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Establishing Propositional Relations in Reading Stories

E. Abdollahzadeh

Associate Professor Iran University of Science and Technology, Tehran email: s abdolah@iust.ac.ir

Abstract

This study examined the establishment of coherence relations by Persian EFL learners in their reading of stories. 201 undergraduate EFL learners read narrative passages and selected appropriate coherence elements of different types necessary for the proper construction of meaning. The results demonstrated a consistent pattern of a text-specific hierarchy for the comprehension of conjunctive relations across learners with different proficiency levels. More specifically, adversatives were found to be the easiest connectors by all the three groups followed by causals as the second easiest, then sequentials as the third and more difficult, and additives as the most difficult markers. The results have both theoretical and SUDFWEDO DSSOUEDWIRQV DQG IPSOUEDWIRQV IRU WKH µPRCHD EXIODIQI¶ KI SRVIKHNHV RQ VKH RQH KDQG DQG UHDCIQI comprehension and instruction on the other.

Keywords: inference, meaning construction, connectives, reading comprehension, stories

1. Introduction

Reading comprehension studies have been mainly dealing with variables such as ability, age, prior knowledge, motivation, purpose, as well as text variables such as voice, ambiguity, word length or frequency Hereived: 03/08/2011 Accepted: 08/14/2011 (Brantmeier, 2005; Zinar, 1990). However, few studies have examined KRZ WKHUHDGRENV FRPSUFKIO VRQ LV DIIHFWGZKIO WKHVDOLHDIEH RID SDWDIH IV WWK WALHIVP DO BOODWG . LOWFK DO G9 DO' LIMI DJMG that when logical links between and among propositions could not be found, the reader must make an inference. Coherence elements are believed to help the reader identify and link proposition sets. Through them, the reader will be able to organize information stored in the long-WLP PHPRU DQGKHQIFH DFFHW WKIPP HDMQ 6S\UGINM . IQWFK * UTHAHUHWOO =IQID ,QDVP IOUYHQ DOG9 DO' INN S WOMEN WITH THE HOP HOW O INH 6S\UGINI transitions, interrelate superordinate and subordinate content by adding in ZRIGVDQGSKDVHV WKDVHP SKDVLH WKHUHDVARQKEV « 6LIQDV VKR&G help the reader form a hierarchical framework in memory that will facilitate the placement of the incoming information".

2

Narratives construct a pattern of events with a problematic and/or unexpected outcome that entertains or instructs the reader or listener. 7 KH WQGWK IQGNH HY MAY OL DWR Q IQ WK HUHDEHUDV SDUWRI WH UHDGIDI 7 KHP R WFRPP RQHOP HOWIR & G LQ QUULAYH SURIHW ' HOLV texts are characters with goals and motives, event sequences, morals and WATP HV * UTHWHU * RODJ / R**Q** 1 DUDWYHWY W IRFX RQ SHURQ VRENIFW DQGUHDWRQ VQ WP H L H P HQDOSURIHW RI SHIFHS WRQ IQWEP H %URRNV: DUHO 5 HAHDIFKHINOINH RUED WILLGWR discover how native and non-native readers of Japanese process text and represent its meaning in memory when they have differing goals (narrative vs. expository). He argued that narratives have a more predictable organization with global causal structures which appear to JKGH, RØJ DOGDGØWHDGHM FRPSUFKHOVRODOGSURHWIQI * ROPDO DQG9 DQKDHQ7 UEDWR HWDO * HJHUDQG0 LOODV found that comprehension differences between procedural and other text WSHVONHQIDODAY HVDHP DQQ GXHVX GUHHQIEVIQ OREDOFR KHQIEH, Q the same vein, Abdollahzadeh (2006) found that when low-level learners perform on narrtive texts in which textual signals are not included, they may find the narratives as difficult as the expository texts.

