Cognitive Situation Models in Discourse Processing in Arabic Texts

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Abstract:

Cognitive situation models are those abstract unique , subjective and cognitive constraints that language users build during some phases of discourse processing for purposes of manipulating the text at hand (comprehending , understanding , and retrieving the text later on). They are the missing conceptual link between the new incoming information , the short and the long-term memories , and the world knowledge being under the control of the central system .The new output of information after processing is different from that in the text given .The reader has left something on the text creating thus a new texture that differs to a large extent. It is here where human communication is considered relative and productive

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النماذج الإدراكية لمعالجة الخطاب في النصوص العربية

الملخص:

تعرف نماذج المواقف الإدراكية بكونها قوالب ذهنية تجريدية فريدة يبنيها مستخدمو اللغة في بعض من مراحل معالجة النص (الاستيعاب النص وفهمه واستخدامه فيما بعد) . اد أنها الروابط الإدراكية المفقودة بين المعلومات المكتسبة، والذاكرة قصيرة المدى، والذاكرة بعيدة المدى والمعارف تحت سيطرة النظام المركزي . ولا يمكن أن تكون المعلومات التي تمت معالجتها هي نفسها القادمة من النص . اد يترك القارئ بصمته على النص موجدا بذلك بنية جديدة ولدا يمكن ان يعد التواصل الإنساني مسألة   نسبية ذو عطاء دائم.

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1-Introduction

Cognitive situation models (Van Dijk 1985 and 1994) are those cognitive representations the speaker/hearer or writer /reader modulate in their mind for the purpose of understanding discourse . The new output of information is not the same as that in the text given but something being worked out in the long-term memory. Many factors are involved in such a texture most of which are attitudinal in nature. But in all cases the new product is not the same as the original one. The reader unconsciously leaves his print on the old product since he is affected by his own cognitive repertoire.

Text interpretation is not given by the text itself but is assigned to by language users themselves and then it is reproduced somehow differently to others by means of cognitive situation models which have the role of simplifying reality. Also, understanding discourse and text usually takes into consideration knowledge of both the world in general (including social situations) and the language in particular (Van Dijk 1994).

New incoming information is resonated with those old ones to capture the relation holding between them and to build the mental models used later on to

retrieve the text then after. Those mental models are structured hierarchically in the mind (see Van Dijk 1985). They are subjective in the sense that they are unique to the person using them and objective in the sense that they are perfect representations of the information constituting them. Still they are related to the background information the language user may have. This processing is manipulated by a central system the function of which is to control the flow of incoming new information being processed in the mental model in the working memory and going to the long-term memory to be stored there later on (see Kintch , Patel and Ericsson 1999).

In the process of retrieval the opposite direction is going to happen starting from the long-term memory passing by the episodic memory to handle the information in the mental model and to have them as given information to be retrieved. The background information affects the long-term memory in one way or another and vice versa since storing information when happens to be very old is usually transformed to the background knowledge. Still, background knowledge even affects the central system and its work. Related information, further, is only manipulated in this process. There should be a relation of whatever type between the incoming new information

and the information in the long-term memory and the background knowledge (see Van Dijk 1985).

2-Aims of the Study

The present study aims at :

1-Investigating the structure ,role and nature of the cognitive situation models.
2- Investigating the subjects' capacity to retrieve what they have heard.

3- Showing to what extent those subjects can add to the original texts.

4- Verifying the role of social situations in comprehending ,
recalling , and adding information to these texts.

5-Describing the role of long and short-term memories in retrieving and reproducing the information being processed.

3-Hypotheses

1- The language user builds a cognitive model to comprehend the discourse , to use it later on to reproduce and understand the text**.**

2.Information relevant to the language user (because of physical proximity or relatedness to a goal) is more accessible than information that does not meet this criterion .

3.-Those pieces of information which are consistent and fixed need less reading time than those which are not .

4. Information which is related to the readers' emotions and ideologies is more accessible than the one which is not .

5- Subjects produce texts which are some how different from those which are read to them by someone due to differences of the knowledge repertoire the subjects may have.

4- Procedures

In the present study eight students are selected to comprehend three Arabic texts chosen because they are up-to-date ones . The advisor reads the texts one by one more than one time as the informants need so that they comprehend the texts. They are asked to write what they hear and understand from the texts. Whatever the informants may add would be considered. Then the results are discussed and analyzed . This procedure is conducted to see how the informants structure the cognitive models of the texts given and how they are going to be crystallized in their production.

5- Value of the Study

It is hoped that this study will be valuable practically since it tries to present a general framework of the cognitive situation models at the level of discourse comprehension.

So it is also hoped to be of value to teachers, researchers and students of discourse analysis and those who are interested in linguistics.

6- Theoretical Background

The term of mental model in general is first used by Craik (1943) in his book " The Nature of Explanation " . Many years, the term is used no more till Gentener and Stevens (1983) use it in their book to solve problems of connectivity between logic and psychology . It has nothing to do with discourse comprehension which is dealt with in Van Dijk and Kintch (1983). Also, it should be noted that the concept of model used here is different from Johnson-Laird's (1983) in his book Mental Models. Johnson-Laird used the term to explain strange contradictions between logical and psychological interferences with no focus on comprehension and discourse processing during understanding (cf Van Dijk , 1995).Then, the concept of model used by Van Dijk is an internal 'scale – model' - representation of a reality. This

concept with some modifications is adopted here as well.

Following Van Dijk (1985 and 1994) these mental models are referred to as cognitive situation models. Although they are necessarily cognitive, they need not always be situational in the sense related to interaction. Instead, they are always related to a specific cognitive situation. The cognitive approach that we are proposing here is applicable to both spoken and written discourses although different strategies are involved in the realizations of these two genres of discourse as they have the same bases of mental cognitive representations . So the term 'situation' refers here to the specific cognitive context of the discourse /text processed . It is a cognitive situation model which determines the construction of the structure of the discourse at hand (see Van Dijk 1994).

Most cognitive scientists and linguists believe that a mental model constitutes unstable, subjective, running and abstract schema segments. However, the structure of these models is still obscured . (See Davidson et al.,1999, Van Dijk , 1995 and Yvonne , Rutherford, Andrew and Bibby 1992).

The concept of model as represented here is different from the casual word of model usually referring to

an approach of analysis with a fixed theoretical background. The concept of model referred to here is represented in cognitive, psychological, and computational linguistics , and later has been used by Van Dijk and Kintch (1983) in text (or discourse) processing ; text understanding , comprehension , and reproduction . Accordingly, "model" can be defined as the cognitive representation the users of language build to process the text at hand. It is "a construct in episodic memory that represents the event or situation a text is about" (Van Dijk 1995 : 394). It is " the ideal interface between shared social information such as knowledge , on the one hand and the personal, unique, semantic interpretative or productive [information] of a specific text , on the other hand " . (Ibid : 395) . So, texts are not related to the objective world they belong to , but to a subjective cognitive representation the language users build in their mind and specifically in the working memory or what Van Dijk called "episodic memory " during the process of the text . Text processing then involves building new ad hoc and unique models or updating already existing ones. A specific model for a specific text of whatever type or size should be specified for this text and not others. It is personal , subjective , and related to the old experience of its user.

Actually, these models (in addition to their reflection of the text undergoing the process) activate and update the already existing information in the whole repertoire of knowledge people may have. The given new text does not meet the actual one but only in the main points which we shall call the red boundaries of the text . These main points in the text are going to be retrieved almost the same but the minor details are not going to. Hence, texts are not interpreted according to their relative reality, but to the model the reader constructs to understand the text. This is the essence of human productivity. The essence of communication altogether, then , is a matter of sharing these models among language users and knowledge of the whole world could be modulated in a set of models . It is here where philosophy and discourse analysis meet to consider reality as a relative matter.

