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## An Outline of a Non-Linguistic Approach to Subject-Relationships

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Not language itself, but reality displayed by means of language should be the object of investigation. One must try to look behind linguistic expressions in attempting to visualize this reality, especially when one is concerned with subjects and relationships, which cannot be made objects of direct observations (immaterial subjects and relationships).

This leads to the well-known fact, that subject-relationships are of two kinds: Static or dynamic, where the last named covers what in linguistic terminology is labeled: Processes, actions and action-processes.

As one or two subject-connections are always present in a dynamic subject-connection, it is reasonable to consider this type of connection as the framework inside which the contents of a sentence is suspended.

Another characteristic of great importance is the fact, that even if a dynamic connection can be expressed in one sentence, one sentence sometimes contains linguistic expressions of subjects that do not belong to the dynamic connection in question.

This in its turn leads to the question of mutual relationships between connections, which is only touched upon in this paper.  
(Author)

### 1. Introduction

Reality is most varying and so is language. Consequently this paper cannot and does not make any claim to completeness. It is an outline concerning subjects and their relationships concentrated on the process, i.e. the three subjects, which in our terminology are labeled object, pre-related subject and post-related subject.

Considering a literary work, extensive or not, expressed in speech, as a written or a printed text, we are, as is well known, confronted with two levels: The content of the work, and the way in which it is expressed (the 'what' and 'how'). In passing, it should be noted that this holds true not only for literature but for other arts as well, but literature has an exceptional position as it is expressed in language, which is only perceptible for people conversant with the language in question.

Content vs form manifests itself in a literary work, as well in a single composite sentence, as in a sentence, and in fact in a single word. Consequently this duality calls for the greatest interest in connection with many scientific subjects (theory of cognition, cataloging, classification, jurisprudence, (author's rights), linguistics, psychology, etc).

Much research has been done and is being done especially in the field of linguistics with the aim of finding grammatical features common for all languages – a universal grammar. Thus a general feature of these

efforts and investigations is that they necessarily will be based on language itself.

In this paper, however, we shall attempt to use another basis. Let us imagine that several persons make a written record of some situation. No two of these records will be alike, because they will bear the personal stamp of their respective authors (perception, view, interpretation, and style). Correspondingly, if several artists depict the same scene – the results in question will turn out to be more or less unlike each other, all through they present the same basic motive.

If we want a reproduction of the situation, devoid of subjectivities, we shall have to use the equivalent of a (film- or video) camera.

To begin with we will therefore have to ask: which subjects and subject-relations are we able to observe directly, and which can we predict on that basis?

### 2. Static and dynamic connections

In a given situation we will always observe several subjects – a totality of subjects – in some connection (cn). If they are unchanging or immovable in regard to each other, we shall call the situation a static connection (scn) – if not, a dynamic connection (dcn).

Thus a static connection can be reproduced on a photograph, whereas a dynamic connection would need a video-tape. As the existing media up till now can only reproduce visual and auditory sense-impressions, this will only serve as an illustration, not as a definition of scns and dcns (consider the following example: The wood is dry).

Chafe<sup>1</sup> mentions as examples of the two kinds of connections:

- (a) The wood is dry
- (b) The wood dried
- (c) John ran
- (d) John dried the wood,

where (a) is a static connection, the others dynamic connections.

#### 2.1 Static connections (scns)

These are conveniently demonstrated by an example.

I am sitting at my writing-desk, looking at the things placed there – things that taken as a whole are a totality, but my interest is not necessarily concerned with all these things. At one moment I am looking at the things to the right on the table, at another moment I look at the writing-pad placed there, and later only at the topmost leaf<sup>2</sup>.

Now we choose a subject in this scn, which will be the base of the investigation – accordingly we name it the main subject (ms), and then we can consider a static relation between the main subject and another subject in the scn:<sup>3</sup> ms(r)s

*Example:* As ms we can take one of the books on the table, and as related subject the binding of the book. Then it is evident that the two subjects book and binding are connected in a whole-part relationship.

