TOWARD A THEORY OF SENTENCE STRUCTURE[1]

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0. Introduction

This paper is an attempt to outline the main parameters and
components of sentence structure. The sentence is the level of
structure between the clause and the paragraph, defined semantically
as the minimum unit of illocution and as the sphere of operation of
locutional structures. Surface sentences would need to be defined
individually for each language. Semantic sentences may be manifested
at levels other than the surface sentence, but the normal unmarked
case is for surface and semantic sentences to match.

The theoretical presuppositions[2] could be called tagmemic in
their general direction. The basic outlook would include the follow-
ing propositions: (i) language is basically a social phenomenon;
(ii) language is a complex living effective organism, not a mathemati-
cally calibrated machine; (iii) the best description of a language is
that which most accurately and effectively portrays the living language,
not necessarily that which is the neatest or most efficient or most
elegant description; (iv) various notation forms are all equally valid
to the degree that they describe real language; (v) hypothetical
constructs tend to be avoided unless psychological reality can be shown;
(vi) despite recent advances, our ignorance about language is still
vast, so any realistic theory must leave room for growth.

Some of the basic constructs posited for language include: (i)
language is a form/meaning composite, so phonology and grammar-semantics
are mutually interacting but basically independent; (ii) language
tends to be hierarchical, with distinguishable levels; (iii) language
tends to operate in terms of units, each with its form(s), meaning(s),
and distribution rules; (iv) units and levels may have clear centers
but merging borders; (v) there are also prosodic features in language
which range over larger stretches than simple units.

This paper thus builds on the assumption that there is a level
which can be called the sentence, with typical semantic and surface
forms, besides noncontrastive carrier structures. It is an attempt to
sort out the many parameters that enter into sentence structure,
especially the semantic parameters, and to organize them into a
coherent outline. Some of the parameters have turned out to be
continua along which each language chooses points for lexicalization.
Other parameters appear to be composed of discrete types or units.
Thus this paper does not purport to uncover any startling new facts
about sentences, though some details may be new, but rather it is an
attempt to organize a framework for the known facts about sentences,

with resultant heuristic value for researchers and pedagogical value for language teachers, in addition to its theoretical thrust.[3]

1.   Semantic structures (deep structure)

The semantic components in a sentence are assumed to be part of the universal stock of human cognition. They may be classified under four main headings: propositional content, modal (pragmatic) content, semantic prosodies, and presupposition.

1.1   Propositional content

The propositional content of a sentence is composed of three parts: an obligatory nucleus, optional compounding, and an optional periphery.

a.   Nuclear sentence types. The nuclear types are those relation-ships which are distinctively sentential, not found on other levels of structure. If sentence parameters were to be ranked, this parameter would probably be ranked as most basic.

(i)   Purposeful (Causal)

A purposeful sentence states a purposeful action:

Previous State (Cause) -- Correcting Event (Result) -- Expected State (Purpose)

Abe was sick, so he went to a doctor in order to be cured.

(ii) Deductive

A deductive sentence states a logical argument:

General Grounds -- Specific Grounds -- Deduction

All men are mortal, and Socrates is a man, so Socrates is mortal.

(iii) One-action

A one-action sentence just contains a simple statement:

Action.

Charlie went to town.

(iv) Covarying

A covarying sentence states that two actions are varying together:

Free Variable -- Conditioned Variable

The harder Don ran, the faster his heart beat.

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(v)   Conditional

A conditional sentence states an action and its result (whether intended or not):

>Condition -- Result

>Whenever Ernest would go to town he would get shot at.

(vi)   Temporal

A temporal sentence states two or more actions that have just a temporal sequence relationship:

>Prior Event -- Subsequent Event

>Frank went to the bank first, then he went to the grocery.

(vii) Introduction

An introduction sentence introduces a participant and says something about him:

>Introduction -- Predication

>There was a man named George who went to town one day.

b.   Compounding. Compounding also conveys cognitive content, but does not change the basic sentential relationships. It differs from the nuclear types in that it may also be found on other (all?) levels of structure. (Cf. E.Pike 1974.) Compounding may be encountered in presumably all slots of all sentence types.

(i)   Contrastive (Adversative)

Contrastive compounding compares two apparently opposite actions.

>Since Abe was sick, though John was feeling better, Abe went...

(ii)   Equivalent (Paraphrase)

Equivalent compounding restates an action or state.

>Since Abe was sick, having a high fever, he went...

(iii) Alternative

Alternative compounding gives two or more alternate actions.

>Since Abe was sick, or at least he thought he was, he went...

(iv) Additive (Coordinate)

Additive compounding adds one action to another in the same situation.

