

## LINGUISTIC GEOGRAPHY

*The language we speak is the most important element of our culture. What we speak, and how we speak are extraordinarily powerful markers of our identity. Language shapes our world view, both constraining and liberating what we can know and feel. Language, like other elements of our culture is a product of geography and a force acting upon the lives of people in all places.*

### *Introduction*

What we speak and how we speak is the most powerful marker of who we are, not only as individuals, but as groups. Our language constrains and liberates our thoughts and feelings; and battles over the control of words and phrases are central to how power is exercised in most communities. The pen, or the turn of phrase, is indeed mightier than the sword.

A **language** is a system of communication that persons within a community use to convey ideas and emotions. The study of languages is called **linguistics**. Sometimes, people who speak (or sign) the same language find it very easy to communicate with each other. Chances are, people who communicate easily speak a very similar version of a language, known as a **dialect**. On the other hand, dialects can become so different from each other that they border on becoming a different language because they extend past what is called **mutual intelligibility**. Consider that many speakers of American English find that they cannot understand speakers of Scottish English if their [dialect is extreme](#). Part of the problem is the differences in **accent**, which refers to the way people pronounce words. For example, the Scottish “roll” their tongues when they pronounce words with the letter R in them and Americans do not. Americans pronounce “to” like “tu” and the Scottish pronounce it like “tae”. A dialect is more than just accent, because different dialects use different vocabularies and may structure sentences differently than Americans. A Scotsman might use “wee bairn” to describe a small child, where Americans might use “little kid” instead. So different is Scots English that some linguists even consider it a separate language.

There are other forms and uses of language as well. In places where two or more languages are spoken, a **pidgin language** may develop. Pidgin languages are simplified versions of a language or several languages that help people communicate, especially in matters of trade or business. Lots of pidgin languages have formed around the world, especially in border areas and in places where colonial empires were built. Sometimes a pidgin will become more complex and evolve into a language in its own right; a native tongue. Linguists call these newly

created tongues *creole languages*. Most creole languages remain unofficial, but some like Haitian Creole, a blend of French and West African languages, become an official language with rules about spelling and syntax, formally taught in schools, etc.

Louisiana has a fascinating mixture of all these elements. Louisiana Creole, the creolized language of many people in south and southwestern Louisiana is spoken by people who call themselves Creoles. It, like the language of Haiti, is a hybrid of French and African languages, plus probably a healthy dose

of Haitian Creole as well. Many other people in the region speak a variant called “Cajun French”, which is less a creolized language, and more a very wayward dialect of Canadian French.

The popular culture chapter in this text discusses how the linguistic differences among French speakers in South Louisiana is express in terms of music and ethnic identity.

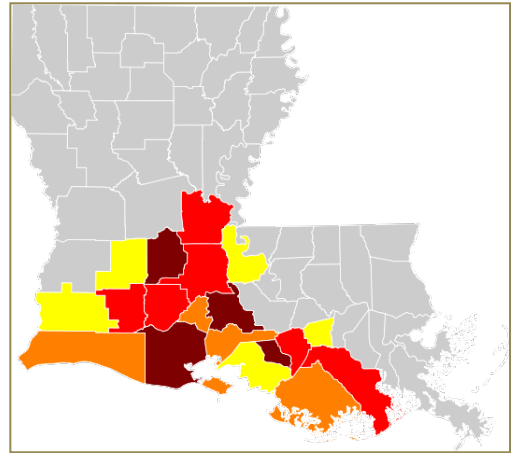


Figure 2: Linguistic Map of Louisiana  
Percent of Persons Speaking French at Home.  
Yellow – 4-10%; Orange 10-15%; Red 15-20%; Dark Red: 20-30%. Source: [http://www.mla.org/map\\_data](http://www.mla.org/map_data)