#### 2.2 Dynamic connections (dcns): Processes

Here we shall comment on the process-part of the dynamic connection. – It has been mentioned above, that a dcn is characterized by change, hence we define

it in contrast to the static connection so far:

A dcn (here process) takes place, if a subject related to the main subject by a certain relation in a scn is replaced by another one related to the ms by the same type of relation.

That implies that we at one time and at a later time will observe the scns:

ms(r)s1 and ms(r)s2, respectively.

Under these circumstances the ms will be called the *object*, s1 the *pre-related subject* and s2 the *post-related subject*.

*Example:* If we take the situation at the writing desk once more, we have the scn1, found at the time t1 – if I go away returning at t2, maybe nothing has changed in which case scn1 prevails, but certain changes may have set in, for instance:

The writing-pad has been moved from the books to the lamp: a change of the pad's location.

The topmost leaf of the pad, which was white, has another colour (someone has smeared it with ink): a change of the leaf's colour.

The leaf has been torn to pieces: a change of the form or state of the paper from leaf to bits or – in a more general sense: a change of the corresponding concept from 'paper' to 'refuse'.

According to Chafe<sup>4</sup>, process sentences are characterized by 'as a rule of thumb' to be the answer of: 'What happened to N?'

On the basis of what has been dealt with above, we can answer the question thus: In a relation between the object and a subject, this was replaced by another subject.

Especially with reference to the writing-desk example:

The locating subject of the writing-pad was changed from the books (pre-related subject) to the lamp (post-related subject).

The colour of the paper was changed from white to another colour.

The form or state of the paper was changed from leaf to bits – or the concept to which the object belonged was changed from 'leaf of paper' to 'refuse'.

Thus these three processes show a growing change in the relationships of the object.

If we consider process-sentences we observe that the linguistic expressions of object, pre- and post-related subjects may be present as is the case in the examples above, but this is not always so. – On the other hand – according to the definition of a process – in reality the two related subjects are present.

Fillmore<sup>5</sup> quotes two most illustrative sentences (action-process sentences); 'One example of a 'covert' grammatical distinction is the one to which traditional grammarians have attached the labels 'affectum' and 'effectum'. The distinction can be seen in sentences 1 and 2.

1. John ruined the table
2. John built the table

From our point of view and according to the law of the conservation of matter<sup>6</sup> we have to admit that the matter in question is present before and after the processes as well. In 1 the table is reduced for instance to a heap of wooden pieces and in 2, the table is built from wooden planks.

Thus in 1, the form of the object (wood) is changed from table (pre-related subject) to pieces (post-related subject), and in 2, the form of the object is changed from planks to table.

In these two examples we are fortunate to be able to reconstruct the missing scns:

1. scn 1: wood in form of a table  
scn 2. (wood in form of pieces)
2. scn 1: (wood in form of planks)  
scn 2. wood in form of a table

from which we conclude (according to the definition) that 'wood' is the object.

Another situation will occur if we have a process-sentence with two subjects:

The carpet was placed on the floor, or, the floor had a carpet placed on it.

Here Chafe's rule used on both sentences allows for two questions:

- What happened to the carpet?  
What happened to the floor?

That is: We cannot immediately decide which is the object. If we take the first question with the carpet as the object we can see that the relationship between object and related subjects is that of location, with 'somewhere' as pre- and 'floor' as post-related subjects.

In the second question the floor will be the object, the carpet post-related subject, and the relationship as before is that of location. But there is no pre-related subject, as the carpet did not replace anything on the floor.

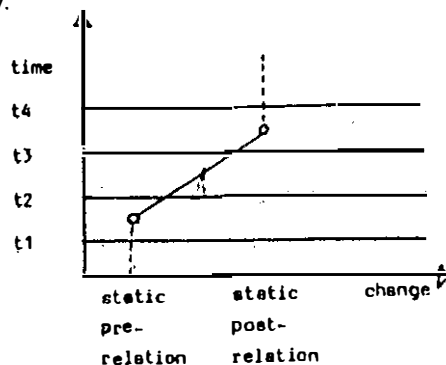
The wider perspective of the example is that we must allow for processes, being deficient not only linguistically but also in regard to reality. – If we decide to give precedence to the 'complete' process, then the carpet will be the object<sup>7</sup>.