Prior research on connectives and narrative comprehension suggest a limited picture of the relationship between text signals and comprehension. They essentially focus on the role of causal relations as SQ ITH HOPP HOW LO OCUUDANYH FRPSUFKIQURO 0 \ H.V HW DO 7 UEDWR HWDO 7 UEDWR 6SHU 7 KH DJN WKDWHDGHV MAGJH FEDKI DO UHDANRQV DV PRUHI IPSR NAQOW VKI VKIH IQHAUSUHMANRQ RI QIDUDAWYHV WKIQ DQ, RWKHU WA WA OHOPP HQW 7 UDEDWR 6SHU However, readers do not unfold narratives by means of causal relations per se, but may also resort to other connectives like additives and 7 KHMH UHMHDIFK HUM IRFX WKHO DGYHADAYHP DINHEV %HQ\$QDXK runs the risk of limiting their findings since such a restricted focus excludes other types of relations (i.e. concessive, additive, and sequential relations) that readers seek to comprehend while reading stories. Further, almost all these studies have used sentence pairs rather than extended SDWD HVIQ WKHGPYLJQRI WKHLJQWWK HQWS VO MUD FDWIRQE such pairs may present relations that are inherently easy to integrate and comprehend. Sentence pairs may not accurately reflect the effect of connectives as the global macro-level context provided in an extended passage is not taken into account in such designs.

1.1 Significance of the study and research questions

Examining the effects of connecting devices such as logical connectives can help us identify how these devices function in the text and how they contribute to a better understanding of the narrative information. A systematic investigation of different kinds of signals can help us discover whether some are more important for comprehension than others. Accordingly, better models of the cognitive effects of signals could be SRVMDWG WKINFDQ KINH UHDMDQIFH WK UHGQJ IQVWK WRQ / RUFK

Previous research has been mainly concerned with the relationship of these signals with the amount recalled or questions correctly answered. Further, almost all these studies, using sentence pairs rather than extended passages in the design of their instruments, have failed to reflect the effect of connectives at the global macro-level. The assumption in this research is that an inability to connect ideas in the text in an appropriate fashion would impact comprehension of the text as a ZKRD * ROPDQ DQGO MUQ 7 KHIQWHWKRH IV HWHQWWQ IQhow readers understand the functions of logical connectors of different kinds and the meaning relationships implied by them.

To shed light on these issues, this research attempted to delve into WAH ZD, / UHDEHV DWGIIHHQWDQIN JH SURIFIER OWNEV FDQ IQHU logical relations denoted by connectives while reading extended stories. To this end, the following research question was investigated in this WMS \setminus + RZ GR, UQQDQ / UHDEHV ZIMK GIIHHQWDM HOV RI ODQI XDJH proficiency infer connectives while reading extended narratives?

1.2 Background

Coherence elements or connectives are used "to characterize words or morphemes whose function is primarily to link linguistic units at any OHY IO &U WAD S 7 KPH FROOTHWRIVFDOUHHUWRDUFKVHWRI relationships such as causal, adversative, additive, sequential as well as SUDJPDWF UHDWRQV9DQ'LW 7 KH DH IUHTN QW FOWLING DFFRIGIQJ VX VX HFULMUD SURSRINGE (+ DODGID DQG+ DWDQ PRG This model is a broadly used model in different discourse-functional approaches in linguistics. That is why we, given our purposes, chose this model for identifying the connectors in the texts. They present four classes of connectives: (a) additives, which present new information; (b) adversatives, which present relations contrary to our expectations; (c) causals which present true causes and logical inferences, and (d) sequentials (temporals) which present real-time sequential or relationships.

There have been a number of studies investigating the role of connectives in text processing in different narrative and expository text types. Some researchers claim that coherence relations are merely analytic tools which are useful to describe text structure but they should QRWEH JIYIQ SWFKREJIFDO IQWSUFMARQ * URY DQG 6IGQH

Others hypothesize that coherence relations should be considered as

FRJQNAYHHQWAHV + REEV 0 DQQDQG7 KRPS VRQ 6DOGH/HW al., 1993). According to the cognitive representation of coherence, constructing a coherent representation of a text requires that coherence relations be established between text segments or rather between the cognitive representations that readers have of text segments. For instance, Sanders and Noordman (2000) focused on the cognitive status of these relations. They found that explicit marking of the relations resulted in IDWHUSURHWIQJEW GG QRWIHWHFDOD\$ OR 'HDQGDQG6DQGH/ (2002) investigated the effect of causal connectives and signaling phrases in expository texts that were manipulated with respect to the presence or absence of linguistic markers. Their results showed that comprehension in the implicit condition was significantly lower than in the explicit condition while the explicit versions did not significantly differ from each other.