The term 'mental model' on the other hand is " partial , subjective , and relevant cognitive mapping of the real world'' (Van Dijk , 1985 : 62) . It provides the referential basis for the text comprehension .

Also it is defined as " representations of fragments of the world with respect to which expressions are meaningful , or may be assigned truth value" (Ibid). So, it constitutes the

base of the interpretation process taking place during discourse processing. It is also " the experiential basis for more general and abstract ″frames″ or ″script ″in memory…[and]…their localization in memory suggests that [these] models are integrated structures of previous experiences of individuals'' (Ibid. 63).

It can be running like a film or computer program and watched in the mind's eye while it is running.

So, mental models are '' representations [which usually consist of categories of propositions organized hierarchically] in [working] … memory of situations , acts or events spoken [or written] or thought about , observed or participated in by human actors" (Van Dijk ,1994: 1). Thus, they may be referred to as cognitive situation models.

7-Models of Discourse Comprehension

This section handles the approaches of discourse comprehension which have a great role to play in text processing. Four models are going to be tackled here , the Resonance model , the landscape model ,the Langston and Trabasso model and the Construction – Integration model. The resonance approach which is first proposed by

Myers and O'Brein 1998 is an approach of describing a" bottom – up reinstatement process".

Sentences in the same text are processed and manipulated at the same

phase of time and a network of concepts is constructed in the short-term memory. It should be noted also that in resonance theory, items which are not part of the text should be given by the modeler. In the working memory ,there is an integration of the incoming (new) information and the

already existing (old) one taking a form of activation. Such an integration

is referred to in the resonance theory as 'reinstatement phenomenon' (see Mayers and O'brein 1998 and Frank, 2004).

Reinstatement is either top – down or bottom –up. If it is top- down , subjects try to integrate the incoming information to earlier ones in the working memory. If the connection between the two pieces of

information is missing ;the mental representation of the text is searched until a connection can be made. This causes earlier text elements to be reinstated into the reader's working memory.

Bottom- up interpretation of the text is something different in the sense that there is no search process to make such a connection taking place. Instead the incoming elements reactivate the already existing ones. The old information , in other words, resonates to the new information in all cases. (See Myers and O' Brien, 1998).

Items from the sentences (including concepts, propositions, and sentence markers) are processed according to the resonance approach and not the whole sentence. But very time a sentence is processed it is put in a format of network including these items of the sentence.

The second approach to the study of discourse comprehension is the 'landscape approach ' stimulated by Van den Broek et al., (1999).

This model is restricted to a higher level in discourse comprehension. It is related to the process of how the activation of items take place in the (long- term and short- term) memories. The concept of value is important here since the (input) propositions when activated in the memory have a specific value ; specially when they are related to the reader knowledge. This value differs from one proposition into another, the maximum of which is the more relevant to the (long-

term) memory. Like the resonance model , items which are not found in the text and needed for text comprehension should be supplied by the modeler from the mental models (See Van den Brock et al., 1999).

The third approach to the study of discourse comprehension is the Langston and Trabasso model proposed by Trabasso's works in the 1980s and 1999. Also here items which are not found in the text and needed for text comprehension should be supplied by the modeler. This model is related to the causality relatedness between the propositions of the discourse . "Statements that have a stronger causal relation to previous story events are read faster and recalled more often …and rated more important to the text'' (see Myers , Shinjo , and Duffy 1987 and Langston and Trabsso 1999).

The fourth approach to the study of discourse comprehension is the construction - integration model proposed mainly by Kintch , (1988) and (1998). Kintch claims that the user-language's and linguistic knowledge is kept in a theoretical package called " knowledge – net''consisting of items connected together. When the text is manipulated , the items of the text choose some other items from this net and the rest of the net is left behind. Two

processes thus are taking place here , 'construction' and 'integration'. In the first process , items from the language user's knowledge are selected . In the second , maximally important and relevant items are going to be selected and others less important are left behind (see Kintch 1988 and 1998).

Also other models of discourse comprehension are found. To mention few only are the predication and the Gestalt models. (For the Gestalt models see Landauer and Dumais , 1997, Altmaun, 1997, and for the Predication model see John and, McClelland 1990 and 1992, and John , 1992).

8-Features of Cognitive Situation (Mental) Models

Mental models are comprehensive, they include all the objects, states and actions of the memory system. Also they should be concise having enough

details . They should be coherent and concrete (showing intuitive sense and good level of familiarity). They also should be conceptual (meaningful) , correct (having actual objects and events) and considerate (use appropriate vocabulary and organization), (see Van Dijk 1985 : 63 ; see also Mayer 1989).

Mental models should allow fast, effective and relevant representation and

retrieval of information (Van Dijk 1985 : 64). Also they should have a specific structure that can be at least similar to that of the discourse being processed. At last renewing these models and other processing that these models undergo should be easy to be accomplished .Accordingly,   three features can be identified here ,speed , structure , and easiness.

Furthermore , it is assumed that the structure of the mental models is categorical and hierarchical in nature . The theoretical bases of the mental model consists of categories   arranged hierarchically depending on the principle of importance and interest.   Most important categories are supposed to be at the top of the hierarchy (see Van Dijk 1994:4) . This means that in every understanding process in a specific situation we expect to find a model consisting of a number of categories , the related information are kept in . This principle applies to all types of models and in both the short and long- term memories . (cf Van Dijk 1985 : 64). Accordingly, Mental models have a role in the organization of the (short and long-term) memory in the way that they organize information   in packages depending on size and type of this information (cf Van Dijk 1985: 1).

9-Types of Mental Models

Van Dijk 1985 identified three types of mental models: the general , the particular , and the social mental models embodying a type of interfacing between them. He believes that ''Models … embody the interface between episode, personal knowledge of ..(texts) … and the socially shared belief of groups''(Van Dijk 1994 : 1). Particular mental models refer to those models which are related to a particular place , time , situation and person. They are manipulated at the same time of speaking. They are expected to be localized mostly in the short-term memory. They   hold new fragments   of information which can always renew the repertoire   of information in the long-term memory. General mental models represent   the consultation , references   , and /or the source models from which and to which information from the particular mental models   clashes   in   discourse comprehension,   retrieval,   and reproduction.

The third type of models are the ''social   models''. These models are shared among the members of specific group and they are socially relevant. Generally, mental models go through more abstraction , generalization and decontextualization processes taking into consideration socially , and ideologically

shared opinions and attitudes to construct the social – situation   models. These constitute the ultimate viewpoint the members of the group may have towards the world altogether   , as well as the group – expected motivations, goals and even situation- governed actions (see Van Dijk 1994).

Social   situation   models   are expected to be located in the far back

 of the long-term memory where views of changing and renewing are difficult to be attacked   due to problems of sacredness   these models may hold (cf Van Dijk ,1985 : 63).

The flow of information between these three types of mental models and the short- term memory and the long-term memory should be controlled by a specific central system the role of which is to organize the flow of information between these phases, otherwise things would be in a mess. Such a   system is located in between the short-term memory and the long- term memory and we offer to call it here 'the central system'. So, mental models have no specific location   in the memory but flying in between the short- term and the long-term memory and being controlled by the central system.

