

# MENTAL ACTIVITIES AND LINGUISTIC STRUCTURES<sup>1</sup>

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*"To explain the complicated visible by the simple invisible..."*

Jean PERRIN

(Nobel Prize for Physics, 1926)

## **Abstract**

Between the world - real or imaginary - and the linguistic domain, there is an area which is not directly observable ; this is the area of *conceptualization*. For many years linguists have been devoting their attention to this field of investigation. Eighty years ago, Gustave Guillaume set about establishing schematic representation of mental trajectories (the radical binary tensor). This line of research has been pursued, first by European semanticists, then by American cognitivists, oscillating between topo-synthetic graphic representation (the geometric approach) and logico-analytical formulation (the algebraic approach). The hypothesis is that the speaker's conceptualization of the universe is based on a reduced number of simple mental mechanisms and that these underlie all the more complex operations.

### **Keywords**

Conceptualization - mental mechanisms - trimorph - semantics - categorization.

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<sup>1</sup> I wish to thank Dairine O'Kelly for her help in translating this paper.

## الملخص

توجد بين العالم -الواقعي أو الخيالي- والتظاهرات اللسانية منطقة لا يمكن ملاحظتها بطريقة مباشرة هي المنطقة التصورية. فقد وضع غوستاف غيوم -منذ 80 عاما- مخططات لتمثيل الآليات الذهنية تحت شكل موتر ثنائي جذري. وقد اتبع هذا التوجه عدة دلالين أوروبيين وتلاههم معرفيون أمريكيون، وتكون المقاربة إما بتمثيل بياني اصطناعي (مقاربة هندسية) أو بصياغة منطقية تحليلية (مقاربة جبرية). وإذ نعرض هنا امتدادا لعلم النفس الميكانيكي، نؤكد بأن تصور تجربة العالم يتأسس على عدد صغير من الآليات الأساسية التي تضم عمليات مركبة.

## الكلمات المفاتيح

التصور - الآليات الذهنية - مثلث الشكل - علم الدلالة - الجمع على جنس.

## Résumé

Entre le monde - réel ou imaginaire - et les manifestations linguistiques, il y a une aire non directement observable, celle de la **conceptualisation**. Il y a quatre-vingts ans, Gustave Guillaume a établi des schèmes de représentation des mécanismes mentaux, sous la forme du tenseur binaire radical. Cette orientation a été suivie par plusieurs sémanticiens européens et ensuite par des cognitivistes américains, l'approche étant soit une représentation graphique synthétique (approche géométrique), soit une formulation logico-analytique (approche algébrique). Nous présentons ici une extension de la psychomécanique et soutenons que la conceptualisation de l'expérience du monde se fonde sur un petit nombre de mécanismes fondamentaux qui sous-tendent des opérations complexes.

## Mots clés

Conceptualisation - mécanismes mentaux - trimorphe - sémantique - catégorisation.

## Introduction

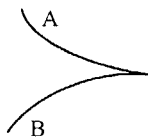
1- Between the world - real or imaginary - and the linguistic domain, there is an area which is not directly observable ; this is the area of *conceptualization*. For many years linguists have been devoting their attention to this field of investigation. Eighty years ago Gustave Guillaume set about establishing schematic representations of mental trajectories (the radical binary tensor). This line of research has been pursued, first by European semanticists, then by American cognitivists, oscillating between topo-synthetic graphic representation (the geometric approach) and logico-analytical formulation (the algebraic approach).

2- Scientific ethics requires researchers to take the work of their colleagues into account, even if they do not belong to the same school, live in the same continent or write in the same language. This is why we shall recall briefly certain modern orientations before presenting our own theory<sup>2</sup>.

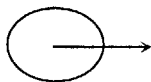
3- The common aim to all the work done on the subject of conceptualization is to establish essential fundamental representations, from which can be derived the complexities expressed in natural languages.

As a general rule the following distinction must be maintained between:

- the most abstract GRAPHS, which are independent of natural languages, such as :



to express the union of A and B  
(mix, fuse, melt into, meet, merge),



to be interpreted as a passage from an interior to an exterior  
(go out, extract, evacuate, way out)  
(lat. EX).

- *META-TERMS* which can designate, in the course of the description, events or entities, for example :

- *operators* : “movement”, “state”, “control”, DO, STAY ;
- *concepts* : resulting from linguistic analysis : “ergativity”, “localization”, “determination”, or resulting from the promotion of some lexical terms, belonging to a particular language, to the rank of “primitives” : *I, think, after, two* ;
- *semiotic notions* that are the result of the interpretation of the meaning on the textual level : //revenge//, //frustration//, //betrayal//.
- the SEMES which belong exclusively to particular language and make possible the organization of the relation between signs :

- either to express common features : /stability in time/ for *stable, stay, permanent, intangible, always* ;
- or to make explicit differences, for example between *joy/ pleasure* or *introduce/ plunge* ;

<sup>2</sup> Other researchers could have featured in this presentation : A. Culioli, J. Fodor, A. J. Greimas, J. B. Grize, A. Joly, G. Lakoff, F. Rastier, H. Seiler, for example.

- or any other *ad hoc* function.

## I. Some Models of Mental Mechanisms

### A. The Catastrophe Models

#### 1. Presentation

The underlying philosophy, the foundations of which were already laid by G. Guillaume, is characterized in the following way by R. THOM : “Theorization consists essentially in the art of reducing to the identical. The scientific procedure leads to the highlighting of a single process” (remarks taken from *Le Monde*, 22-23 July 1995). It should be noted that all levels the complexity are concerned by this principle - from the simple morpheme to the complex utterance, and even to the text.

The graphs are composed of lines which occupy a space in time, in continuity : “to reconcile the immediate intuition of continuity with the generativity - by definition discontinuous - of the operations” (R.THOM, *Paraboles et catastrophes*, p. 159). This topological configuration is by its very nature *kinetic* and the lines are the traces of entities in Time.

When these entities (which become linguistic actants) are endowed with certain properties such as force/power ( $\pm$  PUI) or will ( $\pm$  VOL) these energy factors lead to *dynamic* schemata.

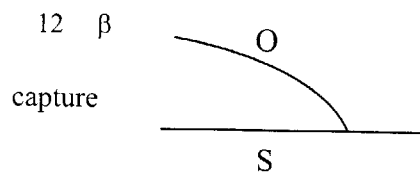
Obviously, the question of the impossibility of representing certain concepts is raised. As Jackendoff puts it : “What visual images convey the thoughts expressed by words such as “justice”, “if”, “tomorrow”, or, for that matter “thought”?” (*Patterns of the Mind*, p. 187). It will be seen that these concepts have their place in our schemata.

R.THOM qualifies this doubt : “Already Aristotle observed that privation is a *kind of form, drawing attention, in this way, to the palpable effect* an absence can sometimes have. Must we conclude that the isomorphic topological representation of spatio-temporal processes is an impossible dream?” (Letter to B. P., 5-2-96).

#### 2. René THOM

The “catastrophe theory”, founded on mathematical principles, opened up the way, over thirty years ago, to numerous interdisciplinary developments, in particular in the field of linguistics.

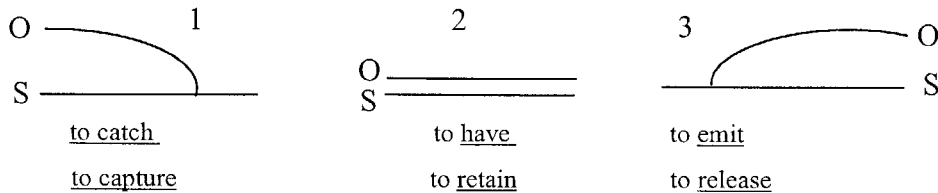
Starting from seven singularities, eighteen schemata are proposed to represent the basic types of events. The visualization is clear and immediately comprehensible. Every line designates an entity. A convention attributes specific properties, since :



(1970, p. 248)

refers to the “capture of O by S and not the opposite” (straight line = continuing existence in time).

