**Notes on Structural/ Generative and Systemic Functional Linguistics**

**Structural/ Generative Linguistics**

*Saussure*

Structural linguistics takes as its starting point the work of Ferdinand Saussure (1906), who made a number of important distinctions:

* *synchronic* approaches to language (how the elements in a language ‘hang together’ at a particular point in time) and *diachronic* approaches (how the language evolves);
* *langue* (language as a system or structure) and *parole* (the use of that language in utterances)
* relational sets of concepts: *syntagmatic* (relationships between language units: their ability to combine) and *paradigmatic* (associative relationships within the minds of users: what is evoked). Analogy: the physical parts of a building are *syntagmatic*; what a person thinks of when viewing a building is

Saussure broke with the abstract, idealistic nature of traditional linguistics (better known as philology). He made a distinction between language as an idealized structure and language in actual use and emphasized the evolving nature of language.

This implied that all languages were equal (or rather, that no language or dialect is superior to another) and that language is structured within the mind. This, in turn, led to the implication that language is constructed by humans and that it constructs meaning. To give an example: the conception of a ‘river’ is different in French (a ‘flueve’ ends up in the ocean; rivere ends up in a lake) the than it is in English (‘creek’ and ‘river’ are different solely in terms of size).

Saussure’s work led to an emphasis on:

* the use of *contrast* and *opposition* within linguistics
* the importance of speech
* the concept of *interlanguage* and *code-switching*
* the distinct discipline of sociolinguistics (how people use language in society (*style, register, domain, code*)

### and led to a break with

### grammar translation (which was the main tradition up to this point; legacy of the use of Latin and Greek academically and ecclesiastically; the search for a source language like Hebrew or Sanskrit);

### the study of extinct languages

* most prescriptive grammars

You can also see how this was one of the major starting points for relativistic philosophy and its modern emphasis on language.

*Chomsky*

In contrast to the emphasis on the unpredictability of language that was extant in the early part of the 20th century (see Malinowski), Chomsky’s work is an attempt to determine the boundaries of language and aspects of its universal nature.

This has been termed an idealistic (as opposed to a materialistic) theory of language that has antecedents back to Plato. This means that there are universal standards as to what constitutes language.

At the same time, Chomsky conceived of a system that is genetically derived (i.e. hard wired in the brain), infinitely creative and existing at a deeper level than what we usually consider discrete languages. This is what he calls *Universal Grammar.*

Language is hard-wired: a system that is (potentially) activated by the brain as part of its genetic inheritance. How else can you explain the speed at which children learn their first language(s)?

This system is also creative in the sense that there is no limit to the potential meaningful combinations that a user of the language can create. How else can one explain how one can create and comprehend sentences that are completely new to one’s (or potentially anyone else’s) experience?

*Universal Grammar* (UG) is the deep structure that everyone in our species shares and individual languages, such as English, French or Mandarin, are its surface reflections. Originally, Chomsky thought of the relationship between the two levels as being relatively monolithic. In his recent formulations, as I note below, this relationship becomes much more subtle.

In any case, Chomsky started his project with an examination of the properties of syntax: how words are ordered in sequence.

Although one can postulate the properties of many words in terms of where they are placed in sequence, many of these aspects seem determined independent of syntax.

So, for example, adjectives precede nouns in English. The fact that these two types of words are almost always adjacent to one another makes their relationship relatively easy to see.

However, other syntactical relationships are complex and often do not occur in way that make them readily apparent. Conditionals, for example, have complex structural relationships within sentences.

The solution was to posit a layered structure to syntax that divides sentences into phrases. Different components of a conditional sentence, for example, can be expressed as different phrases with clear rules that govern how these components relate to one another.

Phrase structure grammar is commonly expressed through ‘tree diagrams. For some examples of these ‘tree diagrams’, see:

http://en.wikipedia.org/wiki/Image:Basic\_english\_syntax\_tree.png

Before long, however, Chomsky saw two problems with this technique and its assumptions:

1. there needed to be an enormous number of grammatical rules (particular to each language) to explain all of these structures, and
2. sentence trees couldn’t explain the enormous differences in meaning generated by simply transposing a word into a syntactical slot (i.e., “Betty is anxious to help” is very different from “Betty is difficult to help”).

Chomsky’s solution was to posit ‘deep’ and ‘surface’ structures to language.

Suppose you want to refer to snow as an event that happened yesterday. The deep structure might be represented as “It + snow + past + yesterday”. This deep structure can be represented by at least two different forms of surface structures: “It snowed yesterday” and “yesterday, it snowed”.

The deep structures of language are transformed by mental processes (the mind/ brain) into surface structures. Hence, transformational grammar.

Like most other paradigms of language, transformational grammar is divided into syntax (structure), phonology (sounds) and semantics (meaning).