10-Short and Long-Term Memories

Incoming information must be stored whenever they enters the system of human processing. However, such storage is relative to people and intensity. Scholars believe that there are three storage stages in the brain: sensory stage , the short-term memory and the long- term memory. These stages filter the incoming information and leave behind those information which we have nothing to do with (See Collette et al. , 2000 : 46). Looking at a group of boys playing football in the street on our way home is an incoming information which should be filtered out if it has nothing to do with our own deep memories. But it is not if it has a relevance to our experience (like reminding us of a close relative who has already died because he was playing football in the street and being killed in a car accident).   After passing the sensation memory , the incoming information moves to the short-term memory. This memory has a limited capacity where we expect to have the processes involved in text manipulations .It is referred to as working memory and defined as" a limited capacity system responsible for the temporary storage and processing of information while cognitive tasks are performed " (Collette et al . 2000: 46). It is here where the

language user decides to keep the information or retain it. Storing information in the long-term memory needs a great amount of effort since every piece of information should have a connection in the long- term memory, a task that is not easily determined. New incoming information needs to resonate with the old ones in the long- term memory.

Students sometimes keep the incoming information in the short-term memory for a while by strategies different from those used in the long-term memory to retrieve the information in the exam . It is something similar to keeping a telephone number to recall somebody at the moment . This number is needed no more then. Storage of information in the short-term memory could be conducted through repetition even if the language user does not understand what this information means. Understanding , on the other hand , involves sending this piece of information somewhere else to find the connection , sending it then to the long-term memory. It is here where the text is understood and stored. When the incoming information is related to something that the language user already knows about very well, storage and understanding of this piece of information becomes easily manipulated (see Kintch et. al 1999) .

So short- term memory is going to be the working memory where texts and incoming information are going to be processed (understood, comprehend, retrieved or reproduced). It is defined as a temporary motivation of incoming information in comprehension and in retrieval in long-term memory. Short term memory processes information coming whether from the sensory stage in comprehension or from the long-term memory in information retrieval (cf Collette et al. , 2000 : 48 and www.2013).

Long- term memory is the memory where huge files of information are going to be stored hierarchically (see Van Dijk 1995 and Kintch et al. 1999) . These files are called for whenever incoming information enters the short term memory to get resonated with to activate this new information and in turn reactivate the old ones .The new information is going to be processed and added then (if necessary) to the old files of information if they are ultimately new. If not, they are going to be integrated with the old ones and change them.

In this sense, short- term memory cannot be understood to be a " gate way" but a working stage between sensory stage and long term memory. It is instead a working memory where a set of operations are conducted (cf Collette et al. , 2000 : 48).

Parts of the activation process happens in the short term memory and parts in the long term memory. Still , activation involves all the information available till the process of filtering the relevant information takes place in the long term memory (cf Kintch et al. , 1999: 186).

Many variables are involved in the long and short-term memories. These include perceptual features , linguistic features , propositional structure, scripts, goals , lexical knowledge , frames , general knowledge , prior text together with the cognitive situation models .(See Van Dijk and Kintch ,1983:347 and also Kintch et al. ,1999:188). Each of these terms needs a discussion by itself. But grouping them like that activates views to handle long-term memory with more care and respect (See Figure 1).

Background Knowledge

The Central System

| New Information | Sensory Memory | The Episodic Memory | Mental Model | The Long Term Memory |

(to be stored in latter on)

Becomes old information
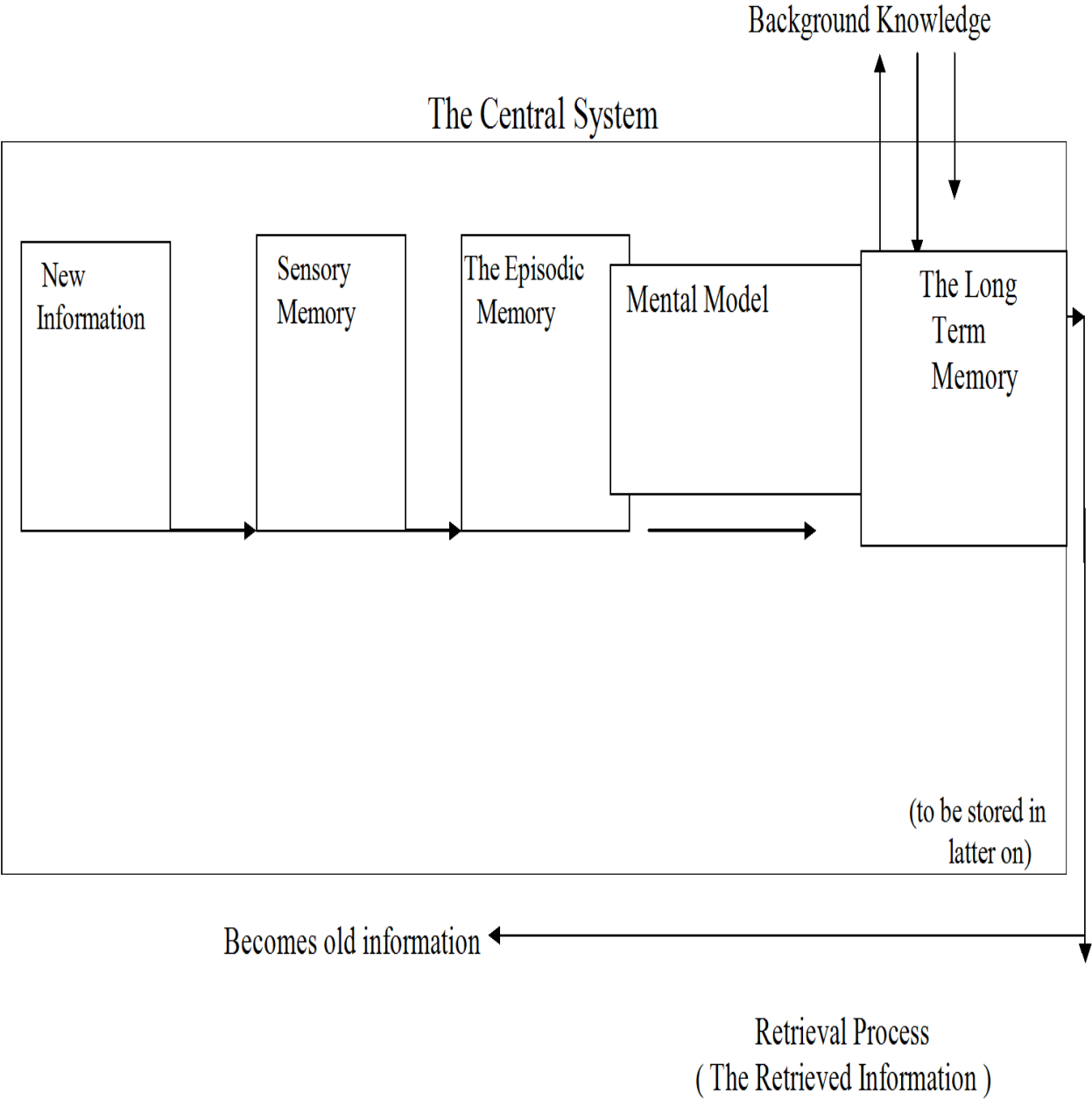
Retrieval Process
(The Retrieved Information)

Figure (1) : Information Processing System

11-Levels of Processing

Three levels of processing can be established : surface representation level , text base level and the situational level . The surface level deals with the text's literal wording . At the text base ; the second level '' the meaning of the text is represented as a network of concepts and propositions from the text''(Frank et al. , 2007: 133). The third level arises when items from the text base are related to the reader's knowledge of the world . These levels are specific and unique to the language user to the extent that discourse comprehension is relatively manipulated being tied to people's experience and memory repertoire (cf Van Dijk , 2000: 228).