### *Language on the Landscape*

Spoken languages, like songs, jokes and other intangible elements of culture is a *mentifact*, and is therefore invisible on the landscape. However, written elements of language are quite common on the landscape in the form of signs. Because signs generally have words on them, they provide an easy and fascinating opportunity to

practice reading the landscape, as a geographer. Be careful though, because frequently the words on the landscape do not “tell” the same story as the landscape in which they are found. Consider for example, a sign that is not uncommon near the entrances to college or high school campuses that reads, “This is a drug free campus”. Do you believe that there are any college campuses free of drugs? There are probably few high schools that could legitimately claim to be drug free, and even fewer colleges. Why do



Figure 3: Motel Sign. The sign above, once just off U.S. 101 in Oxnard, California made use of a font that conformed to the “western” theme used by the business to attract tourists. This helped reinforce their effort to sell “down home cooking” and “friendly hospitality”. How do you think the aqua background and the use of neon (visible at night) fit with the overall motif of the business?

you think then, school administrators would place a sign like that on a campus? Are they naïve? Are they making claims for political gain? Are they just trying to create a drug-free environment and believe that a sign will encourage students to abstain from using drugs? If you see a sign proclaiming something that is clearly false, or laughably untrue, and you realize that the location in which the sign is erected makes it obvious the message on the sign is erroneous, then you are reading the landscape. Try reading the landscape of the house in the photo below.



**Figure 4: House with Realtor Sign:** Attempt to read the sign and landscape of the photo of this working class neighborhood in Louisiana above. Can you spot the irony? Focus your attention on the sign and the windows of the house in the foreground.

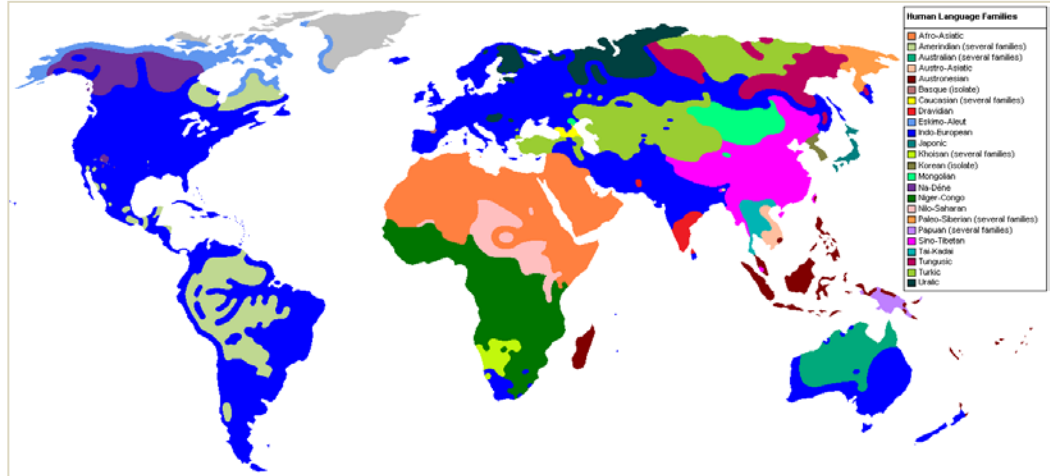
Not only are words inscribed on signs occasionally misleading, but often they don't match the media or materials used in the sign. For example, a sign made of wood might be appropriate and effective for a restaurant specializing in Bar-B-Q ribs or cowboy boots, but would seem inappropriate and misleading for a store that sold laptop computers or high-definition televisions.

### *World Languages*

There are hundreds of languages around the world and many thousands more dialects. Often, the world's languages are arranged into a sort of family tree, with languages that share similarities occupying a close spot on a branch and more distant relatives sharing a common *proto-language* that forms the trunk of the tree, much like an ancestor who died thousands of years would on a human family tree.

The major world language families are Indo-European, Sino-Tibetan, Afro-Asiatic and the Niger-Congo. The distribution is displayed on the map below.