>Since Abe was sick, and had no medicine in the house, he went...

c.   Peripheral elements. The two common sentential peripheries are time and location setting. Time and location settings are also found on clause, paragraph, and sentence levels.

(i)   Time setting

In 1973 Abe got sick, so he went...

(ii) Location setting

In Kentucky Abe got sick, so he went...

1.2   Modal (Pragmatic) content

The modal parameters give the relationship of the locution to the speaker, the hearer, and the assumed real world. They may be divided into speech act, mood, and reality.

a.   Speech act types. The speech act (illocutionary force) is the effect that the speaker wants to have on the hearer (or ocassionally on a third person). There are three major types -- declarative, interrogative, and imperative, and other minor types, including social, self-expressive, and aesthetic.

(i)   Declarative

Declarative illocution states a fact, but there may be varying degrees of assurance, and the sources of information may be not first-hand but reported.

Charlie went to town.

Charlie probably went to town.

It is said that Charlie went to town.

(ii) Interrogative

Interrogative illocutions may be either yes/no questions or content questions.

1) Yes/no questions, also called polar or truth value questions, may presume the answer in different degrees.

Did Charlie go to town? .

Charlie didn't go to town, did he?

2) Content questions ask for omitted information from the sentence, clause, or phrase levels of structure.

Why did Charlie go to town? (sentential : purpose)

Who went to town? (clausal : actor)

What color is that book? (phrasal : quality)

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(iii) Imperative

Imperative illocutions may vary in force from wishes to commands, and the source of compulsion may be first person or some other person, and the object of compulsion may be second person or some other person.

> Charlie, go to town!

> Charlie should go to town.

> I beg you to go to town.

> We desire you to go to town.

(iv) Social

Social illocutions may function as initiating, responding, maintaining, or breaking off verbal interaction.

> Good morning.

(v) Self-expression

Self-expression illocution serves just to express one's feelings, not to communicate.

> Ouch!

(vi) Aesthetic

Aesthetic illocution is concerned with form more than content.

> Peter Piper picked a peck of pickled peppers.

b. Mood types. The mood is the attitude of the speaker (or listener) toward the subject matter. There are several mood parameters, including pleasure, surprise, admiration, and probably several more. Moods express evaluations of the situation. The evaluator may sometimes be other than first person, and the object being evaluated may be a whole action or a participant in an action.

(i) Pleasure

The pleasure mood may vary from pleasure to displeasure.

> I'm glad John went to town.

> You will be sorry to know John went to town.

> I'm pleased with John for going to town.

(ii) Surprise

The surprise mood may vary from normal expectation to surprise.

> Do you mean to say John went to town!

> It will be no surprise to you that John went to town.

> I'm surprised at John for going to town.

(iii) Admiration

The admiration mood may vary from admiration to shame.

> I'm ashamed that John went to town.

> You will be proud of John for going to town.

c.   Reality types.   The reality parameter gives the relationship of the subject matter to the assumed real world. Simple sentences have a simple reality value, but complex sentences may have complex reality implications. Sentence negation is to be distinguished from clause negation and functions independently of it. There are four main reality types: factual, contrafactual, hypothetical, and uncertain.

> Because Ernest went to town he got shot at.

> If Ernest had gone to town he would have been shot at.

> If Ernest were to go to town he would get shot at.

1.3   Semantic prosodies (staging)

The semantic prosodies are the internal structurings and flow in the sentence. Similar prosodies also function on other levels of structure. Sentential semantic prosodies include time movement, information flow, reference structure, assertion structure, and topicalization.

a.   Time movement.   The progress of time through the sentence. Time may be indexed with simple subscripts or with a more detailed time topology (Litteral 1972).

> All men are mortal (Tgen), Socrates is a man (T_1), so Socrates is mortal (T_1).

> Bill smokes (T_1), and everyone who smokes $(Tgen_1)$ gets sick $(Tgen_2)$, so Bill will get sick (T_2).

b.   Information flow.   The flow of old and new information within the sentence, as distinct from old and new information in the discourse.

> All men (N) are mortal (N), Socrates (N) is a man (O), so Socrates (O) is mortal (O).

c.   Reference structure.   The use of nouns and pronouns to refer is partly a sentence-level function and partly a discourse-level function.

> Abe (N_1) was sick, so he (Pr_1) went to the doctor (N_2) so he (Pr_2) could cure him (Pr_1).

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d.   Assertion (prominence) structure. Prominence may be given to one or more clauses in a sentence by assertion (marked in English by finite verbs), in contrast to non-asserted or presupposed clauses.   In the following example the asserted clauses are marked with asterisks.

Because Abe was sick, *he went to a doctor, *and got cured.

e.   Topicalization (theme-rheme). One participant (or location) in a sentence may be marked as the center of attention, often in contrast with another participant in a neighbouring sentence.