12-Reproduction and Retrieval of Information from Memory

Reproduction and retrieval as concepts are taken in this study cognitively. Learning and teaching have nothing to do here . They are taken for purpose of gaining evidence from memory and this is the only way to gain back information from memory (whether short or long- term memory). Discourse representation involves a set of representations and complex operations that together may be thought of

(theoretically) as a discourse reproduction unit in mind. This unit is pragmatically, semantically and formally controlled .

(see Van Dijk , 2000: 235).

Five principles determine the process of retrieval in discourse processing

1- Reconstruction
2- Multiple Application
3- Valuable Principle
4- Being supported by knowledge system
5-Relevance (Ibid).

People need to reconstruct their discourses to save space in memory. Information could be reconstructed to get inferred by others. Also, such reconstructive information could be stored deeply in the memory to be used later on in other discourses comprehension to be a " reference" to go back to when needed. In this sense the reconstruction information will be applied

multiply which arises the second principle of retrieval in discourse processing. This principle allows the information to be used (when stored as a reference in the long term memory) with every type of relevant situations and to get resonant with to make use of when needed later on .

The third principle, being valuable is related to the structural basis of the text. Simply the higher the structural value , the higher the correct retrieval of the discourse. Badly structured discourse is not likely to be retrieved correctly and misunderstanding is likely to happen here. (see Van Dijk 2000).

Retrieval should be supported by knowledge system the memory may have in general and this is the fourth principle. It is the system of language that the participant is retrieving the discourse from. Sometimes when a missing word or construction faces the participant , he has to offer some other element belonging to the same system and subsystem. So, he should construct another element which matches the already existing one.

In the fifth principle two aspects of relevance are involved , one is related to the language user himself and the other to the incoming information in the text processed. Further, the most relevant pieces of information to the language users are likely to be retrieved faster than those which are not. Language users are likely to use other elements from the same knowledge system or subsystem to retrieve the text at hand (see Van Dijk 1980).

13- The Model of Analysis

Incoming information should always be updated during text processing. Such an operation is usually conducted in the mental models proposed during the processes of text comprehension. If the language users try to come up with the incoming information they have to always update the information in the mental models. The new information is more available than the old ones. (see Zwaan and Madden 2004). Things usually change their placing and timing every part of a second. New information becomes old and the old one becomes new and successful processing of the texts is impossible without such updating. It is expected to have a lot of mistakes to happen. Accordingly, incoming information during such updating resonates with all the repertoire the language user may have in the long-term memory even with information which has nothing to do with the current text. They are reactivated again and again in the working memory (short- term memory). Here, they are integrated with new information to change or fix the mental models of the incoming information. The old information could also be changed in the new mental models to change the whole view of the world of the language user accordingly.

It is expected to find pieces of information that are more available , relevant , informative , and important, more accessible and workable than those which are not. Yet they are all resonated in the working memory .

Reading times should be taken into consideration here. The fixed and consistent information should have less reading times than inconsistent ones . The name of the protagonist in a story and his general point of view towards the world for instance should have less reading time than those which are not related to the protagonist or to some minimal characters in the story. (cf Zwaan and Madden 2004)

When people want to communicate effectively with each other and comprehend texts and speech , they first build a model choosing the relevant belief , the relevant intention, relevant setting and relevant goals and then start to communicate this model. This approach represents a cognitive model of information processing. It concentrates on the nature of this processing (reproduction , comprehension , retrieval and understanding) as a dynamic, multiple , and on –line mechanisms.

Also, the structure of the mental model is very similar to the structure of the discourse at hand. So, what is comprehended as the most important issue is the structure of the text rather than a set of propositions the text constitutes.

In the retrieval of the discourse the participants draw information from the three types of the mental models (general, particular and social models) under the control of the central system . Any linguistic item however small and simple could be a cue to resonate the relevant information in the other mental models. Resonation could be partial or complete depending on the relevance of the information in these models underlying rules of abstraction, particularization, generalization, deletion, addition, transformation, contrast, evaluation, substitution ,reformulation, foregrounding, shifting, background, repetition and solving ambiguity.

Also different kinds of constraints are found here in the retrieval of the discourse at hand. These constraints could be pragmatic, cognitive , rhetorical , communicative , cultural , linguistic… etc. (cf Van Dijk , 1998:67). Hierarchical representation of information could also be due to politeness constraints. And another constraint which also control discourse comprehension is the principle of simplicity . The simple the text is the easy it is to be processed at any stage of life.

14-Text Analysis

Three texts of different topics entitled " The Arab Spring", " Freedom" and " Globalization" are given to eight university   students   of   third   year /Department of English at the College of Basic Education/ Mosul University(1) .The texts are read by the advisor one by one. Each text is read more than once as the students and the context require. Then the students are asked to retrieve what they have heard from the advisor. The written version of the texts are not given   to   the   subjects   under   any condition. The subjects are free to write what they think they hear from the advisor . Then the results are collected and analyzed as shown later on. After a period of time the same students are reminded of the texts they had listened to in the experiment indirectly. The original texts are not going to be given to the subjects in order not to Xerox them as they are without comprehending them. Listening to the texts will give the informants the chance to build the models   we   are   looking   for.   The informants are allowed to add only 20% of the texts and not more than that . Also they are asked to give their rendering in Arabic   to   avoid   the   problem   of mastering the language since it is not expected   that all the students master English language very well. In what

follows each text is going to be handled differently.

The texts   are going to be analyzed into episodes   according to the   level of importance. The most important   ones should be remembered by all the subjects (and we shall call them the red spots). Other episodes which are somehow less important are   going to be forgotten even by one or two students (they are   the yellow spots) and the green spots are going to be those elements (or episodes) which are relative to the informants (as far as   its importance is   concerned). Additions by the informants   are going to   be   stressed   in all cases. Also differences   between   the   students themselves are going   to be stressed as well since these differences could have a socio-cultural value .

Whether the text comprehended is going to be stored in the long- term memory or not also plays a role here. After a period of time , the subject is going to retrieve this text if he has a chance   to store it in his long- term memory (which depends on the time he needs to process it and the relation between this text as conducted in a model and his old repertoire of information). When the text is said by the advisor is something and when read and then the text is left behind is something else since through nonverbal communication   the

advisor will unconsciously reflect something on the text.

4.1.Text(1) Globalization

The genre of this text is simple argumentative due to   the existence of an introduction ,   argument (1) , argument (2) , and   conclusions (for this structure see Eemerern and   Grootendorst 1994). It is simple because this structure is so simple and clear and nothing stands in between the four phases of the discourse. When other items get in between these four phases , the structure is said to be complex.(cf Eemerern et al 1992).

