THE USE OF CONTRASTIVE STUDIES IN LINGUISTICS

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Graduate students, faced with the necessity of producing a research paper to complete their degrees, often seek out their mentors with plaintive pleas for guidance, "What can I write about?" As SLA (second language acquisition) began to emerge as a field within linguistics, an early attempt to explain the process of moving from one language to another, derived from the Behaviorists, was the Contrastive Analysis Hypothesis, possibly best enunciated by Lado, who maintained that the differences between the native language (L1) and the target language (L2) were responsible for the difficulties faced in SLA. the more the similarity between the languages, the easier to learn the target language; the more the difference, the harder.

While the Contrastive Analysis Hypothesis has been largely discounted, at least in its strong form (which had a predictive bent), it still survives in a weak form as a research tool. So, although contrastive studies in linguistics have lost favour in recent years as contemporary theorists tell us that (1) they are redundant (somebody has probably done the work already), and (2) that they are irrelevant (they don't prove a thing), there is still tremendous value in such studies for gradu-

ate students in Education who have some idea of who and what they will be teaching in the future, the who being the L1 and the what being the L2, or graduate students in Linguistics who seek insight into the nature of language.

For the former it is a question of how contrastive analysis will help the L2 student. For the latter it is the simpler question of what insight contrastive analysis may provide, since its value lies in the area of inductive research, research which may lead, down the road, to the formulation of a hypothesis destined to land its creator in at least a satisfying academic position and possibly generations of assigned text books. For both it is a surprisingly simple procedure to handle.

All it takes, in essence, is one transparency, real or in one's mind, showing what the L1 is like, and another showing the L2. One places the one transparency over the other and holds them to the light. In other words, the methodology of contrastive analysis is merely the discovery and analysis of differences, of contrasts, between the L1 and the L2.

Contrastive analysis can be used with sounds, with words, or with grammar We will examine each of these in turn.

SOUNDS

The easiest place to start is with phonics, since the universe of identifiable phonemes is comparatively limited. Indeed, since 1888 practically all phonemes known to be used in human speech have been incorporated into the International Phonetic Alphabet (IPA). The contrastive study merely shows which sounds exist in the target language which don't exist in the native language(s) and vice-versa. Obviously, these constitute points of friction where students of the language may encounter difficulty (although, surprisingly, they may not be of major pedagogical concern: by their very uniqueness they may be internalized rapidly, almost as rapidly as traumatic occurrences). For instance, one, then, may be in the position of anticipating the difficulty Anglophones will have with a tonal language.

The line between phonics and phonetics may be rather vague at times, but the way a language uses epenthesis and metathesis, assimilation and dissimulation, and plain deletion may cause trouble. The graduate student may want to investigate these areas. Or there is room for investigation on a contrastive basis of the very way speakers of the L1 and L2 produce their sounds. Need we underline the fact

that to produce essentially the same sound, the P sound, English speakers press their lips together while Russians draw theirs slightly inward? Well, maybe this is not a good topic for investigation since both Russians and Anglophones will recognize the other's P.

In this respect, possibly the most obvious sound for showing major differences across linguistic lines is the R. We North Americans have a retroflex R made by curling the tip of the tongue back into the mouth, but sometimes made by swelling the tongue upwards and back into the mouth. This sound, together with its fellow liquid L, can drive East Asians, especially Japanese, to extremely high levels of frustration in their attempts to reproduce it. And the North American variety is quite recognizably distinct from the flap often used in Britain (as in their pronunciation of VERY), the uvulan gargle made by the French, the distinctive rolling R of the Scots, or the tap of the Spanish. There are also weird (from the Anglophone's point of view) lateral fricatives and denial as well as alveolar laterals, and even a palatal lateral in Spanish, Serbian, and Croatian.

Diphthongs, too can cause all manner of difficulty in moving from one language to another. Indeed, the very definition of a diphthong can sometimes be confusing. For instance, in English we do not view YES and YAK as beginning with diphthongs since the initial sound is considered a glide. But in Finnish it is considered a vowel, hence the two-sound combination is described as a diphthong. This sort of thing may be moot since the difference would not usually cause difficulties in any interlanguage transition.

On the other hand, a terror for many learning English are the fricative interdentals, the THs, both voiced and voiceless. And for Anglophones learning other languages the German voiceless palatal fricative CH or the Russian voiceless velar fricative TCH can cause difficulty, as can the bilabial fricatives, either voiced or voiceless, or the voiced velar fricative common in Spanish.

