

Uniting Chomskian Linguistics and Sociolinguistics

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Preview:

There are at least two objects of inquiry in linguistics.

- (i) Languages as the mental linguistic systems of individuals;
Language as the general properties of the mental systems of the individuals of the human race.
- (ii) Languages as the socio-cultural linguistic systems of communities;
Language as the general properties of the socio-cultural systems of the communities of individuals within the human race.

The object of inquiry in Chomskian linguistics is (i). The object of inquiry in Sociolinguistics and Hallidayian linguistics is (ii). These approaches complement, not contradict, each other.

In this talk, I explore the relation between the mental and socio-cultural entities. I also explore how the concepts of social group (from social psychology and sociobiology), species (from biology), and coupling (from physics and biology) provide an overall perspective within which we can gain a better understanding of the interaction between the socio-cultural linguistic system of a community and the mental linguistic system of the individuals of the community.

Part I: Two Aspects of Language

Objects of inquiry in linguistics

- (1) a. Linguistics: the scientific study of “language”.
- b. Grammar/linguistic description: concerned with individual languages
- c. Universal grammar/linguistic theory: concerned with Language

What is a “language”?

(2) Objects of Inquiry

- a. Socio-cultural (de Saussure, Halliday)
A language as the sociocultural system of a speech community (E-language)
Language as the sociocultural system common to the sociocultural systems of the communities within the human species.
- b. Cognitive (Sapir?, Chomsky)
A language as the mental system of a human individual;
Language as the mental system common to the mental systems of the individuals within the human species.

(3) Grammar and Universal Grammar

- a. Sociocultural
The grammar of a speech community is a theory of the sociocultural linguistic system of the community (I-language);
The universal grammar is a theory of the system that underlies these sociocultural grammars.
- b. Cognitive
The grammar of an individual is a theory of the mental system of the individual;

The universal grammar is a theory of the system that underlies these mental grammars.

(4) Corpus Linguistics (NeoBloomfieldians)

A language as the system of a corpus (a text / a set of texts / a set of utterances)
Language as the system common to the corpus systems of the within the human species.

Consistent with both the socio-cultural and cognitive approaches, but more useful for the former.

Language in Chomskian Generative Linguistics

(5) *What does "generative" mean?*

"The generative grammar of a particular language (where "generative" means nothing more than "explicit") is a theory that is concerned with the form and meaning of expressions of this language. One can imagine many different kinds of approach to such questions, many points of view that might be adopted in dealing with them. Generative grammar limits itself to certain elements of this larger picture. Its standpoint is that of individual psychology. It is concerned with those aspects of form and meaning that are determined by the "language faculty", which is understood to be a particular component of the human mind." (Chomsky 1986:3)

"Generative grammar is sometimes referred to as a theory, advocated by this or that person. In fact, it is not a theory any more than chemistry is a theory. Generative grammar is a topic, which one may or may not choose to study" (Chomsky (1986:4)).

(6) *I-language (Internal language) and E-language (External language)*

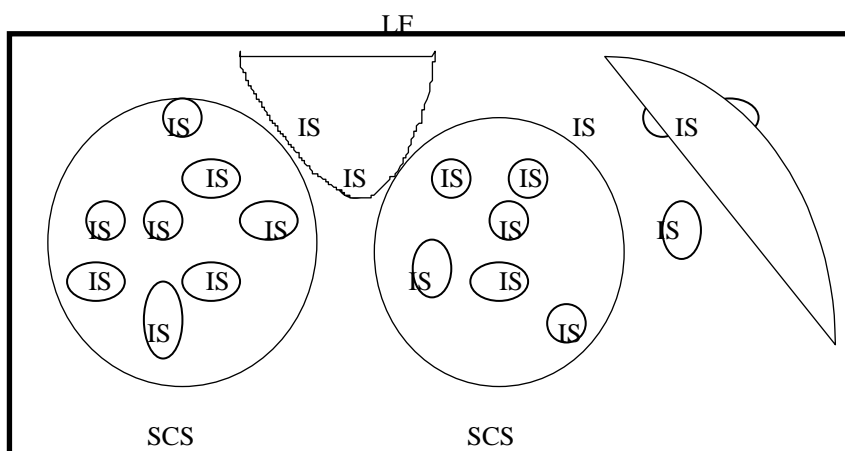
"I should mention that I am using the term "language" to refer to an *individual* phenomenon, a system represented in the mind/brain of a particular individual. If we could investigate in sufficient detail, we would find that no two individuals share exactly the same language in this sense, even identical twins who grow up in the same social environment. Two individuals can communicate to the extent that their languages are sufficiently similar.