The presentation of “morphological archetypes” leads to binary distinctions (unite/separate, send/ take). In our view, each pair could enter a schema of a more general nature, if an intermediary term were introduced.



forming, in this way, a “whole event”, which can frequently be repeated and become cyclical.

### 3. In the Wake of R. THOM

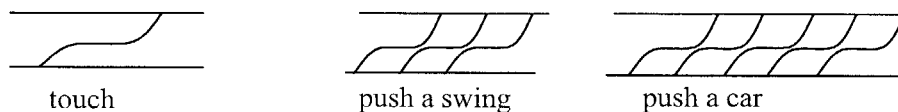
#### 3.1. Jean PETITOT

The author has developed the model of R. THOM in numerous articles which should be referred to. He demonstrates how a geometric space can give rise to a more abstract semantic interpretation. The localist hypothesis is defined as *spatio-temporal to which* is added the dimension of intentionality. This approach represents the most important development in the domain of catastrophe theory.

#### 3.2. Wolfgang WILDGEN

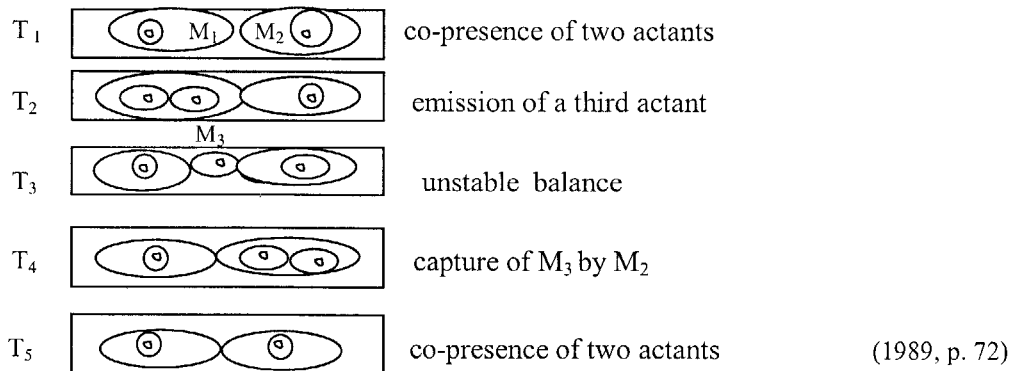
The author has included the textual dimension in the theory. He has made an excellent distinction between *configurations* (schemata) and the *energies* that can be transmitted by the actants.

The tendency to have recourse to iconicity is evident in the following illustration :



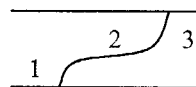
(1989, p. 71)

The example of *to exchange* illustrates clearly the “typical stages” of the process in five “flashes”:



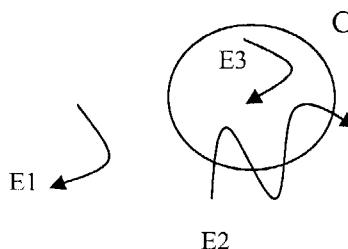
(1989, p. 72)

The change in domination is then expressed by a figure of the type which introduces an indispensable continuum.



### 3.3. Per Aage BRANDT

The “chorematic” model is based on the choreme or area “traversed by a plurality of objects (the latter to be taken as dynamic modalizing)”. The three situations of interiority, boundary and exteriority are variables, which is the reason for using the dynamic arrows applied to the choreme :



An example of interpretation :

- E<sup>1</sup>: impossible (cannot enter)
- E<sup>2</sup>: possible, free
- E<sup>3</sup>: necessarily interior (cannot leave)

The choreme “live” has its entry (*birth*) and its exit (*death*) in a similar way to “activity” (*start and finish*). This presentation resembles our own model of mental chronology (model A). For the various extensions attributed to the chorematic, it is best to consult the author’s various publications.

### 3.4. Bernard POTTIER

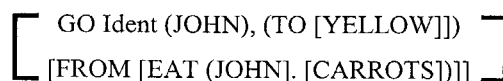
As a former pupil of G. Guillaume and an attentive reader of R. Thom, we propose a representation of mental mechanisms capable of accounting for all the semantico-conceptual organizations apart from entities of a first order (beings and things) .This will be presented in the second part.

#### B. Analytical Models

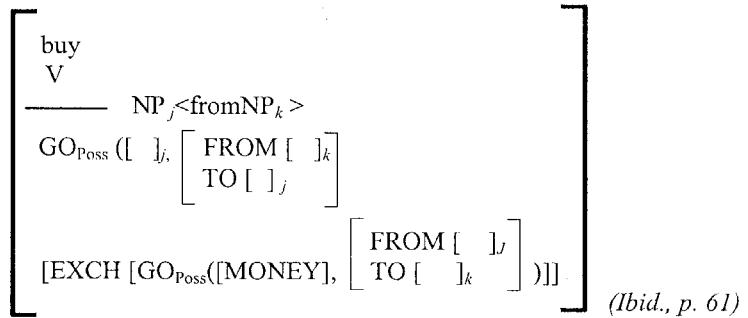
##### 1. Ray JACKENDOFF

The author’s starting point is the establishment of “major conceptual categories” such as PLACE, PATH (*to, from, via*) EVENT (*go, stay*), STATE, CAUSE...

The utterance “John turned yellow from eating carrots” has the following conceptual structure (*Semantic Structures, p. 96*).



Similarly *buy*, which expresses a change, can be represented by :



## 2. Anna WIERZBICKA

A.W. has been working on natural languages for many years ; from this source, she has intuitively extracted the concept of “primitives”, expressed through the medium of the English language, *I, think, want, see, where, other, two...* Their number, originally reduced to a dozen, has currently reached thirty seven and could reach “dramatically” fifty-five (*Semantics. Primes and Universals*, p. 110).

The author explains : “The elements which can be used to define the meanings of words (or any other meanings) cannot be defined themselves ; rather they must be accepted as *indefinabilia*, that is as semantics primes, in terms of which all complex meanings can be coherently represented” (*Semantics*, p. 10).

Examples of rewriting :

“X became Y” :

- at some time, X was not Y
  - after that something happened to X
  - after that X was Y
  - I say this after that time
- (*Quad. di Sem.*, 89 (2), p. 328)

“X is Y’s mother”

- thinking of X and Y one can say :
  - Y’s body came out of X’s body
  - and before Y became a person Y’s body was like a part of X’s body
- (*Quad. di Sem.*, 89 (1), p. 108)

## 3. Igor MEL’ČUK

In accordance with the Russian tradition of the sixties, I. M. also has recourse to primitives. In establishing his dictionaries, has retained about sixty lexical functions which allow all the lexies to be characterized. Semantic relations can be presented by means of a network, underlying a whole series of paraphrases in natural languages.

“W helps Y to do Z” = W is a factor contributing to Y’s taking place, Z being desirable to Y or to people in general.”