Then there are (for the poor Anglophones) unfamiliar affricates spread out over the continuum of points of articulation including the one found in the German *pferd*, a voiceless labiodental affricate. And, too, there are the "exotic" glides like the one found in the French words *huit, huile,* and *huître.*

Stops not found in English, for example, include the dental T, D, and N found in various Romance languages in place of the alveolar variety. In India they have retroflex versions of the T and D. Both the Serbs and Croatians have voiced and voiceless palatal stops. The

Inuktituts have voiced and voiceless uvular stops. And the Spanish have nasal stops.

But still, most of the attention in phonetic contrasts seem to focus on the vowels. By the end of the first couple of contact hours of exposure to the French language, most Anglophone students are aware of the four nasal vowels found in French (without having had these spotlighted by the instructor or the native speakers). Unfortunately, if these students are also presented with the French writing system they can develop an English-based interlanguage substitute using the equivalent non-nasal English vowel sound followed by an appropriate nasal consonant. This pattern is easy to acquire and altogether too easy to become fossilized.

Yet these students will have an equally difficult time with the high front rounded tense vowel. This is the vowel sound in the French word *rue* (made doubly difficult by the juxtaposition of the uvular R), the German *Bücher*, and the Turkish *dugme*. French Canadians often make this into a high front rounded lax vowel as in *duc* or *lune*. And the French *peu* and the German *schon* use a rounded mid front tense vowel. There is a lax equivalent of this in the French word *oeuf*, the German *ortlich*, and the Turkish *gol*. Finally, there is an unrounded high central vowel found in the Russian *bil* and the Romanian *mina*.

Of course, this list is far from exhaustive either from the point of view of vowels which appear in one language and not another, or for the languages chosen as examples, and it leaves plenty of room for contrastive investigation: good, worthwhile contrastive investigation.

Included in our brief survey of areas of possible attention for contrastive investigations within the domain of phonics/phonetics are the supersegmentals (or prosodic properties) of phones no matter what form their articulation takes, nor where it occurs. These include pitch, loudness, and length. We have already referred to the difficulty faced by Anglophonic students of Chinese with their tonal system. The same combination of phonemes, *ma*, means "scold" when pronounced with a falling pitch, "hemp" with a rising pitch, and "horse" and "mother" when pronounced with fall-rise and flat pitches respectively. Some tonal languages even have distinct tone levels. Sarcee, one of the Athapaskan languages of Canada has three levels (high, medium, and low), and Mazateco, an indigenous language of Mexico has a register of four tones. Indeed, while tonal languages may seem exotic and difficult to learn for most Westerners, they are found throughout the Americas, in Sub-Saharan Africa, and, of course, in East Asia.

And then there are languages like Hungarian, Cree, German, Finnish, and Yap which have long and short forms of the same vowel. These same Hungarians and Finns, along with Turks and some others also have long and short forms of the same consonants. Incidentally, it was this fact, among others, that pointed investigators to the determination that Hungarian and Finnish were part of the same family of languages. And while some languages change the meaning of morphemes by changes in the length of their vowels and consonants, others, like Modern Greek, go to great lengths to avoid changes in vowel or syllable length.

But as we move farther along the continuum from phonics to phonotactics we encounter more and more areas ripe for investigation. Does the target language (like English) contain consonant clusters unlike the native language (like Chinese)? This could cause difficulty, although for some strange reason we do not find that Chinese studying English have much difficulty in this particular area. And English, as we recall, can string together three consonants in the initial position and four in the terminal position (including that rogue S). By the time we are well into phonotactics we see that each language has its own set of constraints on what sounds can be sequenced and how, and of course, what sounds cannot. The very common SRI, found on both sides of the Bay of Bengal, contains an SR sequence that is otherwise unknown, indeed not permitted in English other than in the case of borrowed words like the name of the the Commonwealth nation to the south of India.

Greek is another language which has provided English with unacceptable consonant clusters: #PS, #NM and #PT for instance, as in psychology, mnemonics, and pterodactyl. Anglophones usually end up reducing these clusters to single consonants (S or T, dropping the P) or inserting a schwa between the N and the M. However, when faced with a Russian consonant cluster like vprog, some Anglophones may lean toward a resumption of the Cold War Actually, they usually resort to breaking the FPR cluster into FePR, inserting a vowel (the schwa) into the middle like the Japanese do when faced with the need for a CV structure when the borrowed word is CVC: ba-se-bu-ru for "baseball".