The text starts with an introduction of the subject " globalization'' representing a definition of this term and this is the first phase of the   structure

(introduction). The second phase represents the positive effect of globalization   on nations and this the second phase of the structure , argument (1).Against such an argument is argument (2) which represents the third phase of the structure . It is the negative effect of globalization on nations .Then the conclusion (as the last phase) is given represented by a personal view point of the writer in a form of advice for his readers to be aware of globalization. A piece of logically wrong information has been given deliberately in this text to see the effect of this on the comprehension of the text (الحذر من العالم الثالث) (that they should be careful of the third world). It is not the third world but the first world. The writer's language is Arabic and he belongs to the third world , and we do not expect him to warn others of his world.
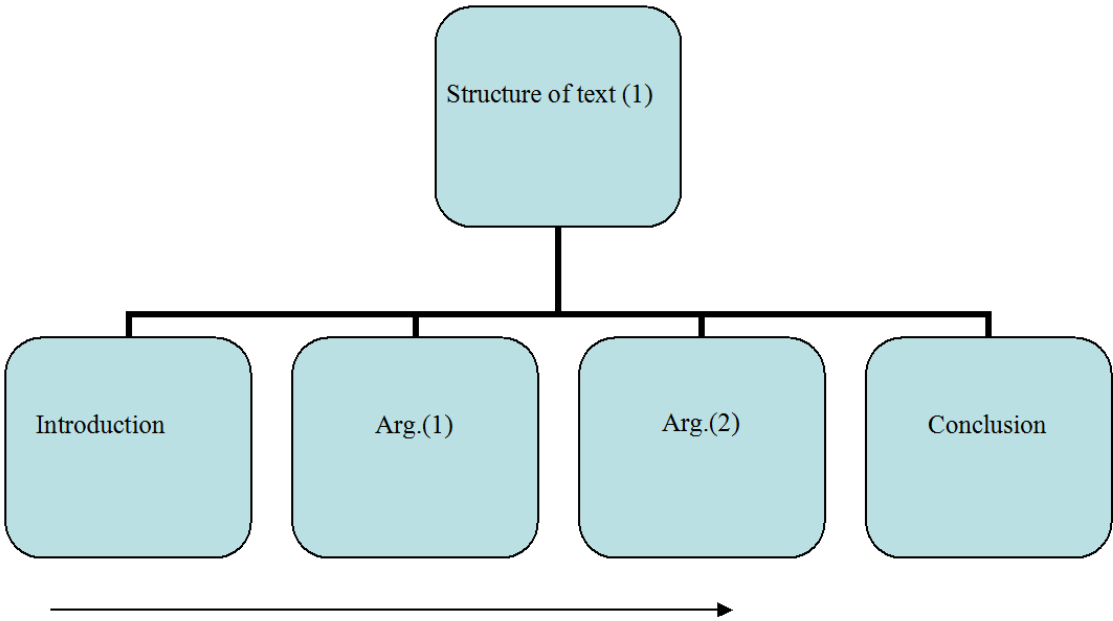
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                    ┌─────────────────┐
                    │ Structure of text (1) │
                    └─────────────────┘
      ┌──────────┬──────────┼──────────┬──────────┐
┌───────────┐ ┌───────────┐ ┌───────────┐ ┌───────────┐
│Introduction│ │  Arg.(1)  │ │  Arg.(2)  │ │Conclusion │
└───────────┘ └───────────┘ └───────────┘ └───────────┘
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Figure (3) : The Structure of Text (1)

Table (1) : The Analysis of Text (1) , Globalization

Participants	Introduction	Argument 1	Argument 2	Conclusion
1(1)	+	+ +	+	+ +
2(2)	+	-	+ +	+ +
3(2)	-	-	-	-
4(2)	-	+	+ +	+ +
5(2)	+	+	+	-
6(2)	+	+	+	+
7(2)	-	-	-	-
8(1)	+	+	+ +	+ +
(2)				(3)

As shown in the above table participant (1) has her own understanding of the positive effect of globalization in the sense of making use of time with less effort. One of the most important finding here is that the wrong piece of information is reflected as it is 'wrong '. Sense of productively is missing here. The participant is unlikely to change the text even if it is wrong. ''The conclusion'' is represented here in a form of conclusion that '' the negative effect of globalization is dangerous , not in a form of advice like the case in the text . Participant (2) missed the first argument since she believes that globalization has only a positive effect .To ensure this she gives a good example from 'Greece' as an experience the participant has in her memory. The wrong piece of information is avoided altogether . Participant (2) represents the conclusion in a personal view point including a new concept as an example. Participant (3) missed all the phases of structure since all the text is represented in a chain of sentences which are not understood altogether. Participant (4) missed the introduction. Instead he preferred to have a personal view point of his own about the term without defining it. Also, examples are given in representing argument (2) in the production of the text. The conclusion is also represented by a personal view point. The wrong piece of information is also avoided altogether .

Participant (5) missed the conclusion which is a very important phase of the structure. Examples are given in the introduction and the wrong piece of information is corrected instead of getting ignored. Participant (6) reflects the text as it is without any change. He was so exact that even the advice is kept and the wrong piece of information is corrected in a simple way. Participant (7) shows no structure at all and he missed all the phases of the structure with the avoidance of the wrong piece of information. Also participant (8) has kept the structure and he adds something new to argument (2)and to the conclusion which is represented as a personal view point. The wrong piece of information is avoided altogether.

14.2.Text (2) The Arab Spring

The genre of this discourse is complex argumentative. It is argumentative since it is represented in a structure consisting of introduction , argument (1), argument (2), and conclusion .It is complex since argument (1) is separated from argument (2) by a separate and specific view point. Also the text starts with an introduction representing the definition of "Arab spring" followed by argument (1). This argument represents the positive idea of the existence of Arab spring as a fact . The second argument represents the idea that

"Arabic spring" is not a fact but an illusion , showing a negative side of the first argument .These two arguments are then followed by a conclusion showing a personal wish of the writer. The first argument is cut with another conclusion, a wish of the writer mixed with a criticism making the genre of the text a complex argumentative one.

Table (2) : The Analysis of Text (2) , Arab Spring

Participant	Introduction	Argument	Conclusion	Argument 2	Conclusion
1 (1)	+ +	-	-	-	+ +
2 (1)	+ +	+	-	-	+
3 (1)	-	-	-	-	-
4 (2)	-	+	-	-	+ ↶ + ↷
5 (1)	+ +	+ +	+ +	-	+ ↶ + ↷
6 (1)	+	+	+	+	+ ↶ + ↷
7	-	+ +			
8	-	+	-	-	+ ↶ + (4)

As shown in the above table , most of the structures are missing due to the complexity of the text and its structure . It seems that the participants here are somehow unable to retrieve this discourse due to the lack of the background information of the subject .

Participant (1) tried to add some new information like Zionist occupation and the social level of people , the slaves (which exists no more). Sill, she missed the structure of the text and most important elements of it. She was not in need to repeat the reading because she was sure that the problem was not with getting the information but with having no mental background about the topic in general. Participant (2) had little information about the topic, so he gave examples showing this knowledge about the subject. Participant (3) seemed to have missed the structure and the meaning of the text altogether. As shown in the previous text his bad mastery of Arabic has a role to play here. Participant (4) started with the conclusion and she seemed to have missed the meaning of the concept altogether , although she had given a personal argument and view point.

Participant (5) seems to have captured the structure of the text though things are represented differently with different wording and samples are given to elaborate such an understanding of the text. Participant (6) takes the voice of the writer and explains things as they are without any change showing a vague case of direct retrieving of things. Participant (7) gives a conclusion at the very beginning of the text and gives an example to elaborate his speech . Still the structure is not complete and the text lacks so much details. Participant (8) also starts with a conclusion and new related concepts

are involved like (nationalism).

Those participants who have a conclusion at the very beginning of the text almost have another conclusion at the very end of the text , a structure which looks like : conclusion - argument (1) – argument (2) - conclusion. The assessment accordingly is given in advance in stead of : Introduction - argument (1) - conclusion - argument (2) - conclusion which proves that complex structures are complex to build mental models about.

14.3. Text(3) Freedom

The genre of this text is descriptive . It starts with an introduction and a definition followed by a development of the topic of freedom giving its conditions and then a conclusion representing a personal view point of respecting others' freedom and privacy is given.