Other studies examined the effect of explicitly versus implicitly WIXING FROOFFINY FY IO WITH FRPSUFK HOVRORI WIW * HYDDOG5 \ DO examined fifth and seventh grade children who read expository texts QIGHUIRMI FROOMAROV, PSOLFLWZLWKRWY FROOLFMYFY HISOLFLWZLWK FRQQFFMYFY KILKUKWG ZUKKFRQWFWRQWQGHUQQHGDQGFDSUM02HG DOCGHES WITH HOGHUKIG WITH HOPFWFROM FUR OWNER K KDFOR HWWW 7 KH analysis indicated that all groups benefited from the highlighted and H SOFTWFROM F WRO/ 3 \$ YHO H DOGEHORZ DYHO H UHDGHU VKRZHG OHV knowledge of these important cohesive indicators than above average UHDGHEV * HMDDQG5 \ DQ S 7 KH FROESH WKDWK KUHGHW WRZ SURHOP VZIWK ERWNORZOGJHRI FROMYF WROVDOGFROMYORYH their use in comprehending expository text. Nonetheless, these readers benefited from the highlighted condition in accessing and answering both GHMAD DQG WWX WAH THA WAR QV6 IP LODLO * ROUDU H DP IQIG WKH HIHFWRIH SOLFIWIP SOLFIWIQGKIKO KWG FRQOHING VRQ(67 UHOGHM comprehension. He found significant differences between the performances on the explicit and highlighted versions on the one hand, and the implicit versions on the other hand. However, no significant differences between the explicit and highlighted versions were found.

* ROY IX IQYMN DWG WHRCHRI DGYHDWYHFRQQFWYHQ helping good and poor readers to integrate information in texts. \$ GYHDWYHFRQQFWYFY ZHH IR&G W DG SRRUHDGHEV DEKDW W H FOGH IUHDY IQ VQIR P DWRQDQGIP SURYEJ RRCHDGHEV SHIRP DQFH W IR HJ UR&G IQR P DWRQ 2 Q D P R HJ HQHDOQRW * ROY IX EHOHYFY that connectives help readers activate the schema related to the topic under discussion or to its structure. They also help, through their redundancy, alert the reader to the organizational structure of the texts, thus helping the reader to process the information on a deeper level.

0 H, HU IR&G WKDWWN IODG UHD GHW SR WHW DGHT&WM W, W organizational skills to generate most of the implicit logical relationships in a text through their structure strategy to read difficult texts even in the DE VFQIFH RI FRQ&F WYFY 7 KN WKFYLV ZDV ODWLU TM WRQEF E\ RWFW UHHDJFKHW) RUIQ WAQIFH 6S\UGDNN DJJN G WKDW R RUH WLQ likely if a comprehender is faced with a sufficiently difficult text; he/she ZICOI&F WRQONHD SRRUFRPSUFKHQGH, I WKN LV WR WKHQ VJ QIOV FR&G aid good comprehenders, who have become poor comprehenders due to textual difficulty" (p. 231). She found that logical connectives appeared to contribute to both superordinate and subordinate level of comprehension.

Robertson (1968) also investigated fourth, fifth, and sixth grade UHCCD FRPSUFKHQYRQ RI FRQQFWYFY + H FKRM **LOGYGNO** connectives and examined the sentence structures in which they appeared IQ WKHWWGHOWWEDDOUHDGDJWMW7KHQ KHFRQWWKWGD PØWSØH choice test in which each connective had to be selected for the slot from WAHRS DROV7 KHUHWAW WKRZHG WKDWEDHGROJUDGH WEMHFWGHYHRSHG DO IQFHDMQI ØGHWWOGDJ RI HDFK RI WKH VHOFFWG FROGFWYFY 6 WASHQWFRPSUFKHQWRQRILDWPV WAWDQJFRQQHFMXYHVWXKDV KHZHYHU UNKXY DONKRXK DQG \ HW P R WO DG YH JUNY FY ZHH EH RZ WH comprehension level of the total student groups on all test items. Significant correlations were also found between understanding of FRQQFFMXFVDQGVKHVXMFFVVVH DHSODFHRIUHVGHQFHDQGDEKDANHVIQ listening, reading, and written language. Female readers gained higher

marks than male readers on the connective test and children in urban areas scored higher than those in small towns, who in turn did better than WR WIQ UN DODHEN 5 REHEARQ WWG \ LVIQ WHARQ J IQ WHARQ VI WIDAW refers to the developmental nature of the learning of connectives by children. This view is an ontogenetic perspective which indicates that producing texts in writing is not a skill acquired all at once homogeneously, but it follows different paths depending on the requirements, and depending on the text type concerned at different ages 6FKQM Q

6H DO'XFKDQ 6FRWW DWJQHG D P RH FHQWOURCH WK connectives. They found out that they not only signaled the structural relations between elements in simple narratives, they were crucial as well in building a coherent mental model for interpreting happenings in the story world without which the reader would not be able to build the IQMQGH P RGH 7 KX WKH SUHHJ WK X H WKH WMP µP RGHEK @GQJ connectives, for inter-clausal connectives.