In ordinary usage, in contrast, when we speak of a language, we have in mind some kind of *social* phenomenon, a shared property of a community. What kind of community? There is no clear answer to this question. We speak of Chinese as a language, whereas Spanish, Catalan, Portuguese and the other Romance languages are different languages. But the so-called dialects of Chinese are as varied as the Romance languages. We call Dutch a language and German a different language, but the variety of German spoken near the Dutch border can be understood by speakers of Dutch who live nearby, though not by speakers of German in more remote areas. The term "language" as used in ordinary discourse involves obscure sociopolitical and normative factors. It is doubtful that we can give a coherent account of how the term is actually used. " (Chomsky (1988:36-7)).

(7) The danger of the dismissal: What happens to the study of "language change?"

A Perspective on cognitive and sociocultural linguistics

(8) *Individual, society, and species*



IS = individual system; SCS = sociocultural system; LF = language faculty

(9) *Internal and external patterns of language*

- a. **External patterns:** those patterns which *are identifiable on the basis of natural language use / corpus*, the kind of data that language users are normally exposed to in their everyday life. e.g. pronunciation, morphological forms of actual words, word order of sentence patterns that are commonly used, word meanings, etc. The kinds of language patterns that Halliday is interested in.
- b. **Internal patterns:** those patterns which *are not identifiable on the basis of natural language use / corpus*, but call for experimental techniques of probing (judgements on forms which do not occur in normal circumstances, language experiments during brain surgery, etc). e.g. patterns of pronoun-antecedent relationships, wh-movement, control, null pronouns, etc. The kinds of language patterns that Chomsky is interested in.

(10) *Experimental and non-experimental linguistics*

When one individual pronounces the word *direct* as [direkt] and another individual pronounces it as [daiTMrekt], it is easy to spot the difference in real life language use or a corpus of utterances. Similarly, if one individual says *There is some books on the table* and another individual says *There are some books on the table*, the difference in the pattern of agreement is visible in actual language use or in a corpus. However, sentences such as *The boys thought that each other's pictures would be on sale*, or *Which book did Susan say John tore the cover of?* do not usually occur in actual language use or corpus, and except in the laboratory of a linguist, language users are not asked to make acceptability judgments on such sentences. Hence, differences in judgements on such sentences are not visible in actual language use or corpus. Chomskian linguists are typically interested in the judgments on such sentences.

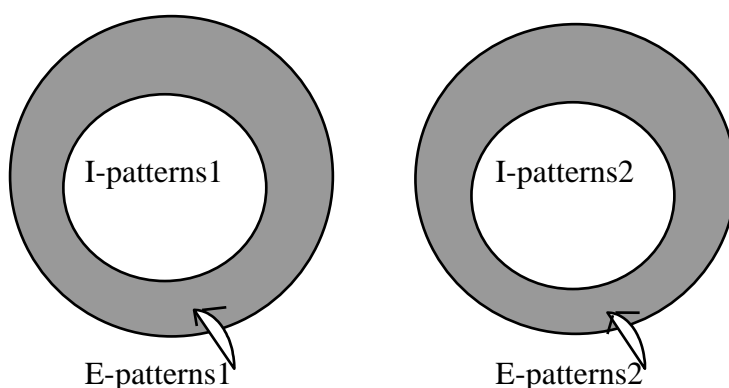
Certain aspects of nature are revealed to us only under experimental probing. Theories of particle physics, chemistry, and molecular biology, and developmental biology are based on data collected through laboratory experiments. So are Chomskian generative linguistic theories. Halliday's theories are based on non-experimental observations.

