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Musical Diffusion and Linguistic Diffusion

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What we've been calling musicology and ethnomusicology might better be called "mixmusicology": the term would remind us that the process of music making is the process of change and the assimilation of new ideas. . . . ✓
For the most part, this process goes on unabashed. Living musics are not concerned with aesthetic purity. They simply rejoice in any lovely new sound that catches the ear of the composer [McAllester 1979:182].

Every culture in the world presumably has language, and every culture also has music. These two departments of human culture have some important similarities and points of contact; perhaps the most obvious of these lies in the fact that language and music are the two most important ways in which man uses sound. . . . We can distinguish two main types of link between language and music: their mutual influence in singing, and their structural similarity. The remainder of this paper will discuss these two topics, which, although logically distinct, both constitute areas for cooperation between linguistics and musicology [Bright 1963:26].

There can be no doubt that music and language are overlapping phenomena, as is especially obvious in song—the genre that combines the two. This essay¹ investigates areal studies in music and language—showing how these studies have proceeded in the two fields, and what sorts of new insights can be reached by an approach combining them.

Linguistic and Musical Areas: Ecology or Diffusion?

In a recent monograph, Herndon (1980) addresses the issue of musical areas and their relation to linguistic areas. Since her discussion is based on some widely held but misleading

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assumptions about areal studies in general and linguistics in particular, I beg her forgiveness for bringing up some of her points here only to disagree with them. To begin with, she states that "the assumption underlying the creation of areas is basically ecological . . . in that it is assumed that the physical characteristics of a region will exert similar influences on the people who inhabit the area . . ." (ibid.: 93).

No one can doubt that the physical environment plays an important role in certain fundamental aspects of culture. However, few modern scholars—especially those studying language or music—would place ecology at the head of the list of factors responsible for the areas their studies delineate. Instead, *diffusion*—a primarily social phenomenon²—is seen as the major source of similarity between neighboring groups of different origins. Language, in particular, has been shown to be quite free from environmental influences in all but the most shallow respects (for example, languages spoken in areas where the salmon run will have a word for salmon). Few phonological or grammatical traits of language have been shown to have an origin in the biophysical environment. An exception is onomatopoeia, wherein sounds are used to imitate the sounds of processes in the environment. Frequently such utterances utilize sounds that are not otherwise present in the language—such as a child's imitation of a machine gun or a siren. As will be seen later in this essay, onomatopoeia and related phenomena do play a role in linguistic diffusion.

Music, more than language, may have some indirect ties to the physical environment. Some scholars have attempted to show the relations between some aspects of musical style and social structure (Lomax 1968); and many anthropologists have closely examined the relationship between social structure and ecology (see Vayda 1969). To the extent that these studies are found to be valid, there might be said to be a very indirect relationship between the physical environment and music, via social structure. Nevertheless, whether a group in North America has "paired-phrase patterning" or "the rise" has no direct relationship to the physical characteristics of the region in which it lives. In music, as in language, the major source of similarity between neighboring groups must be found in diffusion.

Linguistic Families and Linguistic Areas

A second quotation from Herndon is a critique of Nettl's areal studies of music (e.g., Nettl 1954):

Nettl identifies six regional [musical] styles. These style areas coincide, to some extent, with cultural areas previously identified by others; however, they are at variance with language families. Since most Native American music is vocal, this raises a number of questions about the validity of culture traits, particularly musical ones [ibid.: 107].

Herndon's doubts about the validity of musical areas are based on two questionable assumptions: (1) she equates musical and cultural areas with linguistic *families* rather than linguistic *areas*; (2) she assumes that because Native American music is primarily vocal, it must therefore behave like language does in terms of its distributional patterns.

² Diffusion itself is, of course, a process which needs explanation. No one knows why it is that out of a hundred possible traits, it is a particular five or six that diffuse. Some of the explanation for diffusion may itself be environmental, but the larger portion is explained by social factors rather than environmental ones.

