Meta-Function Propositional Approach to the Interpretation of Natural Languages

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1. Introduction

A language is a system of arbitrary vocal signs as well as mental signs by means of which a group of people communicate their wills one another. This implies that a system of Korean language is subjected to be not the same as that of English. It goes the same with any language of the world. Supposing that a man of Korean mother tongue met any English expression, could he correspond the componental units of the English to those of Korean one to one base. He will find some he could and others he could not. He will discover some similarity. e.g. 'Door opened easily.' is an English sentence. If he interprets it syntactically, he will get Korean: 'muni swipke yeureutta.' This case the 'door' is interpreted as an action actor, agent. It is an action goal, and not an agent. This tells us that the interpretation is wrong. Of course this is not normal sentence. English has bunch of these expressions. Especially man of highly well cultured and trained use all kinds of mysterious arts of expressions.

Meta-function propositional approach is a new arts of interpretaton. This new arts of interpretation suggests a cue to solve those mysteries. How? According to what conventional rules? Depending upon what hypothesis? And what could be self-consistent processes? Do the conventional rules satisfy simplicity condition of science? Are the rules testable or provable? Are they exhaustive? When the conventional rules could be applied to one language, if they could not be applied to some others, then it is not feasible to claim that the conventional rules are universal grammar of human brain works.

This suggests the new arts of interpretation had to be a scientific one

that could have been realized based on some kind of hypothetical principles and fixed process.

Conventional rule is SDRR. This materializes Meta-Atomic-Function Propositions. In a word, they are termed Matrix Proposition of SDRR.[1]

Chapter 2 will present some examples of English surface structures. Readers can appreciate if any given surface expressions could cause any issue or not. He will find some are troublesome, and others not. I recommend Korean readers to try to put them into Korean. Then about when he reads through this paper, he will be able to compare his interpretation with one suggested here. There will be a lot of discussion.

Chapter 3 will manifest Universal Grammar of Matrix Proposition drawn out of the alleged conventional rule, SDRR. The matrix proposition consists of meta-atomic-function propositions: 1. Proposition of christening; 2. proposition of rest; 3. propositions of motion. Proposition of motion consists of nucleus proposition and motive (causative) force proposition. These propositions are yardstick device of parsing of all surface structures.

Chapter 4 will undertake parsing of English expressions based upon hypothesis and meta-function propositions which formulae had been extracted out of SDRR convention. S stands for Stimulus, D, Distribution, R1, response 1, and R2, response 2 to n, which make recurring sameness realize.

Chapter 5 will further discuss discrepancies between syntactic structures and semantic deep structures.

This article will not touch any advanced pragmatic dimensions such as modals.

Chapter 5 will try to conclude this new mechanics of interpretation to natural languages is quite reliable and systematic that it would let even computer run interpretation of natural languages by this new meta-function propositional approach.

This article claims matrix proposition to be universal truth.

2. Examples of English Surface Structures

These are unusual English sentences. They need some scrutiny. Syntactically they present no problems, but when semantically seen, they definitely manifest crucial troubles in discrepancies between syntax and semantics. Four groups of abnormal English sentences are shown as following. Readers are recommended to try to put them into their mother tongues.

2.1. A group:

1. A hammer broke a window.

2. The bombs destroyed the city. Bomb's destruction of the city.
3. The door opened. The book fell. Drum beats wildly. The package arrived.
4. Gasoline propelled the missile forward.
5. The new gas lawnmower cuts very well.[2]
6. The flood destroyed the city.
7. The poison killed many children last year here.
8. The window broke when he hit it.
9. This cake eats crisp (or short).
10. They loaded (smeared) the truck with hay.
11. John sprayed the wall with paint.
12. $25.00 will buy very little today.[3]
13. John threw Mary the ball.
14. John baked Mary a cake.
15. John bought Mary a Christmas gift.
16. John sent Mary some candy.
17. The cabin sleeps five comfortably.[4]
18. The strange voice commanded us to remain seated.
19. This steak cut easily.
20. This door opens easily.
21. John tossed the first base the ball.
22. *They filled water into *the pool.*
    The pool filled with water.
    Water filled the pool.
23. He aimed the gun at Mary. He aimed the whip at his nose.
24. The key opened the door.
25. Jane was ordered to be given money.
26. Mother made Susan a dress.[5]
27. He asked him a question. He asked a question of him.
28. The shooting of the hunter. An appraisal of the situation.
29. He drained the bucket of water.
30. He is going to establish his son in the hotel business.

2.2. B group: This group concerns mostly measurement or scales as length, width, amount, size, etc.

1. The room measured five meters.
2. The thermometer reads 100°C
3. John weighed two hundred Ibs.[6] John weighed the box.
4. John owes $400.
5. The room measured five yards.
6. The painting cost $5,000.00.

7. The old scales weighed the box. Someone measured the weight of the box with old scales.
8. A faulty odometer measured the football field.
9. The computer priced the painting at $5,000. Someone evaluated the price of the painting at $5,000 with the computer.

2.3. C group: This group seems something got to do with predicates of human feelings.

1. The clown was amusing to the children.
   The clown amused the children.
2. Her behavior was annoying to him.
   Her behavior annoyed him.
3. His compliment discused her.
4. Commies strategy was amusing to Achison.
5. James was surprising to Mary.
6. The familiarity of the conductor with the music...[7]
   The familiarity of the music to the conductor...
7. The interest of the children (in the activities)...[8]
8. The amusement of the crowd (at the clown's antics)...[9]
   The clown's antics amused the crowd.
9. The enthusiasm of the public (for the Beatles)...[10]

2.4. D group: This group presents sentences consisting of more than three propositions.

1. There was a quiet goodness in everything.[11]
2. A glance and smile had placed the young stranger on the footing of familiarity with the oldest daughter.
3. The disregard of their imminence was no more than a fragile shield against possibilities too disturbing to contemplate.
4. One government of each nationality by another is in the nature of slavery.
5. Framton labored under the tolerably widespread delusion that total strangers and chance acquaintances are hungry for the least detail of one's ailments and infirmities, their cause and cure.
6. The whole absurdity of that contract that that first blue jay had tackled hit him home.
7. I read everything on the topic that comes to my notice, but of late I read *with growing impatience.*
8. You can proceed *with near certainty* to significant scientific advances.

9. It (chemistry course) captured my imagination almost immediately.
10. The notable examples of identification with chosen occupations are those of men whose names never occur to one without the thought of their work.
11. John is easy to please. The car is easy to drive.
12. John is eager to please.
13. Mary is certain having done that.
14. Mary is splendid to know. It is splendid of Mary to know.
15. So too much must not be expected of him.
16. The dog drank thirstily of the water.
    The dog drank the spring thirstily of the water.
17. The gutters of the city will run whole day long with blood of youth.
18. He prevailed upon John to answer his question.
19. He convinced her of her error.

2.5. Problem Points and Cue to Solution

The above examples are in a sense not normal expressions. That I mean, generative types from deep structures of function propositions to surface structures of sentences are not normal. But as English expressions, they are absolutely-abnormally-normal expressions. If we take the said normal sentences to be kernel sentences, then, these abnormal sentences must be those that had undergone some kinds of transformations from kernel ones. Taking predicates, 'convincing or prevail' these predicates had been realized innately with more than one predicate such as 'convincing' with 'make + believe' and 'prevail' with 'persuade + to do'. In this paper, a term, PROJECTION TYPE is used in the sense of generative type.

Some of the following sentences will be taken into parts as samples in chapter 4 based upon the said meta-function propositions of universal grammar in chapter 3 that are functional semantic propositions of the actual phenomena. *Proposition is what a world says about. A world stands for a phenomenan of actual world as it is.* Proposition might be able to describe actual situations much closer than surface expressions. But however strongly one may claim proposition to be true description of actual phenomenan as it is, since the proposition is also a scientific description that had been realized based upon relative terms of hypothetical setups by human brains, function proposition is also hypothetical price realities. Phenomenan of the universe as seen as it is can not realize any price units of sign systems. That is absolutely taken no price unit can be materialized. It is nothing but a

hypothetical reality of human conception devised.