(11) Experimental and nonexperimental observations:

- a. Non-experimental:
Linguistic expression x is present and Linguistic expression y is absent in the corpus.
Linguistic expression x appears in the corpus more frequently than linguistic expression y in the corpus.
- b. Experimental:
Individual k accepts linguistic expression x but rejects linguistic expression y.
Individual k finds linguistic expression x more acceptable than linguistic expression y.
stimulus : linguistic expression, response : acceptability judgement.

Both are equally “real”. The non-experimental data in astronomy is not any more “real” than the experimental data in particle physics. (ref: Sinclair’s rhetoric of “real language”).

(12) The mental linguistic system of two individuals in a community



E-patterns1 and E-patterns2 converge, but I-patterns1 and I-patterns2 can diverge in startling ways.

Halliday is interested in E-patterns, Chomsky is interested in I-patterns. Naturally, Halliday relies on non-experimental data from corpus/texts, while Chomsky relies on experimental data from speaker judgements.

Variation of Internal Patterns of Individuals within a Community

(13) Invariant judgements across speakers of English

- a. John scolded his mother. (his = John’s or someone else’s)
- b. He scolded John’s mother. (He = someone else, not John)
- c. John’s mother scolded him. (Him = John or someone else)
- d. That he is fat does not bother John. (He = John or someone else)

(14) Variability across speakers

- a. His mother scolded John.
- b. The professor on his committee detests John.

(His can refer to John only for some speakers)

(15)	(13a)	(13b)	(13c)	(13d)	(14a)	(14b)
type 1	ok	*	ok	ok	ok	ok

type 2	ok	*	ok	ok	ok	*
type 3	ok	*	ok	ok	*	*

- (16) a. Everyone scolded his mother.
(For each person x, x scolded x's mother.)
- b. He scolded everyone's mother.
(intended meaning: For each person x, x scolded x's mother.)
- c. Everyone's mother scolded him.
(For each person x, x's mother scolded him)

The interpretation under (15c) is possible for some speakers, but not all.

(17)		(16a)	(16b)	(16c)
	type 1	ok	*	*
	types 1 and 2	ok	*	ok

- (18) a. Wilbur thought that the boys admired each other's pictures.
(Wilbur thought that John admired Jack's pictures and Jack admired John's pictures.)
- b. * The boys thought that Wilbur admired each other's pictures.
(John thought that Wilbur admired Jack's pictures and Jack thought that Wilbur admired John's pictures.)

- (19) a. The boys thought that each other's pictures would be on sale.
(John thought that Jack's pictures would be on sale, and Jack thought that John's pictures would be on sale.)
- b. The boys thought each other's girlfriends would win the election.
(John thought that Jack's girlfriend would win the election, and Jack thought that John's girlfriend would win the election.)

(20)		(18a)	(19a)	(19b)	(18b)
	type A	ok	*	*	*
	type B	ok	ok	*	*
	type C	ok	ok	ok	*

- (21) a. The boys told Mary that each other's pictures would be on sale.
b. Mary told the boys that each other's pictures would be on sale.

(22)		(19a)	(21a)	(21b)
	type M	ok	ok	ok
	type N	ok	ok	*
	type O	*	*	*

- (23) a. The king built a marble palace for the queen.
b. The king build a marble palace for his unborn grandchildren.
c. The king built the queen a marble palace.
d. The king build his unborn grandchildren a marble palace.

All speakers accept (23a-c). Some speakers (not all) reject (23d). (The benefit has not reached the beneficiary yet.)