Comparison must be made between musical areas and linguistic areas, rather than linguistic families. Linguistic families are groups of languages that can be traced to a common ancestor, such as Portuguese, French, Italian, and Spanish which all derive from Vulgar Latin and are called the Romance family; or, in North America, Navajo, Apache, Hupa, Beaver, and other languages which are all of the Athabascan family. A linguistic area, on the other hand, is a geographic area containing a number of languages from different language families, but in which many of the languages share certain linguistic traits. For example, throughout the Northwest Coast and Northern California, most languages have glottalized stops. The languages come from many different families, and members of those same families that are outside the area in question usually do not have glottalized stops. It is believed that the cause for the prevalence of glottalized stops in that area is diffusion.

General Principles of Diffusion

That traits diffuse from one language to another cannot be disputed. Similarly, traits may also diffuse from one musical tradition to another, as must be obvious when one considers such phenomena as the use of European instruments in South American Indian music, the large audiences in any American city attending Italian opera (sung by Americans), and so on. That musical traits diffuse from one language group to another in North America is very obvious when one observes, for example, the deep similarity of musical traditions among Uto-Aztecan languages and Yuman languages in Southern California. Not only are all the traits of the singing style described by Nettl present in both language families, but the styles are the same, right down to having many of the same genres and the same song cycles. Uto-Aztecan and Yuman singers can even be found singing the same songs together at social gatherings.

There is at least a rough correlation between culture areas, linguistic areas, and musical areas. (See Sherzer 1968 for the most general work available on linguistic areas in North America and how they correlate with culture areas.) However, the boundaries between areas are never exact (groups will often show characteristics of more than one culture area), nor can the correlation between linguistic, musical, or cultural areas ever be exact, because different sorts of traits have different sorts of diffusional patterns. Whether or not a given trait diffuses from one group to another depends on the patterns of social interaction between the two groups. For example, material objects (and the words naming them) may be passed from group to group for long distances along trade routes, while other items (such as a particular grammatical structure) may diffuse from one group to another only by means of intensive social contact involving widespread bilingualism.

This brings us to Herndon's second assumption mentioned above: that music and language must behave the same in terms of their distributional patterns. Just as a word for a particular material object may show a different pattern of diffusion than will a grammatical structure or even another word, so may some musical traits show different patterns of diffusion than linguistic traits, or even than other musical traits. The problem of diffusion, which I have argued is the basis of areal studies, is very complex, tied up with all the intricacies of social interaction. I will argue later in this essay that vocal music does indeed diffuse in a way rather different from spoken language, partly because of the differing social roles of music and speech, and partly due to the differing natures of vocal music and speech. I will also argue that vocal music may serve as a hitherto unrecognized source of linguistic diffusion.

Areal Studies in Linguistics and Musicology

It is interesting to note that while linguistic areas and musical areas are analogous, there is nothing in ethnomusicology that corresponds to the linguistic family. Musicologists studying the indigenous traditions of the Americas have concentrated heavily on the delineation of musical areas, and have not attempted to develop the notion of a "musical family" analogous to the "linguistic family." The fact that "musical families" have not been set up is itself an important piece of evidence that language and music have differing diffusional patterns. It might be suggested that musical characteristics spread so rapidly that more long-standing similarities that would show a common heritage between communities tend to be obscured over a relatively short period of time. Languages, in turn, are conservative, sufficiently impervious to drastic change to maintain evidence of common heritage over several thousand years. It is extremely common for communities speaking related languages to have completely different musical traditions. As already demonstrated, one can expect musical styles to have a distribution corresponding roughly to linguistic areas, *not* linguistic families.

Nevertheless, it is possible that an attempt to study familial or genetic relationships between musical traditions could bear fruit. To the extent that it is true that related languages came from a common ancestral language spoken in a single community, it can be inferred that at one time they had a common musical tradition. By searching out musical traits that two linguistically-related communities have in common, it might be possible to infer what some of the traits of the ancestral musical tradition could have been.