Nevertheles it does not deny actual being of Sun as a phenomenan.

I would like to recommend reader of this chapter to try to put these given sentences into their own mother tongues and keep them with them. And when about he reads through this article, he can try to compare his interpretaion with those suggested in chapter 4. I am certain he will be benefitted very much. He will be able to see natural languages in the manner of mathematical realities. Meta-atomic function propositions will let us find mechanism device by which one can parse natural languages to interprete reasonably. This claim is from the view that *all human brains operate with the suggested meta-function propositions as common core of cognizant functions irrelevant from their surface structures.*

3. Universal Grammar of Matrix Proposition as a New Tool of Interpretation to Natural Languages

Universal grammar is a common core of all natural languages. It consists of meta-atomic-function propositions. Matrix Proposition is a representative term of them. They have been extracted out of a configuration of conventional rule, SDRR, stimulus, distribution, and response 1 and 2. Psychologist gave a term, conditioned reflex. 3000 years before Load Gottama had defined it 'DEPENDENT ORIGINATION'. What makes UG of matrix proposition significant in this paper is that those meta-atomic-function propositions had been suggested as yardstick device of UG by means of which semantic componental elements of S.S could be analized. Hypothesis 1: Deep structure determines the nexus part of the meaning properties of surface structure.

Here D.S. is used only limitted sense, that is meta-function propositions and lexicons as surface arguments. And projection types are excluded from D.S. since they function as bridge from D.S. to S.S. They may be included to the part of D.S. later though. D.S. here means structure of meta-function propositions and insertions of combination string of argumental lexicons to them. Nexus part implies without tense, aspect, number, person, gender, modal, mood, and discourse and sentence specifiers.

It is based on a claim that fundamental function frames of all sentient beings, human or animal had been equipped with this configurational device of SDRR conventional rule, that is, meta-function propositions. As one and zero are kernel units of all mathematical price realities, so are these propositions kernel psychic function units of all psychic operations. Buddha declared the whole universe is operating by this law of SDRR such as if ferrous (as stimulus) meets oxigen (as distribution) gets rusty (response),

or if H_2O gets into an environment from temperature 1°C to 99°C (as distribution) becomes liquitous (as response), and gaseous, solid, etc.

Readers may wonder what meta-atomic-function propositions are and what the occurrence relation formulae of them are.

3.1 Meta-Atomic-Function Propositions[12]

Function proposition is what a function relation of functional arguments of a phenomenan as it is says about.

I want to quote a chart of Matrix Proposition that is SDRR conventional rule framework, diagram 1 and 2, and occurrence relation formulae of the propositions, formula 1, as following.

"Diagram I: A Chart of Matrix Proposition: SDR Franework"[12]
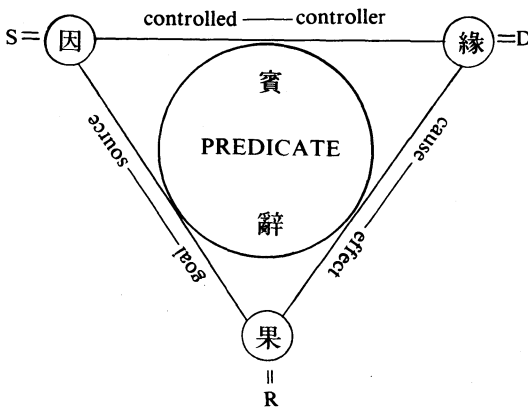
* S stands for Stimulus
  D stands for Distribution
  R stands for Response

[CONTROLLED = SOURSE] = STIMULUS
[GOAL = EFFECT] = RESPONSE
[CAUSE = CONTROLLER] = DISTRIBUTION

1. PREDIGATE [D,S,R]
2. PREDIGATE [S,R]
3. [PREDICATE [D,R,]
4. PREDICATE ᴵD,S]
5. PREDICATE [S]
6. PREDICATE [D]
7. PREDICATE [R]
8. PREDICATE [Φ]

} Allo-propositions

"Diagram 2: Matrix Proposition"[12)]

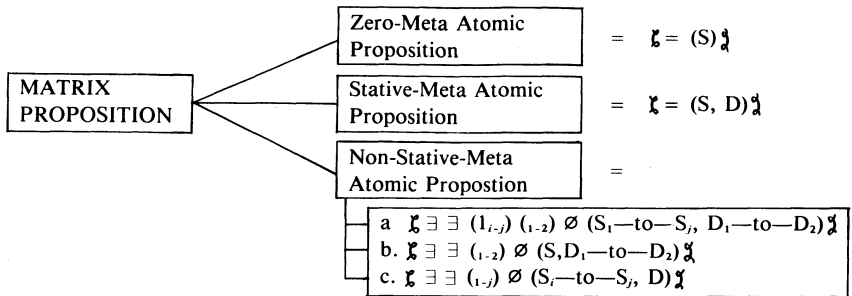|		
	Zero-Meta Atomic Proposition	= $\mathfrak{L} = (S) \mathfrak{J}$
MATRIX PROPOSITION	Stative-Meta Atomic Proposition	= $\mathfrak{L} = (S, D) \mathfrak{J}$
	Non-Stative-Meta Atomic Propostion	=

a. $\mathfrak{L} \; \exists \; \exists \; (1_{i\text{-}j}) \; (_{1\text{-}2}) \; \emptyset \; (S_1\text{—to—}S_j, \; D_1\text{—to—}D_2) \mathfrak{J}$
b. $\mathfrak{L} \; \exists \; \exists \; (_{1\text{-}2}) \; \emptyset \; (S, D_1\text{—to—}D_2) \mathfrak{J}$
c. $\mathfrak{L} \; \exists \; \exists \; (_{1\text{-}j}) \; \emptyset \; (S_i\text{—to—}S_j, \; D) \mathfrak{J}$

Note: Atomic modality: a. Existential quantifier: $\exists$
b. Transformational quantifier: $\exists\exists$
c. Comparative quantifices: Ω
d. Propositioneme marker: $\mathfrak{L} \; \mathfrak{J}$
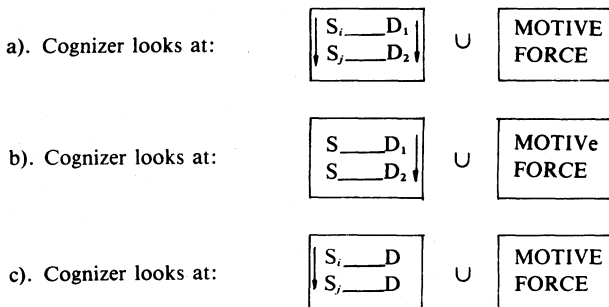e. allo-proposition marker: { }

Universal suggests commonness to languages. What could be common? Phenomenan or situation that a world says about can be common to language users. And inter-relational functions of elements as materializing the phenomenan or situation can be common. But if there were no cognitive human brain which recognize a function of an element to be stimulus to cognitive sentient doors such as eyes, ears, nose, tongue, body, and will or 2nd function of 2nd element to be distribution to them, or resultant effect of the first stimulus as being conditioned by 2nd element, distribution, to be response, none of price units of any sign system could be realized. All sign systems are nothing more than arbitrary hypothetical cognitive devices.

How can we express it in a conventional formula?[13(]

The quoted Diagram 2 and Formula 1 try to introduce whole background of the universal grammar of Matrix Proposition. Fundamentally there are only two atomic meta-function propositions: zero and one. The *zero* indicates christening individual objects with names. The *one* describes stative proposition, that is proposition of REST, which implies an *existence* of an individual at a locus. Here the object is expressed with a term STIMULUS (S) since individual stimulates sensory doors through which human beings gather informations from outside desected phenomenan. From brain, the stimulus is an object of cognition.