Abe, he was sick, so...

f.   Cohesion. The cohesion of a sentence may be shown either by internal linkage or by boundary marking.

If Eustace smokes he'll get sick. (linkage)

You're going, eh?   (boundary)

1.4   Presupposition

Presuppositions are the additional information that one needs in order to correctly understand a sentence. They may be classed into sentential encyclopedia, structural presuppositions, contraexpectancies, and rhetorical sentences.

a.   Sentential encyclopedia. The sentence-level encyclopedia is composed of the universal, cultural, and contextual information that the sentence assumes to be known.

re: Abe was sick...

a)   sick people generally go to doctors

b)   doctors generally make sick people well

b.   Structural presuppositions. Certain locution structures presuppose certain items in other points of the structure. In a deductive sentence, for example, the conclusion requires certain items in the grounds, and indeed, in a deductive sentence all the parts are highly structured relative to each other.

c.   Contraexpectancies. Universally, culturally, or contextually unexpected items are usually structurally marked. In English they are usually marked with but.

Because he was sick, Abe went to the doctor, but he didn't get cured.

d.   Rhetorical sentences. The context may sometimes give a sentence an illocutionary force different from its normal force. Rhetorical questions are the most common of these.

Who knows?

You will obey me immediately.

2.   Formal structures (surface structure)

Surface structures will differ from language to language, so the following points, based on English, are only suggestive, not universal. A distinction between nucleus, periphery, intonation, and completeness may, however, be presumed to be universal.

2.1   Some English nuclear form types

a.   Simple

Charlie went to town.

b.   Relative embedding

Abe, who was sick, went to a doctor, who cured him.

c.   Conjunctive

Abe was sick, so he went to a doctor so that he might be cured.

d.   Participial

Being sick, Abe went to a doctor.

e.   Nominalizing embedding

Abe's sickness caused him to go to a doctor.

f.   Infinitivizing

Abe went to a doctor to be cured.

g.   Adjectivalizing embedding

Sick Abe went to a doctor.

h.   Appositive embedding

Abe, a sick man, went to the doctor.

i.   Subordinating

Under the influence of his sickness Abe went to a doctor.

j.   Juxtaposed

Abe was sick; he went to a doctor.

k.   Final echo   (tag)

Abe was sick, so he went to a doctor, he did.

2.2   Some peripheral slots

a.   Adverbials

Fortunately Charlie went to town.

All men are mortal, so naturally Socrates is mortal.

b.   Vocatives

You are sick; go to a doctor, Abe!.

2.3   Prosodic morphemes

a.   General intonation contours. There are various contrastive intonation contours.

b.   Intonational prominence. There may be added peaks and dips in the intonation contour for special emphasis or deemphasis.

c.   Stress placement

If Ernest goes to town he may get *shot at.

If Ernest goes to town he *may get shot at.

2.4   Grammatical completeness

A sentence may be grammatically intact, or there may be deleted sentence tagmemes or deleted clause tagmemes.

3.   Phonological carrier structures

Certain aspects of phonology seem to be just carrier material rather than meaningful material and may sometimes be quite independent of the meaning of the sentence. These aspects may be classed as phonological groupings, phonological completeness, and phonological unity.

3.1   Phonological groupings

A sentence may be grouped into such units as syllables, feet, pause groups, intonational clauses, and intonational sentences.

///Abe/was sick//so he went/ to a doctor// to get cured///

3.2   Phonological completeness

A sentence may be continuous, spoken straight through, or it may

be interrupted by other speakers or by his own pauses, or it may be fragmentary or incomplete.

3.3   Phonological unity

There may be speaker unity, with the sentence spoken by a single speaker, or there may sometimes be speaker shift, with a second speaker completing the sentence for the first speaker, or several speakers in unison or alternating. And the speaking voice may be described as to its quality, volume, and pitch.

1.   Re theory: a theory is an organization of a field of know-ledge such that it is internally coherent, matches the known facts, and predicts the form of facts not yet encountered. Note Bach (1968:102): "This inappropriate opposition [between empiricist and theoretician] is reflected in the frequent attempt to set up some sort of division between 'descriptive' and 'theoretical' linguistics, as if there could be description without theory or theory without description."

2.   This paper was given at the 10th Annual Congress of the Linguistic Society of Papua New Guinea, in Port Moresby, September 1976, and somewhat revised since. Much appreciation is due to the many people who over the last few years have wittingly or unwittingly helped to improve and expand this analysis.

3.   For further details and discussion of this sentence model see Thomas 1980. Partial exemplification may be found in Willett 1980 and Thomas 1978.

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