Nevertheless, it does seem that the reconstruction that would be allowed by this sort of study will provide us with much less information than does linguistic reconstruction. Musical traits appear to spread faster and further than linguistic traits, obscuring factors of common heritage, sooner than would be the case with languages. This is evidenced by communities that speak languages that are clearly genetically unrelated but still display virtually identical musical cultures.

Linguistic Aspects of Musical Areas

It is not, of course, always the case that musical diffusion results in identical musical cultures. A community may borrow a single song or song style or instrument while still retaining its own independent musical character. In this section, I would like to identify certain traits of music that may spread from group to group without showing complete identity in musical style.

In general, musicologists doing areal studies have concentrated either on instrumentation (Roberts 1936, Brown 1967) or on musical style (Nettl 1954); for example, range and melodic form. Rarely have the song texts themselves been used in studies of musical areas. I will suggest here some aspects of song texts that could profitably be studied from an areal point of view. Sadly, song texts have rarely been studied at all from an analytic point of view of the sort I am suggesting here. Normally (with some notable exceptions such as McAllester 1954, Frisbie 1980, and Bahr and Haefer 1978), ethnomusicologists have concentrated more heavily on musical aspects of songs, and linguists generally consider song texts to be outside their field of study. I am basing most of my suggestions primarily on certain interesting aspects of Havasupai songs that may in some instances show up in areal patterns. When I know of a trait's presence elsewhere in the Southwest or in neighboring regions I will point it out. But these are not to be considered areal traits, but only *possible* areal traits—for the research has not yet been done.

1. *Vocables.* The presence of vocables ("nonsense syllables") are relatively prominent throughout North America, and can well be seen as an areal feature of the continent as a whole. Nevertheless, comparative studies of degree of prominence and type of vocables within North America could be very enlightening. As for phonological type, there are probably universal constraints on vocable form (Hinton 1980a), but nevertheless, within those constraints, the segments chosen for prominence are very likely to show areal patterns of distribution. For example, in the Great Basin, Papago, and in Arizona Yuman, the velar nasal [ŋ] is very common in vocables, but it is absent in most of California and in many other parts of the country.

Another aspect of vocable construction that may have areal significance is the use of affixes as vocables. That is to say, certain grammatical affixes of fairly general meaning (such as demonstratives and aspect markers) may be used so generally in songs that they are obviously semantically empty and there primarily for their sound value. This is described for Havasupai in some detail (Hinton 1980a, 1984), and there is some indication that the phenomenon exists elsewhere, at least in the Southwest (Sherzer 1981). But it has not been studied enough to tell its distribution.

2. *Phonological Considerations.* Many phonological aspects of song texts should be studied for areal distribution. Havasupai, Hopi (Foster 1982), and Papago (Bahr and Haefer 1978) all show a phenomenon of vowel-lowering, so that /i/ approaches [e] and /u/ approaches [o] in quality. As with all the traits I am discussing here, the extent of distribution of this phenomenon is unknown due to insufficient study.

Another phonological trait common to Havasupai, Hopi, and Papago as well as other Southwestern musical styles is a tendency toward a CV syllable-type in songs. In some languages this reflects the same syllable-type found in speaking, but in other languages such as Havasupai, where consonant clusters abound in speech, this syllable-type can only be created through vowel-insertion.

In Hopi and Havasupai, at least, the one exception to the rule of CV syllable structure in songs can be found in line-end position, where an *-m* may be inserted. This pattern of line-end insertion of *-m* may also have areal significance.

Yet another phonological trait of interest is consonant mutation. Havasupai, Hopi, and Papago all show traits such as the replacement of spoken /v/ by sung /w/, and so forth. (See Hinton 1980a for a more detailed analysis in Havasupai; Bahr and Haefer 1978 show the phenomenon in their transcriptions of Papago songs; Foster 1982 describes it in Hopi.) A general study of whether consonant mutation exists and what the specific choices of mutation are would be very worthwhile.