'')Formula 1: OCCURRENCE RELATION FORMULAE of the meta-function propositions''[12])
of motion:

a. Cognizer looks at an object against another:
Congnizer looks at an object and identifies: $= (S)$

b. Congnizer looks at an object in a distribution:
Cognizer looks at an object and identifies
as existing at a locus: $= (S,D)$

c. Cognizer looks at an object and identifies transformation from a state of
existence of an object to another state as being influenced by some MOTIVE
FORCE PROPOSITION:

a). Cognizer looks at:

$$\left. \begin{array}{l} S_i \underline{\quad} D_1 \\ S_j \underline{\quad} D_2 \end{array} \right| \quad \cup \quad \boxed{\text{MOTIVE FORCE}}$$

b). Cognizer looks at:

$$\left. \begin{array}{l} S \underline{\quad} D_1 \\ S \underline{\quad} D_2 \end{array} \right| \quad \cup \quad \boxed{\text{MOTIVe FORCE}}$$

c). Cognizer looks at:

$$\left. \begin{array}{l} S_i \underline{\quad} D \\ S_j \underline{\quad} D \end{array} \right| \quad \cup \quad \boxed{\text{MOTIVE FORCE}}$$

***Note: Downward arrow means a transformation and $\cup$, union.

3.2. Application of Meta-atomic-function Proposition

Proposition as *what a world says about* can be construed as consisting
of meta-function proposition and lexicons as surface arguments, and theme-
rheme, and some constraint conditions.

3.2.1. Case of One Argument Function Proposition of Christening: $(=(S))$

Let us see how surface structure expressions get materialized from
cognitive identification of brain works.

Diagram 1a: Proposition of Christening + Noun: $(=(S)+N)$
Deep Structure to *Surface Structure*

Function Proposition   a) English:

#	Predicate(Argument)	O X	Sentence	O X	Noun	O X	Verb	O X	Adjective	O X	P.P.
1	$= (S)$	O	it be book	O	being of book	O	to be book	O	being book	O	to being of book
2	$= (\underline{\quad})$	X		O	being	O	to be	O	being	O	of being

b) Korean:

1	∅ (S)	O	책이다	O	책임	O	책이-	O	책 일인	O	책이기에
2	∅ (—)	X		O	-임	O	이다	O	-일	O	이기에

If argument is one, then a proposition can have 2 subsets including zero subset. As we know as surface structure category marker, we have sentence, noun, verb, adjective, adverb, infinitive phrase, conjunctive, etc. As syntactic function marker, English uses subject, object, prepositions. Korean uses case markers. English hires pronoun to complete sentence since they can not say, 'A book is.' When argument is one, out of one argument proposition, we can have maximum 10 surface forms: S1,S2,N1,N2,V1,V2, Adj1,Adj2, P.P.1,P.P.2. 'o' mark indicates occuring, and 'x', no occuring. '#' denotes index number. So 'BE_{n1}' means it is 1st noun form. Each form can have more than one variants. We call them paraphrase. Especially P.P. form can have quite a number of forms as far as given noun forms could occur with any prepositions in English and in Korean syntactic case markers. We have said that English prepositions are function markers. P.P. form is '$f + N$.' Adverbs are mostly verb qualifiers. Adverb should go with predicates rather than arguments. ' = ' of predicate proposition means 'a cognitive identification'.

The following is an example of one argument, too, but predicate is adjective. Meta-function proposition should look: ' = pretty(S)' or '$= (\frac{pretty}{S})$' ' = pretty' means 'be pretty'. This case 'be' denotes 'a cognitive identification'.

Diagram 1b: Proposition of Christening with adjectine predicate

Diagram 1b: Proposition of Christening with adjective predicate.

#	Proposition		S		N		V		Adj		P.P.
1	∅ (S)	O	S be pretty	O	Prettiness of S	O	to be pret. S	O	being pret. S	O	prep + N
2	∅ (—)	X		O	being pretty	O	to be pretty	O	being pretty	O	prep + N

In a sentence, 'Mary is pretty.', there is one argument and pretty is predicate. When predicate is an adjective, the relation between adjective

and argument is that of subset to universal set. Mary can share numberless properties. The adjective predicate is partial cognitive identification of the argument as universal set, for the adjective is one of subset features which realizes the universal set. 'pretty' qualifies Mary. When 'Mary' is whole, 'pretty' is a part of it. It differs from proposition of rest: $E(x) = (S \subset D)$. Here (S) does not qualify (D), and (S) can not become predicate when Adjective can even though they are both subsets

3.2.2 Case of Meta-function Proposition of Rest: $E(x)=(S \subseteq D)$ or $E(x)=(S,D)$ or $=(S,D)$

This is a case when a cognitive organ identifies a sensory OBJECT (stimulus) as being included into another, that is, DISTRIBUTION. The object is in hyponymy relation with the distribution. In English, 'There is a book.' *Book* is stimulus to the cognitive sensory organ. And *'there'* is LOCUS, that is DISTRIBUTION. In French, 'Il y a un libre. *'libre'* is a stimulus and *'y'* is LOCUS. Hyponymy is inclusion of one meaning into another. When a cognitive organ identifies an object as a subset, but not as qualifying the locus like adjective, as being included into a distribution, UNIVERSAL SET, the cognitive brain works accepts the OBJECT to be EXISTING. Logician qualifies it with existential quantifier. Consequently any OBJECT to be considered as EXISTING should be conditioned by DISTRIBUTION as a universal set. Proposition of Rest should require two arguments as universal set. The proposition can have four subsets as positional variants:2^2.

Let us see how many surface forms the four subsets of Proposition of Rest can generate.

Diagram 2: Function Proposition of Rest

a). English: 'There is a *book* on the *desk*.'

#	Proposition		S		N		V		Adj		P.P.
1	= (S, D)	O	there is B on D	O	being of B on D	O	B to be on D	O	being B on D	O	prep + N
2	= (S, —)	O	there is B	O	being of B	O	to be B	O	being B	O	prep + N
3	= (—, —)	X	there is on D	O	being on D	O	to be on D	O	being on D	O	prep + N
4	= (—, —)	X	there is	O	being	O	to be	O	being	O	prep + N

#stands for index of both D.S. and S.S., 1 stands for subset 1; N2, 2nd noun form; o, occuring; x, no occuring in English S.S..

b). Korean: '방에 책이 있다.'

#	Proposition		S		N		V		Adj		P.P.
1	= (S, D)	O	방에 책이 있다	O	방에 책이 있음	O	방에책이 있어	O	방에 책이 있을	O	N+posp
2	= (S, —)	O	책이 있다	O	책이 있음	O	책이 있으	O	책이 있는	O	N+posp
3	= (—, D)	X	방에 있다	O	방에 있음	O	방에있—	O	방에 있은	O	N+posp
4	= (—, —)	X	있다	O	있음	O	있다	O	있는	O	N+posp

In English not all subsets generate corresponding surface forms when Korean does. When more than two arguments occur in a sentence in Korean, arguments are almost order free except slight focussing significance with preceeding context. But English are strictly order bound. Proposition of rest denotes a cognitive identification of an object at a locus. A stimulus to a sensory organ is simultaneously an object of cognitive brain organ. The term, STIMULUS is an objective one when OBJECT is subjective. 'BE' verb meaning EXISTENCE has four subsets and can have at least 20 surface forms. We can notice all 20 forms can occur in Korean, but English not. Korean '있다' verb has 11 participle forms. This implies each adjective index can have 11 variants. And P.P.'s case, both in English and Korean how many variants can occur, is hard to tell. For there are many prepositions. Consequently we need to nominate subscripts to P.P.es.