In relation to processes which are dealt with here according to our point of view, it should be noted, that the object, the pre-related and the post-related subject have a certain similarity to the deep cases: object, source and goal. Cf. Fillmore 1971, p. 12.

During the examination of static subject-connections it was mentioned, that the scn as such or a part of it may be the object of attention – this appears from the linguistic expression by which it is rendered. The same holds true for dcns, especially processes, but as we are now dealing with a phenomenon with an extension in space and time as well, attention may be concentrated on a part of the duration of the process. It may even be the case that a process is not observed in its complete duration.

Hence the linguistic expression of the process may show four variants according as it is observed between four points of time:

t1–t4, t1–t2, t2–t3 or t3–t4 – illustrated by the figure below.



- Examples:* t1-t4: The table was constructed from wooden planks  
 t1-t2: The train departed  
 t2-t3: The chair was being painted  
 t3-t4: It stopped raining<sup>8</sup>.

The circumstances, however, are more complicated than shown here. Ballmer<sup>9</sup> has analysed the German word 'Mahlzeit' where it is called to attention that a process as 'Essen' is composed of a succession of single processes: 'Das Zugreifen, das Zum-Munde-führen, das Einnehmen (das Abbeissen, oder Schlürfen), das Kauen, das Schlucken.'

### 2.3 Dynamic connections (dcns): Remaining subjects.

Now we take into consideration the other subjects, present in a dcn along with the process, which we consider the nucleus of the dcn.

If we accept the law of causation for being valid it is evident that there will always exist a subject, the *agent*, that is the cause of the process. But as a process is taking place at a certain time, it is natural to ask why the agent brings about the process at just that time. The answer must be that some subject has entered into relationship with the agent, thereby activating it. The implication is, however, that the agent acts as an object in a preceding process.

*Example:* 'The nitric acid dissolved the silver'. It is not the acid in itself, that brings about the dissolution of the silver, but a process, the post-relationship of which is the two substances brought in touch with each other.

Correspondingly the expression 'instrument' covers a (subordinate) process, in which the instrument plays the part of the object as the instrument as such has no part until it is being used.

*Example:* 'John dissolved the silver by means of nitric acid'. Here John is the agent, and John's bringing the nitric acid in touch with the silver, the instrument(al process).

The connection between agent and instrument has been discussed by Fillmore (1971)<sup>10</sup>. We should put in the following argument:

The use of an instrument involves a *choice* of instrument, and as only animate subjects are capable of this, an instrument is found only in connection with an animate agent and not with an inanimate one – illustrated with another of Fillmore's examples: 'We do not find sentences like 'the air pollution killed my petunias with cyanide''<sup>11</sup>. – But 'John wrote the text with a pen' is quite natural.

Apart from certain subjects having a more neutral function, with which we shall deal presently, we may say, that

process, agent and instrument

form the 'complete' dcn, in linguistic terminology called 'action-process'.

In response to Chafe's question<sup>12</sup>: 'What did N do? where N is some noun' – posed to distinguish an action from a process – we can give the general answer: N (the agent) brought about a process.

Now we pass on to the rest of the subjects: *The governing subject* – the linguistic expression of which is seldom found, because it is generally implicit – is in a certain sense complementary to the instrument as the

use of this makes a process practicable, while the governing subject sets the limit for the number of ways in which a process can be carried out. As a process normally is composed of a series of part-processes, several processes of the same type will display differences or variations, limited by this subject.

*Example:* Two persons playing chess are seen to move the pieces, one by one, which can be done in (enormously) many ways. These are, however, limited by the governing subject, in this case the rules of the game.

In analogy with this, rules for good manners in the mutual intercourse between people are a governing subject to say nothing of the laws in society! This subject will not manifest itself, as mentioned above, until the limits laid down by it are trespassed.

