GRAPHIC NARRATIVES IN RESEARCHING MULTILINGUAL INNER SPEECH: EXPLORING THE ZONE OF PROXIMAL DEVELOPMENT

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Abstract: A challenging issue in the cognitive research of multilingualism is the exploration of how multilingual individuals use their several languages to solve different linguistic problems in their nonnative languages. The present study investigated the advantages presented by graphic narratives as research instruments in the cognitive study of the multilingual language processing and use. The study tried to shed light on how multilinguals decoded schema inconsistent information from images, then transposed this information into verbal L3 output and integrated it in a narrative story. Ten Vietnamese-Hungarian proficient bilinguals, learners of English as a first foreign language, were asked to compose an English story starting from verbal guidelines. In a second delayed session, the same participants were asked to supply a story in English for a series of wordless pictures. The research used a questionnaire for gathering background data on the potential participants' language acquisition and learning history and their preferences of language use. The concurrent think aloud method was used to gather verbal data in the two story-composing sessions. For data complementing and triangulation of data a pre-task and a post-task interview were employed. Data analysis took place according to a qualitative paradigm. In data interpretation, the study drew on the Vygotskian sociocultural theory and the translanguaging construct. The stories composed by the participants were evaluated within a process-writing framework. Findings seem to indicate that visual stimuli support better the narration-building process performed in a third language than verbal stimuli do in terms of both length of attention span and mobilized vocabulary. The study also revealed that those individuals who know and use more than two languages in everyday communication seem be able to keep these languages apart in their mental dialogue. In addition, languages which are used often together in the multilinguals' interpersonal speech seem also to have strong links in their intrapersonal discourse. The findings might be useful for the educators and teachers involved in multilingual education in general and in teaching free writing in a non-native language in special. The findings of the study might be also of use for those researchers who explore the cognitive processes of multilinguals.

Keywords: wordless picture series, narrative story, multilingual mental dialogue, translanguaging, concurrent think aloud protocol

Introduction

Wordless picture narratives – printed images arranged in a logical sequence to convey meaning (Eisner, 1985, p. 5) – are excellent teaching aids in the process of developing learners' vocabulary, rhetorical and writing skills, and fostering their motivation for learning through discovery (Cohen, 2014). They are also part of certain foreign language assessing tests where the test taker's ability to narrate a story within a pre-established frame is measured (e.g., ECL Language Test designed by the European Consortium for the Certificate of Attainment in Modern Languages). Wordless picture series have proved to be valuable research materials in first language (henceforth L1) and second language (henceforth L2) language-learning and language-use studies (Berman & Slobin, 1994; Frawley & Lantolf, 1985). Series of pictures which tell a story are also effective research tools in the exploration of multilingual language use, especially in the exploration of the interplay of languages in the multilingual mental lexicon because they can shed light on the languages engaged in the process of solving a problem in a non-native language.

The aim of the study was to explore how multilingual language users employ their languages they have command of to compose a narrative in a third language (henceforth L3). For this, the study examined the participants' mental dialogue as it surfaced in concurrent think aloud processes. The study attempted to answer the following research questions:

What advantages do pictorial prompts present over oral instructions in the task of building a narrative in an L3?

Which of their languages do Vietnamese-Hungarian proficient bilinguals, learners and users of English as an L3 rely when they engage in solving a linguistic task in L3 (building a narrative text based on pictorial prompts in a non-native language)?

What roles do the languages engaged in the process of building an L3 narrative text play?

For data collection, the research employed a questionnaire which helped the purposive sampling of the participants, pre-task and post-task interviews, and two concurrent think aloud activities.

The present paper starts with a brief note on terminology, it continues with an outline of the relevant theoretical pillars on which the study rests, then it presents the exploratory study which used two L3 composition tasks one of them having as its starting point Shaun Tan's (2006) The *Arrival* picture book.

Note on terminology. Theoretical framework 2.1 Multilingualism and multilinguals

The study adopted McArthur's (1998) definition of *multilingualism* which defines it as being "the ability to use three or more languages, [regardless of] the degree of competence in each language" (p. 387). Multilingual language users are considered those individuals who have command of at least three languages and use these at various proficiency levels in different situations and for different purposes. A relatively recent and influential model of multilingual mental language system. According to this dynamic multilingual mental model, the languages acquired, learnt and stored by an individual are in a perpetual interplay, in a flexible stream which gives birth to a wide spectrum of translanguaging phenomena (Garcia & Wei, 2014): language alternation, congruent lexicalization, insertion and tag-switching (Muysken, 2000).