However, Chomsky’s system called for a division of syntax into two further components: the base (lexicon and deep structure phrase rules) and transformational rules (how deep structures are transformed into surface structures).

He argued that the evidence for these divisions was by observing ‘movement’ within syntax.

Take this (surface) example of syntax: “I put/ the cat/ outside to play”

One cannot move the phrases in this sentence around arbitrarily. Thus, one cannot say (at least grammatically correctly): “I put/ the cat”, or “I put/ outside to play” (not to mention the other possibilities, such as “Outside to play/ the cat/ I put”).

The deep meaning for this sentence (or concept) has to do with getting this cat outside. Transformational rules in English, however, determine that there are only a few limited ways in which this can be expressed as a surface structure in ways that are recognized by a native speaker as being grammatically correct.

Out of this, Chomsky formed what was called the *Standard Theory of Transformational Grammar* in 1965. It consisted of a set of transformational rules verified by structural analysis (did the phrase in question contain all of the needed components?) that described a specific syntactical change.

So, for example, the phrase “I drove carefully down the street” can be changed to “Carefully, I drove down the street”. Each phrase contains the same words (lexical items), and so passes the structural analysis. We can then say that the rule governing this transformation specifies that the noun/ verb order (“I drove”) remains the same whether you place the adverb (“carefully”) at the beginning or the end of the phrase.

It didn’t take long, however, for problems in this *Standard Theory* to develop.

An important principle in the *Standard Theory* has to do with the retention of meaning. Transformations cannot change the meaning of the sentence. Moving the adverb to the front of the sentence, like in the example above, doesn’t change its meaning. However, problems arise in many other examples, where subtle changes in meaning occur with transformations that pass structural analysis.

So, for example, note the subtle changes in meaning with this transformation: “Many dogs are friendly and many dogs are well-bred”; “Many dogs are well bred and friendly”. The same elements are in the sentences and thus the transformation passes the structural analysis. The transformational rule invoked here is parallel structure.

However, the transformation does not contain quite the same meaning. When the sentences are combined using parallel structure there is an implication that being well bred and friendly are somehow connected. This connection is not implied when the sentences are separate.

One way to get around this problem is to say that we have not represented the deep structure accurately. So, in the case of the example above, there really is no grammatical connection between the two phrases “Many dogs are friendly” and “Many dogs are well-bred”. This solution is called *Generative Semantics*.

By extension, *Generative Semantics* has claimed that deep structures are the same for all sentences that express the same meaning, no matter how different the surface structures appear. So, in deep structures, the concept of *kill, stop living, cause to die,* etc. would be the same. The surface structures that express this concept would be different.

But the problem now arises as to how to interpret these various surface structures in order to determine what the deep structure is. Do the surface structures (e.g., *kill, stop living, cause to die*) really expressive of the same concept? For example: doesn’t *killing* some imply an active and consciously engaged act (such as purposely running over someone with a car); and doesn’t *causing someone to die* imply an act of negligence (like telling someone to go play on the freeway)?

In the end, *Generative Semantics* came to be dependent on the individual judgments of the researchers involved and fell short of the scientific model that generative grammar aspired to.

The other way to get around the problem of the retention of meaning is to examine the influence of particular elements. In the case of the friendly and well-bred dogs above, we can say that the use of a quantifier such as “many” changes the way in which the transformation operates. This solution is called the *Extended Standard Theory*.

The problem with this, though, is that the division between the way meaning is captured at the level of deep and surface structures becomes highly problematic. The word “many”, for example, may reflect deep structures. However, it is important to note that for the *Extended Standard Theory*, the word does affect the meaning of the sentences at the level of the surface structure. The implication here is that meaning is conveyed through such surface structure. This is different from Chomsky’s original conception, which emphasized that surface structures reflect the meanings retained at the deeper level.

To get around this new problem, the *Extended Standard Theory* was revised into what has become known as the *Revised Extended Standard Theory*, (or as it is more commonly known: *Trace Theory*). *Trace Theory* notes that meaning does occur at the surface level, but that there is an imperceptible trace left over in the surface structure that conveys this meaning. So, for example, we might say “I think you are right”, a sentence that contains a trace of the word “that” (in “I think that you are right”).

Unfortunately, what has resulting in this search for solutions is a morass of rules involving what constitutes a trace. *Trace Theory* has become a highly complex system of rules upon rules. In the end, the simplicity that constituted the original strength of generative grammar has been lost.

As part of his rethinking of generative grammar in light of these problems, Chomsky reconceptualized *Universal Grammar* as being a combination of nature and nurture. Children are born with the potential to develop language (*principles*), but these hard-wired properties must be activated by experience (*parameters*). Youngsters have innate sets of language switches that experience turns on and off. Each switch has major repercussions for language development. Thus, exposure to a language, say, that has a particular word order (SVO in English) will actively switch structures so as to conform to that pattern.