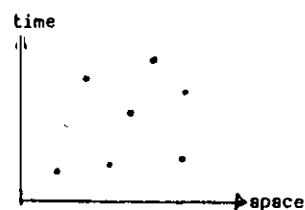
In dynamic connections where the agent is inanimate, the process will generally pass off in the same way – it appears that in this case the agent and the governing subject are most intimately connected.

*Example:* A chemical process involving certain substances will go in the same way, providing temperature, pressure and concentration of the substances are the same in each case. The governing subject will be the laws of nature that determine the progress of the process and the agent the substances brought together under the said conditions.

A dynamic connection (esp. process) is an event that takes place in the so-called four-dimensional continuum (the collection of all events in all places and at all times). In order to determine the location in the continuum, an indication of *place* and *time* is called for. – Further it is essential if the dcn belongs to the past or the future in relation to the observer.

If it belongs to the past we will say that its *state* is that of reality or realization, but if it belongs to the future, the state depends on the agent's being an animate or inanimate subject. In the first case the state ascribed to it may be that of possibility, wish or intention in the mind of the agent, in the second the state will be that of a consequence determined by the agent.

Finally – if the dynamic connection takes place several times we can indicate the place of the individual dcns approximately by a dot in a system of coordinates with the axes corresponding to time and space:



The dynamic connections form a collection and corresponding to the qualities of an individual dcn (linguistically expressed by adverbs) we must take into consideration the qualities (for instance the frequency of the realization of the dcns) of the collection taken as a whole and understood as one subject.

The relations between the subjects that constitute a dcn and the dcn itself, enumerated up till now have been of syntactic character. As for the semantic relations we shall here indicate the corresponding subjects with the thesaurus terms:

BT generic  
 NT generic  
 BT partitive  
 NT partitive

They are however found at both dcns and processes as well. — Thus we arrive at the enumeration of subjects constituting a *process*:

BT generic, NT generic, BT partitive, NT partitive  
 object  
 pre-related subject  
 post-related subject  
 type of relationship between object and related subjects

As for a dynamic connection further, besides the process itself:

agent  
 instrument  
 governing subject

These must be added:

time, place (location in 4-dimensional continuum)  
 state of dcn (process) (past or future)  
 qualities of dcn (process)  
 qualities of collection of dcns (processes)

### 3. Static relations

We apply the formula  $ms(r)s$  — main subject (relation) subject — again and define a static relation as a relation between two subjects, that is unchanging at least for a certain duration.

In using this cautious definition we want to indicate that we may anticipate three types of static relations; those which are

- always present and permanent (ex. John's (main subject) father (subject), the mirror (s) of a reflector (ms))
- always present, but where the related subject may be exchanged for another one (ex. the colour (s) of a thing (ms), the temperature (s) of water (ms) in a vessel)
- not necessarily present (ex. the stained glass-windows (s) of a church (ms), John's (ms) car (s)).

Referring to what has been said above concerning processes, it appears that no processes correspond to the first type, which consequently will be found especially in definitions of a subject. The second type allows for both pre- and post-related subjects (which may sometimes be the case in the third type, too). This corresponds to the 'complete' process, which can be decomposed to 'change'. In the third type we may also observe incomplete processes with only one of the related subjects being present in reality, i.e. a static relation that disappears or appears.

A great number of subject classifications has been established<sup>13</sup>; what we want to establish here is a typology of the relationships between subjects, and as the relation-types — as mentioned above — depend on the type of the subjects concerned we will group together the subjects which will be found as main subjects (ms) in static relations. Then we combine these subjects with subjects from the same and other groups thereby arriving at an enumeration of the relationships sought for.

However, if a relationship is the same as one enumerated before, it will not be repeated (ex. person — physical part of person, which is contained in thing — part of thing, 'thing' taken here in its widest sense).