3.2.3. Application of Meta-function Proposition of Motion

According to a chart of Matrix Proposition, there were 3 Non-Stative-Meta-Atomic-Fuction Propositions:

$$
\boxed{\begin{array}{l}\text{Non-Stative-Meta} \\ \text{Atomic Proposition}\end{array}} = \begin{array}{l} \text{a. } \{\exists\exists\,(_{i-j})\,(_{1-2})\varnothing(S_1\text{-to }S_j,\ D_1\text{-to-}D_2)\} \\ \text{b. } \{\exists\exists\,(_{1-2})\ \varnothing(S,\text{-}D_2\text{-to-}D_2)\} \\ \text{c. } \{\exists\exists\,(_{1-j})\ \varnothing(S_i\text{-to }S_j,\ D\} \end{array}
$$

These are kernel function propositions of motion. Each differs according to different directions of transformations or changes. All surface expressions of motion are built up with one of these. More than one compose complex function propositions.

Suppose that we have a surface expression, *'JOHN OPENED THE DOOR WITH KEY.'* What semantic properties is this statement built up with? First we have to find out what situation the statement is describing.

We can visualize that 'John by using key, he caused the door which is on the door frame to get off from the door frame, but still one side of the door as hooked with hinge.

If we try to describe with SDRR conventional rule, we get the following.

Formula 1: Occurrence Relation Formula of *'John opened the door with key.'*

b). Innate Fuction Proposition: a). Function Proposition as Motive Force:
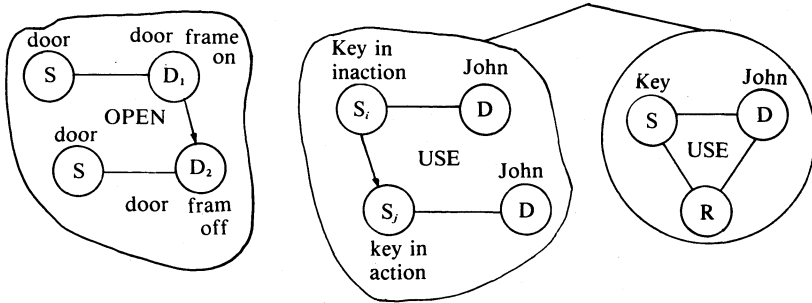
b). is a key function proposition of actual occurrence. As motive force function proposition 'John' should have used his hand. But this part is omitted. I believe it is taken as understood as 'doorframe on to doorframe off' is taken as understood by both speaker and hearer.

Formula 1 tried to describe function relation among arguments in the actual phenomenan or situation. We can formulate the function relations among arguments as follow.

Diagram 3: Complex Meta-Function Proposition from Formula 1a and 1b.

Motive Force Function Proposition		Key Function Proposition
$[\theta]$ (theta) Function Proposition:	UNION	$[\zeta]$ (zeta) Function Proposition
$[\,\exists\exists\ \ (_{i\text{-}j}) = (S_i,\ S_j,\ D)]$	$\cup$	$[\,\exists\exists\ \ (_{1\text{-}2}) = (S,\ D_1, D_2)]$
$[\,\exists\exists\ \ (_{i\text{-}j}) = (S,\ D)]$	$\cup$	$[\,\exists\exists\ \ (_{1\text{-}2}) = (S,\ -,\ -)]$
$[\,\exists\exists\ \ (_{i\text{-}j}) = (S)] + [\,\exists\exists\ \ (_{i\text{-}j}) = (D)]$	$\cup$	$[\,\exists\exists\ \ (_{1\text{-}2}) = (S,\ -,\ -)]$
$[I]\quad +\quad [A]$	$\cup$	$[\,\exists\exists\ \ (_{1\text{-}2}) = (S)]$
with key + by John		$[\,\exists\exists\ \ (_{1\text{-}2}) = (S,\ [I],\ [A])]$
		OPEN (DOOR, KEY$_{with}$, JOHN$_{by}$)

We have traced how 'OPEN PREDICATE PROPOSITION' has come to being. Now we want to trace where 'with Key' and 'BY JOHN' came from. We want to mark their index number both in D.S. and S.S.

Diagram 4: Surface Forms from USE Predicate Proposition:

#	F-Prop.		S		N		V		Adj		P.P.
1	USE (S, D)	O	D use S	O	D's Using S	O	for D to U S	O	for D Using S	O	prep + N
2	USE (S, —)	O	use S	O	Using S	O	to U S	O	Uing S	O	prep + N
3	USE (—, D)	X		O	D's Using	O	for D to U	O	for D Using	O	prep + N
4	USE (—, —)	X		O	Using	O	to use	O	Using	O	prep + N

'WITH KEY' index is USE$_{P.P.2}$ and 'BY JOHN' is USE$_{P.P.3}$ Each form carry indedx # with itself out of predicate, here, USE. Predicate is like plot which characterizes role relation among starrings.

Diagram 5: Surface Forms from *OPEN* Predicate Proposition:
English Example: '*JOHN(A) OPENED(Ø) the DOOR(S) with KEY(I).*'

#	F-Prop.		S		N		V		Adj		P.P.
1	Ø(A, S, I)	O	A Ø S with I	O	A's Øing of S w I	O	for A to Ø I	O	A Øing S w I	O	prep + N
2	Ø(A, S, —)	O	A Ø S	O	A's Øing S	O	A to ØS	O	A Øing S	O	prep + N
3	Ø(A, —, I)	X		O	A's Øing wing I	O	for A to Ø w I	O	A Øing with I	O	prep + N
4	Ø(—, S, I)	O O	I Ø S S Ø w I	O O	I's Øing of S S's Øing	O	to Ø S with I	O	Øing S with I	O	prep + N
5	Ø(A, —, —)	X		O	A's Øing	O	for A to Ø	O	A's Øing	O	prep + N
6	Ø(—, S, —)	O	S Ø	O	Øing of S	O	to Ø S	O	Øing S	O	prep + N
7	Ø(—, —, —)	X		O	I's Øing	O	to Ø with I	O	Øing with I	O	prep + N
8	Ø(—, —, —)	X		O	Øing	O	to Ø	O	Øing	O	prep + N
	allo-Prp		allo-S		allo-N		allo-V		allo-A		allo-p.p.

Diagram 4 shows 2 argument proposition can have 20 surface forms. Not all allo-sentences occur in English while Korean and Japanese do.

Diagram 5 shows 3 argument proposition has 8 subset function propositions and can have about 40 surface forms. But for example index p.p.1 can have as many positional variants as number of prepositions which could occur with index N1 forms.

These allo-forms did not take into consideration those tense, aspect, mood, modal, or any discourse and sentence specifiers.

Number of all-surface forms differ according to the number of arguments neccessarily required, but not optional ones. We can visualize where each surface form came (generated) from. *USE, OPEN,* etc. are surface predicates. They are like plot in drama and arguments correspond to starrings.

It may be interesting to trace where predicate, e.g. USE, OPEN, etc. have been generated from. Surface PREDICATES are generated from two elements: one from function predicate and 2nd from characteristic combination string of arguments. Each noun belonging to the same string should satisfy extensional restrictions of the given predicate, e.g. *OPEN*. Let us examine the following two propositions:

a). $\exists\exists_{(i-j)} = (S_i, S_i, D) = = $ *John USED the key.*
  $\exists\exists_{(i-j)} = $(KEY *in inaction,* KEY *in action,* JOHN)

($\exists\exists_{(i-j)}$) is a function predicate. To this, features, 'in inaction-to-inaction' added to it, has allowed to form SURFACE PREDICATE 'USE'. Conversely, once USE predicate came into being, it imposes on argument string extentional restrictions. As an object argument of 'USE' only those lexicons which could be used as some kind of INSTRUMENT could appear on the stage.

b). $\exists\exists_{(1-2)} = (S, D_1, D_2)$
  $\exists\exists_{(1-2)} = $(DOOR, DORFRAME*on*, DOORFRAME*off*)

($\exists\exists_{(1-2)} = $) is a function predicate. To this, features, 'on-to-off', added to it, has materialized surface predicate *'OPEN'* form. But the function predicate to become *'OPEN'* surface predicate completely depends upon the extenion class of S, that is here door, of the combination string of arguments, here (DOOR, DOORFRAME on, DOORFRAME off) and motive force proposition.