- (24) All students did not pass.
- | | |
|---------------------|------------------------------------|
| for some speakers: | some students came, others didn't. |
| for other speakers: | none of the students came. |
| for yet others: | ambiguous |

Summary so far:

Traditional grammars, systemic functional linguistics, sociolinguistics, and corpus linguistics are interested in the E-patterns of a speech community (Saussure's langue). Chomskian generative linguistics is interested in the I-patterns of individual speakers (Chomsky's competence.)

E-patterns can be identified on the basis of a corpora or texts. I-patterns call for experimental strategies.

The individual members of a speech community tend to converge in their E-patterns, though some amount of variation does exist. (This variation is the subject matter of variation studies in sociolinguistics.) Much more variability exists among the I-patterns within a community.

Part II: What is a Speech Community?

Speech Community as a Social Group of Individuals

(25) Relation between language/dialect and speech community: two approaches

- a. A speech community is group of people sharing the same dialect or language.
- b. A language or dialect is the linguistic system of a speech community.

(25a) takes the community as primary. Language/dialect is derivative. (Bloomfieldian)

(25b) takes language/dialect as primary. Speech community is derivative.

(26) a. Question for (25a):

What is a language? What is a dialect? That is, when do we call a collection of individual linguistic systems (idiolects) a dialect or a language?

b. Question for (25b):

What is a speech community? That is, when do we call a collection of individuals a speech community?

A consequence of (25a/26a): attempt to characterize language/dialect in terms of structural properties. (e.g. isoglosses, mutual intelligibility...).

Cynicism: A language is a dialect with an army and a navy (Martin Joos)

- (27)
- a. When do we consider a collection of organisms to constitute a species?
 - b. When do we consider a collection of organisms to constitute a social group?
 - c. When does a collection of physical objects (particles, atoms, molecules...) to constitute a physical system?

(28) General perspective on (26b):

When do we consider a random collection of entities to form a single unit?

(29) Social groups (question (27b))

- a. gangs, mafias, clans, tribes, communities, societies.
- b. Social Psychology of small groups: *What makes a random collection of individuals a social group?*
“Social attraction” among individuals (e.g. Festinger, Shachter & Back 1950)
Social identity theory (e.g. (Turner and Giles (1981), Abrams & Hogg 1990)
Self categorization theory (e.g. Turner (1985)
Individuals become a group to the extent they categorize themselves as members of the same social group. Similar to the ideas of Le Page (Le Page & Tabouret-Keller (1985))
- b. Sociobiology: *What are the patterns of social organization among biological organisms? What is the biological basis of social patterns?*
(Edward Wilson (1975), (1978))

(30) What one can glean from social psychology and sociobiology

- A. Inter-group attraction: Individuals of the group exhibit attraction towards each other. Group attraction manifests itself as positive feelings such as liking for one another, group cohesiveness, etc.
- B. Intra-group repulsion: Group members tend to exhibit repulsion towards members of other groups in the same domain. They are positively disposed towards Us (members of their own group) and negatively disposed towards Them (members of other groups).
- C. Group flags: A group has a set of flags or common characteristics by which the members can identify other members of the group (Us), and often to exclude non-members (Them).
- D. Conformity The members of a group tend to conform towards one another in their behaviour.
- E. Dominance hierarchy: Within a group, asymmetries of dominance tend to emerge. In complex organizations, this may take the form of a linear dominance hierarchy (as in pecking order among chicken) or branching dominance hierarchy (as in corporations). Typically, this results in a pattern with a single leader of the group.
- F. Group norms The members who exhibit the prototypical features of the group are perceived as “better” (more successful, correct, competent, etc.). If there is a dominant subgroup, the features of the dominant subgroup are perceived as the prototypical features of the group. If so, reciprocal conformity towards each other changes into the asymmetric conformity towards the dominant subgroup.
- G. Group success and survival Social groups exhibit patterns that maximize their survival and success. Typically, such patterns involve loyalty for each other, and greater propensity for altruism, solidarity, etc., especially in the presence of an external danger. If there is a

dominant subgroup or leader, loyalty and altruism are directed towards this subgroup or leader.