On the basis of these considerations we arrive at the following enumeration of relation types:

Main subject	=	<i>concept</i> (immaterial subject)
subject	=	concept generically subordinate to ms
—	—	concept generically superior to ms
—	—	subject-specimen corresponding to ms
main subject	=	<i>object</i> <sup>13a</sup> (inanimate, material (and non-material) subject)
subject	=	corresponding concept
—	—	material constituting ms
—	—	object consisting of ms
—	—	object being a part of ms
—	—	object of which ms is a part
—	—	object located by ms
—	—	type of location (expressed by preposition)
—	—	object locating ms
—	—	type of location
—	—	person on whom ms is dependent <sup>13b</sup>
—	—	person having an attitude toward ms
—	—	type of attitude (expressed by adjective)
—	—	thought recorded on ms
—	—	collection of which ms is a part
main subject	=	<i>person</i> (as animate, <i>material</i> subject)
subject	=	corresponding concept
—	—	object dependent on ms
—	—	person dependent on ms <sup>13b</sup>
—	—	person on whom ms is dependent <sup>13b</sup>
—	—	person having an attitude to ms
—	—	type of attitude
—	—	collection of persons of which ms is a member
main subject	=	<i>person</i> (as animate, <i>non-material</i> subject, i.e. content of the person's 'mental area')
subject	=	corresponding concept
—	—	object to which ms has an attitude
—	—	type of attitude
—	—	object embodying ms's thoughts
—	—	person toward whom ms has an attitude
—	—	type of attitude
—	—	thought etc. in mental area of ms, to which ms has an attitude
—	—	type of attitude
main subject	=	<i>collection</i> of individual subjects
subject	=	corresponding concept
—	—	number of items contained in ms
—	—	type of items in ms
—	—	collection being a part of ms
—	—	collection of which ms forms a part

This should be added the two subjects of quality (property) and state, which have no 'independent' existence, as they always will be tied to a subject<sup>14,15</sup>.

### 4. Decomposition and analysis of subjects

On the basis of the enumeration of subjects in a dcn and of the types of static relations it is possible to decompose and analyse certain subjects, thereby finding the additional subjects forming its constituent parts.

During this procedure any subject turning up having a linguistic expression in more than one word or denoting a dcn or process will be decomposed further — in the last case on the basis of the definition of the subject in question, the type of relationship between object and related subjects being indicated by the type of the related subject and if necessary that of the object too. In these cases the decomposition will be brought immediately following the subject in question with an indentation showing the structure and at the same time indicating that the subjects found are placed at different levels in regard to the subject decomposed.

It must be noted, however, that the possibility of decomposition will depend on the types of static relationships found above and that the decomposition in itself will depend on the definition(s) used and of the language in which it is performed, as some subjects will

be expressed in one word in one language but in several in another one.

*Example:* Cathedral. Definition: 'A cathedral is a church containing a bishop's throne' (cathedra) – equivalent to the two sentences: A cathedral is a church, and a cathedral contains a bishop's throne.

A cathedral is a church	static connection
cathedral	main object
church	superior generic subject
A cathedral contains...	static connection
cathedral	main object
bishop's throne (cathedra)	subject located by ms
throne	main object
cathedra	synonym
bishop	subject of which ms is dependent
in	type of location

It should be noted that the relation between *church* and *bishop's throne* belongs to the type of relation that is not necessarily found, but the relation between *cathedral* and *bishop's throne* belongs to the type of relation that is permanent and always present – *some churches*, but *all cathedrals* contain a *bishop's throne*.

*Example:* Flower. 'A flower is a shoot of a plant involved in pollination by which the plant is propagated'.

A flower is a shoot of a plant	static connection
flower	main subject
shoot of plant	generic superior subject
shoot	main subject
plant	object of which ms is a part
A plant propagates by means of...	dynamic connection
propagation of plant	process
plant	object
{one}	pre-related subject
{several}	post-related subject
{collection/number}	type of relationship
plant	agent
pollination	instrument
pollen	object
stamen of a flower	pre-related subject
stamen	main subject
flower	subject of which ms is a part
style of another flower	post-related subject
pistil	main subject
flower	subject of which ms is a part
{locating subject}	type of relationship
insects, wind	agents
{other subjects}	agents

The words in braces are inapplicable as they have only 'structural' functions.