7 KH H DP IQIG DFKIOG VRUDOQIDUDAY FV D VHWRI WARLEN RYHD year, a story written for children by an adult, an adult narrative written for an unknown adult audience. They examined the first 10 occurrences RI LEXAM IQ WANDER YHP HQWRQHG GLINH HQWGMFRM VH FRQNAW WA GMFR YH what the producers of discourse were attempting to convey in the SDWDIHV WKDWFROMOQHG WKHWLP LEWN DQGKRZ LEWN IQ FWROH WK DFKHYHWKHUJRIO 7 KH FRQIOGH WKDWEW || FUHDWWD LGRPDQ || IRUWKH interpreter and that the interpreter needs to determine what the domain is, ZKDWH SHFWWROW DH DWRHDWG ZDK WH GRPDQ DOGKRZWH DH being violated. By this, they meant that interpreting relations denoted by LEXAM UHLKUHVJRIQJEH ROCKKHM, WIK & GHUMBOGUVDOGVA SUMQJO DV 6HJDO HWDO S DJXHG ³HMHQ ILYH\ HU/R**G**VVHP WK KDYH OPDIQUE UV VI QUIFDOFF 0 RURYH ØGHUWØOGQJ FROOFWYFYXHG IQ texts requires consideration of information presented much earlier than WALFOOK HSUFFICIO IW: HFDQ WKX IQHUWKOWFRQOFFICYFV FDQ FUHDWA different interpretive relations of continuity (as through additives), discontinuity, causality, and adversity.

All in all, these studies highlight the significance of textual markers of different types and how they may facilitate or constrain the various interpretations that readers might make while reading or producing stories. They further show that the communicative purpose affects the construction of an efficient configuration of textual organizers, and the mastery of narrative comprehension or production implies a restructuring of the configuration of textual organizers in a text.

2. Method

2.1 Participants

254 male and female students took part in this research. They were **VHDFWG IURP & GHJ UDG & W**()/ **W& HQWRI 6 HHQHH DQG7 HFKQRO** from three state universities in Tehran. To determine the language **SUR IFHQF OHY HORI WKHSDWFISDQ W** D 1 HORQ WMW 9 HXIRQ ZDV **DGPIQIXMHG * IYHQ WKHDFWKDWKHSDWFISDQ W** P DM UZ DVQR WQJOXK **IWZ DV DWR HG WKDW7** 2 ()/ DQG,(/76 P IJ K WEHD YHQ GIIIF& WMWWIRU thee learners. Therefore, it was decided that this test may be a better candidate for the purposes of the current study.

These participants were divided into three groups of weak, intermediate, and advanced language proficiency levels based on their mean SHIRUP DQFH DQG WAQGIG GFY DAR Q VFRUH RQ WKIN VMW 0 HDQ

6' \$ VVRPHSDWHSDQ WIDLOOG WK W2NHER KKVMWRI VKHWAG \ VKH final sample was reduced to 201 participants (see Table 1).

Tał	ole1. The	distribution of the pa	rticipants
I	* URXS	/ DQIXDIHOMMHO	1
1	1	: HDN	
	2	, QMALP HEIDM	
	3	\$ GYDQFHG	
	Total		201

2.2 Instrumentation and procedure

7 KHP DLQ LQ WAR HQ WIRU WKM WAS \ Z DV D FRQAQF WRQ FRPSUFKHQ VIRQ WMW7 KHSXISR VHRI WKM WMWZ DV WR FKHFN WKHIRUH JQ ODQI XD H UHDGH VM

NORZOHGJHRIORJIFDOFRQQFMKU/RIDGOEMA/H\$'' DGYHDWYH\$'9 causal (CAUS), and sequential (SEQ) types in different text types WALR X K D UDWR Q DFOR HS IR HG MH 7 K HVEMHFW Z HLH UHT KUHG WK VHOHFW WALL FRUHFWFROWENT FUR OF INFORMATION WALL FRUHFWFROWENT INFORMATION OF WARMEN connector types. Understanding of five additives (i.e. in addition, for example, for instance, moreover, furthermore), three adversatives (but, however, nevertheless), five causals (consequently, as a result, so, therefore, thus), and six sequentials (first, then, second, third, finally, in short, briefly) was examined. Three representative texts for each text type were selected and the following procedures were observed in them: (a) there were eight cloze slots in each passage, each slot at the beginning of a sentence requiring a different connector type as the correct answer; (b) a minimum of one sentence separated two successive slots; (c) the sequence of correct choices and distracters was different in each passage and across passages.