With nearly a billion speakers, more people communicate using Mandarin Chinese, a Sino-Tibetan language, than with any other in the world. However, there are multiple dialects of Chinese, so you may find that even in the United States people from China who are from Beijing have a hard time understanding other Chinese



**Figure 5: Map of Major World Language Families.** Note that much of India and Southwest Asia share a common language with Europe. What does this suggest about ancient migration patterns? Why do you suppose the people of Madagascar speak a language related to Malaysia, rather than East Africa?  
[http://upload.wikimedia.org/wikipedia/commons/e/ed/Primary\\_Human\\_Language\\_Families\\_Map.png](http://upload.wikimedia.org/wikipedia/commons/e/ed/Primary_Human_Language_Families_Map.png) Source: By PiMaster3 (Own work) [CC-BY-SA-3.0 (<http://creativecommons.org/licenses/by-sa/3.0/>)], via Wikimedia Commons

immigrants who came from Guangdong province in Southern China. The Chinese language has been translated into English using several different systems over the years, so you may find older Americans (or older maps) calling China's capital city things like Peiping or Peking. The Chinese use a character based *orthography* or writing system that has a complex relationship to the spoken language. Chinese characters (logograms) have been adapted for use in Korea, Japan and Vietnam; even though those languages are not in the Sino-Tibetan language family. Because Chinese characters represent entire words, literate Chinese readers must know over 3,000. An even bigger challenge has been designing software that can write Chinese using a standard computer keyboard (or cell phone key pad) developed for another language system, using around 50 keys. Several ingenious methods have been invented, but each requires significant effort and may have implications for the adoption of certain technologies by Asians using a character based writing system.

The second most commonly spoken language is Spanish, a member of the Indo-European language family and one of a number of Romance languages that evolved from a common ancestor known as Vulgar Latin. While certainly there were swear words in that language, "vulgar" in this instance refers to its use among the *common* people (unlike Classical Latin). Other Romance languages include, Portuguese, Italian, French and Romanian. There may be as many as two dozen additional Romance languages (Catalan, Romansh, Sicilian, etc.) Many of the less well known members of the Romance family are found in mountainous locations, on



**Figure 6: Languages in Europe.** This map displays many of the language boundaries of Europe. Note how often the boundaries follow physiographic features on the lands, such as mountains or water bodies. [http://upload.wikimedia.org/wikipedia/commons/1/14/Languages\\_of\\_Europe\\_map.png](http://upload.wikimedia.org/wikipedia/commons/1/14/Languages_of_Europe_map.png)

***MAP READING:** When languages and language families are drawn on a map, those languages that are similar should be drawn using the same color family. In the map above Slavic languages of Eastern Europe (Russian, Polish, etc.) all share shades of green, while Basque, which is not related to any family is marked in yellow.*

islands or other isolated locations. Each language in this language family will feature words and linguistic structures that are similar, but they remain generally unintelligible to speakers of other Romance languages.

In addition to the Slavic languages of Eastern Europe, the other major linguistic family in Europe is Germanic which dominates Northern Europe. English, German, Dutch as well as the languages of Scandinavia are related. Most people in North America speak English, as do other locations that were once part of the British Empire. In fact, the map of world languages offers important clues into the military history of the world. Languages, as well as other elements of common culture, were carried by armies and navies where ever they roamed.

German and English are closely related members of the Germanic language family, but English has become the most international of all languages, with more people speaking it than any other. English isn't a particularly easy language to learn, it includes an enormous number of words adopted from other languages; loads of irregular spellings and verbs, and the it is awash in slang; so why has it become the world's most popular second language? The answers lie mostly in the political and military prowess of England and the United States. British naval power and their

ambitious colonization program during the 18 and 19<sup>th</sup> centuries expanded the use of English around the globe. During the 20<sup>th</sup> century, the United States' ascension into the realm of military and technological superpower elevated the status of English even further. An example can be found on jet airliners around the world. Most communication between pilots (and traffic controllers) is in English in large part because the airplane was invented by Americans and the British began the first international commercial flights. It's similar to the doctrine of first effective settlement, discussed earlier, but now with a technology. Consider the other technologies, invented by Americans, and used worldwide. Many users, especially early adopters of such technologies, find them easier to use if they know English. Certainly, the massive cultural influence of rock and hip hop, plus the success of Hollywood has spread the appeal of English worldwide.