Related to consonant and vowel mutation is the tendency in languages with vowel nasalization to replace nasal vowels with an oral vowel-nasal consonant combination. This is done in Navajo and Shoshone (Booth 1975; in Shoshone vowel nasalization is prevalent but not analyzed as phonemic), as well as in French; it may in fact be universal rather than areal in nature.

Another characteristic that needs to be examined is the differing patterns of stress in song traditions, reflecting and constraining metric patterns. Here Havasupai and Papago differ: Havasupai stressed syllables fall in the penultimate position of a line, whereas Papago stress usually falls earlier. This difference may purely be subject to constraints of the stress patterns in spoken language, but only more detailed study can determine whether or not it has areal significance beyond those constraints.

Another difference between Havasupai and Papago is the treatment of vowel-length in songs. In Papago, long vowels are given greater time-value than short vowels in songs

(Bahr 1982); in Havasupai, vowel-length is neutralized in song. These differing patterns may also show areal distribution.

3. *Grammatical Features.* Certain traits listed above are partially grammatical, such as the treatment of affixes as vocables. Other features that might be looked at include the grammatical structure of texts and the emphasis of particular grammatical features in song.

In Havasupai, a musical line (in songs containing real words) consists grammatically of a single noun or verb plus accompanying affixes and particles. This special construction of a line is related to stress/meter, for it allows only one primary stress per line. We would do well to know to what extent this formula for the stress and grammatical structure of lines shows areal distribution.

Also in Havasupai, auxiliary verbs and demonstrative particles are used very heavily in song, representing well over half of the lexical items present in a song with real words. Of course, this emphasis presupposes the existence of such verbs and particles in the spoken language. But given such existence, we can ask: will all languages bearing such items utilize them heavily in songs? Or if not, will this emphasis on certain grammatical elements show an areal distribution?

I must point out that this heavy use of auxiliaries and particles is confined to certain genres of Havasupai songs — cante-fable, narrative songs, and Old Women's Songs (see below). A very prevalent genre, the Circle Dance Songs, shows a very different pattern — that of a marked reduction in affixes, auxiliaries, and particles. Indeed, it is very difficult to find any lexical item other than full nouns and verbs in these songs. The Circle Dance Songs are inspired from the Great Basin, most of them being from the 1890 Ghost Dance era, which had its origin among the Uto-Aztec peoples of the Great Basin region. Interestingly, Papago songs have also often been described as having a "reduced" grammar, leaving out auxiliaries, particles, and affixes. (See Shaul 1981 for a discussion of the relevant literature.) We can speculate (on the basis of this very insufficient amount of data) that reduced grammar might be a family feature of Uto-Aztec songs, a feature that has diffused to Havasupai in the Circle Dance Songs.

4. *Semantics and Content Features.* Havasupai songs containing real words (except Circle Dance Songs) are virtually all in first-person form. Songs represent the emotions and expressions of people and spirits and mythical characters, and as such must always be in first person. What is the areal distribution of this rule?

A phenomenon that may be related is one found in Seri, reported by Hine (1982). Seri songs have an interesting quotative particle translating as "he said." Most phrases end with this particle, demonstrating that the rest of the song is a quotation from someone else. I have not heard of this use of a quotative in other song traditions (although in Havasupai songs within stories, each song is followed directly by a spoken quotative that translates "so he said"). However, one might expect to find other traditions near Seri to show this device. Sherzer (1982) reports a similar phenomenon among the Kuna of Panama. Only careful research could show whether this is an areal phenomenon stretching from Northern Mexico to Panama (and beyond?) or whether we are seeing two unrelated smaller areas exhibiting similar phenomena.

Havasupai also exhibits a genre of song often labelled as "cante-fable" which entails a story-telling style where quotations of all characters are in song-form. Cante-fable was described by Sapir (1910) for Southern Paiute (in close contact with Havasupai), who suggested that the device diffused from Yuman tribes into Paiute. The full distribution of this trait could tell us a great deal about prehistoric contact between tribes.