The definitions of 'propagation of plant' and 'pollination' can be derived from the decomposition: for instance 'A dynamic connection in which plants change their numbers from one to several by means of pollination' and 'a dynamic connection in which insects etc. transfer pollen from the stamens of a flower to the pistil of another', respectively.

But there are subjects, which are interesting from another point of view; this is the case of the two central intellectual occupations of *writing* and *reading*, – the main basis of communication. If we try – in a more readable form – to make an analysis in accordance with the ideas brought forward here, we will arrive at results which at first glance might occur as rather controversial, due to the fact, that the basis is what language represents and not language in itself.

We shall further attempt to show that there is a far-reaching analogy between these two activities, so that in the analysis of 'writing' we only need to exchange certain words with their counterparts to get an analysis of 'reading'.

In the case of *writing* it is not the text-content that is the object as this is left unchanged *in the mind or mental area* of the writer, so that no change has taken place there. Hence the *paper* is to be considered as the object because the activity ends with a newly established relationship between the paper and the text-content (an incomplete process); this relationship being caused by the *writer* (the agent) by using a *pen* and the *text-content*, as instruments, as the dcn could not be carried out without these two subjects.

In the case of *reading* it is not the text-content that is the object as this is left unchanged *on the paper*, so that no change has taken place there. Hence the mind of the reader is to be considered as the object because the activity ends with a newly established relationship between the mind of the reader and the text-content; this relationship being caused by the *reader* (the agent) by using the *eyes* and the *text-content*, as instruments<sup>16</sup>.

It has been stated that a dcn can be expressed in one sentence but that the opposite is not always the case. To illustrate this let us compare two sentences grammatically similar with Alice as the beneficiary (the case category corresponding to the case relation of benefactive).

John handed Alice a book  
John built Alice a house

Making the decompositions we get:

book	object
John	pre-related subject
Alice	post-related subject
{locating subject}	type of relationship
John	agent,

and (corresponding to 'John built a house')

matter	object
building materials <sup>16a</sup>	pre-related subject
house <sup>16a</sup>	post-related subject
{state}	type of relationship
John	agent

As both are complete dynamic connections we may wonder what has to be done with Alice in the last example. The answer is that John's building of the house has a purpose which forms another dcn to which Alice belongs. However, the linguistic expression of this dcn is most incomplete as it consists of the only word 'Alice' – probably Alice will be the object in this dcn (she accepts the house, she might live in it etc.).

The examples show that the benefactive in some cases belongs to the same dynamic connection as the object and in other cases to another dcn. Thus the beneficiary does not present itself as a 'genuine' case-category from our point of view<sup>17</sup>.

## 5. Relations between connections (cns)

The above observation leads immediately to the question of relationships between two connections. A priori three types can be enumerated:

1. The connections may be related by virtue of a relationship between a subject in one cn and a subject in the other.
2. A connection may be a subject in the other.
3. The relationship may include the connections in their entireties.

In the first case the relationships – apart from those enumerated in section 3 – may be those of identity, similarity, comparison and difference, which, beside the

subjects themselves, involve the connotations of the corresponding concepts.

The second case is illustrated by one of Thompson's examples<sup>18</sup>:

'She took the children to the Zoo, which was very helpful' – equivalent with  
She took the children to the Zoo. (Dynamic connection)  
(Her taking the children to the Zoo (main subject)), was very helpful. (Static connection)

We have already touched upon this case during the presentation of the agent and instrument as both these subjects ultimately may be considered as connections.

The third case is expressed by the general formula

cn1(r)cn2 or connection<sub>1</sub> (relation) connection<sub>2</sub>

which superficially reminds of the formula illustrating a static relation. There is, however, a difference, as in that case relationships are most conveniently expressed by the type of the subjects involved, but in this case the connections will be considered as being of the same type, that is: We are moving into another field and shall consequently confine ourselves to indicate the types of relationships expressed by the connectors ('r's).

At once we are aware of three types, as

- neither temporal relation nor causality
- temporal relation, but not causality
- both temporal relation and causality<sup>18a</sup>

are denoted. (The fourth combination is excluded, as the cause always precedes the effect).