(*Quad. di Sem.*, 89 (1), p. 87)

The author explains : “I conceive of semantic primitives simply as ELEMENTARY LEXICAL MEANINGS OF A PARTICULAR LANGUAGE and I do not know whether they will be the same for all languages”

(Quad. di Sem., 89 (1), p. 101)

### C. Intermediary Figurations

#### 1. Ronald W. LANGACKER

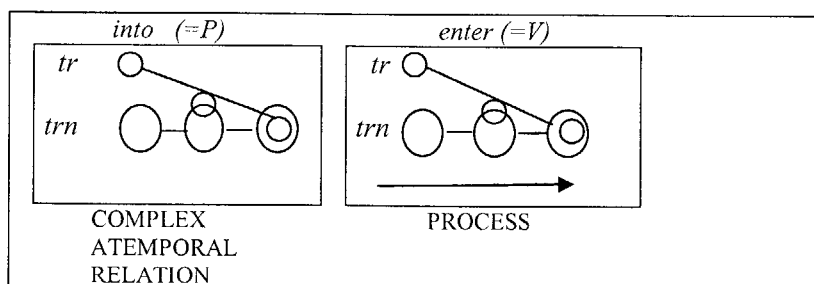
Among the author’s representational procedures figure the terms *viewpoint*, *trajector* and *landmark*, which correspond to the terms “point de visée” (angle of vision) “flèche” (arrow) and “limite” (limit) that I used in 1955 to define relational elements. These components are, of course, indispensable when it comes to defining simple configurations.

For more complex events, a too frequent recourse to iconicity tends to lead to the introduction of a schema for each separate visualization. With respect to “just then the door opened”, R.L. gives the following visual representation of an opening door. because *distant*, and far *off*, would have the same solution. The spatial proximity announced can only be defined as a modal attitude. The “semantico-conceptual whole”<sup>3</sup> (SCW) should have three terms :

“far - near - in contact”

Likewise, it seems strange to forget *during* when opposing *before/ after*.

There appears also be a certain interdependence of linguistic classes, because despite the difference visualized in



(1995b, p. 65)

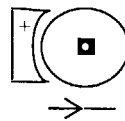
the same movement is conceptualized. According to the author, a preposition “profiles one or another kind of an atemporal relation” while a verb “profiles a process... through time.” This introduction of linguistic notions into conceptual patterns leads to confusion. In our view, in natural languages, a *single schema* accounts for the solutions proposed.

#### 2. Leonard TALMY

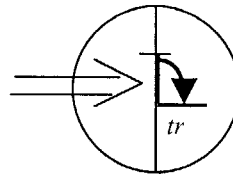
The author sometimes has recourse to diagrams. When he studies the relation of energy between entities, the diagram

<sup>3</sup> *L'entier sémantico-conceptuel* (ESC).



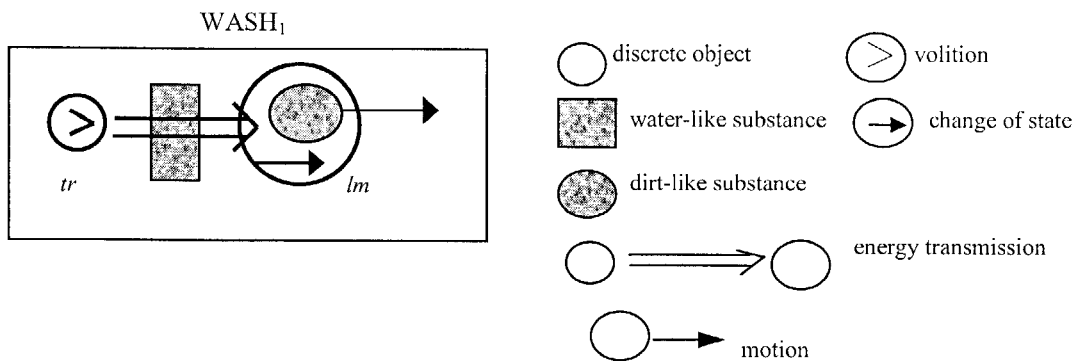


(1988a, p. 55)



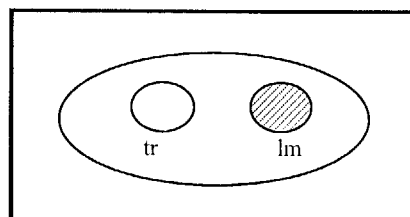
(1995b, p. 62)

and in the case of WASH, the water is placed between the agent and the car, and the dirt is on the car :



This schema, which is valid for a prospective event, has to be modified for the proposed example : *I washed the car*, in which the respective situations of the entities are modified. Only a continuous archetype permits the aspecto-temporal variables to be manipulated with ease.

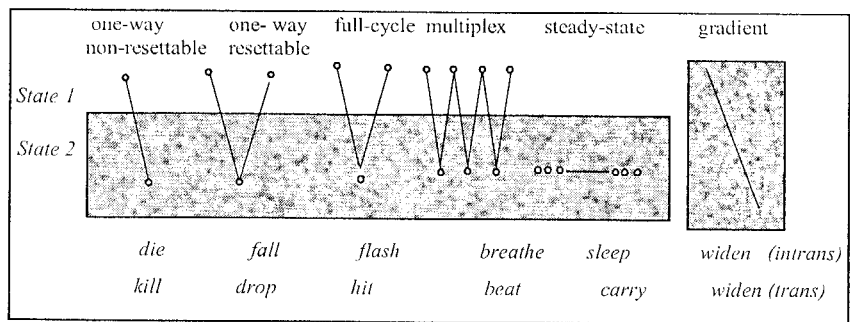
Sometimes the information is insufficient. *Near* cannot be reduced to :



(1995 a, p.15)

resembles the actants of A. J. GREIMAS, for example “l’adjuvant” (the helper) and “l’opposant” (the opponent) as well as the modal combinations *to be able to/ not to be able to do*.

Some schematic illustrations of events are suggestive but not systematic :

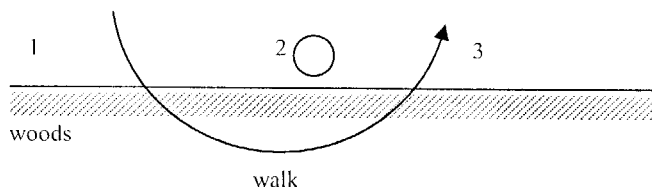


The use of paraphrases expressed in elementary terms places him in the same group as the authors of the second group. In “I walked through the woods”, *through* is analyzed as : “*notion along a line that is within a medium*”, and this could be efficiently expressed as :



(cf. lat. PER [ ----v----> ] in B. Pottier, 1955)

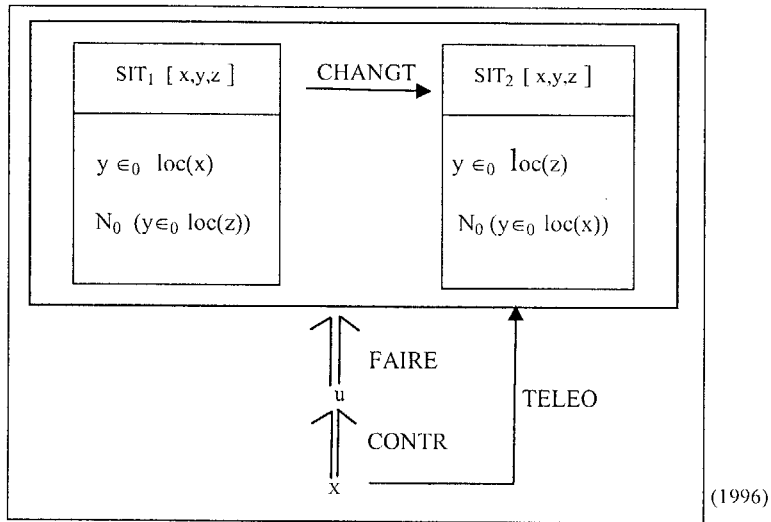
and it would be even better if the “path” were integrated in a whole event :



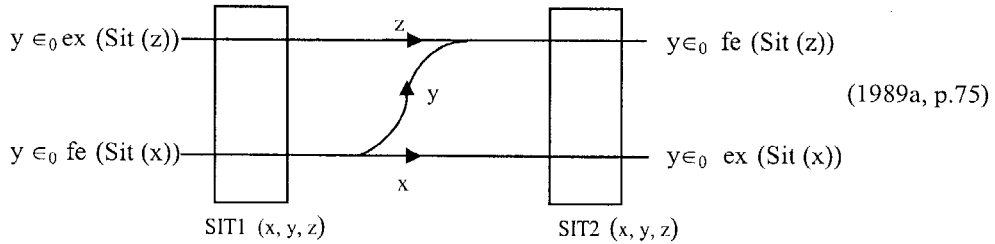
### 3. Jean Pierre DESCLES

The use the author makes of primitive concepts such as “movement, change, control, teleonomy”, applied to events considered to be “static, kinesic, dynamic, causative, modalized” argues his inclusion in the second group.