, QNADOO VHYHDOQIDUDWYHSDWDHVWKDWHPHGWKEHRIFRPSDUDEQ similar features were selected. Then, five passages out of this pool of passages were selected as appropriate ones with comparable features in terms of length (one-page long passages), number of words (Average ZRIG IUHTNIQF **0 IO** 0 D **OK** EHURI SDDDDSKV paragraphs each), and text type (narrative). These passages were shown to three experienced instructors involved in teaching English reading courses, and were deemed appropriate for our intended participants in terms of difficulty level. Their consent as to the readability of the texts was important as the current readability formulas were not suitable for our intended purpose. Readability formulas provide a quick and easy way of estimating the difficulty of a text focusing on word difficulty and sentence length. Notwithstanding, the point is that connectives make sentences longer and readability scores soar, while they ease the GLIIFEN W RI WAH WA WIR UUHDGHEV %HDXJ UDQGHDQG ' UHWOPLJ WIM that readability formulas ignore the degree of vividness, concreteness, exposition, organization, and content of the texts. Therefore, these IRUP ON DEFRIGION WAR OH HU QHG WK FRQKGHUUHDCHUYDDDEODV (verbal ability, age, education, styles, etc.), text variables (such as textual signaling which was examined here), and task variables (mode of presentation, task type, etc.). Unless readability formulas take these points into account, they would not be really reliable. That is why we SUHHUHGWHWEJ P HQWRIUHGQJLQWK WUWRVEIWH RUB ØDV

After the trial administration, the researchers decided to include three passages for the final administration. The developed instrument VHVKH\$SSHQGL ZDVSIOR WGZIVK DJURX RI ()/ ODQRVVP IODU to the target population. Participants took the test in one hour. Pilot DGPIQIVWDWRQDQGGNFX VRQZIVK WR RI WHUMDIFKRV FRODJN V resulted in some modifications of items as to appropriacy, intelligibility, workability, and item classification. Accordingly, the number of the passages was reduced to three passages, and the administration time to 50 minutes.

7 KHSDWHSDQ WWRRN WH WWW IQ WZR VHWIRQV, Q WKHIILWWHWIRQ they were assigned he Nelson test, and one week later they were assigned WHGPY HRSHG WWW7 KHFR OF WG GDWZ HH WKHQ VXMFFWG IQ WWKH6366 software for analyses and comparisons.

3.	Results

) ILW DQ RYHDO GHFUSWRQ RI WKH SDWHSDQW FRPSUKKQ VRQ RI connectives of different types across groups is presented in Table 2.

/ HMHD	&21&7<3(0 HQ
: HDN	\$.81
	\$ '	1.30
	С	1.21
	S	
, QMLP HADM	\$	1.2
	\$ '	1.81
	С	
	S	1.41

Establishing Propositional Relations in Reading Stories

/ HMHD	&21&7<3(0 HDQ
Advanced	А	1.64
	\$ '	2.10
	С	2.02
	S	1.91

1 RWA\$ \$ GGWAYH\$' \$ GYHADMAYH & DX DO6 6 HITM Q MAD

An overall comparison of the performance of the groups on the comprehension of coherence elements shows that, in terms of mean rank performance, additives and sequentials were the most difficult to infer by all learners, followed by causals and adversatives respectively (see Table 3).

Table 3. Overall performance on conr	nectives in narratives
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&2 1 &7<3(0 HQ
A	1.22
\$'	
C	1.63
S	1.36

To discover the significance of the differences in mean performances of different groups on the main instrument of the study, 5 HSHDMG 0 HDMI HV \$129\$ ZDV FRQGMMG 0 DK KOV 7 HW RI Sphericity (Table 4) shows the homogeneity of covariances and thus allows us to make further comparisons.