So far we have tried to see how and where surface structure expressions have been generated from. How should imply generative process from D.S. to S.S.. Where implies from what deep property to S.S. forms.

This deep property is construed to be semantic (meaning) property of surface structures, especially, surface predicates. Hereby we can set up a hypothesis.

> *Hypothesis 1:   Nexus part of the meaning of sentence is determined by its deep structure: function proposition and insertion of lexical arguments.*

Since generative process of proposition to surface structure has been crystalized as above, as interpretive process of surface structure, we can recommend retrieval process which is backward tracking of the generative process.

Next chapter we want to discuss this interpretive approaches to natural languages.

Suppose that the following sentence is given to you. Do you have selfconsistant and reliable interpretive mechanism, that is also testable and provable.

'The disregard of their imminence was no more than a fragile shield against possibilities too disturbing to contemplate.'

And are you sure you could tell the exact feeling of the following sentence.

'There was a quiet goodness in everything.'[4]

Syntactically there is no problem at all. But semantically it is quite complicated. We will grind this in the next chapter.

This chapter did not describe projection type at all. This is generative type from D.S. to S.S.. Chapter 4 will manifest some of them.

4.0. Function Propositional Mechanism of Interpretation to Natural Languages

According to Hypothesis 1: The meaning of sentence is determined by its deep structure, that is proposition. If we want to extract the meaning of a sentence, then we have to find out, first of all propositions consisting of the sentence. As plot schemes out the whole plan of the drama, so does predicate the whole property of the proposition. This hints us that if we want to find out propositions in a sentence, then we can try to find out predicates in the sentence. Well then, one will ask if all predicates of the involved propositions are up on sentence or not. I can tell you that in complex propositions, predicates of propositions of christening are mostly dropped out. Some predicates change their form to the form of preposition such as *use* to *with* and *by, have* to *of, exist* to *of, belong to* to *of, favor* to *for* and some adjective predicates take adverb forms as *slowly.* And it is very often that nominalized verbs and adjectives as *manifestation, goodness,*

absurdity, acomplishment, and so forth are predicates of propositions that have undergone nominalization transformation. Verbalization includes infinitivalization, and adjectivalization is participialization. And P.P.ization is form of 'preposition + N'.

> *Hypothesis 2: While syntactic categories: sentence, noun, verb, adjective, and adverb are syntactically contrastive, in deep structure, they are not:*
> Syntactically S ≠ N ≠ V ≠ Adj ≠ Adv;
> Semantically S = N = V = Adj = Adv.

This predicts us that the same subset of function proposition with lexicon can be generated to any surface forms: S, N, V, Adj, and Adv simultaneously.

4.1. Interpretive Process

Process 1: **If one wants to draw meaning property of a sentence, then, find out propositions consisting of the sentence;**

Process 2: **If one wants to find out propositions of a given sentence, then, pick out predicates in the sentence;**

Process 3: **Next, reconstruct propositions of the given sentence with the Predicates picked up;**

Process 4: **Then, examine syntactic structure form such as subjectivalization, objectivalization, p.p.ization, and order of words, so that one could find out projection types and topicalizations;**

Process 5: **Finally arrange componental parts of the sentence to the closest expression structures of one's mother tongue to complete interpretation.**

4.2. Sample Interpretation

4.2.1. *'There was a quiet goodness in everything.'*

Process 2: Process 3:   Process 4:
a. QUIET QUIET (S)   QUIET (EVERYTHING)
b. GOOD GOOD (S)   GOOD (QUIET(EVERYTHING))
c. BE $\exists$ (x) = (S,D) BE ((GOOD(QUIET(EVERYTHING))), THERE)

Process 5:
a. Everything was quiet.

b. That everything was quiet was good.
c. There was the fact that that everything was quiet was good.

Transformation:
QUIET: from predicate use to attributive adjective;
GOOD: from predicate use to nominalization;
EVERYTHING: from subject use to P.P.ization;
BE: since nominalized GOOD is subjectivalized, locus expression
    is required: THERE

Almost all college students put this into Korean:

모든 것에 조용한 善이 있다.

Right Interpretation from c:

모든 것이 조용한 것이 참 좋았다.

Syntactically we could never approach to the near situation that statement expresses.

Students' translations are quite natural. So far no one discussed problems like this. Furthermore no English scholars picked up this kind of transformation as problem not to mention of manifesting any way of parsing them. Only this new mechanism of interpretation tried to peal off mysterious English structures like this.

Similar statements are shown as follows:

'There was blind absurdity in her love.'
'There was old-fashioned cheverness in him'
'First sentence: Her love was blind.
              That her love was blind was absurd.

Second sentence: He was old-fashioned.
              That he was old-fashioned was clever.

4.2.2. 2nd English Sample Sentence

We will take into parts the sample sentence and try to put into Korean observing suggested hypothesis and process.

Sample Sentence: *'The disregard of their imminence was no more than a fragile shield against possibilities too disturbing to contemplate.'*

4.2.2.1. Propositional Properties of the Given Sentence:

Process 2: Predicate:	Process 3: Predicate Proposition:	Process 4: Proposition in Sentence:
a. DISREGARD	DISREGARD (S,D)	DISREGARD ((IMMI-NENT(SITUA TION)), THEY)
b. IMMINENT	IMMINENT(S)	IMMINENT(SITUA-TION)*not on S.S.
c. BE	BE(S_1,S_2)	S_1 is to S_2
d. FRAGILE	FRAGILE(S)	FRAGILE(SHIELD)
e. POSSIBLE	POSSIBLE(S)	POSSIBILITY that someone can not contemplate because someone else disturbs him too much.
f. DISTURB	DISTURB(S,D)	DISTURB(OTHER'S BUSINESS, SOMEONE)
g. CONTEMPLATE	CONTEMPLATE (S)	CONTEMPLATE (SOMEONE)

h. ...be no more than... against... = A is to B what C is to D.
i. ...too...to...

Process 5:

a). A is 'They disregard their imminent situation.' = the disregard of their im-minence

    B is 'Shield is fragile.' = a fragile shield
    C is 'Someone contemplate.' = to contemplate
    D is 'Someone disturbe someone else.' = disturbing

b). Arrangement:

    They disregard their imminent situation is to *shield is fragile* what
               A   B
possibilities *someone can not contemplate* is to *someone disturbe so-*
                D   C
meone else too much.

    The disregard of their imminence is to fragile shield what possibilities too disturbing to contemplate.

c). Translation

The relation that they have to disregard their imminent situation with the excuse that thier shield is too fragile means the same relation as that because someone else disturbs someone too much he can not contemplate.

d). Korean Translation:

그들이 방패가 너무 허약하다고 해서 그들의 긴박한 상황을 못본체 한다는 것은 마치 이웃이 시끄러워서 명상을 할 수 없다는 거와 꼭 같다.

Don't you think it's got beautifully parsed. Unless we follow this new mechanism of interpretation to natural languages, no one can parse this monstrous sentence that beautifully.

4.2.2.2. Retrieve of Generative Process from Proposition to S.S.

As syntactic category, we have sentence, noun, verb, adjective, adverb, conjunctive, etc., and as syntactic function markers, there are _V position (subject) and V_ position (direct object), and prepositions in English.

Let us mark category indices of the given sentense first, then syntactic function markers, and then generative types from deep case to surface case.

4.2.2.2.1. Category Markers of the Given Sentence:

> *'The disregard of their imminence is* no more than *a fragile shield* against
>   N   V   N
> *poossibilities* too *disturbing*   to *contemplate.'*
>   N   *Adj(participle)*   *V(infinitive)*

4.2.2.2.2. Index Marking of the Categories:

Now let us mark indices of the above categories, that is from which index number of subset of the relevant proposition and from which index of surface structure forms.