(31) A speech community is a social group that can be understood in terms of (30A-G).

Individuals who speak the same language tend to be positively disposed towards each other, and hostile towards members of other groups (e.g. language conflicts in India).

The observable E-language patterns are become the features by which speakers categorize themselves and others into their respective groups.

Members of a speech community conform to each other in their E-language patterns.

Typically, one of the subgroups become more dominant, in which case their E-language patterns become the norm that others conform to (standard patterns).

(32) A warning: The use of the term “language” in terms of (31) and (25b) does not correspond to the use of the term “language” in statements such as:

Hindi and Urdu are two different languages.

Malay and Indonesian are two different languages.

Mandarin, Hokkien and Cantonese are dialects of the same language.

These statements reflect political decisions, which need not reflect the sociocultural reality. (Language with an army and a navy.). I am not interested in political decisions.

This is analogous to the notions of a nation as a sociocultural entity, and as a political entity. If there are two sociocultural nations within a single political nation, a typical outcome would be internal conflicts.

Language as a sociocultural entity should be distinguished from language as a political entity

An Insight from Biology: the Species Concept

(33) A problem in biology: What is a species? Do common dogs and wolves form two different species or the same species? What is the rationale for making a decision? (analogous to: are Malay and Indonesian dialects of the same language or two different languages?)

(34) The traditional attempt: to characterize biological species in terms of the morphological (=structural) characteristics of individuals. (analogous to the approach to language/ dialect in terms of structural characteristics)

(35) The current solution in biology: to consider not only structural similarities and differences, but also reproduction, adaptation to ecological niches, gene pools and so on.

“...the members of a species constitute (1) a *reproductive community*. The individuals of a species of animals respond to one another as potential mates and seek one another for the purpose of the individual's reproduction... The species is also (2) *an ecological unit* that, regardless of the individuals composing it, interacts as a unit with other species with which it shares the environment. The species, finally, is (3) *a genetic unit consisting* of a large intercommunicating gene pool, whereas an individual is merely temporary vessel holding a small portion of the contents of the gene pool for a short period of time. The species definition that results from this theoretical concept is: Species are groups of actually or potentially interbreeding populations, which are reproductively isolated from other such groups (Mayr (1984: p 533)

Criteria: reproductive isolation, ecological difference, and morphological distinguishability as the three central criteria for grouping populations of organisms into species (Mayr p 537). We may take these three properties as the metaphor for our characterization of speech communities (or communities in general, for that matter).

(35) Lesson from biology: Reproduction and communication

For two organisms to belong to the same species, it is necessary to have sufficient structural similarity, since two organisms which diverge widely in structure cannot participate in reproduction.

For two speakers to belong to the same speech community, it is necessary to have sufficient structural similarity in the same, since two speakers with widely divergent structural patterns cannot participate in communication.

In both linguistics and biology, the purely structural characterization has turned out to be unsatisfactory.

An Insight from Physics: Coupling

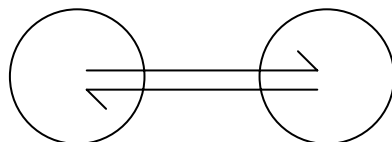
(36) Coupling:

“In February 1665 the great Dutch physicist Christiaan Huygens, inventor of the pendulum clock, was confined to his room by a minor illness. One day, with nothing better to do, he stared aimlessly at two clocks he had recently built, which were hanging side by side. Suddenly he noticed something odd: the two pendulums were swinging in perfect synchrony.

He watched them for hours, yet they never broke step. Then he tried disturbing them -- within half an hour they regained synchrony. Huygens suspected that the clocks must somehow be influencing each other, perhaps through tiny air movements or imperceptible vibrations in their common support. Sure enough, when he moved them to opposite sides of the room, the clocks gradually fell out of step, one losing five seconds a day relative to the other.