If we introduce the notation Ncn to indicate that the cn was not or will not be realized, we may characterize the *first* situation by

both cn1 and cn2, both Ncn1 and Ncn2<sup>19</sup>

The last one being equivalent to neither cn1 nor cn2 – the *second* by

cn1 followed by cn2, and  
cn1 preceding cn2

If two cns thus are observed following each other several times in the same succession, this may give rise to the idea that a causality is involved; then the hypothesis is near at hand, i.e. the *third* type:

if cn1, then consequently cn2  
if cn2, then because of cn1

Here the first relation is valid for an inanimate agent in cn1, if the agent is animate, then an intention may be expressed: – in order that. . .

Introducing Ncn we might anticipate a hypothesis such as:

if cn1, then consequently Ncn2  
if cn2, then because of Ncn1

which are equivalent to

either cn1 or cn2<sup>20</sup>

A hypothesis may be confirmed and then we get two sets of relationships without 'if'. But they may be invalidated too (for instance the first of them) by the observation.

cn1, yet cn2  
cn2, although cn1

## 6. Concluding remarks.

There are several attitudes to the role of language in the

field of subject-relationships – generally it is considered as the basis. We have tried here to promote a certain dethronement of language, but on the other hand as by Whorf, language has been considered as the basis of our thinking and understanding<sup>21</sup>.

Correspondingly several attitudes are found in the field of language itself. One may consider the verb as the basis, which is the case especially with Tesnière, who divides the verbs according to the number of actants they allow ('. . . les *actants* sont les personnes ou choses qui participent à un degré quelconque au proces')<sup>22</sup>. In this paper the opposite attitude has been put forward: That the verb in the linguistic expression of one dynamic connection can in principle be expressed by the object, the two related subjects – and the relation type.

In any case it can be said, that a difficulty is present in the fact that language often disguises the subject-relationships, for instance when a word covers the subjects and relationships appearing in the definition of the word. But here another difficulty arises: How far should the analysis or decomposition go, as the subjects appearing in a definition may also be defined, etc.? – Here we have chosen to continue until *no* subject denotes a dcn or a process. – After all, faced with these considerations we are forced to accept the 'economy' of language, which is one of the greatest difficulties met with in this field.

## Notes

- 1 Chafe p. 98ff. (also mentioned by Hutchins, p. 60).
- 2 For an account of the general psychology of perception, see Arnheim: Visual thinking.
- 3 As for the designation 'main subject' we should refer to Chafe (p. 98): '. . . the verb is specified as a state. . . the patient specifies what it is that is in the state.' – As the formula ms(r)s is not valid for states alone, but also more generally for relationships of 'unchangeable' nature, for instance part-whole, the broader designation of 'main subject' has been preferred, 'object' being used exclusively in dcns and processes.
- 4 Chafe, p. 100.
- 5 Fillmore (1968), p. 4.
- 6 Modern physics admits that matter is convertible to energy and vice versa, which of course is of lesser importance here, but the law of the conservation of matter leads to the conclusion that, if the object is a material subject, and one of the related subjects denotes a state or concept, both subjects will always be present.
- 7 The example indicates that in the presence of two complete or two incomplete processes we cannot decide immediately which one is the object unless the sentence is part of a complex sentence, which will show which subject carries the weight and thus should be considered as the object.
- 8 The verbal expressions in the last examples correspond to Longacre's phasals, mentioned in connections with action-sentences (consisting of agent and verb); they 'indicate whether an action is beginning, continuing, or ending. . . . We call these features respectively, inceptive, continuative, and terminative'. (p. 238).
- 9 Ballmer, p. 21, see also Ballmer and Brennenstuhl.
- 10 Fillmore (1971), p. 44.
- 11 Fillmore (1968), p. 24 makes this distinction between the two situations as he operates with the case of 'Agentive (A), the case of the typically animate instigation, of the action identified with the verb', and 'Instrumental (I) the case of the inanimate force or object casually involved in the action or state identified by the verb'.
- 12 Chafe, p. 100.
- 13 See Dahlberg, p. 294–324.
- 13a Not to be confused with the object in a dynamic connection.