The various impasses outlined above in the 1970’s led Chomsky to develop a new model in the 1980’s that has become known as the *Government and Binding Theory*.

*Government* in this system means that some elements have a controlling function over others. *Binding* refers to the ability of some elements to link items to one another.

Transformational grammarians are engaged in research in an effort to determine which elements govern (or *constituent-command*) others. Using language tree structures, they have sought to determine the complex principles involved. So, they might say that a word is *constituent-commanded* by its antecedents. Thus, for example, you could say, “She enjoys traveling by herself”, but not “She enjoys traveling by themselves” because of the way one word governs another in this structure.

Words are said to be *properly bound* to others if the link between them is sensible. So, for example, if one says “Who does she enjoy traveling with”? , one can say that “who” is bound to “she” because they both refer to people. Substituting “it” for “she” would be an example of *improper binding*.

Needless to say, the hunt for *binding* and *governing* rules gets pretty involved.

But I’ll leave it at that.

Let’s look at the other major paradigm in linguistics next.

**Systemic Functional Linguistics**

Systemic/ Functional Linguistics, although a recent school within linguistics, has a long ancestry that can be traced through the empirical tradition in philosophy. Its immediate antecedents have been the Prague School of Linguistics in the 1920’s (Roman Jakobson), and the London School of the 1960’s (J.R. Firth and Bronislaw Malinowski). Until fairly recently, empiricism has been the dominant influence within linguistics. Rationalism, although just as old as empiricism, has become dominant in linguistics only recently.

Rationalist Linguistics can be more recently traced to the 17th century ontological speculations of Rene Descartes. Using a method that placed doubt and skepticism on sense perception, Descartes built his proof of the existence of God on the basis of a seemingly irrefutable demonstrable principle: the existence of the inquiring mind itself. In the English-speaking world, rationalism was not an important influence on linguistics until Chomsky burst on the scene. Much of Chomsky’s appeal was that he stood in direct opposition to extreme forms of behaviorism that were then dominant in the field.

These are quite broad generalizations and must be viewed carefully. Linguists and philosophers (like people) don’t always fit into neat categories! It is important to note, for example, that both linguistic schools have been strongly influenced by the notion that Saussure (1916) developed of language as an ever-evolving system.

Many of the debates between these two schools are around the emphasis they place on the innate and social aspects of language. Rational Linguistics emphasizes those aspects that are innate (Lenneberg, 1969) and reflective of self-contained systems (Chomsky, 1957). This school helps explain the creative aspects of language, the fact that we can comprehend and use the vastness of language at an early age, and how second language learning (code switching) is possible. Functional Linguistics emphasizes the way in which people actively interact with and are influenced by their environment (Halliday, 1985). It explains how a language is used pragmatically and the way in which language performs social functions.

An Example

What do you think? Let’s take a well-known example from the anthropological literature. Malinowski, a member of the London School, carried out a series of influential anthropological studies in the Pacific. In the 1920’s, he noted that:

A European, suddenly plunged into a Trobriand community and given a word-by word translation of the Trobriander’s utterances, would be no nearer understanding them than if the utterances remained untranslated- the utterances become comprehensible only in the context of the whole way of life of which they form a part (Sampson, 1980).

Do you agree with him? Can anything be understood by the European? Some? What aspects? What could be understood on the basis of nature and what on the basis of nurture?

*Halliday*

Michael Halliday’s work is informed by that of Firth, whom he studied under. Halliday makes very different assumptions than Chomsky about the relative importance of social and innate influences on the brain’s ability to use language. Whereas Chomsky described one’s knowledge of the language as being “hard-wired’ into our genetic code, Halliday emphasized the social determination of our language use. Chomsky also spends most of time on examinations of the smaller components of language: morpheme, phoneme, word, etc. Halliday takes as his unit of analysis the text, since he believes that functional meaning in language is not expressed in smaller components.

Are there parallels here with the struggle to find a unified field theory in physics?

The following are its major features and principles:

* Language is a resource. It is a set of meaningful choices for the user, rather than a system of formal grammar rules.
* There is little value in positing an ideal or abstract version of a user of language.
* Human language use is in “chunks”, not in discrete words or phonemes (see whole language).
* There is no orthodox or ‘received ‘version of a language.
* The organizing principle of language is system, rather than structure.
* Context defines meanings.
* Language forms cannot be separated from meaning.
* Language is the most important cultural system because it mediates all the others.
* Language is expressed in particular speech situations, which are in social contexts.

Variation in language is of two types:

1) According to user: which affects accent and dialect, but does not affect meaning.

2) According to use (register), which reflects the social order in a speech situation and does affects meaning.