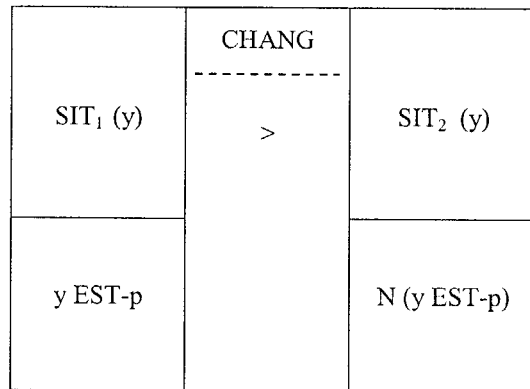
However PETITOT has made the point that a schema such as *give* (“donner”) :



can easily be expressed in terms of catastrophe model :

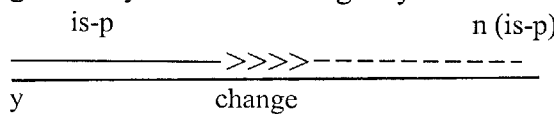


Furthermore the semantico-cognitive schema of *die* (“mourir”)

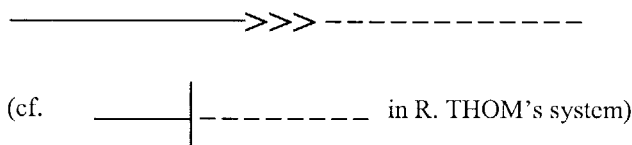


(1985, p.30)

paraphrased by : “the same object passes from a situation where the property “IS-p” is attributed to it, to a situation where the same property is no longer attributed to it “could be represented figuratively in the following way :



or even, since the analysis is focused on the existence of  $y$  :



More recent developments presented orally by the author in scientific gatherings give more details about the various components of the theory. The semantico-cognitive schemata, which illustrate items from natural languages, lead to the establishment of an invariant for a class of verbs (the archetype) which can have a universal vocation. The “semantico-cognitive types” allow the entities, the situations, the topological operators and major grammatical categories to be classified. The model is constantly being enriched.

## II. Ternary Morphodynamics

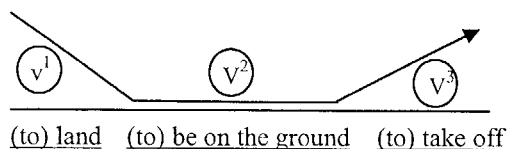
### A. The Principles

#### 1. Ternarism

Binary structuralism, by definition static, finds its expression in the often quoted pairs *before/after*, *give/receive*, *good/bad*, *up/down*. Guillaume’s binary schema was despite this already kinetic and continuous<sup>4</sup>.

We propose a continuous ternary schema in which the intermediary position is an integral part of the mental mechanism.

In this way *three phases* are delimited : in other words, we are dealing with a “trimorph”. The typical example for pedagogical purposes would be:

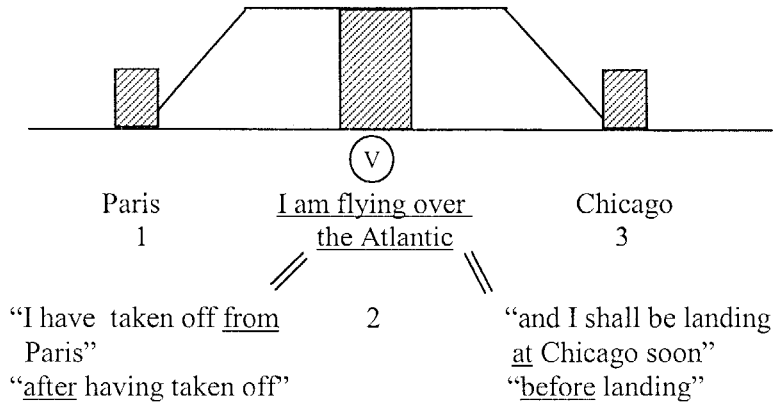


We define as a “noemia” the set of these three phases which constitute a *semantico - conceptual whole* (SCW). We are dealing here with an EXPERIENTIAL CHRONOLOGY, the viewpoint (V) varying continually in time.

If on the contrary (V) is considered by the speaker to be stable, he will speak about what *has* happened to him, what *is* happening to him and what *will* or *may* happen to him. The pedagogical version will therefore be :

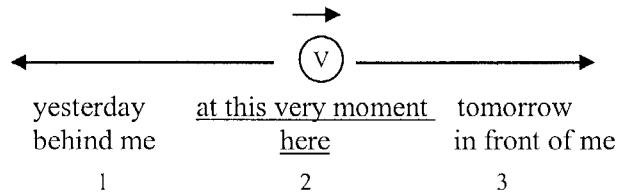
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<sup>4</sup> See in particular the writings of A. JOLY.



This “appropriation” of the event by the speaker leads to an EVENT CHRONOLOGY, in which the order of the events is *inversed*.

The speaker can have at least a self-centered vision of the world which he organizes around his own person : this is the DEICTIC CHRONOLOGY.



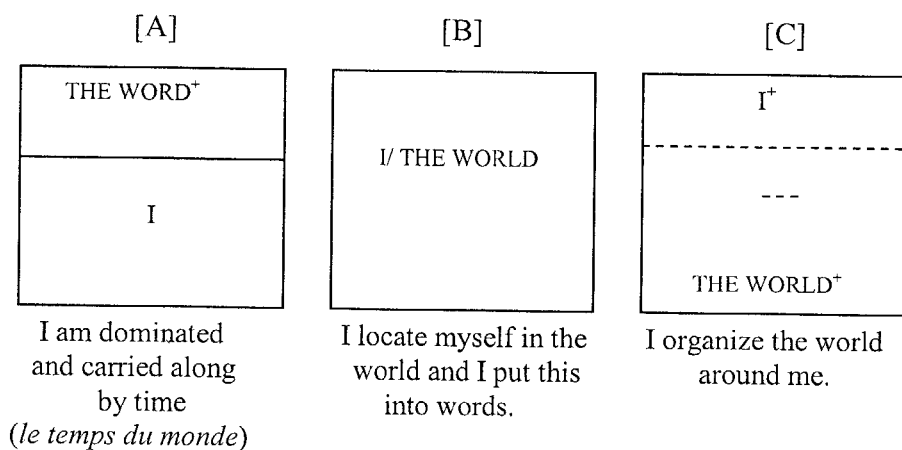
## 2. The Axes of Instanciation

The localist hypothesis puts particular emphasis on space. Space, however, requires time in order to “exist”. As for the various entities, these are endowed with properties which belong to the notional domain. The speaker, for his part, takes charge of his own utterance by modalizing it. The “being” himself experiences the hazards of existence (absence, privation, *not yet*, *no more*). This explains the necessity of the following axes:

- existential (EXI)
- spatial (S)
- temporal (T)
- notional (N)
- modal (M)

which will be used in the course of the presentation of the models.