But then this leads us into a rich area for productive research, especially for the linguist. In the contrastive analysis of phonotactics, as opposed to that of simple phonetics, there is always that WH question. The what, for the language educator, is often readily apparent; the why, for the linguist, has probably not been sufficiently explored. Why is it that Chinese languages don't contain consonant clusters? Is

there a negative correlation between tonal languages which find differences in meaning in register or shifts from one register to another and the number of consonants permitted in a cluster or even the predominance of CV syllabic structure? In other words, if redundancy is found in one sphere is it needed in another?

A contrast of phonemes and allophones can be revealing, for these are generally language specific. In Bahasa Malaysia, for instance, the rule tends to be that all vowels and glides following a nasal consonant and not separated from it by a nonnasal consonant are nasalized. This is certainly not the case in English, and teachers of English in Malaysia should, of course, be on the lookout for signs of this practice in the interlanguage. And how would they know that there is a difference? By someone doing his homework, in this case a little comparative analysis.

In nearby Cambodia the Khmer language has the same stop phones as in English, both aspirated and unaspirated versions of P,T, and K. But these are allophonic in English while these same aspirated and unaspirated voiceless stops are contrastive in Khmer, as the word pairs (PA) for "father" and "silk cloth", (TU) for "chest" and "relaxed", and (Kae) for "repair" and "month" Again, this is easy to describe, valuable to the teacher of Khmer, and a wonderful topic in need of a theory for the pure linguist.

WORDS

Psycholinguistics, Sociolinguistics, Morphology, Semantics, Pragmatics, Historical Linguistics, and Comparative Linguistics all contribute to our fascination with words. The field is ripe for research with the greatest opportunities available for those with at least one foot planted in English, which simply has the most words to study, the richest lexicon by far of any language. We usually credit complex modern Western European languages with vocabularies of 500,000 words or so, but English has at least four times that number The Oxford Unabridged Dictionary has half a million entries, but the COBUILD corpus, a giant computer base which includes semantic and functional differences for the same lexigraphical unit, has at least 114 (some say 200) million entries.

Of course, the reason for that is that English has historically been the greatest thief of them all, taking vocabulary from every corner of the world. Indeed, at its birth, it was already twice the size of most languages, incorporating both Norman French and the Germanic Languages of the Angles, the Saxons, the Danes, and the Jutes. So while

the Germanic peasants herded their cows, the Norman nobles would dine on beef; the peasants kept lambs but the nobles ate mutton, the peasant owned a calf but the nobleman was served veal, swine ran around the peasant's house but the lord ate pork in his castle or mansion. Even today most of our most frequently used words in English - the prepositions, the articles, the auxiliaries, etc. - are of Germanic origin while most of the others - especially in the areas of government, religion, the judiciary, science, culture, and warfare - French vocabulary predominates.

But in more modern times, British colonialism and American commercial enterprise brought rich additions
tions that have always been uncensored by Chauvinistic French-type academies deciding which additions to allow, or Israeli-type nationalisms seeking to fabricate modern vocabulary for a politically resurrected language. This has permitted English to dissect the concept pod of light into such gradients as glimmer, glitter, glow, gleam, and glisten (to list only those starting with GL).

Concept propagation is worthy of attention by more than linguists. If anyone has ever wondered why languages as geographically separate as Kikongo, Kiswahili, Hindustani, and Bahasa Malaysia use essentially the same word for "table", the answer is simple. The speakers of these languages had never encountered the object in question before the arrival of the Portuguese, whose ships brought tables along with the Portuguese word for "table" down the coast of West Africa, up the coast of East Africa, around the Indian Ocean, and into the Pacific.

We must be suitably awed by the language propagation of that race of proto-Malayo-Polynesians (languages sometimes known as the Austro-Tai family) whose outrigger civilization of taboos and ancestor worship spread across at least two-thirds of the world, from a couple of hundred miles off the coast of Africa to about a thousand miles off the coast of South America (linguists are still looking for connections with the languages of the indigenous peoples of South America, worthy area for Malay graduate students to explore). Or we may wonder how Korean, on its peninsula in eastern Asia, could be related to the Turkic languages of western Asia like Turkish, Uzbeck, Kazakh, and Azerbaijani.