Multilinguals are, in most of the cases, literate in all their languages, that is they are able to read and write in the languages they speak (Williams, 2004, p. 576) and are able to "think, learn, and express [themselves] in terms of images" (Braden & Hortin, 1982, p. 39) in their multiple languages.

2.2 Visual literacy and pictorial information

Visual literacy is a basic cognitive ability, part of our higher mental functions, which assists us in making meaning out of information in form of images and pictures. In Braden and Hortin's (1982) definition of visual literacy the ability to "think [and] learn (...) in terms of images" is a key element. The ability to make sense of pictures is a socioculturally nested intellectual activity in the sense that it is a mental activity which has social and cultural origins (Kennedy, 2010) and it is one of the critical components of our private speech (Vygotsky, 1934/2012). Sinatra (1986) pointed out that visual literacy is the basic literacy

element in the thought processes of comprehending and composing, skills which underlie reading and writing (p. 138). Visual literacy development starts in our early childhood and it is a gradually unfolding process in which picture books play an important role. Through these picture books we first become familiar with the pictorial practices of the community in which we become socialized. The ability to make sense of syntagmatic event structures — series of pictures arranged to tell a story — develop quite early in our childhood and constitute a strong base for the development of our verbal ability (Reynolds Myers, 1985). When we make sense of information in the form of pictures and encode this information in verbal language a re-composing process occurs (Carry, 2001) which mobilizes our knowledge structures, both visual and verbal. It is a characteristic of the pictorial-verbal re-composition process that the *reader* is invited to "fill in the gaps", that is to mobilize his or her web of knowledge and imagination in order to gain meaning from the pictures.

It is within this frame of resource-mobilization that new interpretation of reality and learning take place. From a teaching and learning approach those pictorial information are effective which call upon the reader's active engagement in the interpretation process (Krashen, 2004, pp. 97-101) and lead to understanding through a data-driven interpretation-process. Carlson, Borman and Robinson (2011) in their recent study identified that a data-driven teaching approach has positive effects onto academic achievement. From a language-acquisition-and-use research point of view, pictorial representations which present the readers with new and uncommon information are valuable as they prompt a process of meaning making which is data-driven (Nishida, 1999) and as such allows for a close observation of how this process occurs.

The present study employed the sequence of pictures from Shaun Tan's (2006) *The Arrival* wordless graphic novel to explore the narrative text composition processes in an L3 of 10 multilingual individuals. The picture-based narrative composition process was compared to verbal-stimuli based composition process in terms of languages engaged in the text-building process, time spent on the task and, length of the final text.

2.3 Mental dialogue

The process of re-composition highlighted by Carry (2001) entails a problem-solving course of action in which information received in one form has to be transformed into another form. The study's main focus was on how multilinguals transformed information from pictorial representations into a verbal form. Finding solutions in a problem-solving task is a "cognitive process that is goal directed and requires effort and concentration of attention. The solution is not found directly in a single step but via intermediate reasoning steps, some of which may later appear useless or false"(van Someren, Barnard, & Sandberg, 1994, p. 13). The whole process of reasoning is permeated by the individual's mental dialogue, of which verbal language is a key component (Vygotsky, 1978, pp. 26-27). The intrapersonal self-discourse which is the tool and carrier of human thought and reasoning was labelled in this study "mental dialogue", in line with Bakhtin (1981) and Fernyhough (2009), to stress its multi-voiced, multi-perspective and dynamic characteristics. Mental dialogue is a complex construct central to the study of cognitive processes. Various labels, such as *private speech*, *private verbal thinking*, were given to this internalized dialogue in different periods by different schools of thought, labels which vary only in their nuances of meaning, while they

denote the same content. The present paper, due to length limitations, cannot offer a comprehensive panorama of the evolution and development of the concept of mental dialogue. The reader will find relevant information on the subject in Vygotsky (1934/2012; 1978), Bakhtin (1981), and Winsler, Fernyhough, and Montero (2009).

It can be argued that mental dialogue can be most effectively explored through concurrent think aloud protocols because think-aloud verbalizations have the potential to reveal thought processes in the working memory at the moment they are occurring. However, it should be noted that verbal language which surfaces as audible speech during the concurrent think aloud activities may be the verbatim copy of the mental dialogue but there may also be mental dialogue contents which do not emerge as audible verbal speech (Guerrero, 2005).