## COOL LINK

[HTTP://WWW.FESTIVAL.SI.EDU/2013/ONE\\_WORLD\\_MANY\\_VOICES/MAP.ASPX](http://www.festival.si.edu/2013/one-world-many-voices/map.aspx)

Some locations, particularly those that were difficult for armies or navies to conquer boast unique languages. Locations that are isolated by high mountains, on islands, across vast wastelands or deep in swamps have a tendency to house people who speak uncommon languages. Hungarians and Finns speak a language that is different than most of the rest of Europe. People on the islands of Corsica and Sardinia speak a language similar, but different than their neighbors in Italy. Others, like Armenian and Greek are very far removed from their “cousins” on the Indo-European family tree, and so are called *linguistic isolates*.

Perhaps the best example of this is found in the Eastern Pyrenees Mountains of Spain and France where people speak Basque. This language is so unique, that it appears to be unrelated to any other in the world. There are theories that suggest the language is exceptionally old, perhaps dating back around 40,000 years, before the time that most European's ancestors

migrated (with their proto-language) into Europe. Some genetic evidence suggests there has been less interbreeding between Basque people and their European neighbors, which may account for how this language survived when presumably other very old European languages went extinct. The rugged mountains where Basques have lived for thousands of years surely played a role in protecting their language and culture from invasion and succession.



Figure 7: Basque Restaurant, San Miguel, California. Basques came to the United States and largely settled in California where the landscape resembles their home territory in Spain.

Over the centuries, membership in a language or even a language family has proven critical in the fates of both individuals, regions and nations. When the Germanic Archduke of Austria Franz Ferdinand was assassinated in Sarajevo by a Bosnian Serb, it touched off World War I. Though there were numerous additional reasons for the First World War, the first alliances were based on linguistic alliances. The Russians had agreed to help their Slavic cousins in Serbia. The Germans were allied with the Germanic Austro-Hungarian Empire.

The earliest rumblings of World War II in Europe were also generated when Adolph Hitler attempted to expand Germany's borders to include parts of neighboring countries where a significant population of German speakers lived. German speaking Austria was effectively became part of Germany in early 1938. Nazi Germany later that year forcibly annexed parts of Czechoslovakia known as "the Sudetenland" because the language created a right to take that land for Germany. Later all of the Czech and Slovak areas were taken. It was when Germany invaded Poland, to take land where the language was once primarily German, World War II began.

It should be noted that many wars have been fought between people of similar linguistic heritage, (Germany vs. England, e.g.), but the longstanding alliances between the U.S. and other English speaking nations of the world is no doubt a product of the way our common language has shaped a common core of values that bind us in ways that are especially strong.

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COOL LINK:  
MODERN  
LANGUAGE  
ASSOCIATION  
MAP DATA  
CENTER

[HTTP://WWW.M  
LA.ORG/MAP\\_D  
ATA](http://www.mla.org/map_data_center)

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### *American Dialects*

Your ability to communicate efficiently with other Americans may depend on where you (or perhaps your parents) grew up. Some parts of the United States have very distinct dialects that others find challenging to understand. People in the Midwest and much of the West Coast, on the other hand, speak a kind of "ordinary" American English that is used by national television news anchors, and spokespersons for various products advertised on TV and radio.

There are quite a few regional dialects in the United States. Some argue that distinct dialects exist within different boroughs of New York City, or that Cincinnati has its own dialect. The map in figure ff is a very clever use of youtube videos to plot differences in the pronunciation of words can be found in the US. However, the main dialect regions



**Figure 8: Menu Sign** This menu sign from Jim's Steaks in Philadelphia uses the word "Hoagie" to refer to the large breaded sandwich, that most of the United States calls a "sub" sandwich. Can you think of other words for these sandwiches?

in the United States align reasonably close to the main folk culture regions. In the northeastern states, they speak in the family of Yankee dialects. In much of the Mid-Atlantic and Midwest, people use the Midland dialect, and the South is broken into Upland and Lowland Southern dialects.



Figure 9: Water tower - Florence, Kentucky. This monumental sign welcomes motorists leaving "the North" into "the South" just below Cincinnati on Interstate 75. Why do you think the vernacular "Y'ALL" is included so prominently?

