beside the point. While it is unfortunate that his desire not to make phonology into an algebra clearly impelled Jakobson to mix phonemic with phonetic substance in his choice of designations for the distinctive features, it is just as clear that the cardinal significance of these designations as terms of phonological oppositions is the RELATIVITY of the oppositions they subsume. When Jakobson talks about the "genus liquid," he is emphasizing precisely this point. All manifestations of r—flaps, trills, retroflexes, the lot—are differentiated from /l/ by the feature [± interrupted]. PHONOLOGICALLY, the fact that the American English version of /r/ is not phonetically "interrupted" ("abrupt") in the way, say, that a Russian trilled /r/ is immaterial: they are both varieties of the same liquid. Note that the phonotactics of American English bears this out: both "linking r" and "intrusive r" provide evidence of the consonantality of /r/, just as do examples of its diphthongization in emphatic speech (cf. the analysis in Andersen 1972, 36, of *Christ!* and *Please!*). Cf. Hockett (1958, 74, 80), where the analysis of American /r/ as a "retroflex vocoid" does not disturb its classification as a sonorant/consonant. This is indirectly confirmed by the phonotactics: "onset clusters of three consonants all begin with /s/ and end in /r l w j/: /spr, str, skr, spl, skl, skw, spj, skj/, as in *spread, stretch, scratch, splash, sclerosis, squelch, spume, skew*" (Hockett 1958, 87).

REFERENCES

- Andersen, Henning. 1968. "IE *s after i, u, r, k in Baltic and Slavic." *Acta Linguistica Hafniensia* 11: 171–90.
- . 1972. "Diphthongization." *Language* 48: 11–50.
- . 1979. "Phonology as Semiotic." *A Semiotic Landscape*. Ed. Seymour Chatman, Umberto Eco, and Jean-Marie Klinkenberg. The Hague: Mouton, 377–81.

- . 1989. "Understanding Linguistic Innovations." *Language Change: Contributions to the Study of Its Causes*. Ed. Leiv Egil Breiwick and Ernst Hakon Jahr. Berlin: de Gruyter, 5–27.
- . 1991. "On the Projection of Equivalence Relations into Syntagms." *New Vistas in Grammar: Invariance and Variation*. Ed. Linda Waugh and Stephen Rudy. Amsterdam: Benjamins, 287–311.
- Butters, Ronald R. 1993. Letter to the author. 23 July.
- Cassidy, Frederic G. 1993. Postcard to the author. 24 Sept.
- Hock, Hans Henrich. 1986. *Principles of Historical Linguistics*. Berlin: de Gruyter.
- Hockett, Charles F. 1958. *A Course in Modern Linguistics*. New York: Macmillan.
- Jakobson, Roman. 1960. "Closing Statement: Linguistics and Poetics." *Style in Language*. Ed. Thomas A. Sebeok. Cambridge, MA: MIT P, 350–77.
- Jakobson, Roman, C. Gunnar M. Fant, and Morris Halle. 1963. *Preliminaries to Speech Analysis: The Distinctive Features and Their Correlates*. 3rd printing. Cambridge, MA: MIT P.
- Jakobson, Roman, and Linda R. Waugh. 1979. *The Sound Shape of Language*. Bloomington: Indiana UP.
- Jones, Daniel. 1962. *Outline of English Phonetics*. 9th ed. Cambridge: Heffer.
- Olive, Joseph P., Alice Greenwood, and John Coleman. 1993. *Acoustics of American English Speech: A Dynamic Approach*. New York: Springer.
- Read, Charles. 1971. "Pre-School Children's Knowledge of English Phonology." *Harvard Educational Review* 41: 1–34.
- Shapiro, Michael. 1980. "Poetry and Language, 'Considered as Semeiotic.'" *Transactions of the Charles S. Peirce Society* 16: 97–117.

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SPOKES-TERMS

Originally, a spokesman was an interpreter: "1519 HORMAN *Vulg.* 43 b, Mythrydate spake . . . to men of xxii rymes, euery man in his owne language, without any spokisman" (*OED2* 1989).

Before 1540, *spokesman*—which was "irregularly formed from English *spoke* (past participle of *speak*) + *man*, on analogy of *craftsman*, *landsmen*, etc." (*Barnhart Dictionary of Etymology* 1988)—acquired its current meaning 'one who speaks for or on behalf of another or others': "a 1540 BARNES *Wks.* (1573) 354 Vnto God . . . , wee neede no spokesman nor no mediatour but alonely a deuoute mynde" (*OED2* 1989).

More than a century later, *spokeswoman* 'a woman who speaks for another or others' appeared in the language: "1654 GAYTON *Pleas. Notes* IV. i. 173, I know not how he had wonne upon my wenches, They were his spokeswomen, and high Abetters" (*OED2* 1989).