Method

The research on which this paper reports explored the benefits wordless graphic novels present in the exploration of how multilinguals use their languages in an L3 composition process. A group of 10 Vietnamese-Hungarian proficient bilinguals, learners of English as an L3 and of German or French as a fourth language took part in the study which was conducted at a secondary school in Budapest during the first academic semester of the 2013-2014 school year. The study incorporated the following six steps of data gathering:

Purposive sampling supported by a questionnaire

Interviews with the participants' teachers who taught English as a foreign language

Pre-task interviews with the 10 participants who were sampled for the study

Composition task based on verbal stimuli within the frame of a concurrent think aloud activity

Delayed composition task based on pictorial stimuli within the frame of a concurrent think aloud activity

Post-task interview

Because the paper has to meet particular length requirements, in the followings the data gathering steps and methods will be detailed however in the section which reports on the findings only the outcomes based on the two composition tasks will be described in detail. An extensive report on the study will be given in a forthcoming paper.

3.1 Participants

The study started with a questionnaire which was answered by 28 Vietnamese-Hungarian multilingual secondary students. At the time of the research they were 10th or 11th graders at one of the secondary grammar schools in Budapest which offered intensive and extensive foreign language education. Their parents were first generation immigrants to Hungary, who were born, raised and educated in Vietnam, and moved to Hungary either to attend tertiary education or to work. The 28 respondents to the questionnaire were born in Hungary and they acquired Vietnamese as L1 and Hungarian as L2. Based on the answers given to the questions, 10 participants were sampled purposively. The three criteria the participants had to meet were: Vietnamese spoken as the language of home, Hungarian and Vietnamese used in their daily interactions, and an intermediate proficiency in English, their L3. These criteria were set because it was considered critical from the point of the aim of the

study (research questions 2. and 3.) that the participants use actively the languages they know. The L3 intermediate language proficiency of the participants was one of the selection criteria because of two reasons. First, according to Cohen (1998) a non-native language shows up as a language of thought in an individual's mental dialogue repertoire if the individual has a fluent command of that particular language in a certain discourse domain. Second, the successful completion of the two composition tasks called for an intermediate L3 competence as described by the Common European Framework for Languages (European Commission, 2009).

To gain a broad evaluation of the participants' L3 command, three data sources were employed. They self-evaluated their proficiency of English across the four skills of listening, reading, writing and speaking during the completion of the questionnaire. The teachers who taught English at school were invited to evaluate their students' English proficiency level based on the students' achievement at school. Finally, the *Online MM Placement Test* was used to assess the participants' English language proficiency across the four skills.

To evaluate the purposefully sampled participants' proficiency in their L1 and L2, self-evaluation was employed. Connected to the participants' competence in their L1 (Vietnamese) all 10 participants reported that they were able to speak and read in Vietnamese; however their writing skills in Vietnamese were restricted to basic knowledge.

Beside language proficiency, verbal data was gathered about the participants' familiarity with pictorial representations, wordless picture stories and graphic novels. Based on their self-reported data, the participants were familiar with the genre of stories told with the help of pictures; however graphic novels and picture stories were not a usual part of their literary diet.

The average age of the participants was 15.7. Ages ranged from 15 to 16. Three male students and seven female students took part in the study. Before the beginning of the study parental permission was asked.

3.2 Procedures

Following purposive sampling the participants answered the questions of a pre-task interview which developed the themes of the questionnaire and had additional questions about the participants' reading and writing practices, including their familiarity with text-building starting from a pictorial stimulus. The two think aloud tasks were administered with a delay of one week after the pre-task interview session. The topic of both compositions was migrating and settling in a distant country in order to make a living.

The participants first had to compose an L3 narrative text starting from verbal instructions. During the composing process they verbalised their thought processes. These verbalisations were recorded.

In a second, delayed session, the participants were presented Shaun Tan's (2006) wordless graphic novel *The Arrival* and were asked to build up an L3 narrative based on the pictures. The participants verbalised their thoughts as they composed the L3 narrative based on the pictures. Each session was recorded.

The collection of concurrent think aloud verbal data had the following characteristics:

The concurrent think aloud sessions took place in the participants' educational environment.

Before the actual composing tasks the participants took part in a one-session (70 minute-long) concurrent think aloud workshop where they became familiarized with the essence of the thinking aloud procedure. They also had the chance to practise thought verbalisation by solving an arithmetic word problem in their L2 and then a second one in their L3.