### *Mapping Dialects*

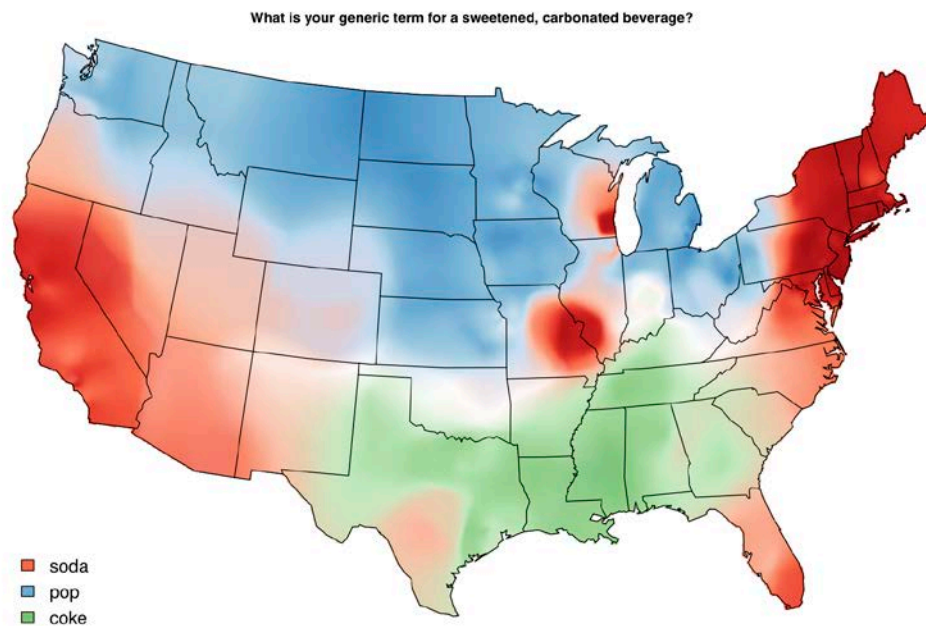
Maps of dialects in the United States are fascinating to inspect, generating a lot of laughs at the “crazy things” other Americans say; but keep in mind there are significant cultural differences frequently at play as well. You should check out Joshua Katz’s excellent dialect survey and the accompanying maps. Possibly the most entertaining for students is the “What do you call a soft drink?” question. Most Americans use “pop” or “soda”, but in much of the south, people use the word “Coke” to refer to any soft drink, even a Pepsi or a Faygo. This is funny to others, but you probably use “Frisbee” to refer to a flying disc, or perhaps “Kleenex” to refer to a facial tissue.

COOL LINK:

[HTTP://ASCHMA  
NN.NET/AMENG  
/#LARGEMAP](http://aschmann.net/ameng/#largemap)

COOL LINK:

[HTTP://WWW4.  
NCSU.EDU/~JA  
KATZ2/PROJECT  
-DIALECT.HTML](http://www4.ncsu.edu/~jakatz2/project-dialect.html)



Map by Joshua Katz, Department of Statistics, NC State University  
Based on survey data from Bert Vaux, Department of Linguistics, University of Cambridge



**Why Omaha?**

Have you ever called a toll free (1-800-) phone number to order some product, make hotel reservations, or get service for something like your internet connection or cable television? If you have, there's a chance you've been connected to an American from another part of the United States. Sometimes, you'll be connected to someone from India, Ireland or the Philippines. Maybe you were connected to a "computer voice" that prompted to push buttons and enter data with your key pad. Did you have trouble understanding the accent of the person on the line? Did they have trouble understanding you? Difficult phone calls to toll free numbers are more common today than they once were. They are partly a product of cost saving strategies by companies, and a general lack of concern for customer service. From the late 1970s, when toll free calling began to become common through the early 1990s, the operator on the receiving end of many 1-800 calls was likely to be in Omaha, Nebraska.