7 DECH O DXFKO, VVMWRI VSKHUFUW

				1		
0 DXFKQ V:	Approx.	D	6IJ	* UHQKRX	Huynh-	/ RZHU
: LWALQ6XENAFW	Chi-Square			VH* HVVHU	Feldt	bound
Effect						
&21&7<3(

11

7KH: DKQ 6KMFW (IIIFW GDAD 6HH 7DEOI GP RQWDMG significant differences between connector type and language level, respectively. That is, there were significant differences in the comprehension performance of narratives across connector types. No significant interactions, however, were discovered between connector type and *language level.

7 DECH	/HWRIZDKAQ	WENNEWHII	HWLFURW	FRQQHW	HVLLGOM	HO
6RXUFH		7∖SH,,,	D	0 HDQ	F	Sig.
		Sum of		Square		
		Squares				
&21&7<3(Sphericity	23.663	3		10.934	.00
	Assumed	23.663	2.852		10.934	.00
	* UHQKRXVH	23.663		8.084	10.934	.00
	* HWHU	23.663	1.000	23.663	10.934	.001
	Huynh-Feldt					
	/ RZ HJERXQG					
&21 &7<3(Sphericity	1.964	6		.454	.84
//(9/	Assumed	1.964		.344	.454	.83
	* UHQKRXVH	1.964	5.854	.335	.454	.83
	* HWHU	1.964	2.000	.982	.454	.63
	Huynh-Feldt					
	/ RZ HJERXQG					
Error(CONCT	Sphericity	428.494	594			
<3(Assumed	428.494	564.684			
	* UHQKRXVH	428.494				
	* HWHU	428.494	198.000	2.164		
YY	Huynh-Feldt					
	/ RZ HJERXQG					

7 DECH 7 HWRIZIWIO WENNEWHIH WDFURWFROOH WINDOG OMO

7 KH% HAZ H-Q6 KEMHFW(IIHFW 7 DE (PI VKHZ HG VU) Q LIFDQ W

differences in the mean performance on narratives among groups with different language proficiency levels.

12

Establishing Propositional Relations in Reading Stories

7 DECH 7 HWRIEH KEHKEH WEINFWHIHFW						
6RXLFH	7∖SH,,, 6XP RI	Ð	0 HDQ	F	Sig.	
	Squares		Square			
, QMLFH5W						
/ * / (9 /						
(URU						

To discover the loci of the differences in connectives and across levels, 3RWKRF 6FKHIH DOD VV ZDV FRQGRING 7DEO 6LJQIIFDQW differences between all the groups with weak, intermediate, and advanced language levels in their performance on the narrative comprehension test were found.

7 DEOH 3 DUZ INHFRP SDUDROVDP ROJ JURXS VRO WHFRP SUHKHONRORI

connectives							
, OMHO	- OMHO	0 HQ	Std. Error	Sig.			
		' IIIHHQFH					
: HDN	, QMLP HEIDM						
	Advanced	903	.141	.00			
, QVMLP HCIDVM	\$ GYDQFHG						

The post hoc analysis on connector types across narratives (see Table 8) showed significant differences between additives on the one hand, and adversatives and causals on the other.

Table 8. Pair wise comparisons between connector types across narratives						
&21&7<3(&21 &7<3(0 HDQ' LIIHHQFH	6 WG (UURU	6IJ		
А	\$ '					
	0	110	007	00		

	С	410	.096	.00
	S	136	.105	1.00
\$ '	&			
	S	.380	.106	.003
С	S			

13

Additives, contrary to our expectations, were found to be more difficult to infer in narratives than adversatives and causals by all **ODQHV** 0 RURYH WHOUHHUFHVEHZHQDGYHDWYPVDQGVHTNQWOV were also found to be meaningful, i.e. overall the comprehension of sequentials was found to be significantly more difficult across all the **ODQHU JURXV** ZINK **GUIHHQWSURIFHQF OPYFOV** 0 **HOZKOH** WKH differences between causals on the one hand and sequentials and adversatives on the other were not significant, nor was the difference between additives and sequentials.

4. Discussion and Conclusion

This study tried to examine the comprehension of connective elements in UHOGQI QIDUXXYIV, WZ DV IR&G WKIVKLKRUOYHOODQRVFDQ SHIRUP significantly better in comparison to lower level learners in their construction of propositional meaning established through connectors. Sequentials and additives were by and large the most difficult markers IRUODQRVDWD000MHVWIQIHU 0 HQZKIDH WKHRPSUKKQVRQRIFDX DO and adversative relations was found to be easier for them.