During each concurrent think aloud process the participants were reminded that they were free to use whichever language they wanted during the reasoning process.

The participants had access to paper format monolingual English and bilingual Hungarian-English, English-Hungarian dictionaries. They also could use the LingvoSoft® Online Vietnamese-English and English-Vietnamese dictionaries.

Neither of the compositions had length and time limits.

The instructions for the composition task were given English, the target language of the task. The instructions for the concurrent think aloud protocols were given in Hungarian.

For a better focus on the task and in order to make possible later revision and correction or alteration, the participants wrote down the texts they composed. These written texts were then compared to the participants' verbalized composition-protocols.

The second concurrent think-aloud session was followed by a post-task interview. The focus of the questions was on the characteristics of the two L3 text-composition tasks as each participant perceived them, and on their opinion about their achievement in both L3 text-composition tasks.

Concurrent think-aloud data analysis

The analysis of the verbal data gathered during the study took the steps of qualitative analysis paradigm suggested d by Strauss (1987/2003, pp. 25-39). The initial coding process began as soon as the first interview sessions were completed. Provisional codes and in vivo codes were assigned respectively collected throughout the initial coding process. In the following phase of axial coding the relationships between the emergent core categories were indentified. Interpretation of data was based on the core categories of data which lined up to give the main axes of the outcomes. The findings of the study became formulated descriptively and this description was supplemented by quasi-statistical data in the form of comparative tables.

The present paper reports on partial findings by focusing on the outcomes which emerged from the two concurrent think aloud composition-tasks.

Findings based on the concurrent think aloud protocols

The study on which the present paper reports explored how pictorial representations, namely wordless picture clusters support the narrative composition processes in an L3 (English) of multilingual language users. With this end in view 10 Vietnamese-Hungarian young multilingual users were invited to compose two L3 narrative texts on a similar topic. The first composition task started from verbal stimuli, it gave the instructions and the frame for composition in words. The second composition task used Shaun Tan's (2006) *The Arrival* wordless graphic novel as a starting point.

The research questions guiding the exploration were:

What advantages do pictorial prompts present over oral instructions in the task of building a narrative in an L3?

Which of their languages do Vietnamese-Hungarian proficient bilinguals, learners and users of English as an L3 rely when they engage in solving a linguistic task in L3 (building a narrative text based on pictorial prompts in a non-native language)?

What roles do the languages engaged in the process of building an L3 narrative text play?

To answer the questions, the participants' verbalisations from the two concurrent think-aloud sessions were compared in terms of:

length of the composition in number of words

length of time in minutes dedicated to building the text

the languages mobilized in the process of text building

the role(s) the languages played in the process of composition

In what follows the outcomes will be displayed as they emerged from the two concurrent think aloud composition tasks. each sub-section contains a brief discussion of the relevance of the findings.

Length of the compositions in number of words. Time spent with building the L3 text

It was assumed that the length of the participants' compositions in number of words constitutes a relevant aspect based on what we could gain insight into what advantages one prompt present over the other. Setting the number of words produced by the participants as one of the criteria is in line with the generally employed requirement of secondary and tertiary education composition writing tasks in which the composer-writers have to write a text with a given length (e.g., Gryca et al., 2007, p. 56).

Table 1 shows, the participants were able to write more when they had the wordless picture series as a prompt and they spent more time with building up the L3 texts when they had the series of pictures as prompts. One of the main findings which emerged from the verbal data of the concurrent think alouds is that the participants' attention was better captured by the pictures which acted as idea generating tools. Verbal data collected from the participants in the post-task interviews came to support the finding that by having pictures to relate to, a greater area of vocabulary could be mobilized, pictures acted as helpful prompts and the text-builder's attention stayed focused for a longer period of time.

These findings are in line with foreign language and multilingual educational research which advocates the use of pictures and pictorial information in the teaching of L2 and L3 reading, meaning making and text composition (e.g., Arif & Hashim, 2008; Arizpe, 2009).

As regards the time spent on composing the two L3 texts, data show that composing the L3 picture-based text took the participants more time than composing the L3 text based on verbal stimuli. On the one hand it is reasonable to spend more time on composing a longer text. However, the lengthier time spent on composing the L3 text based on the picture series may have been the result of the more complex meaning making processes the picture series asked for. Making meaning from the wordless pictures required the participants to follow a pre-set story frame and to re-compose verbally the all the information displayed by the pictures. To be able to formulate the story the participants had to mobilize vocabulary which they may have not used when composing the L3 text based on verbal stimuli. From this

standpoint, pictures seem to be superior to only-verbal stimuli in the non-native language composition process.