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LISTEN :

[OMAHA,](#)  
[NEBRASKA](#)

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LISTEN :

[WESTERN](#)  
[NORTH](#)  
[CAROLINA](#)

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LISTEN :

[TANGIERS](#)  
[ISLAND,](#)  
[VIRGINIA](#)

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LISTEN :

[OUTER BANKS,](#)  
[NORTH](#)  
[CAROLINA](#)

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LISTEN :

[SOUTH](#)  
[LOUISIANA](#)

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This Midwestern city has developed as one of the leading cities in the United States for telecommunication because of its central location. During the Cold War, the US military placed the Strategic Air Command just outside Omaha. This central, but isolated, location made it harder for other countries to strike at this key element of our national defense. Because the Strategic Air Command was nearby, Omaha benefitted from the nation's most advanced (and secure) telecommunications network. This telecom-munications network permitted nearby businesses to experiment with toll free call centers. Nebraska's location in the Central Time zone made Omaha more convenient for workers there to make and receive calls from both coasts. Perhaps most importantly, the local dialect is what some linguists call "Middle American". This accent or dialect is the most ordinary and easy to understand speech pattern in the US for most Americans. Is it any surprise that a city located on a plain, in the center of the continental United States would have a "neutral" accent? The growth of the call center industry in Omaha spurred on additional growth in telecommunications, high tech and other service industries. Had Omaha been isolated by mountains, or swamps; or if it was on the coast, not only would its dialect be quite different, but so would its economy (and probably politics, religion and other elements of its culture).

Several places in the United States have site and/or situations that are partly responsible for significant linguistic differences from what folks in Omaha have experienced.

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LISTEN :

[SEA ISLANDS,](#)  
[SOUTH](#)  
[CAROLINA](#)

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Appalachian English, sometimes affectionately (sometimes derogatorily) referred to as "hillbilly", is commonly spoken by people by many people who live in the less accessible reaches of the Appalachian (and Ozark) Mountains. Many of the people who moved into these areas during the 18<sup>th</sup> and 19<sup>th</sup> century were from Scotland or Ireland. Their speech patterns, though certainly changed since those times, have perhaps undergone fewer changes because the inaccessibility of those regions discouraged waves of immigrants from elsewhere. Because these locations have been spatially *isolated*, there's a good chance that dialect innovations made by

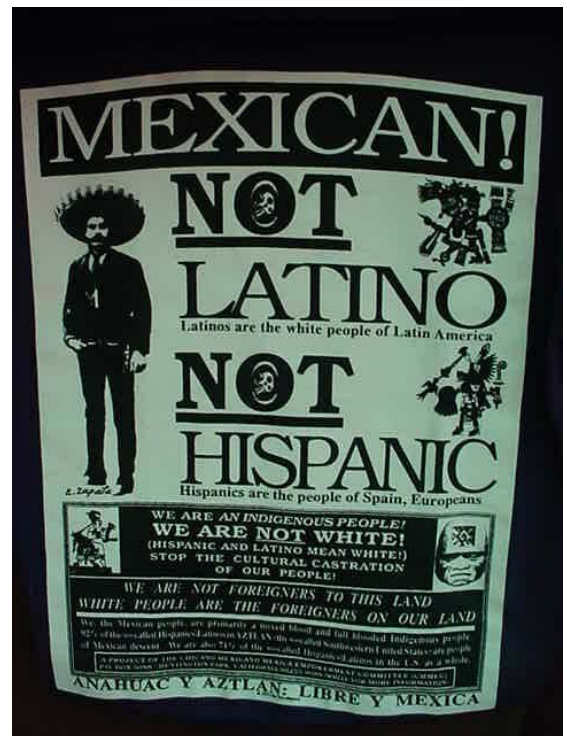
people in these mountains are prone to spreading throughout the neighboring communities, but rarely enter the speech patterns of the rest of the United States. Similarly isolated dialects can be found in other remote locations, such as islands or in swamps. Check out the links on the left.

### *Ethnicity and Dialect*

Ethnicity is frequently expressed through dialect; and conversely a dialect may be a marker of one's ethnicity. Geographers contend that both are products of the peculiar spatial experience of each group. Each of the dialects spoken in the United States, or anywhere for that matter, bears the mark of the ethnicities and therefore source points of the people who once lived there.