**3. The hypothesis is that** these three models are the result of a dialogue between I (the self) and the WORLD, in a progressive alternation :

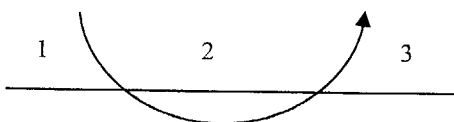


## B. Illustration of the Models

### 1. Model [A] : EXPERIENTIAL CHRONOLOGY

For reasons of economy, the various comments which would explain and justify the place of the following examples in the inventory have been omitted.

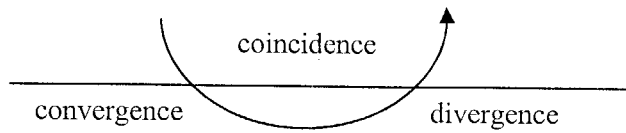
#### 1.1. Existential Axis



	Non- existence of BEFORE	Existence Co-existence	Non- existence of AFTER
• 1 entity	<u>appear</u> <u>be born</u>	<u>be</u> <u>live</u>	<u>die</u> <u>disappear</u>
+ CAU	<u>build</u> <u>write</u> <u>draw</u>	<u>maintain</u> <u>preserve</u> <u>conserve</u>	<u>destroy</u> <u>efface</u> <u>erase</u>
• 2 entities	<u>(to) get married</u> <u>marriage</u> <u>fusion</u> <u>conjunction</u>	<u>live together</u> <u>spouses</u> <u>stability</u> <u>junction</u>	<u>to divorce, separate</u> <u>divorce, separation</u> <u>fission</u> <u>disjunction</u>
+ CAU	<u>(to) marry</u>		<u>(to) cause to divorce</u> <u>(to) separate</u>

N.B. cf. TO GATHER < TOGETHER  
 cf. tasse à thé < tasse de thé  
 TEA CUP < CUP of TEA  
 (Adj.) (Sb.)

1.2. Spatial Axis



• Lat.	AD, IN (accusative)	IN (ablative)	EX, DE, AB (ablative)
• Localized entity	(to) <u>reach</u> (atteindre)	(to) <u>travel through</u> (parcourir)	(to) <u>leave, abandon</u> (quitter, abandonner)
	(to) go <u>towards</u> (se diriger <u>vers</u> )  (to) go <u>to</u> (aller <u>à</u> )  (to) arrive <u>at</u> (arriver <u>à</u> )  (to) enter <u>into</u> (entrer <u>dans</u> )  To walk <u>through</u> (se promener <u>à travers</u> )		
			(to) go <u>away from</u> (s'écloigner <u>de</u> )  (to) leave <u>from</u> (partir <u>de</u> )  (to) come <u>out from</u> (sortir <u>de</u> )

- The two types of parasynthetic formations :

(a) :

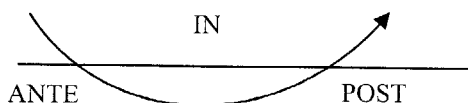
(to) <u>embark</u> (get on a boat) (s'embarker)	(to) be <u>aboard</u> (to be on the boat)	(to) <u>disembark</u> (get off the boat) (débarquer)
---	--	--

(b) :

(to) <u>emblazon</u> (to) <u>empower</u> (to, add, give...)	(to) be <u>empowered</u>	(to) <u>defrost</u> (to) <u>deforest</u> (to remove)
---	--------------------------	--

“not to have”	“to have”	“to no longer have”
(to) <u>seek</u>	(to) <u>find</u>	(to) <u>mislaid</u>
(to) <u>buy</u>	(to) <u>own</u>	(to) <u>sell</u>
(to) <u>obtain</u>	(to) <u>retain</u>	(to) <u>lose</u>
(to) <u>capture</u>	(to) <u>detain</u>	(to) <u>free</u>
(to) <u>take</u>	(to) <u>keep</u>	(to) <u>return</u>

### 1.3. Temporal Axis



- |   |  |   |
|---|--|---|
| <u>before</u> arriving at the bridge<br>( <u>before</u> coming to the bridge) | on the bridge                                    | <u>after</u> having arrived at the bridge<br>( <u>after</u> coming to the bridge) |
| he is <u>not</u> at the library <u>yet</u>                                    | he's at the library<br>(he's <u>still</u> there) | he is no longer at the library  |
- + ASP ( the event as an ongoing process)

to start to

to be in the process of ... (to) be finished (with)  
(*en train de*)

I have *two chairs* to deliver    *I am delivering* *two chairs*    *I have delivered* *two chairs*

I am to deliver two chairs

(TO) BREAK

BREAKING

BROKEN

### 1.4. Notional Axis

- Abstract relations :

“association”

+

et, AND

avec, WITH

plus, MORE

“alternative”

=

ou , OR

autant, AS

“dissociation”

-

mais, BUT

sans, WITHOUT

moins, LESS

- Absence of a “before” and absence of an “after” :

Lat. IN-TECTUS

TECTUS

DE-TECTUS

IN-FORMIS

FORMA

DE- FORMIS

Fr. informe

diforme



- Determination.
 

“in quest identification”	“identification, monstration”	“anaphora” (presupposition)
• common noun <u>table</u>	proper noun <u>Charles</u>	pronoun <u>the</u>
• give me <u>a</u> (any) book	give me <u>that</u> book	give me <u>the</u> book (belonging to, that..., yellow...)
<i>A(N) ONE</i>	<i>THIS</i>	<i>THE</i>
- The three phases of attribution in Spanish :
 

“ <u>hay</u> cosas...	que <u>son</u> interesantes....	pero que <u>están</u> mal presentadas ”
(presentation)	(definition)	(relator)

### 1.5. Modal Axis

#### (a) Alethic Modality

<u>impossible</u> <sup>1</sup>	<u>possible</u>	<u>necessary</u> <sup>2</sup>	<u>possible</u>	<u>impossible</u> <sup>3</sup>
	Cf. PER-HAPS	HAPPEN		

#### (b) Epistemic Modality

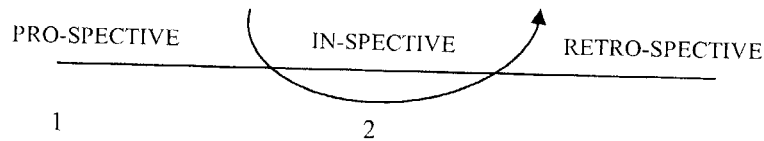
• <u>I have no opinion</u>	<u>I doubt</u>	<u>I am certain</u>	<u>I am no longer sure</u>	<u>I exclude</u>
<u>be ignorant of</u> <sup>1</sup>	<u>learn</u>	<u>know</u> <sup>2</sup>	<u>forget</u>	<u>I ignore that I knew</u> <sup>3</sup> (ignore my previous knowledge)
	<u>think</u>	<u>believe</u>	<u>know</u>	

N.B. For *cyclical* presentations, see B.P., *Sémantique générale* and "Modèles Linguistiques", XV-2.

- |                                 |                            |                                |
|---------------------------------|----------------------------|--------------------------------|
| • "before knowledge"            | " knowledge "              | "presupposition of knowledge " |
| • INTERROGATION<br>did he come? | AFFIRMATION<br>he has come | NEGATION<br>he has not come    |

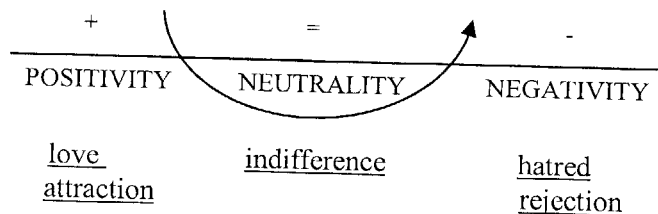
<u>DO</u> YOU SMOKE ?	I <u>DO</u> SMOKE	I <u>DO</u> NOT SMOKE
• HYPOTHESIS	THESIS	
if I have time	I (do) have time	
I'll go and see <u>if</u> ...	I see that ...	
I don't know <u>if</u> ...	I know that...	
• SUPPOSITIVE	TESTIMONIAL	MEDIATIVE
I <u>suppose</u> you are against	he arrived yesterday (I saw him arriving)	he <u>is supposed to</u> have arrived yesterday
	He is dead (I can vouch for it)	<u>he is reported to</u> be dead

(c) Factual Modality



- DESIDERATIVE  
VOLITIVE  
DEONTIC
- (to wish)  
(to) be able to  
(to) be obliged to
- IMPERATIVE  
close the door!
- OPTATIVE  
Let the best man win!
- CONSTATIVE  
(+AXIOLOGICAL)
- (to) see  
(to) observe  
(to) realize
- APPRECIATIVE  
It's a good thing I was there!