We can retrieve indices of categories as following according to 4.2.2.1: process 3.

a). The disregard of their imminence = DISREGARD (S,D)

#	F-Prop.		S		N		V		Adj		P.P.
1	ø (S, D)	O	D ø S	O	ø of D' ø	O	for D to ø S	O	D øing S	O	prep + N
2	ø (S, —)	O	ø S	O	D of I	O	to ø S	O	øing S	O	prep + N
3	ø (—, D)	X		O	D's ø	O	for D to ø	O	D øing	O	prep + N
4	ø (—, —)	X		O	ø	O	to ø	O		O	prep + N

N_4: DISREGARD N_4

b). their imminence: IMMINENT(S)

#	F-Prop.		S		N		V		Adj		P.P.
1	ø (S)	O	S ø	O	S's I	O	S to ø	O	S beingø	O	prep + N
2	ø (—)	X		O	I	O	to be ø	O	ø	O	prep + N

N_1: their imminence = $I(S)_{n1}$

c). a fragile shield: FRAGILE(S)

#	F-Prp.		S		N		V		Adj		P.P.
1	ø (S)	O	S ø	O	ø of S	O	S to ø	O	S being ø	O	prep + N
2	ø (—)	X		O	fragi-ty	O	to be ø	O	ø	O	prep + N

N_1: a fragile shield = $F(S)_{n1}$

d). possibilities: POSSIBLE(S) *S must be proposition of existence or motion.

#	F-Prop.		S		N		V		Adj		P.P.
1	ø (S)	O	S be ø	O	ø of S	O	to ø S	O	S ing ø	O	prep + N
2	ø (—)	X		O		O	to be ø	O	ing ø	O	prep + N

N_2: possibility = $P(S)_{n2}$

e). disturbing: DISTURB(S,D) *(S) argument must be a proposition of Rest or Motion. (D) is one who disturb (S).

#	F-Prop		S		N		V		Adj		P.P.
1	ø (S, D)	O	D ø S	O	D's øing of S	O	D to ø S	O	D øing S	O	prep + N
2	ø (S, —)	O	D ø S	O	øing of S	O	to ø S	O	øing S	O	prep + N
3	ø (—, D)	X		O	D's øing	O	D to ø	O	D's øing	O	prep + N
4	ø (—, —)	X		O	øing	O	to ø	O	øing	O	prep + N

Adj_4: DISTURBING = DISTURB$(S, D)_{Adj4}$

f). to contemplate: CONTEMPLATE(S)

#	F-Prop		S		N		V		Adj		P.P.
1	Ø (S)	O	S Ø	O	S's Øing Ø of S	O	S to Ø	O	S Øing	O	prep + N
2	Ø (—)	X		O	Øing		O	to Ø	O	Øing	O	prep + N

V_2: to contemplate = CONTEMPLATE(S)$_{v2}$
N_2 form can be either contemplating or contemplation.

4.2.2.2.3. Conclusion of Dissection

'disregard of their imminence' is composed of complex proposition.

If we rewrite the construction of the given sentence with both predicate propositions and indices of each components, we can obtain the followings.

'DISREGARD(S,D)$_{n4}$ of IMMINENT(S)$_{n1}$ BE to F(S)$_{n1}$ what POSSI-BLE(S)$_{n2}$ too DISTURB(S,D)$_{adj4}$ to CONTEMPLATE(S)$_{v2}$' ⇒

'DISREGARD(S,D)$_{n4}$ of IMMINENT(S)$_{n1}$ is no more than FRAGIL(S)$_{n1}$ against POSSIBLE(S)$_{n2}$ too DISTURB(S,D)$_{adj4}$ to CON-TEMPLATE(S)$_{v2}$.'

As we have anatomized semantic components of the given sentence, we have come to be able to see that the sentence consists of 7 predicate propositions and 2 connectives: ...be no more than...against..., and ...too...to... Possibility' represented 'too...to...' phrase. There is possibility that too...to...situation might happen.

Unless one could analize the sentence according to Hypothesis 1 and suggested process of parsing, no one can dream a translation as the preceding Korean translation.

We can conclude that only deep structure dissection, that is to reduce the surface structure of the given statement down to componental predicate propositions, can let us induce an analysis of the closest possible meaning properties of the structure.

4.2.2.2.4. Projection Types from Deep Case to Surface Case

Projection type of this sentence is expressed by 'be..no more than..against..' connective phrase. Therefore enumerating 'A is to B what C is to D.' will not be too much help to the readers. Later this chapter 1 will demonstrate token examples of projection types.

4.2.3. Third Example

'Framton labored under the tolerably widespread delusion that total strangers and chance acquaintances are hungry for the least detail of one's ailments and infirmities, their cause and cure.'

4.2.3.1. Propositional Properties of the Given Sentence:

Process 2: Predicate:	Process 3: Predicate Prop:	Process 4: Predicate Prop. in Sentence:
1 LABOR under	LABOR under(S,D)	LABOR(DELUSION under, FRAMTON)
2 TOLERABLE	TOLERABLE(S,D$_{to}$)	TOLERABIE(WIDESPREAD DELUSION, US$_{to}$)
3 WIDESPREAD	WIDESPREAD(S)	WIDESPREAD (DELUSION)
4 DELUDE	DELUDE(S$_i$,S$_j$)	DELUDE(PERSON$_2$, (BELLIEVE (PERSON$_2$)$_{into}$), PERSON$_1$)
5 STRANGE	STRANGE(S,D$_{ro}$)	STRANGE(PERSON$_1$, PERSON$_2$)
6 CHANCE	CHANCE(S)	CHANCE(S = proposition of motion)
7 ACQUAINT	ACQUAINT (S$_i$,S$_j$)	ACQUAINT(S$_i$ = (-Familiar(S,D)) (S$_j$ = (+FAMILIAR(S,D))
		Aquaint = to make familiar a person with a fact.
		MAKE = to put into proper condition for use; to cause to be or become; to make an old person young
8 HUNGRY for	HUNGRY (S$_{for}$,D)	HUNGRY (INFORMATION, STRANGER or ACQUAINCES)
9 AIL	AIL(S)	AIL(ONE)
10 CAUSE	CAUSE((BE(S,D),D)	CAUSE(AILMENT AND INFIRMITIES)
11 CURE	CURE(S$_i$,S$_j$,D)	CURE(AILMENT, SOMEONE)
12 LEAST		not a fit of information (detail)

The given sentence is built up of 11 predicate propositions.
If we transfer process 4 to natural languages, we will get:

1. Framton labored under delusion.
2. widespread delusion is tolerable to us.
3. Delusion is widespread.
4. One delude a person into believeing something.
5. Someone is strange to someone else.
6. It *happened* someone to make oneself familiar with someone else.
7. *Familiar person* that someone made himself familiar with someone else.
8. Hungry for = to wish to know some detailed information; to wish to know..of..
9. ail = someone suffers trouble.
10. Cause of ailment and infirmities

11. To cure one's ailments and infirmities.
   $(8 + 12)$ = are *not* hungry for the slightest detailed informations.

4.2.3.2. Korean Translation of the Given Sentence:

후렴돈은
전연 낯선 사람이나 우연히 알게된 사람들은 남의 괴로움이나 병
등, 그리고 그런 것들의 원인과 치료에 관한 자세한 내용들은 추호
도 알고자 하지 않는다'고 그릇 기억하고 있는데 그런 착각은 세상
에 널리 퍼져 있는 것인데 너그러히 보아줄 수 있는 것이기도 한데.'

4.2.4. Fourth Example

'One government of each nationality by another is in the nature of slavery.'

4.2.4.1. Propositional Properties of the given Sentence:

	Process 2: Predicate:	Process 3: Predicate Prop.:	Process 4: Predicate Prop. in Sentence:
1	GOVERN	GOVERN (S,D)	GOVERN means to EXERCISE the function of government by a nationality EXERCISE (FUNCTION OF GOVERNMENT, NATION)
2	of	HAVE (S,D) POSSESS (S,D) BELONG (S,D$_{to}$) BE (EXIST) (S,D)	Each nation has one government. Each nation possesses one government. one government belongs to a nation or people. *There is one government at each nation. Another nation possesses another government.
4	by another		If the one government of each nationality were possessed *by another* nationality, then the one
5	is in the nature of slavery =		government of each nationality.... is in the nature of a state of subjection like that of a slave.