Table (3) : The Analysis of Text (3), Freedom

Participants	Introduction	Development	Conclusion
1 (1)	+	+ +	+
2 (1)	+	+	+ +
3 (1)	+	-	-
4 (1)	+ +	+ +	-
5 (2)	+ +	+ +	+ +
6 (1)	+	+	+ +
7 (1)	-	+ +	+
8 (1)	+ +	+	+ +

As shown in table (3) most of the participants capture the three phases of the structure with almost different wordings .Most of them are able to capture the main proposition of the text. Also, as shown in the table , most of the participants are not in need of another reading of the text due to its simple structure. The additions or changes of wording the participants have in this text are due to their differences in ideological background .

Participant (1) adds the concept of ' women in Islam' to be the most perfect sample to be given in a topic of freedom . Also another example participant (1) has given another example which is that of ' bird and fish' and the comparison between them in relation to freedom. Participant (2) has used one hadith of the Prophet Mohammad (peace be upon him). These two participants ,it seems have been affected greatly by the text to the extent that they relate this topic to their belief . Just like the case in text (1) and (2) Participant(3) is unable to capture neither the main proposition nor the structure of the text due to lack of mastering the language. Participant(4) seems to have a political ideology affecting his understanding of the text . He has given an example which is politically oriented , i.e. the freedom of some parties in Iraq. Also it seems that personal problems affect the participants' retrieval of the text. Participant(4) has troubles with his fiancée, he was unable to get married because of some financial problems. So, this is also reflected as an example in his retrieval of the text.

Participant(5) also uses the concept of 'women in Islam' to be used as an example in his text. Another concept is the ' West's understanding of freedom ' which participant(5) believes to have a role to play in understanding freedom. Participant (6) also adds the Western view point of freedom in relation to   the Eastern one. Most of the participants conclude their texts in a form of personal view point. Participant(7) shows the difference between the Western and the Eastern societies in understanding the term 'freedom'.

Participant(8) gives a different understanding of the term 'freedom' though the same structure is kept and the same main proposition is given . Freedom is taken in relation to satisfaction and it is a personal issue that the free person is that one who feels free even if he is really a slave. Mind , accordingly , should be set free first in order to have freedom. Such a philosophical conception is related to ideology of logic and philosophy the participant may hold.

15. Discussion

Throughout the analysis of the text different variables are shown here , the structure of the texts , the participates'

ideology , and the personal and emotive problems as well levels of education and age. In the two simple structures represented by texts (1) and (3) the participants have almost the same structures of the original texts. Accordingly, the mental models of these texts are represented as the structure of the texts rather than a sets of propositions. These structures are affected by the participates' ideology in the sense that some elements which are not found in the original text is added in the retrieval of the texts, the religious and political ones are the most prominent.

Most of those represented texts are not just perfect like the original texts, which shows that the participants have the texts being undergoing processes of generalization , abstraction , particularization … etc. The advisor being a Kurdish person (since Kurdishes pay more attention to such topics in their life due to the difficult circumstances they live under for many years) affects some participants' judgment about the most important elements in the text (globalization العولمة/ الحرية freedom).

Also, personal problems are reflected in the texts and announced publically since the participant (e.g. participant 4 in text 3) believes that understanding the texts is affected by mentioning these problems as an example in

the productive texts. The complex structure of text (2) makes it somehow difficult to be retrieved , although ,the text , its main proposition, and wording is very easy to understand which also proves that retrieval is a matter of structure not wording.

The subjects need some time to retrieve the text. So, the age and the level of education play a vital role in such a process; younger subjects need long time than the older ones (here participants 1 and 6) to retrieve the text due to experience culmination and less educated people need longer time than those who are more educated ones.

It seems that retrieval of discourse is related to emotive cues since more comfortable participants are more likely to retrieve the discourse than those who are not . By chance some participants were unhappy at the time of the task , they retrieve the most important elements as those which are not pleasant . Also participants depend on those pieces of information which are mostly prominent to build their categorical and hierarchical models of the discourse under investigation. Participants take the most important propositions to build a hierarchy of categories depending on the most relevant and important information . Still, those texts which show an inside, easy and clear structure are more retrieved than others, which

proves the structural nature of the models being construed.

Most of the participants missed both the main proposition and the phases of the structure yielding thus a set of incoherent and incohesive texts.

Also mostly the illogical information is avoided altogether, when an illogical piece of information about the third world is put deliberately mostly all the participants avoid this information and when retrieved , it is either corrected or retrieved as it is as if the participant has received something which cannot be worked out (e.g. participant (1) in text 1).

Mostly, the conclusion is represented by a specific personal view point.

And although the new version differs from the original text , it has the same structure of the text and same main proposition . Participants (1, 2, 3, 4, and 7) in all the texts reflected some religious ideology in their renderings. Participant (2) was unable to capture the structure of the three texts due to the lack of the mastery of Arabic language(her mother language is not Arabic) . Participant (5 and 8) reflected a political and philosophical ideology in their renderings. Participant (6) shows no productivity but he reflects the text as it is with its main proposition, just like that of the writer.

Two weeks later , the participants are asked about the task to give the main propositions of the three texts. Identifying the most important element is very crucial since it is going to be the core element around which everything is going to be said and it is going to be the top of the hierarchy. Only participant(3) and participant(6) were unable to remember any idea about the texts. This proves that those two participants built an unsuitable mental model in their short-term memory and they were unable to store such propositions in their long-term memory from which they were unable to call any piece of information. The problem of participant (6) is related to matters of interest .All the other participants were able to retrieve some main ideas about the texts at hand and it is the main proposition (the conclusion) in texts 1 and 2 (phase 4) and the introduction in text 3 (phase 1).

16. Conclusions

1- The illogical wrong items are avoided mostly if not corrected .

2- The structures not the wording of the text are retrieved and even if changed the participants represent a structure by themselves.

3-So we agree that mental models are a set of phases of structure not a set of

propositions that the language users build to comprehend the text and retrieve it later on.

4- The personal view point of the writer is represented as a personal view point of the reader and   not the same as that of   the writer .

5- Real personal   and emotive problems are also reflected in the retrieval of the text.   Accordingly, information relevant to the language –user experience is more accessible than information which does not meet this criterion.

6- The religious ideology is the most powerful   variable   in   the understanding   of the text (text 3).

7- The higher the structural value , the higher the retrieval of the text is.

8- The simplest the structure of the text is, the easiest to be retrieved and this variable makes text (3) more accessible than other texts.

17.Notes

1-For these texts , see the Appendix .

2-The symbol(+) means that the participant   was   successful   in comprehending the phase of the structure and the symbol – means that he was not . The other small (+) refers to the existence of   other new   elements (additions   by   the   participants themselves).

3-The   numbers 1-8 represent the participants and the number between brackets represent the time of reading the students needs to understand the text. This also has a role to play in understanding the text.

4-The symbol(↶∪) refers to change of the position of the structure - item, the conclusion , in participant (8) seems to be at the very beginning of the   text.

Appendix

1-العولمة_

تعنى انفتاح العالم ليصبح قرية صغيره لتبادل الثقافات والاقتصاد وهو ما حل بالعالم الان اصبح العالم كله حل واحده اذا تأثرت بلد بانهيار اقتصادها تأثر بقيه البلدان اما تأثيرها على الشعوب العربية فله جانبان جانب ايجابى وهو التقدم فى مجال التكنولوجيا وتنميه الثقافة والتعرف على عقول مختلفة لتنمى تفكيرنا وتغير منظورنا نحو العالم. والجانب السلبى وهو الحد بالتفكير عند هذه التكنولوجيا والتسلط عليها دون تفكير ما هو واجب علينا الاتباع له وما يجب الابتعاد عنه وهناك من الثقافات التى لا تناسبنا فى عاداتنا وأخلاقنا وهو ما يسير الكثير معه وينجرف لهذا التيار ولا يخفا علينا جميعا ما هو لهذا احب ان ارسل الى كل اخوتى واخواتى الحظر من العالم الثالث وما يحاول الوصول اليه من تجنيد عقولنا لهم وعدم التفكير فى اى شئ ثانى غير العبث معهم فيما يصنعون .