Each speech situation is comprised of:

* Field of Discourse: the social meaning or action; the topics and actions that are being expressed (what is going on?)
* Tenor of Discourse: the role structure the participants fulfil; the language users, their interrelationships and purposes (who is taking part in the situation?)
* Mode of Discourse: the status assigned to the language being used; the channel though which language is expressed (what role does the text or utterance play?)

Language has two major macro functions, which are universal to all languages:

1) Ideational: which reflects and acts on things; and

2) Interpersonal: which reflects and acts (symbolically) on people

the link between these major functions is the textual function, a language user’s potential to form text (in written and oral forms).

The field of discourse tends to determine choices made in the ideational component of the language being used.

The tenor of discourse will tend to determine the choices made in the interpersonal component of the language being used.

The mode of discourse will tend to determine the choices made in the textual component of the language being used.

There are three basic strata in language:

1) semantic: the fields (ideational, interpersonal and textual) described above; these have been called pragmatics elsewhere.

2) lexicogrammar: the linguistic structure (composed of syntax (word order), lexicon (choice of words) and morphology (structure of words).

3) phonological/ graphological: sound structure and graphic representation.

*Mohan*

The Knowledge Framework (Mohan, 1986) is an extremely useful organizing template for teachers who want to help learners master academic content while developing language. The KF is a form of content-based instruction (CBI) that is based on a particular school of socially-orientated linguistic analysis.

In the second language context, CBI references various approaches designed to “mainstream” or integrate ESL students into “regular” classroom. Essentially, the idea is to teach language through content.

“In a content-based approach, students simultaneously acquire subject matter expertise and greater proficiency in English, the medium of instruction. Additionally, they learn to master skills necessary for academic success.” (Raphan & Moser, 1994)

Basic Principles:

* Research shows that for successful language learning to occur, “the language syllabus must take into account the uses the learner will make of the target language”, which means systematic focusing on those language forms and functions which will best serve the learner in his/her future language use.
* The use of “informational content which is perceived as relevant by the learner” enhances motivation in language learning and thus promotes learning effectiveness.
* Content-based approaches are built upon the previous experience of the learner, as they “take into account the learner’s existing knowledge of the subject matter” and use pedagogical methods which aim at overall development of cognitive and academic skills, as well as linguistic skills.
* Content-based approaches provide a larger framework and “context for language “development, in which focus is not only on fragmented examples of “correct” language forms, but also on “interaction and discourse patterns”.
* SLA (second language acquisition) research suggests that a necessary condition for successful language learning is “comprehensible input” which requires focusing on the meaning rather than the form. The development of good receptive communicative skills is the foundation on which productive skills are based.

(Brinton & Snow,1989)

summarized by Naves <http://www.ub.es/filoan/CLIL/CLILbyNaves.htm>

CBI is closely associated with:

Whole-language curriculum (Goodman: 1986)

Task-based approach (Long: 1991, Candlin: 1987, Prabhu: 1987)

CALLA (Cognitive Academic Language Approach) (O’Malley & Chamot: 1987)

immersion or dual education (organized as sheltered or adjunct programs)

CBI is often seen as the best way for ESL students to develop beyond

Basic Interpersonal Communication Skills (BICS), in which language skills are used for social and day-to-day situations, to

Cognitive Academic Language Proficiency (CALP).

(Cummins,1984)

BICS is often mastered by students between 3 to 5 years. However, the development of CALP can take anywhere from five to seven, depending on the supports and resources available to the student. If students have little prior formal education, CALP might take up to ten years to be mastered (Thomas & Collier, 1995).

Acquiring academic language is not simply a matter of learning vocab. One must also master the interrelationships between various forms of academic subject matter. Hence, one must acquire the skills that are outlined in the KF, such as comparing, classifying, synthesizing, evaluating, and inferring.

Mohan suggested that this could be done using a matrix of six structures that he called *The Knowledge Framework:*

|  |  |  |
| --- | --- | --- |
| Classification | Principles | Evaluation |
| Description | Sequence | Choice |

Much of the work of functional linguists has been concentrated on demonstrating the integrative nature of language. This is in contrast to models such as Canale and Swain’s competency model, which have tended to break language down into its component parts for analysis. An important part of this work has been on connecting oral language with visual language.

Visual representation of what is to be learned has had a long history in education (hence, blackboards). It helps utilize different parts of the brain, stimulates recall, strengthens memory and helps clarify analysis.

This can be done though the use of key visuals.

For practical examples of how key visual and the knowledge framework can be applied to a concrete teaching situation, see:

<http://www.naldic.org.uk/ITTSEAL2/resource/readings/EGUsingGibbonsPlanningFramework.htm>

and

<http://74.125.95.104/search?q=cache:cYoXtWj1nyUJ:njrp.tamu.edu/2004/PDFs/Beckett%2520.pdf>