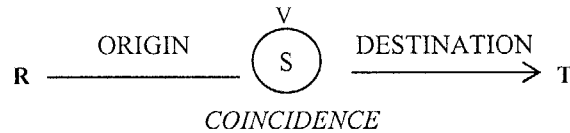
(d) Axiological Modality : Assessment



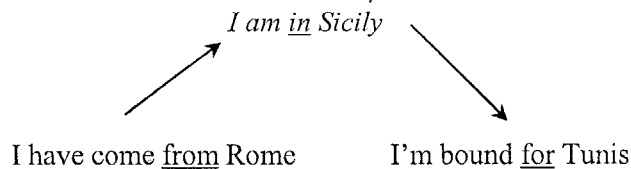
## 2. Model [B] : EVENT CHRONOLOGY

The objective is stable and central (S). It has a BEFORE in (R) and an after (T). This chronology is respected, whatever the linguistic manipulations concerned. The order of the events is the *opposite* to that of the model [A].

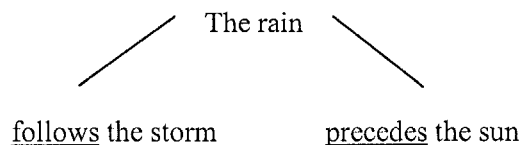
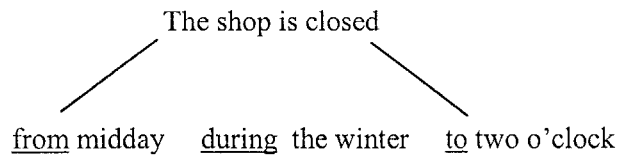
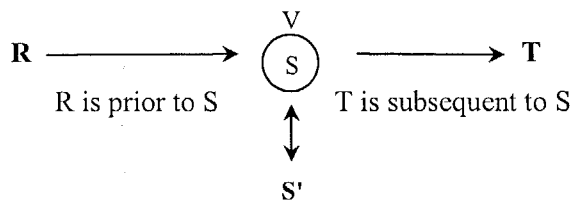
### 2.1. Spatial Axis



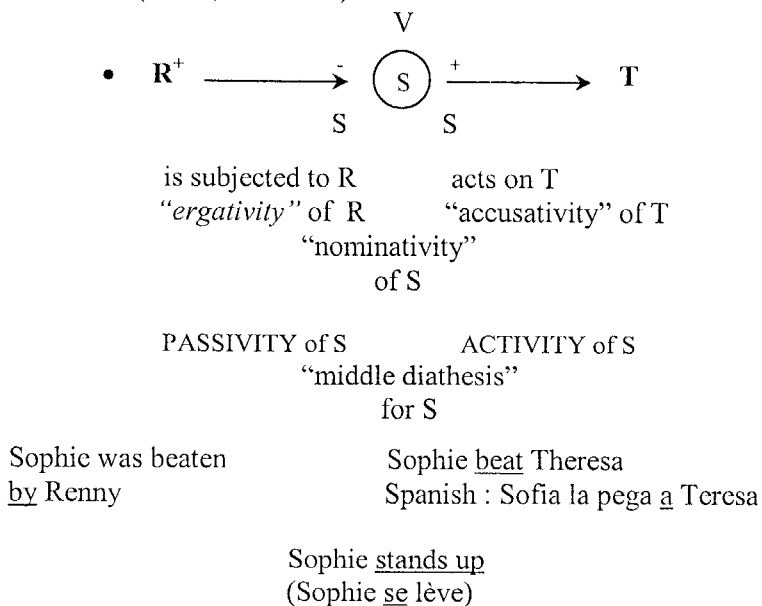
• Latin	<u>unde</u> uenis?	<u>ubi</u> es ? <u>qua</u> is ?	<u>quo</u> is?
French	<u>d'où</u> venez-vous ?	<u>où</u> êtes -vous ? <u>Par où</u> passez-vous ?	<u>où</u> allez-vous ?
Spanish	¿ <u>de dónde</u> vienes ?	¿ <u>dónde</u> estás ? ¿ <u>por dónde</u> passas ?	¿ <u>adónde</u> vas ?
English	<u>where</u> do you come From ?	<u>where</u> are you ? <u>Which way</u> did you come ?	<u>where</u> are you going <u>to</u> ?



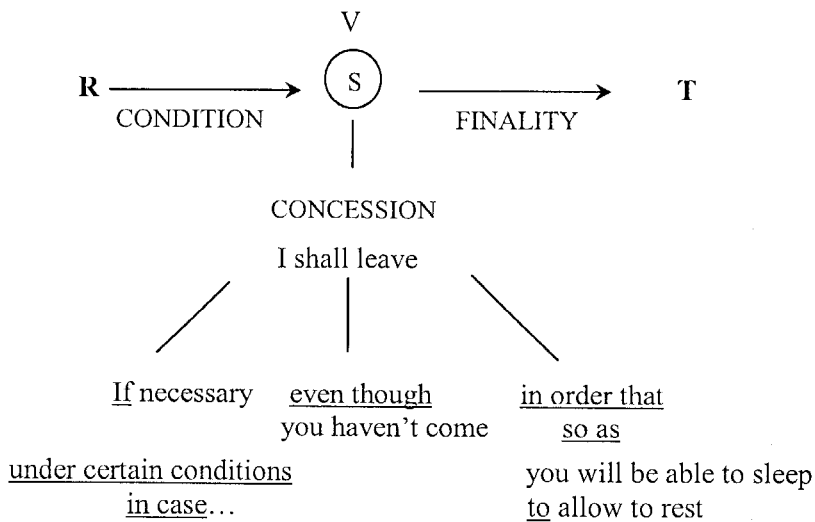
### 2.2. Temporal Axis



- Actancial relations (cases, diathesis).



#### 2.4. Modal Axis

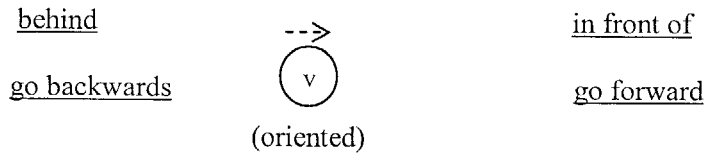


#### 2.5. Summary of Intra- and Extra- Relations

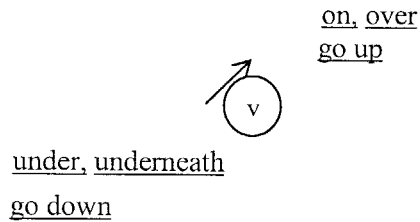
axis	phase	1	2	3
S		<i>origin</i>	<i>coincidence</i>	<i>destination</i>
T		anteriority	simultaneity	posteriority
N		cause	comparison	consequence
M		condition	concession	finality