- 13b We have not found it convenient to elaborate the dependency-relation, which may be of juridical, sociological, or emotional character. Generally it can be said that in the relationship between two persons, the governing subject is more restricted as regards the dependent person, and less so as regards the non-dependent one.
- 14 The relations of identity, similarity, comparison and difference belong to section 5, as they involve more subjects than the two in question.
- 15 It is worth nothing that in, for instance, Thesaurofacet, scns, dcns, and processes are arranged on the same level (thing/process . . . thing/property as attribute . . . (Hutchins, p. 47). The same holds true for Ranganathan's famous formula PMEST.
- 16 Anderson, p. 64 touches upon the role of the text in the process of reading: 'With *read*, although in the case of a book . . . it is necessary to 'change the state' of the book in various ways (in particular by turning pages) in order to read it'. We would say that the book is object but only in the instrumental dcn, entering the dcn of reading.
- 16a I.e. (*matter* in the form (state) of) *building materials* and *house*, respectively. Cf. Fillmore's examples, 'John ruined the table' 'John built the table' in section 2.2 and the following paper-desk example, 'The form or state of the paper was changed from leaf to bits - . . .'
- 17 Fillmore (1971) has always had his doubts as to the case relation of benefactive. Listing the case relations: ' . . . and possibly Benefactive' p. 52.
- 18 Thompson, p. 84.
- 18a A relation like this is found 'on a lower plane' in a dynamic connection. Cf. introduction of 'agent' in beginning of section 2.3.
- 19 Attention should be drawn to an article by Lakoff. (See references).
- 20 There are, as well known, two types of disjunctions. If we, from the presence of one cn can infer the non-presence of the other (and vice versa (i.e. from the presence of the other etc.)), then they are contrary, but if we, from the non-presence of one cn can infer the presence of the other (and vice versa), then they are contradictory.
- 21 According to Stuart Chase, Whorf's two cardinal hypotheses are: *First*, that all higher levels of thinking are dependent on language. *Second*, that the structure of the language one habitually uses influences, the manner in which one understands his environment. The picture of the universe shifts from tongue to tongue'. (p. vi).
- 22 '- II y a des verbes *sans actant*, des verbes à *un actant*, des verbes à *deux actants* et des verbes à *trois actants*'. (p. 106).

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## Society for Conceptual and Content Analysis by Computer (SCCAC): 3rd Meeting, June 5-6, 1985

In conjunction with the 12th International ALLC Conference, University of Nice, France a 3rd SCCAC Meeting took place on June 5 and 6, 1985 organized by Klaus M. Schmidt (Bowling Green State University, Ohio) with the following 9 papers presented and discussed: P.Ph. MOHLER (ZUMA, Mannheim): Problems of a general system of classification for content analysis in the social sciences. - R. HOGENRAAD (Université Louvain): Interpretation in content analysis: Analysis in context. - J.Z. NAMENWIRTH (University of Connecticut): Ideographics in computer-aided content analysis. - W. NEDOBITY (Infoterm, Wien): A computer-aided method of content-analysis for abstracting in the social sciences. - A. GILMOUR-BRYSON (Glendon College, Toronto): Concept-oriented indexing for computer assistance in criminal investigations. - D. NAJOCK (FUBerlin): Computer-aided analysis of Vergil's "Eclogues" by means of Dornseiff's conceptual system. - H. WEISS (Bar-Ilan University): Indexing of motifs and themes in the works of a classical Hebrew writer. - N. CALZOLARI (Ist.Linguistica Computat., Pisa): Semantic links and lexical fields in the Italian machine dictionary. - T.R. WOOLDRIDGE (University of Toronto): "Le Thresor de Nicot" et la concordance du "Thresor": Dictionnaire et Métadictionnaire analogiques. Discussion panels were directed by R.Ph. Weber, A. Zampolli, K.M. Schmidt, Nancy Ide, and P.A. Fortier.