Process 5:
1. of = Each nationality (a nation or a people) *possesses* one government.
2. Another nationality possesses another government.
3. by another = If the one government of one nation were possessed *by another,* then, the one government is...
4. in the nature of slavery

4.2.4.2. English Interpretation:

'One government belongs to one nationality. But if the one government were possessed *by another* nationality, then, the one government is in the nature of a state of subjection like that of a slave.'

4.2.4.3. Korean Translation:

'각 국가는 하나의 정부를 갖고 있게 마련인데, 만약 그 하나의 정부가 다른 국가에 소속하게 된다면, 그때는 그 하나의 정부는 예속 상태에 있는 것이다.'

4.2.5. Fifth Example

'The whole absurdity of that contract that that first blue jay had tackled hit him home.'

4.2.5.1. Propositional Properties of the Given Sentence

Process 2: Predicate:	Process 3: Predicate Prop:	Process 4: Predicate Proposition in Sentence:
1. absurdity = ABSURD	ABSURD (S)	ABSURD (THAT CONTRACT)
2. TACKLE	TACKLE (S,D)	TACKLE (THAT CONTRACT WORK, JAY)
3. HIT	HIT (S,D_1,D_2)	HIT (A STATE..., JAY,SORE SPOT$_{in}$)

Process 5:
1.First blue jay undertook (challenged) to solve that (contract) work.
2.A state that that contract work was totally absurd (stupid);
3.The state.....hit blue jay in a sore spot (disgraced him:humiliated him)

4.2.5.2. English Interpretation:

'That work that first blue jay challenged to solve was totally stupid one. Such a situation hit him (Jay) in a sore spot with humiliation.'

4.2.5.3. Korean Translation:

'그 첫째 어치가 해결하고자 도전한 그 일은 전혀 어처구니 없는 일 이었다. 어치는 창피해서 어찌할 바를 몰랐다.'

4.2.6. Sixth Example

'A glance and smile had placed the young stranger on the footing of familiarity with the oldest daughter.'

4.2.6.1. Propositional Properties of the given Sentence:

Process 2: Predicate:	Process 3: Predicate Prop.:	Process 4: Predicate Proposition in Sentence:
1. GLANCE	GLANCE (S,D) $N \Rightarrow Vt.$	CAST BRIEF LOOK AT (SOMEONE ELSE, SOMEONE): a. GLANCE (STRANGER (S), DAUGHTER) or b. GLANCE (DAUGHTER (S), STRANGER)
2. SMILE	SMILE (S) $N \Rightarrow Vi.$	a. SMILE (DAUGHTER) or b. SMILE (STRANGER)
3. PLACE	PLACE (S,D_1,D_2,I,A)	(A) = THE OLDEST DAUGHTER; (I) = by USING a glance and SMILE (S) = THE YOUNG STRANGER (D_1) = outside of a situation (D_2) = in a situation
4. YOUNG	YOUNG (S)	The stranger is young
5. STRANGE	STRANGE (S,D_{ro})	The young man is strange to the oldest daughter.
6. footing	FOOT (S,D_1,D_2) $N \Rightarrow GR$	FOOT = to make or attach a foot to; FOOT (DAUGHTER,

(ATTACH (A FOOT,
FAMILIARITY to,
STRANGER))

ATTACH (S,D₁,D₂)

7. familiarity   FAMILIAR (S,D with)   to be familiar with a subject,
$N \Rightarrow G r$ book, method, etc.;
closely intimate;
INTIMATE = to make
known; to make some one
known to someone else;
closely INTIMATE = to make
someone closely known to so-
meone else.
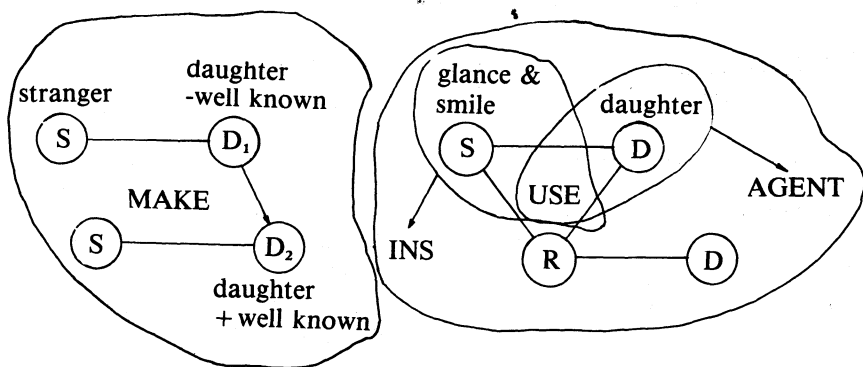
Process 5:

1. glance = the oldest daughter cast brief look at the young stranger.
2. smile = the oldest daughter smiled
3. place = the oldest daughter had placed the young stranger in a particular situation, in which ...
4. young = the stranger is young
5. footing = the young stranger attach a foot to familiarity with the oldest daughter
6. familitarity = the young stranger is familiar with the oldest daughter

4.2.6.2. English Interpretation:

'The oldest daughter cast brief look at the young stranger and drew tender smile. The event gave him a basis to feel that he is closely intimate to her (he knows her very well).'

Here 'a glance and smile' is INSTRUMENTAL and MOTIVE (CAUSATIVE) FORCE proposition like that of 'KEY' in 'The KEY opened the door. 'or 'The POISON killed many children last year.'

4.2.6.3. Korean Translation:

'큰 딸이 찾아온 낯선 젊은 총각을 한 번 힐끈 보고 미소를 지은 것
이 원인이 되어서 그 총각은 큰 딸을 잘 아는 사이인 듯한 느낌을
갖게 되었다.'

4.2.7. Seventh Example

'I read everything on the topic that comes to my notice, but of late I read *with growing impatience.*'

4.2.7.1. Propositional Properties of the Phrase *'with growing impatience'*

Process 2:	Process 3:	Process 4:
1. impatience	IMPATIENT (S)	Someone is impatient. IMPATIENT = ..CAN NOT PUT UP WITH..
2. growing	GROW (S)	Something grows or gets bigger. GROW (IMPATIENT (S))

Process 5:

1. Someone could not put up with (the content of the late article) more and more

4.2.7.2. English Interpretation:

I read everything on the topic that comes to my notice, but whenever I came to read articles of late, *I could not put up with them more and more.*

4.2.7.3. Korean Translation:

'내 눈에 뜨이는 그 주제에 관한 기사는 다 읽었읍니다. 그러나 최
근 것을 읽을 때는 점점 더(그 내용을) 참기 어려웠읍니다.'

4.2.8. Eighth Example

'*The bombs destroyed the city.*'

4.2.8.1. Propositional Properties

Process 2:   Process 3:   Process 4:
1. DESTROY DESTROY (S_i, S_j, I, A) = DESTROY (S, I, A)
(The enemy) destroyed the city with bombs.

4.2.8.2. Projection Type (Generative Type)

Projection type is one that a string deep cases generate out to a string of surface cases as the following example.

a).

DESTROY	
A	⟶ Subj
S	⟶ Obj
I	⟶ P.P.*with*

b).

DESTROY	
A	Subj
S	Obj
I	P.P.
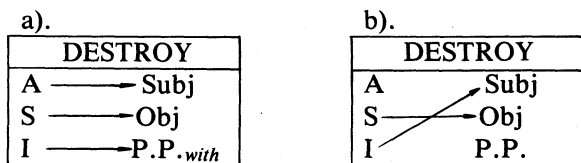
a). is a projection type of 'The enemy destroyed the city with bomb.' and
b). is that of 'The bombs destroyed the city.'
'A' is AGENT and 'I', INS. Both came from Motive Force Proposition.

4.2.9. Nineth Example

   'The door opened easily.'