a : horizontality dominant

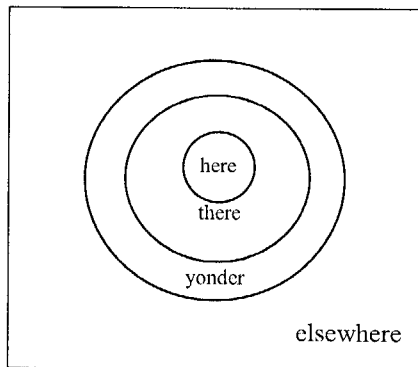


b : verticality dominant

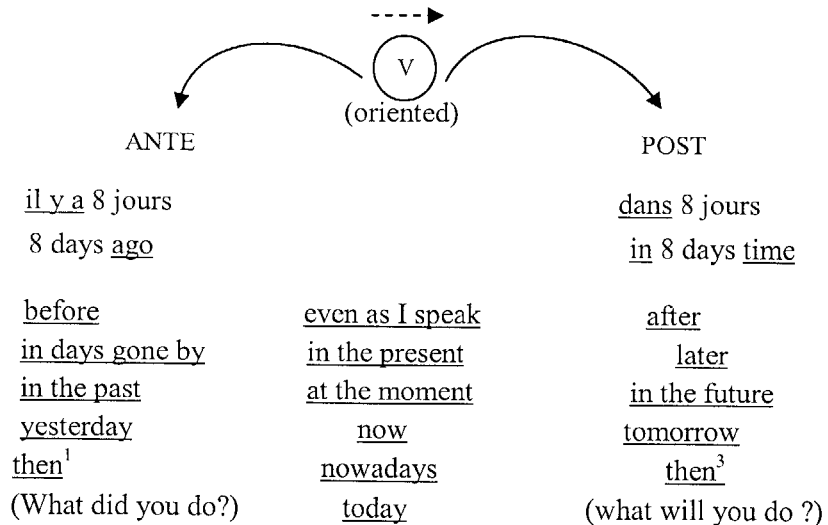


All languages exploit these possibilities in their own ways (INDOORS/OUTDOORS, HERE/THERE/YONDER).

c :



### 3.3. Temporal Axis



3.4. Notional Axis

“dis -conformity <sup>1</sup> ” <u>otherwise<sup>1</sup></u> <u>In another way</u>	“conformity” <u>thus</u> <u>in this way</u>	“dis-conformity <sup>3</sup> ” <u>otherwise<sup>3</sup></u>
--	---	--

- Quantification

less <u>on this side</u> <u>(en deçà)</u> meaningLESS	<----- as ----->  (meaning)	more beyond ( au delà ) meaningFUL
--	-----------------------------------	---

- spanish. librito <----- libro -----> librote  
(cf. “affective”) (cf. “pejorative ”)

3.5. The Modal Axis

- as for his brother, he has arrived <---- his brother has arrived ----> it’s his brother who has arrived

“thematization”

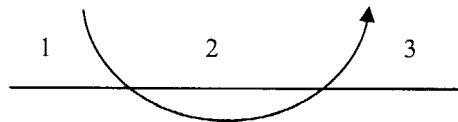
“focalization”

- bad, useless <----- middling -----> good, useful  
injustice <-----> justice  
“going in the wrong direction” “going in the right direction”

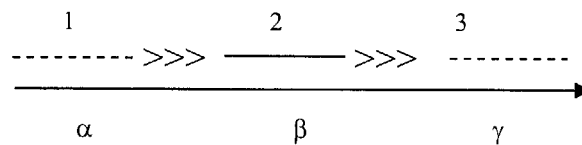
C. From Conceptual Archetypes to Linguistic Semantics

Each noemia or “semantico-conceptual whole” is composed of three phases. Each one is the figurative support of an event - type which can be expressed in various ways within the same natural language.

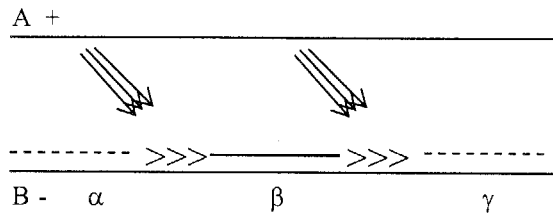
1. The Noemia of Model A



can be expressed in conventional terms, in the case of a change of state :



and if an element of causation is added, the result obtained is :

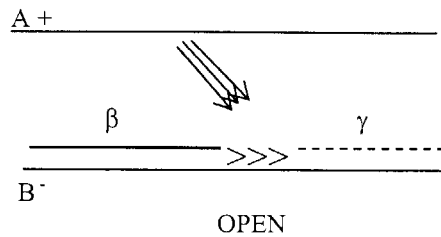


Let us consider phase 3 with semiotization of the noemia in natural language :

TO SHUT // BE SHUT // TO OPEN

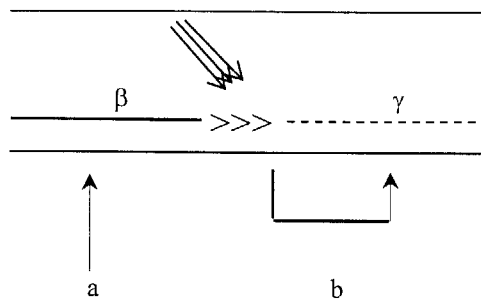
Ex : A = the butler, B = the door.

This provides the basis for examining the complete family of utterances associated with the *archetype* (phase 3 of noemia) :



In this way, the six cases proposed by R. LANGACKER can be re-examined with the introduction of the speaker's intentionality, taking as its point of departure A or B (*A butler opened the door ; the door was opened by a butler*), which targets A thanks to a modalizer (*the door opens easily*), which reduced the agentivity to a minimum (*Just then the door opened*), or which limits the result of the process (*the opened door*). If  $\gamma$  is considered, independently of the process, the result will be *the open door*.

The great advantage of these schemata in continuity is that their progress can be arrested at any moment :

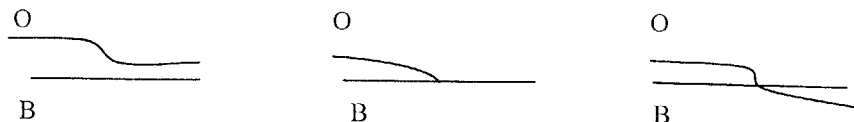


a = “la porte était sur le point d’être ouverte” , “the door was just about to be opened”

b = “peu après l’ouverture de la porte”, etc., “just after the door had been opened”, etc.



2. In the case of convergence between two entities, phase I can be expressed in by the following forms (variants or types) :



If the point of departure is O :

O lands on B      O fuses with B      O penetrates B

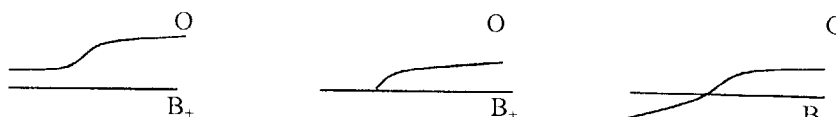
B endowed with/+ POWER (PUI/ ,/+ WILL (VOL)/ will produce for example :

B attracts O (the magnet attracts iron ; John attracts trouble)

B catches O (balls, the flu)

B seduces O (B is a seductor , seduction)

Symmetrically, for phase 3 :



B discards O

B discards an idea

B repulses O

B emits O

B puts forwards an idea

B expulses O

It is these archetypes that are the source of metaphors that play a fundamental role in the enrichment of language.