Huygens’s fortuitous observation initiated an entire subbranch of mathematics: the theory of coupled oscillators. Coupled oscillators can be found throughout the natural world, but they are especially conspicuous in living things: pacemaker cells in the heart; insulin-secreting cells in the pancreas; and neural networks in the brain and spinal cords that control such rhythmic behaviour as breathing, running, and chewing. Indeed, not all coupled oscillators need be confined to the same organism: consider crickets that chirp in unison, and congregations of synchronously flashing fireflies. “ (Strogatz and Stewart (1993).

(37) coupled systems



(38) Important features of coupled systems

- a. Channel: For two clocks to be coupled, there must be a channel that connects them.
- b. Interaction: Two clocks are coupled when there is an interaction, an exchange of energy, between them.
- c. Mutual influence: When two clocks are coupled, they exert a mutual influence on each other, which results in effect (38d) below.
- d. Conformity: When two clocks are coupled, their external patterns of behaviour evolve towards conformity to each other.
- e. Unity: When the individual clocks in a collection are coupled, the collection acts as a single unitary system.

(39) Coupling offers a powerful way of thinking about physical, biological, cognitive, socio-cultural, and ecological systems.

The terms “energy”, “information”, and “order” refer to the same abstract concept. In thermodynamics it is seen as energy, in computer science it is seen as information and in self-organization it is seen as order. If we refer to the concept of energy-information-order as INFORMATION, we may generalize the propositions in (38a-e) as (39a-e), replacing “clocks” with “systems”.

- a. Channel: For two systems to be coupled, there must be a channel of communication between them which makes the dialogue possible.
- b. Interaction: Two systems are coupled when there is an exchange of information (=dialogue) between them.
- c. Mutual influence: When two systems are coupled, they exert a mutual influence on each other, which results in effect (39d) below.
- d. Conformity: When two systems are coupled, their external patterns of behaviour evolve towards conformity to each other.
- e. Unity: When the individual systems in a collection are coupled, the collection acts as a single system.

(40) Viewed from this perspective, we may say that:

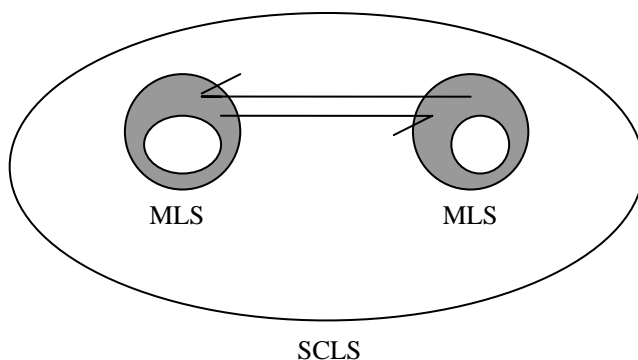
- A. An atom is a coupled system of fundamental particles.
- B. A biological organism is a coupled system of cells.
- C. A cognitive system (the human or animal mind) is a coupled system of interacting subsystems, whose organization parallels social organization.
- D. A society is a coupled system of individuals. The regularities that we observe at the level of social systems are the result of the self-organization in coupled mental systems.
- E. An ecosystem is a coupled system of organisms, species, societies, and physical systems.
- F. A sociocultural linguistic system is a system of coupled mental linguistic systems.

(41) Social groups, language community: Principle (39d) describes the following phenomena:

- a. The individual conforms to society if the collective force from the set of units in a coupled system is greater than the force from within the individual. This is the usual case e.g. language development.

- b. On rare occasions, when an individual makes the other in its environment conform to the individual. This is the basis of internally triggered social change / language change.
- c. The force of the dominant subgroup is greater than the non-dominant group. Hence the members of the non-dominant conform to the dominant.