An interesting finding about the performances of the participants across different proficiency groups is that there was a consistent pattern of performance by all the learner groups in their comprehension of the logical relations of different types. That is, examining the performances across the three learner groups, we notice an absolutely consistent pattern **RI SHIRU DOFFN RQ WAFFRQ OFFW FY**, **Q R WAUZ RUGV ZH FDQ SUFGEWD** consistent hierarchy of performance across the three learner groups. 0 **RUI VSHIIIFDO DG YLVDW FY Z HH IROG W EH WAHDVHWFRQOFFW W** by all the three groups in narratives followed by causals as the second easiest, then sequentials as the third and more difficult, and additives as the most difficult markers.

Causal relations were found easy to infer by all learner groups. Previous research on narrative comprehension refers to the unique and GMMQFWUROH WALL SOD, IQ QIDUDMYHFRPSUHKHQ VRQ 0 \ HV HWDO 7 UEDWR HWDO 7 UEDWR 6 SHUY WALHWARDWALH DFFR&WAG IRUWKHP DAY UW RI WH HY HQ WDQGHUFX WAQHFA GHSIFWG IQ QIDUDAYHA 7 UDEDAR HANDO 7 UDEDAR 6SHU, ,WDSSHUA WADWUHOCHAY NAG JH HAHQ WIQ D WAXU IQ WHP VRI FDX HHIHFWFK IDQ VDQG WAX NAGJ H FDX DO UHDANR QY DV P RUH IP SR WAQ WAX WK HIQ WAS UFMAAR QRI narratives than other elements such as text structure hierarchy (Trabasso

Sperry, 1985). Accordingly, they performed better in their recognition of such causal relations as such markers might have helped them interpret the story line by identifying cause-effect chains integrated in a causal network that directs the narrative forward to its resolution.

,WIV KING WK H SONQ ZK OPDQHV SHIRU HG ZHO IQ IQHUQI adversative relations than other relations like sequential or additive. %DHG RQ0 MUH V FRQMQKW K SRWHV FRQQHWY SON D salient role in narrative text processing and thus help readers engage in processing of the events depicted in the story. The result of this engagement would be becoming internal participants rather than external observers in the story and thus identify with the story characters or with WH QIDDWURI WHW W7 KN VHQ H RI EHRPIQI μ RQH ZINK WHWNU characters would help them overcome the sense of discontinuity (denoted by adversative relations and markers) which might arise as a result of changes in time, place, theme, or characters.

0 HDQZKIDH IQ HP SILIFDO WALLHV RI SHURQD RU SIFWA HEDHG narrations the use of additives and sequentials is very common at both the local and the global level of a text especially in oral narration UHHIQI WAHAQWWADWRORZ HFKRWARUQWP H 9 IRQDQG&ROV 7 KM FRGHKHH IVWQIFHRI P IQP DOUHDWRQKESV EHZ HQSURSRWARQV and group sequences of propositions into a whole in which in some cases WHOQN VEHZ HQ WAFRQVQWI WHGIIHHQ WURSR VARQ VQ WAY Z KREY DHQR WZZ D VFODU - IND 3HMINRQ 0 F&DEH ,WIRORZV that participants might have failed to recognize such links between propositions denoted by such markers. Of course this remains at the level RI VSHEYDARQ 0 RUH UHHDFK ZIMK UI RURX GPUI QVIV QHEHWIDY X IQI verbal protocol and/or recall measures to prove this. Taking the findings of this study into account, we can argue that WAHHIVDKHIDJFK, RIGIIIF&W IQ WAHFRPSUFKHQ VRQRIFRQ&F WRQVQ narratives. Contrary to our expectation, this hierarchy is both text-VSHIIF DQG ODDQHUOYHOVSHIIF ' IIIHHQWM WWSH/GRQRWRKHHIQ WAH VDP HZD, DQGP HWRGVRIFRQ&F WRQIQ GIIHHQWHQHVYDV IQD IQD statistically significant manner (Smith, 1985; Smith and Frawley, 1983). : H P D, WXX VSHF&DVM VKDVVKHFRPSUFKHQ VRQ RI VKHSURSRMRQD UHDWRQ&HQRME WKHFRQMF WYHHOP HQ WP IJKWORYDV LQGIIIHHQW text types (e.g. in arguments or in expositions) due to the different cognitive and rhetorical organization of these text types.