## Conclusions

1. The hypothesis is that the speaker's conceptualization of the referential universe is based on a reduced number of simple mental mechanisms and that these underlie all the more complex operations.
2. Only the continuous morphodynamic ternary graphs allow the inscription of the entire range of phenomena - static, kynetic and dynamic - expressed by language.
3. The confrontation of the SELF (I) /vs./ the WORLD (real or imaginary) can be resolved in terms of chronologies applied to events, subjective experience and deixis.
4. Each lexie should be inserted in its semantico-conceptual whole (SCW), in this way, the significance of its position in phase 1, 2 and 3 becomes apparent. Apart from entities (beings or things ) which should be analyzed in their semantico-cultural context, all the other components of language have a place in the schemata proposed : lexemes destined to become verbs, adjectives or event substantives, grammatical morphemes of relation (prepositions, conjunctions, prefixes), of determination (articles, deictics, personal forms, anaphoric forms, quantifiers...), of temporality and aspectuality and actancy (case), etc.
5. The underlying conceptual level (CO-1) is expressed by ternary noemia. Each separate phase in their development can be represented figuratively by an archetype

(level CO-2) , which in turn tends to have variants or types, expressed in language by an inventory (family) of solutions, that vary in number ; this is level of semantic linguistic.

6. It is on this basis that the operations that are carried out on these representations -particularly where synaesthesia and metaphor are concerned - become comprehensible.

## REFERENCES

- ARBA 3 = *Acta Romanica Basiliensia*, "Linguistique et modèles cognitifs", juin 1995, Bâle.
- Boone, A., et Joly, A., (1966), *Dictionnaire terminologique de la systématique du langage* [de G. Guillaume], Paris, L'Harmattan.
- Brandt, Per Aage, (1989), "The Dynamics of Modality : A Catastrophe Analysis", *RSSI* 9, p. 3-15.
- \_\_\_\_\_, (1992), *La charpente modale du sens*, Amsterdam (= 1987).
- Culioli, A., (1990), *Pour une linguistique de l'énonciation : opérations et représentations*, Paris, Ophrys.
- Desclés, J.P., (1985), "Représentation des connaissances", *Actes sémiotiques*, Doc. VII, Paris, INALF.
- \_\_\_\_\_, (1990), *Langages applicatifs, langues naturelles et cognition*, Paris, Hermès.
- \_\_\_\_\_, (1994), "Relations casuelles et schèmes sémantiques", *Langages*, Paris, 113, p. 115-126.
- \_\_\_\_\_, (1995), "*Langues, langage et cognition*", *ARBA* 3, p.1-32.
- \_\_\_\_\_, (1996), "Langues, cognition et modélisation mathématique", Communication à la Soc. De Ling. de Paris, 23/3/96, exemplier.
- Fodor, J.A., (1987), *Psychosemantics*, MIT Press.
- Greimas, A.J., et Courtès, J., (1979, 1986), *Sémiotique, Dictionnaire raisonné de la théorie du langage*, Paris, Hachette.
- Grize, J.B., (1990), *Logique et langage*, Paris, Ophrys.
- Guillaume, G., (1964), *Langage et science du langage*, Paris, Nizet, (Voir Boone et Joly).
- Jackendoff, R., (1990), *Semantic Structures*, MIT Press.
- \_\_\_\_\_, (1993), *Patterns in the Mind*, New York.
- Joly, A., (1987), *Essais de Systématique énonciative*, Lille.
- \_\_\_\_\_, (1988), *Éd. de la linguistique génétique. Histoire et théorie*, Lille.
- \_\_\_\_\_, (1990), *Grammaire systématique de l'anglais*, Paris, Nathan. (Voir Boone et Joly).
- Lakoff, G., (1987), *Women, Fire and Dangerous Things : What Categories Reveal About the Mind*, Univ. of Chicago Press.
- Langacker, R.W., (1987, 1991), *Foundations of Cognitive Grammar*, Stanford Univ. Press.
- \_\_\_\_\_, (1995 a), "Raising and Transparency", *Language* 71-1, p. 1-62.
- \_\_\_\_\_, (1995 b), "The Symbolic Alternative", *ARBA* 3, p. 51-76.
- Mel'čuk, I.A., (1989), "Semantic Primitives from the Viewpoint of the Meaning- Text Linguistic Theory", *Quaderni di Semantica*, Bologna, X-1, p. 65-102.
- Petitot, J., (1989a), "Hypothèse localiste, modèles morphodynamiques et théories cognitives", *Semiotica* 77, p. 65-119.
- \_\_\_\_\_, (1989b), "Modèles morphodynamiques pour la grammaire cognitive et la sémiotique modale", *RSSI* 9, p. 17-51.
- \_\_\_\_\_, (1992), *Physique du sens. De la théorie des singularités aux structures sémi-narratives*, Paris.
- Pottier, B., (1962), *Systématique des éléments de relation*, Paris, Klincksieck (= 1955).

- \_\_\_\_\_, (1979), "Sémantique et topologie", *Festschrift K. Baldinger*, Tübingen, p. 3-10.
- \_\_\_\_\_, (1987), *Théorie et analyse en linguistique*, Paris, Hachette.
- \_\_\_\_\_, (1992), *Sémantique générale*, Paris, P.U.F.
- \_\_\_\_\_, (1994), "Les schèmes mentaux et la langue", *Modèles Linguistiques*, Lille, XV-2, p. 7-50.
- \_\_\_\_\_, (1995), "Le cognitif et le linguistique", *ARBA* 3, p. 175-199.
- Rastier, F., (1991), *Sémantique et recherches cognitives*, Paris, P.U.F.
- RSSI 9 = *Recherches sémiotiques / Semiotic Inquiry*, Montréal, vol. 9, (1989).
- Seiler, H., (1995a), "Cognitive-Conceptual Structure and Linguistic Encoding : Language Universals and Typology in the UNITYP Framework", *Approaches to Language Typology*, Oxford, Clarendon Press, p. 273-325.
- \_\_\_\_\_, (1995b), "Du linguistique au cognitif", *ARBA* 3, p. 33-50
- Talmy, L., (1988a), "Force Dynamics in Language and Cognition", *Cognitive Science* 12, p. 49-100.
- \_\_\_\_\_, (1988b), "The Relation, of Grammar to Cognition" *Topics in Cognitive Linguistics*, J. Benjamins, p. 165-205, (rééd. *ARBA* 3, p. 139-173).
- Thom, R., (1968), "Topologie et signification", *Âge de la science*, n°4, p. 1-24.
- \_\_\_\_\_, (1970), "Topologie et linguistique", *Essay on Topology and Related Topics. Mémoires dédiés à Georges de Rham*, Heidelberg-New York, p. 226-248.
- \_\_\_\_\_, (1974), *Modèles mathématiques de la morphogénèse*, Paris.
- \_\_\_\_\_, (1983), *Paraboles et catastrophes*, Paris.
- \_\_\_\_\_, (1988), *Esquisses d'une sémiophysique*, Paris.
- \_\_\_\_\_, (1995), "Un entretien avec René Thom", *Propos recueillis par Roger-Pol Droit, Le Monde*, 22-23 janv. 1995.
- Tollis, F., (1991), *La parole et le sens. Le guillaumisme et l'approche contemporaine du langage*, Paris, Colin.
- Wierzbicka, A., (1985), *Lexicography and Conceptual Analysis*, Ann Arbor.
- \_\_\_\_\_, (1988), *The Semantics of Grammar*, J. Benjamins.
- \_\_\_\_\_, (1989a), "Semantic Primitives and Lexical Universals", *Quaderni di Semantica*, Bologna, X-1, p. 103-12.
- \_\_\_\_\_, (1989b), "Semantic Primitives. The Expanding Set", *Quaderni di Semantica*, Bologna, X-2, p. 309-332.
- \_\_\_\_\_, (1993), "Les universaux de la grammaire", *Langue Française*, Paris, 98, p.107-120.
- \_\_\_\_\_, (1996), *Semantics. Primes and Universals*, Oxford Univ. Press.
- Wildgen, W., (1989), "L'instabilité du Langage et sa capacité d'auto-organisation", *RSSI* 9, P.53-80.
- \_\_\_\_\_, (1995), "Realistic Semantics and Multistability of Meaning", *ARBA*3, p.105-138.