Another genre of song that shows areal distribution is the "song cycles," exhibited in all Yuman communities except for Havasupai, Yavapai, and Walapai (Havasupai and Walapai now have these song cycles, but they borrowed them only in the twentieth century), and also exhibited in the Uto-Aztecan tribes of Southern California, in close contact with Yuman. Yet another tradition is the composition (usually by women) of insulting songs—called "Enemy Songs" by the Cupeño (Hill 1982), "Mocking Songs" by the Shoshones (Shimkin 1964), "Hateful Songs" by the Cahuilla and "Old Women's Songs" by the Havasupais. The genre has not been reported for other tribes, but the distribution suggests a spread at least throughout Southern California and the Great Basin, and Havasupai. The Hopis exhibit a more "gentlemanly" version called Grievance Chants (Black 1967). The "War Songs" of the Northwest should also be mentioned here: these are Insult Songs sung by groups of men to each other during a ceremony to settle a dispute (Bright 1978).

One other trait to study is a device defined as "couplets," which Bruce Mannheim (1982) discusses. Mannheim distinguishes two different sorts of couplets: one that presents itself in the form of grammatically parallel lines (typified by Quechua couplets), and one that is characterized by referentially parallel lines (typical of Mesoamerica). Couplets of either sort do not seem to appear in North America: they appear to be an areal feature of Central and South America.

These are just a few suggestions out of many possibilities worthy of investigation from an areal viewpoint.

Problems in Areal Studies

Studying the areal distribution of linguistic or musical features presents certain difficulties. The greatest difficulty, of course, is the lack of available data. But beyond that, all sorts of difficulties of interpretation occur. One major problem is the determination of what constitutes a trait. On a concrete level, grammatical couplets and referential couplets are two separate traits, as are Insult Songs and Grievance Chants. Yet on a more abstract level, they might be seen to represent a single trait of wider areal distribution. The fact that the regions exhibiting the referential and grammatical forms of parallelism are all in Central America and Northern South America suggests that these different forms do show a diffusional pattern, perhaps an ancient one. Similarly, Hopi is in contact with the communities that have Insult Songs. Yet the abstract level carries less certainty with it; it is not certain that two traits alike on an abstract level are alike due to diffusion.

This problem is also present in musical features, not just textual ones. For example, the "rise," characteristic of the California-Yuman musical area (Nettl 1954), is characterized by a phrase of tonal material sung higher than the other phrases. A prototypical form containing the rise is

A B A B A B A B R B A B A B . . .

In Yuman territory, during the rise the rattle accompaniment changes from a rhythmic pulse to a constant shaking; during the first rise the singers, who have been seated, get up and begin dancing, and continue to dance throughout the rest of the song.

Next door to some Yuman tribes having the rise in their musical tradition live the Papago, who lack the rise. The formal structure of Papago songs is described by Haefer (1981:134):

Papago songs exhibit a two-fold pattern of repetition in the manner of complete and incomplete modes: AA'BC AA'BC A'BC A'BC A'BC or ABCDE

ABCDE BCDE BCDE. Piman singers refer to a song as having a *son* "beginning," *ku:g* "end," and *nodag* "turning." The turning refers to the shift from a complete to an incomplete mode and is usually signaled by a change in the way the accompanying instrument is played.

What the Papago and Yuman styles have in common is a repetitive form much like a "verse" which is interrupted and changed somewhere in the song. Both groups change the way the instrument is played at this point. While Papago is rightfully excluded from the area containing the rise, its formal song structure bears certain tantalizing similarities to the Yuman tradition that might suggest diffusion of some ancient pattern that subsequently developed in two different directions.

Certainly the safest approach is a conservative one that deals only on a relatively concrete level. Yet one might miss out on very worthwhile insights by ignoring more abstract levels of similarity.