7 KHR UDQ JDWR QDUR (H S (D) HG E\ FRQ (W HDG Y HEIDOV DQG W. HL) different distribution patterns across different text types assigns a core VLI Q IIFDQ WR (DH W WH HH P DUN HV 7 KM UR (H KLK (D K W W HP R UH μ P R G H EXICG Q J || I (K F WR Q RI W HH V I) Q (D) 6 H DO HWDO 7 K D WL W HP R UH μ Crucial as well in building a coherent mental model for interpreting happenings in the text world without which the reader would not be able to build the intended model.

4.1 Limitations and recommendations for further study

, WVKREGE EHP HQWRQEI VKDWVKWVVKWVVKWV VKM \setminus ZDV OP DMG VK H DP IQQJ connectives and inferring them in extended stories. The role of such devices in other discourse types was not examined. This issue might be considered as one of the limitations of this study. The role of the SUFM-QEFIR UDFN RI RWHUW VX OIHDWA HVONHUHHHQFH μ HODS VV DQG μ VKVVWWIRQUQVKE RPSUKHQURQRWKHERYPHQWRQEVM WVSHVZDV not investigated either.

Nonetheless, the results of this study demonstrate that consideration of textual signals is essential for comprehension at least at lower levels of **UHOGDI SURIFIEDE** O RUFRYH ZKHQ WKPHP DUNEW DHP DWQJ IQ WKH texts, it is essential for readers to infer them. Hence, we will come across differences between more or less proficient readers in their comprehension of logical relations implied by such markers when they DH QRWH SOFEWIQ WKH WW, UZIQ \$FFRUGDIQ WKHQW awareness of the relationship between textual signals and the rest of the text need to be raised. This way, the facilitative role of the explicit WIFKQI RI W WOFRQQFW WRQ WHUHDGQJ FRPSUFKIQ WRQRI ()/ learners in general, and ESP students in particular would be highlighted.

'HY HORSP HQ VIRI & GHUWAQ GQJ RI WI WA OP DUNHUVRI GIIHHQ WWSHV in reading can be expected in other skills (listening, speaking, writhing) WR ZIJK WUQQJ IQ RQHVNIOD DV D SR WIE OF DIG WR WKH OFDQ HW understanding of connectives in another.

) & W.HU, W.IV DOWR DJNIG WKIW DOWKRXK FKIOHQ X H WKPH connectives in speech before going to school, they do not develop a sufficient understanding of their meanings years after that (Ozono and , W. 7 KHHDGQI SURJUP FDQSURYGHV WHP DWF WDQQJIQDZD, that the learners develop more facility in the written form.

Further research is needed to investigate which signals are more problematic for readers at different proficiency levels, and whether the comprehensibility of logical relations for readers is a function of the type of logical relation implied through the signals in the text, or a function of DH RUSURIFIER IQ ODDERY IILWOOD XDH \$ GGWRQID ZHQHG W investigate the effect of individual signals on the reading comprehension of different text types to find out the contributory effect of each signal in HJFK SDWF&DD WSH RI W/W/RJ IFDO UHDWRQKEV PD EH HDXHU W FRPSUFKIQGQQIDDWY FV KID IQ H SR WKU W/W * HYD \$ QRMAU consideration for research is that most of the research findings in this UH DIGUHDMWK/ QDWYHVSHDNIEVRI(QIDW) XUKIEUHHDJFK LVQHEGIG to examine how non-native readers of English or other languages process different types of logical relationships.

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-) DJ OH / 0 H HJ 3 5 KPK UFDO WK IR U DQG UHDG HW classifications of text types. *Text*, 3 (4), 305-25.
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- * ULHWHU \$ & * ROCIQJ * 0 / RQJ ' / 1 DUDWYH UHSUHNHQ WWRQ DQG FRP SUHKHQ VRQ ,Q 5 %DUU 0 . DP LO 3 0 R WHQ WYDO 3 3 HDVRQ (GV Handbook of reading research II SS : KNMB ODLQ V < / RQP DQ
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- + DODCED 0 \$. + DWDQ 5 Cohesion in English. / RQCQQ
- + REV- 5 / DMDAM H DQGFRJQ MARQ & RKHPQ H DQGFRQHHQ H

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