But the greatest thrill may possibly lie in the relatively unexplored area of the contrast and comparison of concept cells. It doesn't take a behaviorist to admit that the basic concept pods or cells (morphemes?), developed in different environments, might differ. Most of us are familiar with the now-exposed fiction of the dozens of words meaning "snow" in the Eskimo-Aleut languages, but the principle remains clear

our very perception of the world is influenced by the language we speak. This is the Sapir-Whorf Hypothesis, almost seventy years old, which maintains that mankind is trapped in the vision of reality determined by our languages. This sort of thing seems rather obvious to any one who has tried to do any translating. Even when one is perfectly at home in both languages, or because one is perfectly at home in both languages, one quickly realizes that there is no direct translation in the target language of a given concept in the language being translated. This, of course, brings us back to morpheme propagation, since, in many cases, there is little alternative to using the original concept pod: *cherchez la femme, savoir-faire, sarong, amok, kow-tow, pajamas, bungalow, adobe, matzos, goniff, gestalt, matador, bwana, totem, moose,* and *skunk*. This process is called borrowing, but it seems that the borrowed items are seldom returned.

Sometimes the task of comparing and contrasting concept pods is rather easy to picture. When the typical North American closes his eyes to envision *bread,* he sees a rectangular solid, sliced, wrapped in plastic, with a soft, light-brown crust surrounding an even softer white interior. A Frenchman may conjure up a long ovoid with a hard crust and a delightful aroma, which produces plenty of crumbs when you try to cut it or rip it apart. Our North American can come up with a similar vision by hyphenating his thought: *French bread.* Conversely, the Malaysian, often brought up to imagine a much flatter thing, can come up with a good approximation of the North American concept pod by using the expression, *sandwich bread.*

Sometimes there can be drastically different concept pods within the same language. We have seen the trauma of the former East Germans, brought up in what was called the German Democratic Republic, trying to adjust their concept pod of the word *democratic* since the fall of the Wall.

The study of the role of affixes takes on a new dimension when regarded from the perspective of a second language. Of special interest is Chinese, a cluster of languages with inviolate concept pods, immune from all forms of affixes. The only other major language with this rather unique characteristic is Sign, the language(s) of the hearing impaired. Chinese is, of course, quite capable of expressing hyphenated thoughts. The very name *China* is expressed by two ideographs (each ideograph corresponding roughly to a concept pod), "middle" and "kingdom" Other Chinese compounds include "day" + "brightness" for "dawn," "head" + "aches" for "headaches", and "earth" + "quake" for "earthquake" But case, tense, voice, gender, person, and number must be injected by separate concept pods. Russian nouns, by contrast, are inflected for gender (masculine, feminine, and neuter), sin-

gular and plural, and are declined through genitive, accusative, dative, locative, and instrumental cases. Other languages, like Basque and Tagalog, have ergative case markings, still others have absolutives. Verbs in most languages are inflected for person, tense, and voice.

Some linguists have been heard to surmise that this very lack of inflection may have some correlation to the recognized high numerical ability of Chinese speakers: a worthy, yet totally unexplored area for investigation.

SYNTAX

Krashen has often claimed that while grammar must be acquired, it cannot be taught. Yet linguists are continually mesmerized by nouns, verbs, adjectives, adverbs, determiners, auxiliary verbs, prepositions, pronouns, and conjunctions, and have devoted careers to studying the relationships between these categories. What then of the Japanese who have no adjectives? Or the French who generally insist on putting their adjectives after the noun (does that make a difference?). Or look to the Koreans who consistently place the head at the end of the phrase. In Indonesia, the Selayarese speakers put the subject noun phrase at the end of the sentence, and the determiner follows the noun inside the noun phrase, but then do the same thing as English speakers with their verb phrases and prepositional phrases. Tamils form yes and no questions without inverting subject and verb by adding a particle (a) at the end of the sentence, and then emulate the Koreans by placing the verb at the end of the verb phrase. Try finding a universal grammar (UG) in that!

CONCLUSION

If any graduate student's interest was piqued by the vistas opened by mention of the Sapir-Whorf Hypothesis, the door to it is by continual contrastive research. The search for a protolanguage is built on finding the existence of relationships between two or more languages. If Universal Grammar does exist, comparisons of languages will point to it. And second language acquisition measures the progress of the learner from native language to target language (through interlanguage) by the acquisition of forms of the target language which differ from those of the native language.

There is, indeed, still a place for contrastive studies.

BIBLIOGRAPHY

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There is a kind of rebuttal in Richards:

Richards, Jack C. 1971. "A Non-contrastive Approach to Error Analysis" *English*

Language Teaching , 25: 204-219.

But the real theoretical attack on the Contrastive Analysis Hypothesis (if we are not to subscribe to Chomsky's Universal Grammar) is probably to be found in Selinker with his Theory of Interlanguage:

Selinker, L. 1972. "Interlanguage". *International Review of Applied Linguistics* , 10: 209-231.