The Role of Music in Linguistic Diffusion

The previous sections of this essay were primarily addressed to issues of interest to ethnomusicologists. In the final sections I will address issues of concern to linguists, to show what role music may play in linguistic diffusion.

I am particularly concerned here with the mechanism of diffusion of phonemes. As illustrated previously with glottalized stops, a phoneme may diffuse across language boundaries. There are many ways in which this may occur. One way is for the phoneme to enter a language through loanwords. Another way is for the element to preexist phonetically in certain environments but to be reinterpreted as a phoneme through a combination of language-internal processes and stimulation from its presence as a phoneme in an influencing language.

The development of a voiced-voiceless distinction in English fricatives provides an example for both processes. Originally [v] was an allophone of /f/ found only in environments surrounded by voiced segments. Similarly, [z] was an allophone of /s/, [ð] of /θ/, and so forth. Alternations based on this allophony are still found in pairs such as *wife* - *wives*, or alternate pronunciations such as "exit": [eksɪt] ~ [egzɪt].

Two things happened then, approximately simultaneously. One event was the borrowing of many French loanwords such as "vast" and "zealous" which did not conform to the rules of positioning for voiced fricatives. Secondly, some of the environments in which voiced fricatives occurred began to deteriorate, leaving word-final voiced fricatives behind. Words with "silent e" provide examples: the "e" was once pronounced, but was dropped in words such as "slave," "pave," "bathe," and "craze." Thus both word-borrowing and phonological change acted together to cause the reinterpretation of voiced and voiceless fricatives as different phonemes.

It appears that both the processes of reinterpretation (stimulated by contact) and of the introduction of a new segment through word-borrowing usually involve bilingualism. For the latter process, in particular, if bilingualism is not involved, the borrowed word is merely changed to suit the phonological system of the borrowing language. For example, English has borrowed many words from Arabic, but these sport no phonemes foreign to English — the pharyngeals and other segments distinguishing Arabic from English have been replaced by English phonemes. It appears, then, that a foreign segment is retained in a loanword only when the speakers of the borrowing language are also able to speak the donor language.

There is no doubt that bilingualism and multilingualism were very common in traditional North America. But is that the *only* way a new phonetic element can enter a language in a contact situation? I would like to suggest that an alternative mechanism for the entry of a new phoneme is through songs and similar genres of oral literature (such as rhythmic formulaic speech).

Diffusion of Songs in Nonbilingual Settings

There is rich evidence in most cultures of borrowing of songs from one language to another without the presence of a noticeable amount of bilingualism in the receiving community. In English, we need only look at the children's repertory to find a number of songs in other languages. Most popular are the round "Frère Jacques" and the French-Canadian song "Alouette." In adult popular music, we find that songs in other languages sometimes hit the Top 10, such as "Volare" and "Guantanamera." Retention of a product of very ancient contact may be found in the nursery counting-out rhyme "Eeny Meeny Miney Mo," reputed to be borrowed from the Celtic languages by early English speakers in Great Britain.

As an example of obvious song-borrowing in North America, I might briefly summarize the foreign genres of song present in the musical traditions of the Havasupais. They sing songs from the following tribes: Hopis, Paiutes, Chemehuevis, Navajos, Walapais, Yavapais, and Mojaves. The latter three languages belong to the same family as Havasupai (Yuman); the rest belong to the Uto-Aztecan and Athabascan families. Some linguistic influence is demonstrable on Havasupai from Hopi, Walapai, and Mojave—for example, a few words are loanwords from Hopi and Mojave—but there is no demonstrable linguistic diffusion from the other tribes, nor are modern Havasupais bilingual in any of these languages. Besides singing songs directly borrowed from these tribes, the Havasupais also sing songs created by Havasupai composers but sung in one of the borrowed styles. The most obvious example is the Havasupai Circle Dance Songs, which were developed during the 1890 Ghost Dance Cult, already discussed above. Havasupais were converted by the Paiutes, and they borrowed some Paiute songs and composed many of their own songs in the same style.