2-"الربيع العربي" حقيقة أم وهم

ما عرف بالربيع العربي عن حق أو باطل، يعني أن البلدان العربية التي عاشت في ظل أنظمة استبدادية متخلفة قد لا يكون لها مثيل في البلدان الأخرى، بما في ذلك الكثير من بلدان العالم الثالث. هذه البلدان التي لم تعرف في حياتها سوى الشتّاء، أو بمعنى آخر لم تعرف سوى الشقاء والبؤس والاضطهاد وغير ذلك من المفردات التي ترمز إلى العسف والظلم والاستبداد . إن هذا المصطلح غير المجمع عليه يدل على أن الأقطار العربية قد انتقلت من وضع أسود إلى وضع جديد سمي "بالربيع العربي"، تيمنا بمضمونه المشرق، وهكذا تنتقل البلدان العربية بعد مخاض عسير حسب أنصار هذا التحليل، من الفصل النقيض وهو الشتّاء أو الخريف أو الصيف إلى الفصل المشرق وهو الربيع بكل ما يعنيه ذلك من جمال وفتنة واستقرار ورفاهية وحياة كريمة وحرية ومساواة. هذا ما يردده أنصار الربيع العربي، وتتمنى أن يكون كذلك، شريطة أن يعم هذا الربيع ليشمل كافة البلدان العربية، بما في ذلك دول الخليج التي لم تعرف في حياتها ربيعا خاصا بها، سوى الربيع الذي يريده لها حكامها القروسطيون. وهو ربيع مناقض تماما لاسمه.

ولكن هل ما يمر به العرب حاليا يمكن أن نسميه ربيعا؟ . ، فالربيع ما يزال بعيدا، وهذا ليس من باب التشاؤم، فبالتأكيد سوف يطل على شعوب المنطقة يوما ما ربيع يريدونه، ويختلف عن هذا الربيع الذي أراده له العديد من حكامهم، وأرادته لهم كل الدول الكبرى الإمبريالية التي ربما سئمت من بعض الحكام العرب الحاليين والذين فقدوا مصداقيتهم أمامها، ومن ثم ترى أن صلاحيتهم للعمالة قد انتهت أو لم تعد مجدية، وتريد استبدالهم بحكام جدد أقدر وأكفأ على تنفيذ أوامرهم والدفاع عن مصالحهم في مواجهة شعوبهم. لا نريد الإطالة في سرد هذه الاحتمالات، ولكننا نقول بكل صدق إننا نتمنى أن يطل على العرب ربيع حقيقي، هو ذلك الربيع الذي تصنعه الجماهير الكادحة بعرق جبينها، ويعم كافة أقطار البلدان العربية بدون استثناء ليس في تونس أو مصر أو ليبيا أو اليمن أو سوريا فحسب، بل في كافة الأقطار العربية. . H:\research\ الربيعforum#forum - htm.

3-الحرية

جعل الإسلام "الحرية" حقاً من الحقوق الطبيعية للإنسان، فلا قيمة لحياة الإنسان بدون الحرية، وحين يفقد المرء حريته، يموت داخلياً، وإن كان في الظاهر يعيش ويأكل ويشرب، ويعمل ويسعى في الأرض. ولقد بلغ من تعظيم الإسلام لشأن "الحرية" أن جعل السبيل إلى إدراك وجود الله تعالى هو العقل الحر. يقصد بالحرية قدرة الإنسان على فعل الشيء أو تركه بإرادته الذاتية وهي ملكة خاصة يتمتع بها كل إنسان عاقل ويصدر بها أفعاله ،بعيداً عن سيطرة الآخرين لأنه ليس مملوكاً لأحد لا في نفسه ولا في بلده ولا في قومه ولا في أُمّته.

لا يعني بطبيعة الحال إقرار الإسلام للحرية أنه أطلقها من كل قيد وضابط، لأن الحرية بهذا الشكل أقرب ما تكون إلى الفوضى، التي يثيرها الهوى والشهوة ، ومن المعلوم أن الهوى يدمر الإنسان أكثر مما يبنيه ، ولذلك منع من اتباعه، والإسلام ينظر إلى الإنسان على أنه مدني بطبعه، يعيش بين كثير من بني جنسه، فلم يقر لأحد بحرية دون آخر، ولكنه أعطى كل واحد منهم حريته كيفما كان، سواء كان فرداً أو جماعة، ولذلك وضع قيوداً ضرورية، تضمن حرية الجميع ،ومنها :

أ– ألا تؤدي حرية الفرد أو الجماعة إلى تهديد سلامة النظام العام وتقويض أركانه.

ب– ألا تفوت حقوقاً أعظم منها ،وذلك بالنظر إلى قيمتها في ذاتها ورتبتها ونتائجها .

ج – ألا تؤدي حريته إلى الإضرار بحرية الآخرين .

وبهذه القيود والضوابط ندرك أن الإسلام لم يقر الحرية لفرد على حساب الجماعة ،كما لم يبخها للجماعة على حساب الفرد ،ولكنه وازن بينهما ،فأعطى كلاً منهما حقه.

1- Globalization:

Globalization means unrolling the world to be a small village to share cultures and economy. This is what happens nowadays .The world has emerged to be one mass, if one country is affected by collapsing its economics , other countries got affected as well.

The effect of Arab nations' globalization has two sides, one positive and one negative .The positive effect of globalization lies in the development in the technological field and developing cultures and having knowledge of different minds to develop our own thinking and change our perspective towards the world.

The negative effect is that it limits our thinking at this point of technology and controlling without thinking what should we follow and what should we get away from. There are so different cultures which do not fit according to our conventions and morals .

These cultures are followed by most of us and all of us know about that.

So I would like to send to all my sisters and brothers to be aware of the third world and to be aware of what it tries to have which is recruiting our minds for

them and never think of any other things but to have fun with what they are doing.

2-The Arab Spring : A Truth or an Illusion

What is known as the Arab spring , whether it is truth or illusion , means that Arabic countries which live under the control of ignorant and despotic systems may have no similar case in other countries including many of the third world countries .

These countries never knew but winter in their life .They knew nothing but misery, persecution and other lexical items which refer to violence, despotism and injustice .This concept which not every body agrees with refers to the fact that the Arabic countries have transformed from a " black situation " to a new situation called " The Arabic Spring " to see a good omen in its implied meaning of shining.

Accordingly , the Arab countries , after a hard work moved from the

contradictory season (for the proponents of this analysis) , winter, Autumn , or summer to the shining season, spring with all meanings of beauty , stability, welfare , luxury, generosity , and equality .This what proponents of Arab spring want and we wish it would be like that on the condition that this spring

prevails allover the Arab countries including the Gulf countries which know no specific spring for them in their life ,but the spring that their Aristocratic leaders choose for them , a spring completely negative to its name .

But can we call what the Arabs undergo as spring?. Spring is still far away .I am not pessimistic .Surely one day , people of the region would have the spring they want which is different from that their rulers need for them, and different from that all the imperialist great countries want for them.