Please refer to Formula 1 and Diagram 3 and Diagram 4 and 5. The surface form index number of 'the door opened easily.' is 'OPEN$_{s6}$'.

4.2.9.1. Propositional Properties

Process 2:   Process 3:   Process 4:

1. OPEN   OPEN (S,I,A) A OPENED S with I.

4.2.9.2. Projection Type

a).

OPEN	
A	⟶ Subj
S	⟶ Obj
I	⟶ P.P

b).

OPEN	
A	Subj
S	Obj
I	P.P.

c).
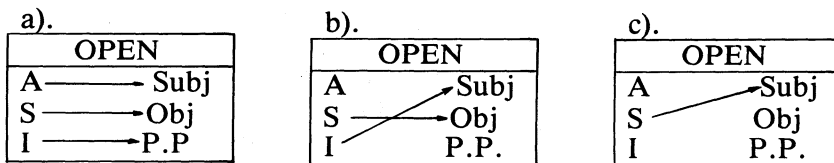
OPEN	
A	Subj
S	Obj
I	P.P.

a). is 'A opend S with I.'
b). is The key opened the door.'
c). is 'The door opened.' Easily describes how the door transforms from doorframe on to doorframe off.

4.2.9.3. Korean Translation:

'문은 열었다.'

'the door' is subjectivalized, that is'door' has become the topic focus. We call this topicalization. Subjectivalization, objectivalization, and P.P.-ization are all topicalization phenomena. In English, subject occupies the primary topic point, object, secondary topic point, and P.P., thirtiary. In the sentence, 'John loaded the truck with hay.' 'with hay' is an example of thirtiary P.P.-ization. And in this sentence, 'the truck' has been objectivalized from 'on the truck' that is P.P.. In the sentence, 'The key opened the door.', 'the key' is an instrumental case that has been subjectivalized.

In English, subject, object, and prepositions don't have the fixed functions. These are not genuine syntactic case markers. They rather expresses 'TOPIC POINT with syntactic cases'. But Korean and Japanese cases mark only syntactic cases. This should be taken into heed.

Korean translation shows that 'the door' is emphasized when it got to be genuine 'object case marker'.

4.2.10. Tenth Example

'Mother made Susan a dress.'

4.2.10.1. Propositional Properties of the Given Sentence

Process 2:   Process 3:   Process 4:

1. MAKE   MAKE $(S_i, S_j, D, B, A) = =$ MAKE (A,S,B); B stands for (Benefactive 'for' = FAVOR S_i stands for cloth. S_j stands for made clothes. B stands for BENEFACTIVE *FAVORED* by (A). (A) is an agent who favored Susan. In order to transfer plane cloth to product. And (A) and (D) are the same person.
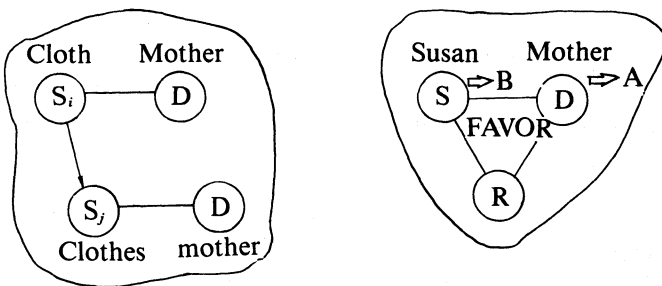
4.2.10.2 Projection Type: (*DEEP CASE substitutes = SYNTACTIC CASES*)

Dear reader might wonder how they could obtain deep case such as (D,S,B,A). For beginners, it must look very complicated when they are very reasonable and systematic. That is because they have been extracted from OCCURRENCE RELATION formulae that describing the actual phenomenan as it happens. 'B' stands for 'BENEFACTIVE'

Hereby in order to help ordinary readers who are not going to be linguists, I want to recommend Korean and Japanese to USE THEIR *SYNTACTIC CASE MARKERS in place of deep cases of (D,S,B,A),* etc. as following.

a).

MAKE		
~가 = A ──────►	Subj
~을 = S ─────►	Obj
~위해= B ─────►	P.P.

b).

MAKE	
~가 ─────►	Subj
~을 ╲╱►	Obj
~위해 ╱╲►	P.P.

a). is 'Mother made a dress for Susan.

b). is Mother made Susan a dress. (어머니가 Susan을 위해서는 옷을 만들었다)

In b). 'Susan' which is 'FOR' BENEFACTIVE has been objectivalized. And 'a dress' transferred to P.P. but lost preposition. This case we call 'zero' preposition as 'zero' function or 'zero' subset. For Korean and Japanese who study English she must look quite a messy language. But as messy, this kind of English expression is quite regular, that conventional English normative grammarians classified these to be the *irregular* sentences. But it would be helpful to differentiate these sentences from those in which deep cases correspond to syntactic cases one to one bases as above a).

4.2.11 Eleventh Example

'Garden Swarms with bees.'

4.2.11.1. Korean Translation:

'뜰에서는 벌들이 우글거리고 있다.'

5.0. Conclusion

5.1. As to Assigning DEEP CASES: (S),(D), and (R)

(S,D, and R) are meta-function markers of argument of predicate proposition. They are assigned as universal function markers of proposition irrelevant to each natural language structure. It is based upon cognitive process of identification of individuals in the brain works. But strangers to this SDRR conventional configuration, it looks pretty tough and complicated. It gives that impression. But it is quite reasonable and descriptive description about the roles of arguments in actual phenomena. It must be most proper idea that one trying to extract universal role relations right out of the actual roles of arguments in situations.

Such roles of arguments must be universal Deep Case. And they must be very universal functions common to all peoples.

(S,D,R) are the very universal Deep Cases. Fundamentaly there are only two deep cases, S and D. Subscripts, $_i$, $_j$, $_1$, $_2$, etc. can cover up the further need.

But to the strangers, they may give impression that it is pretty hard to comprehend how to assign those deep meta-function cases.

5.2. Recommended Substitute for (S,D,R) to Korean: Korean Syntactic Cases

Korean syntax is structured with syntactic case markers. They look much better than Filmore's deep cases.

I would like to recommend strangers to my universal meta-function markers: (S,D,R) to use Korean syntactic case markers in place of them. Let us look at an English sentence, *'John sent the news to the Congressman by telegram.'* Here, Case Grammarians described the Congressman to be Dative. But if you are asked, 'Who sent the news to the congressman?', you will answer, 'John sent...' John is action actor, an Agent Case. Now if you are asked, 'Who received the news?;, then you will answer, 'The Congressman received it.' The Congressman is the very person who took an action of receiving. Then he is an Agent, too. According to syntactic

markers, both John and the Congressman are Agent Case. But Case Grammarians assigned Dative to the Congressman of the sentence, 'the Congressman received the news by telegram.' What puzzles the reader here is that both John and Congressman are syntactically in SUBJECT position. So readers would not know which subject should be taken as Agent and which subject should be taken as Dative. According to my meta-functions, John is always D_1 and the Congressman is D_2. never changes.

As you have noticed in chapter 4, almost all Deep Cases can subjectivalize. Case Grammarians did not know where to depend upon in assigning Deep Cases. They did not have criteria and no conventional norms.

If we follow meta-function propositions, we can clearly see projection types, that is from Deep Case to Surface Case, Syntactic categories. ₒ

For scholars, I would like to urge that they should follow Matrix Proposition of meta-function propositions. But students, I would like to recommend them to use Korean syntactic case markers in place of them.

D group of sentences in chapter 2 are pretty difficult to comprehend. But A, B, and C groups of the sentences are easy for students to understand. They have to be able to read in an instant that 'Susan' of 'Mother made Susan a dress.' to be 'for Susan'. They usually consider it to be direct object of 'made'.

5.3. Benefit out of New function propositional Mechanism of Interpretation to Natural Languages

Most of the students will confess that: Their translations of sentences of chapter 2 after they read through this paper are way far different from theirs to them before they were not acquainted themselves with this new mechanism.

The End.

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FOOTNOTES

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