In summary, Havasupais sing many songs in styles borrowed from other cultures, including some cultures whose languages have had little or no observable effect on the Havasupai language.

The mechanism of musical diffusion was illustrated to me once when I accompanied some Diegueños from San Diego on a visit to the Kiliwas in Baja California. The Diegueños and Kiliwas had no language in common. Communication was through translation involving four languages: a monolingual Kiliwa would make a statement which was translated by a bilingual Kiliwa into Spanish; this would be translated by someone knowing both English and Spanish into English, and then someone bilingual in English and Diegueño would translate the message into Diegueño. However, the need for such cumbersome translation was rare, for most interaction was entirely through various forms of celebration: eating, drinking, music, and dance. Many of the songs sung that night were already known to both tribes. Other songs were led by someone who knew them, and picked up during the singing by the others. By the end of the visit, several songs had been learned by each group, in a situation where linguistic diffusion did not occur at all.

Songs diffuse from one language to another with relative ease, and, while in many cases they are changed drastically from the original, there is usually still enough retention of the

original character for their origin to be discernible. A case in point in Havasupai is the Navajo Horse Songs, borrowed a hundred years or so ago. The account of their arrival in the Havasupai community is an interesting one: it is said that a Havasupai baby was kidnapped by Navajos in a raid and raised as a Navajo. As an adult he learned of his origins and traveled back to rejoin the Havasupais. He carried the Horse Songs back with him, and they were subsequently learned by generation after generation of Havasupais. While the general melodic style and form has been transformed to conform to Havasupai traditions, and the words altered significantly, there is still enough of the original Navajo present in some of them so that key words were recognized by Navajos when I played the songs for them. The songs were identified as being from Blessingway, and many of them fit the wording of the Blessingway Horse Songs (kindly provided by David McAllester; see Hinton 1984 for a full description).

Retention of Alien Phonetic Elements in Borrowed Songs

Because of the fact that *sounds* become important for their own sake in a song context, there is a strong tendency for songs and related genres of oral literature to retain phonetic elements of the original rendition even when sung by speakers of different dialects or languages. For example, people singing Country and Western Songs sing with a southern accent regardless of the dialect they speak. Folksingers singing blues retain aspects of black English in their rendition. Caribbean English songs have also been popular among American folksingers, and are sung retaining elements of the Caribbean dialects.

In some cases even composition of new songs will have characteristics of the dialect or language which first produced the genre, even when the composer speaks a different language or dialect. A case in point is the songs of the Beatles, where little trace remained (especially in the earlier songs) of the Liverpool English spoken by the group, and American pronunciation was prevalent.

In songs borrowed from other languages, retention of foreign phonetic elements is also common. In both "Frère Jacques" and "Alouette" there are words with initial /ʒ/; in spoken English, /ʒ/ may never occur initially. The song "Guantanamera" has often been sung in translation, but the chorus retains the word "Guantanamera" pronounced the Spanish way, with an initial [ɣ], a sound not present at all in English.

As for American Indian languages, I can cite several examples of foreign phonetic elements found in the songs and formulaic utterances of languages. Nichols (1982) has kindly provided me with examples of formulaic utterances found in Northern Paiute stories in Oregon, containing segments alien to Paiute.

pubúpʔmubúpʔm	"bobbing or nodding of head"
sažáʔwažáʔw	"moving back and forth"
šizínazín	"shuffling of the feet"

In Oregon Northern Paiute [ʒ] never occurs before /i/ and [ʒ] never occurs before /a/; nor do we find glottalized consonants, nor voiceless nasals at the end of the words. All these are found in neighboring languages, however; and though they do not appear in loanwords, in Paiute they do appear in these formulaic onomatopoeic utterances – where, as in song, sound for its own sake is foregrounded.