So for example, the dialects of New York City bears the imprint of the massive numbers of Italian, Irish and other second wave immigrants that moved there in the mid-19<sup>th</sup> century. They adopted English, but retained some elements of the languages and dialects they brought across the Atlantic. Intermarriage and decades of living and working together no doubt created dialects that *hybridized* elements of speech into a new working whole.

Today, speech patterns in regions of the US that border Mexico are progressively reflecting the influence of the many Spanish speaking immigrants that live there, so that many places it is easy to find people using a hybridized "Spanglish". These influences may be much, much older though. African American Vernacular English, sometimes called Ebonics, demonstrates not only the power of place, but perhaps also the stubbornness of cultural change.




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NEW YORK  
TIMES  
EDITORIAL:  
[OAKLAND AND  
EBONICS](#) - 1997

Ebonics is a source of some controversy for a couple of reasons. In 1996, the Oakland, California school board passed a resolution recognizing "Ebonics" as language. This sparked some measure of outrage among politicians and pundits, many of whom characterized Ebonics as mostly lazy, street slang. The primary motivation of the Oakland School Board was to find additional funding to help black students in their district better master standard American English by tapping into funds used to teach English as a second language. Linguists were generally sympathetic to the side of the Oakland school board and weighed in with studies

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COOL LINK:  
 PBS.ORG "DO  
 YOU SPEAK  
 AMERICAN" -  
 EBONICS

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that show that a proper understanding student's home dialect or language was useful for teachers who sought to instruct students in Standard English.

The controversy in Oakland revealed several interesting issues for cultural geographers. First, it is curious how some everyday practices like language exert a special resistance to cultural change. In this case, elements of African language systems appear to, even after centuries, remain lodged the speech patterns of many black folks today. Second, the controversy highlighted the important role space and place plays in the maintenance (and diffusion) of dialects. The long history of social, and later spatial, ghettoization of Blacks has helped preserve relic speech patterns brought from Africa. The effects of isolating people on an island/mountain/swamp was somewhat replicated elsewhere in the US through restrictive covenants and other discriminatory housing practices. It is also apparent to anyone who has listened to the speech of white southerners, or urban white folks who were raised in predominantly Black neighborhoods (or regions) that those speech patterns easily transcend racial and ethnic lines. Finally, the Ebonics controversy of the mid-1990s, was depressing because of the rush to judgment by those who knew nothing of linguistics. The vitriolic response in the media to an suggestion that a dialect might be given some of the same pedagogic considerations as a language was surprising. The dimensions of the controversy highlighted very clearly how important language is to the creation and maintenance of political-cultural order.

### *Toponyms – Place Name Geography*

**Toponyms** are the words we use to name places. Toponyms are applied to huge places, like "Russia", and to small places like "Windsor Arms Apartments". Toponyms, if they are interpreted carefully, may offer a number of clues into the history of a location and the priorities of the people (or person) who named a place.

Many of the place names that are very common to us, those used to refer to states, cities and towns are compound terms. These toponyms often utilize a generic indicator and a specific one. For example, Charleston, Boston and Newton are all city names that have the " – ton" suffix, which is a short-hand way of writing "town".

So you could read "Charleston" as "Charles' Town", especially if you're in South Carolina. As you might guess there was some famous "Charles" years ago (King Charles II of England) for whom the town was named. The use of the word "town" or "ton" is an indication that the founders of Charleston were not only English, but also happy with the king; which in turn should also suggest *when* Charleston was founded – well before the unrest that led to the



American Revolution. Charleston, West Virginia, founded around the time of the Revolution, was *not* named after any English King, but still uses an English generic suffix.

The English weren't the only folks who settled in the United States, so there are numerous other generic terms for "town" scattered across the landscape. In those areas where German speakers settled in large numbers, town names have a tendency to use "burg". Pennsylvania has lots of "burgs", including Pittsburgh. Sometimes, as in the case of Pittsburgh, "burgh" appears to be a corruption of the word "borough", an Anglo term for an administrative district in a town or rural township. The corruption may have come courtesy of the many Germans who settled in these areas. Because German and English are quite closely related, the evolution of town names was both easy and common. Other common markers of German settlement in the U.S. can be found in the numerous cities named in honor of German cities; including multiple places in the US named Hanover, Berlin or Hamburg.