(42) The coupling of mental linguistic systems within a sociocultural linguistic system:

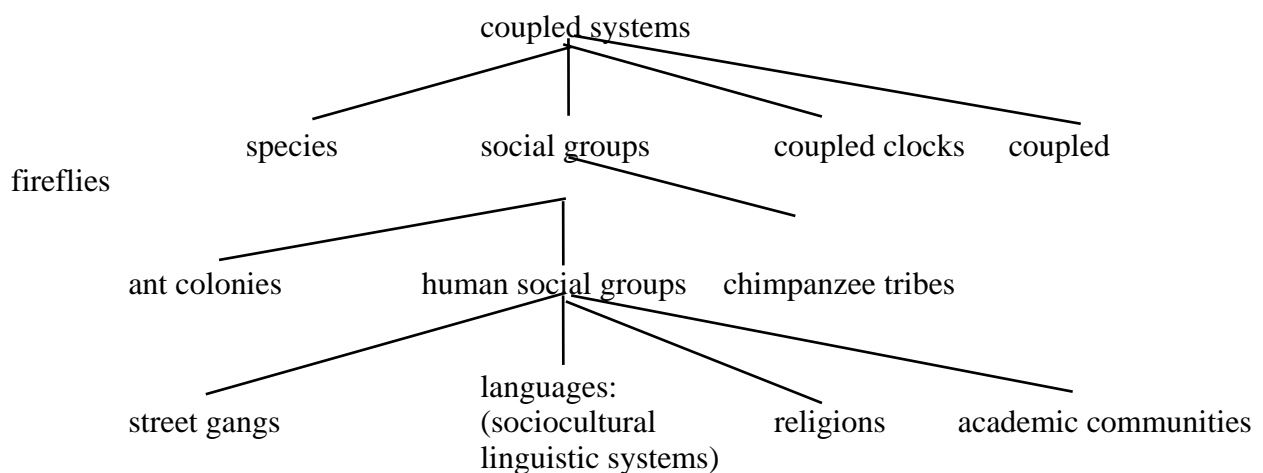


SCLS = sociocultural linguistic system; MLS = mental linguistic system
 shaded area = external patterns (see diagrams (8) and (12))

Summary

- object of inquiry, data: The object of inquiry in traditional grammar, Systemic Functional Grammar, Corpus linguistics, and Sociolinguistics is language as a socio-cultural entity. The structural patterns that these disciplines are interested in are the external patterns generally shared by the members of a linguistic community. These patterns are identifiable from a corpus of utterances as found in natural language use. In contrast, the object of inquiry in Chomskian generative linguistics is language as the mental system of individuals. This discipline is interested in the internal patterns of the mental linguistic systems of individuals. These patterns are best revealed by experimental techniques, though corpuses can also come in handy as a way of checking for errors.
- These two approaches to linguistics complement each other. They do not contradict each other. The type of data that sheds light on one of these objects of inquiry may not shed light on the other.
- A sociocultural linguistic system is the linguistic system of a social group of individuals. The emergence of conformity, norms, notions of correctness, language conflicts, etc. are part best understood against the background of group formation within human and animal populations. The external flags by which the members of the group recognize other members and distinguish themselves from other groups come from the pool of external patterns.
- Language change is a change in the sociocultural system. If the object of inquiry of Chomskian linguistics is the mental linguistic system, then it is outside the domain of Chomskian linguistics: it is a part of sociolinguistics.
- Language acquisition/development involves the processes of (i) the child's external mental linguistic patterns conforming to the sociocultural linguistic patterns, and both external patterns and internal patterns, and (ii) the child's internal linguistic patterns growing relatively freely within the constraints imposed by the external system.

- As implied by the above position, languages and dialects cannot be characterized in structural terms alone. The attempt to identify languages in purely structural terms parallels the attempt to identify species in purely structural terms. In both biology and linguistics, this line of inquiry has proved to be unproductive.
- The phenomenon of social groups can be understood within the general perspective of coupling in physical and biological systems. If a sociocultural linguistic system is a coupling of the mental linguistic system of individuals, we would expect to find in it a cluster of properties that are characteristic of coupled systems, such as interaction, conformity, unity, etc.
- This perspective on language as a sociocultural system is summarized in the following diagram:



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