Another fascinating example of a borrowed segment showing up only in songs and onomatopoeic utterances is the segment [ŋ] (a velar nasal consonant) in Yuman languages. /ŋ/ is a well-installed trait in Uto-Aztecan languages, and reconstructable at least

for Northern Uto-Aztecan. It is not reconstructable for Proto-Yuman; therefore its presence in any Yuman language can be seen as a probable instance of diffusion from Uto-Aztecan into Yuman languages.

It is in fact present in six Yuman languages: Havasupai, Walapai, Yavapai, Mojave, Yuma, and Maricopa. However, its presence is so limited and specialized that it is rarely included as part of the phoneme inventory. Its major presence is in songs and song-related areas. It is found in words for musical instruments, and in onomatopoetic formulas (e.g., Havasupai /giŋagiŋ / "the ringing sound made by a small bell"). In songs, it is exceedingly common in vocables.

It is only in Havasupai and Walapai that any other instance of /ŋ/ occurs: the second-person verb construction contains two contiguous morphemes *g* + *m*, which coalesce to [ŋ] in casual speech. The younger generations have reinterpreted the construction as having underlying /ŋ/ (Hinton 1980b). The role of /ŋ/ in the morphophonology of Havasupai and Walapai has resulted in its recognition as a phoneme by most scholars. It could be argued that the presence of /ŋ/ in songs and onomatopoetic words has allowed its reinterpretation in Havasupai grammar, partly catalyzed by continued contact with Uto-Aztecan languages.

The areal spread of /ŋ/ in songs and music-related words extends also to Papago, a Uto-Aztecan language that lacks /ŋ/ elsewhere in the language. In Papago, /g/ becomes [ŋ] in songs as part of a general pattern of replacing oral consonants by their nasal counterparts (Saxton and Saxton 1973). In the North, it seems quite reasonable to assume that its presence in Yuman languages derives from the Great Basin languages, especially since most of the songs containing /ŋ/ are claimed by the Yumans themselves to come from that region. Its presence in the South, however, is less clearly explained, since none of the languages—either Yuman or Uto-Aztecan—have /ŋ/ in their phonemic inventories; nor do contact patterns suggest that it came from the north. Papago, along with other agricultural groups in Arizona, show influence from the south in their musical instruments (Brown 1967). It is possible that the Papago /ŋ/ (or the general rule of which /ŋ/ is one result) has its origin in the south as well. Further research is definitely indicated here.

We can summarize this discussion by the presentation of a model of the musical avenue of linguistic diffusion:

- 1) Some foreign phonetic elements are retained in diffused songs and onomatopoetic utterances, due to the foregrounding of sound for its own sake.
- 2) This allows the subsequent possibility of the development of a foreign segment in other aspects of the language, especially when contact with the donor language continues. Such development may occur by borrowing other words, and the foreign sounds may be retained due to "acclimatization" through their occurrence in songs and onomatopoetic utterances; or they may occur through language-internal phonological processes.

There is, of course, no necessity for the second step to occur at all, and there is no claim being made here that language diffusion *must* occur first through music. What I am claiming is that this mechanism of sound diffusion can be seen as one way a new sound may diffuse without bilingualism necessarily playing a role.

Scholars hailing from our own departmentalized culture, where music is listened to by many but made by very few, might believe that the musical mechanism of linguistic diffusion must be rare and quite unimportant. But before making such a judgment, it is necessary to understand the role that music has traditionally played in intertribal relations. In most of North America, the occasions of contact between native speakers of different languages

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almost always involve festivities with music and dance. Almost all festive celebrations are attended by more than one language group, and these celebrations play a very important role in contact between groups: they are the occasions of trade, selection of marriage partners, and so on.

Certainly, all those parts of North America renowned for intense language convergence have many such intertribal gatherings every year. For most of the people in these areas, song was and still is a primary form of vocal contact across languages.

It is not usually possible to separate out the effects of the musical mechanism from the bilingual mechanism of diffusion, since the two co-occur in most cases. But when one understands the importance of music in contact situations, one realizes that, indeed, music may well have played an important role in linguistic diffusion.

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