Table 1

Comparative display of the number of words written in verbal-stimulus and pictorial-stimulus L3 composition and the length of time spent with composing the texts

		L3 composition based on verbal stimulus		L3 composition based on pictorial stimulus	
		Nr. of	Time spent	Nr. of	Time spent
	Participants (names	words	composing	words	composing
	given in initials)		(minutes)		(minutes)
1	T.H.L.	521	65	801	119
2	D.N.S.	412	63	820	130
3	Y.S.L.	451	72	771	98
4	V.K.P.L.	340	70	689	90
5	T.Z	409	75	591	90
6	N.N.S.	495	80	620	105
7	N.P.T.	504	75	710	95
8	N.S.Y.	389	60	833	120
9	T.M.H.	321	60	530	84
10	P.D.C	487	85	605	100

4.2 Languages mobilized in the process of L3 text building and the role played by these languages in the composition process

The participants' use of their multiple languages in the process of composing the L3 narrative texts seemed to be dependent on the mastery of specialized vocabulary in the educational discourse domain. In the process of composing the texts in the L3 the participants relied heavily on their L2 and their L3, the L1 occurring only sporadically, in the form of insertions, as nested words or short phrases. An example of such a use is given in the following excerpt from N.P.T.'s concurrent think aloud protocol as he was searching for the English word "journey". Translations of the Hungarian and Vietnamese utterances are given in italics in square brackets at the end of the lines.

[56]they prepare for the trip

- [57] ez nem egy trip, hanem egy utazás [HUN this is not a trip, it is a journey]
- [58] az utazás az travel? [HUN journey is travel?]
- [59] chặng Duờng Di [VIET journey]
- [60] így nem fogom megtalálni [HUN this way I won't find it]

One of the most remarkable phenomena during the composition process was that the all 10 participants when encountered tip-of-the-tongue states – difficulties or the impossibility to retrieve a target L3 word – they relied primarily on the L2 for help. There were only few

situations when the participants' L1 was employed as a secondary choice in the process of finding the L3 target word. The participants' intense reliance on L2 in their mental dialogue while composing the L3 texts is in complete agreement with Cohen's (1998) specificity of discourse-domain construct according to which the language(s) in which certain tasks are encoded by the individuals will determine the language(s) in which they will perform future similar tasks. Viewed on a sociocultural and dialogic background, the language of the educational discourse –in this case Hungarian-English - becomes internalised by the individuals and is employed in their mental dialogue in relevant situations.

The findings highlight the considerable flexibility of the multilingual mental language use capable to keep languages apart and to employ them if necessary in a translanguaging manner.

The role that languages played in the composition process is displayed in Table 2. The labels which were ascribed to the various language uses emerged in the processes of open coding and axial coding.

ROLE OF LANGUAGE IN THE	LANGUAGES			
COMPOSITION PROCESS				
	Vietnamese	Hungarian	English	
decoding pictorial information/	-	Х	Х	
generating ideas				
planning overall content	-	Х	Х	
rehearsal of words and chunks of	-	Х	Х	
language				
searching for L3 words	Х	Х	Х	
deciding on the adequacy of a word	-	Х	Х	
task evaluation and monitoring	-	Х	-	
progress				
evaluation of the produced text	-	Х	Х	
self-monitoring	-	Х	-	
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Table 2

Employment of languages in the L3 composing process

As shown in Table 2 the dominant language was Hungarian (L2) in the participants' mental dialogue involved in composing an L3 narrative texts both prompted by verbal stimuli and pictorial stimuli. Metacognitive talk occurred only in L2 and the main processes of building the English (L3) text were backed up by L2 mental discourse. The alternation between L2 and L3 took place in a flexible way. Vietnamese, the L1 of the participants was employed only for searching for L3 target words and only in those situations when the search from an L2 direction proved unsuccessful. Further work has to be carried out exploring the participants' composition processes in the participants' home environment in order to explore whether the L1 becomes represented more in such a situation.

The findings of the present study revealed that series of pictures assist better L3 learners in the composition of a n L3 text then verbal instructions do, in terms of length of text produced and focusing attention. In addition the findings revealed that proficient bilinguals seem to rely on their L2 more than on their L1 in the process of composing an L3 text if the L2 is the language through which L3 is taught and learnt.

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