These great countries may be got sick with the current Arab rulers who lost their truthfulness in front of them , so their employment has finished or become serious no more . So, they decided to replace them by other new rulers who can implement their orders and defend their interests against their nations. We do not want to go long with these possibilities , but we say honestly that we wish that Arabs had real spring , a spring being made by the working people prevailing all the Arab countries with no exceptions , not only in Tunis ,Egypt , Lebin ,Yemen , or Syrian , but in all the Arab countries.

3- Freedom:

Islam has made 'freedom' one natural right of human . Human life has no value without freedom and when the man loses his freedom , he died internally , though externally he lives , drinks , eats , work , and walks a head. Islam has highlighted freedom to the extent that free mind is the way to consider the conceptual realists to God existence .

Freedom means human ability to do or to live by his will which is a private faculty that every rational human has to control his deeds away from others' control .He is not a slave of anybody neither inside himself, his country , his people , nor his nation.

Islam does not set freedom to be ultimate without constraints , because freedom then would be a shape of chaos which is stimulated by love and desire .Love destroys people more than building them .So, Islam prevents people from following it . Islam looks at the man as civilian by nature living among others, so it does not set freedom for one person and not the other. But everyone has been given his freedom whoever he was , a person , or a group. So Islam has put some important constrains which guarantee freedom for everybody .

These constrains include:

1- One person or group should not threaten the general system safety and convulse its bases .

2- Freedom should not miss more important rights by looking to its value in itself and its results .

3- Ones' freedom should not hurt others' freedom. According to these   constraints we realize that Islam never sets freedom for one person neglecting the group and vice versa , but it makes a balance between the two with a suitable share for each.

BIBLIOGRAPHY

Altmann, G.T. M. (1997). The Ascent of Babel : An   Exploration of Language , Mind and Understanding. Oxford, UK : Oxford University Press.

Broek, V., P. Risden, K. Fletcher, and R. Thurlow. (1996) . " A Landscape   View   of Reading : Fluctuating Patterns of Activation and the   Construction   of a Stable Memory Representation . In B.K. Britton

        and   A. C. Graesser   (eds) Models of Understanding Texts

        (pp. 165-187) . Mahwah, NJ: Erlbaum.

Collette , F. , Linden , M. , and Ponceled , M. (2000). " Working Memory , Long – Term Memory , and Language Processing : Issues and Future   Directions '' . In Brain and Language 71, 43-51.

Craik, K(1943) .The Nature of Explanation .Cambridge:Cambridge University

        Press.

Davidson , M., Laura Dore ,and Jalie Wettz . (1999) . 'Mental Models and   Usability". Cognitive Psychology 404, Nov.(15).

 Eemeren , F . , R. Grootendorst, Blair, A . C . Willard (eds) (1992). Argumentation Illumination. The Netherlands : ISSA.

Eemeren, F. and   R. Grootendorst (1994). Studies in Pragma - Dialectics. The Netherlands : Sic Sat .

Frank, S.   (2004). Computational Modeling of Discourse Comprehension. A Ph. Doctor . University of Tilburg.

Frank , S., W., Koppen , M.Noordman , L. and Vonk, W.(2007). Modeling

Multiple   Levels   of Text Representation. In   F. Schmalhofer   and C.A.   Perfetti (eds.), <u>Higher Level Language Processes in the Brain</u>

<u>: Inference   and   Comprehension Processes (pp.133-157)</u>

<u>Mahwah , NJ</u>:Erlbaum (2007).

Gentener , D. and A.L. Stevens(1983)(eds.) Mental Models:Lawrence:

Lawrence Erlbaum Associates Inc.

Johnson –Larid (1983). Mental Models Towards a Cognitive Science of

Language   Inference   and Consciousness . Cambridge: Cambridge:

University Press.

John , M. F.(1992). The Story Gestalt:A Model of Knowledge –Intensive Processes in Text Comprehension . Cognitive Science , 16, 271-306.

John, M . F . and McClelland , J . L . (1990). Learning and Applying Contextual in Sentence Comprehension . Artificial Intelligence, 46,
217- 257.

John, M. F. and McClelland , J. L.(1992) Parallel Constraint Satisfaction

as a Comprehension Mechanism. In R. G. Reilly and N. E. Sharkey (eds) Connectionist Approaches to Natural Language Processing (pp.97-136). Hove, UK : Erlbaum.

Kintch, W. (1988).The   Role of Knowledge in Discourse Comprehension ,   A Construction   Integration Model. Psychological Review, 95, 163-182.

Kintch   ,W.(1998).Comprehension   :A Paradigm for Cognition .Cambridge   , UK : Cambridge University Press.

Kintch , W . , V. Patel, K. Ericsson , (1999), " The Role of Long - Term

Working   Memory   in   Text Comprehension" . In Psychologia , 1999,

42, 186-198.

Landauer, T. K. and Dumais, S. T. (1997). A Solution to Plato's Problem :

The Latent Semantic Analysis Theory of A Acquisition , Introduction   and Representation   of   Knowledge . Psychological Review, 104, 211-240.

Langstone , M. C. and Trabasso, T. (1999). Modeling Causal Integration and   Availability of Information During Comprehension of Narrative Texts.   In H. Van Oostendrop and S. R. Goldman (eds). The Construction of   Mental Representation During Reading (pp. 29-69). Mahwah, NJ :
   Erlbaum.

Mayer , R.E. (1998) . "Models for Understanding " Review of Educational

   Research, 59 (1)43-46.

Myers, J . I . , Shinjo , M. and Duffy , S. A (1987)
. Degree of Causal   Relatedness and
Memory . Journal of Memory and Language, 26S453-
   465.

Myers and O' Brien (1998) " Accessing the Discourse Representation during
   reading Discourse Processes , Vol .26, pp. 131- 157.

Rolf , A. Zwaan , and Carol Madden , (2004) . " Commentary and Reply :
 Updating Situation Models" . In Journal of Experimental Psychology :   __
Learning Memory and Cognition , 2004, Vol. 30 No(1) P . 283- 288.

Van Dijk, T. (1980). Macrostructures: An Interdisciplinary Study of Global

Structures on Discourse Interaction, and Cognition. London : SAGE.

Van Dijk , T., and W. Kintch (1983). Strategies of Discourse Comprehension.

   New York: Academic Press .
Van Dijk,T(1985) Cognitive Situation Models in Discourse Comprehension:

   The Expressing of Ethnic Situations in Prejudiced Discourse .In Forgas,

   J.P.(ed.) Language and Social Situations. New York:Spnuger.pp.61-79.

Van Dijk , T.(1994) . Cognitive Context Models and Discourse . Maxim Stamenow (Ed.) (1994). Cognitive and Consciousness. Newburry
Park, CA : Sage.

Van Dijk , T .(1995) "   On Macrostructures , Mental Models and other   Invasions" . In Charles A. Weaver, III Suzanne Manner and Charles   Fletcher (eds.) (1995). Discourse Comprehension. Essays in Honor
 of Walter Kintch (pp. 384- 410) Hills dale . NJ. : Erl baum.

Van Dijk, T. (1998). Towards a Theory of Context and Experience Models
in Discourse Processing . In H. Van

Oostendrop, and S. Goldman (eds) The Construction of Mental Models During Reading . Hillsdale, NJ : Erlbaum.

Van Dijk , T. (2000) <u>Ideology</u> : A Multidisciplinary Approach . London :   SAGE Publications.

Yvonne , Rutherford   , Andrew and Bibby , Peter (ed.) (1992). Models in

the Mind . Theory , Perspective , Application. London : SAGE.

<u>(WWW.)(2013)</u>.How Human Memory works. Local host/ G:/ two/ human   – memory2.htm.