Where the French settled in large numbers in North America, towns with the suffix "-ville", as in Louisville, are common. Many of these are in Louisiana, where French speakers were once very dominant in the southern reaches of the state. Still, there are many dozens of other cities with French names as well, including Detroit, St. Louis and Des Moines.

Other immigrant groups, especially those that settled rural areas have left their mark on the landscape, even though many other cultural elements have disappeared. Russians, Poles, Italians, and other came later so there are fewer toponyms associated with these groups. Far more common are cities that have names supplied by the American Indians. Chicago, Milwaukee and Seattle are perhaps the largest, but perhaps far more common are names for physical features, like rivers, mountains and valleys.

A good example of American cultural hybridization can be found in places like Anaheim, California (home of Disneyland). This town's name combines a reference to Saint Anne (or St. Hannah – revered particularly in Greek Orthodox and Islam), originally applied to the "Santa Ana" by the Spanish missionary Juniperro Serra. Later "Ana" was adopted by German settlers who added "-heim" (home) in order to indicate "home by the Santa Ana".

### *Toponymy and Place Marketing*

Toponyms are also used to great effect by real estate developers, who seek to convince potential home buyers, or even renters of the quality of their location or their building. One of the most common ways real estate people market their land and buildings is by making an "appeal to snobbery". It's a simple ploy that frequently uses a reference to a place or activity associated with rich or powerful people. For example, an apartment complex on Maple Street, might be named

“Chateau Des Maples”, to make it sound French, and therefore more exotic. A gated community trying to appeal to upscale homebuyers might be dubbed “The Oaks at Hunter Crossing” in order to evoke large landed estates, where wealthy folks who engage in sports like fox hunting might live. The more comical efforts at leveraging snob appeal appear on the signs of liquor stores, or nightclubs in rundown neighborhoods. Casinos have employed this strategy for years, cashing in on the ability of the landscape to make people feel like “high rollers”. It’s really quite silly once you think about it; but clearly it is effective or it wouldn’t be so very common place.



### *Language and the Environment*

The environment shapes language and in turn, attitudes about nature are shaped by language. There are the obvious things, like the large number of words in Castilian Spanish for rough, hilly terrain versus English. However, it is probably a myth to argue that Eskimos have 50 words for snow. The point is that languages do adapt to the physical environment so that their speakers have a better chance of surviving.



A new line of research in linguistics finds that other elements in the environment may have an effect on the way language *sounds*. One anthropologist recently found that languages developed in high latitudes with “ejective sounds” using a burst of air are more common among cultures living at high altitudes.

Another fascinating recent study of particular interest to geographers is from the world of cognitive psychology. Researchers have found that the way people think spatially is shaped by their language. For example, Australian Aboriginals who speak Kuuk Thaayorre, don’t have words for left and right, so in order to give people directions or even remark on something mundane, like “there’s a bug on your left leg”, they must reference cardinal directions (north, south, east and west). In order to do that, they must know at all times where they are. You must know which way is north too if you’re going to understand which leg has a bug on it. If you turn in fright, then a new instruction would have to be issued. For people born into languages that rely upon cardinal directions, their brains become hard wired

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RESEARCH  
FINDINGS:

HIGH  
ALTITUDES AND  
SPOKEN  
LANGUAGES

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RESEARCH  
FINDINGS:  
LANGUAGE  
AFFECTS HOW  
YOU THINK

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like a GPS. They are acutely aware of where they are at all times, and researchers have found it difficult to disorient even small children by blindfolding them, placing them in windowless rooms, etc. These effects spill over into many other areas as well, including how people experience time and how they see cause and effect. It's just another example of *what you know* being shaped by *how you know* it. It reminds us to pause a moment before dismiss what others think of as "truth".

CHAPTER END MATTERS