

DOES NARRATIVE ABILITY & STORY STRUCTURE KNOWLEDGE DIFFER IN L1 & L2? A CROSS-LINGUAL COMPARISON OF INDIAN LEARNERS FROM CHALLENGING CONTEXTS

Lina Mukhopadhyay, lanthi Maria Tsimpli, Jeanine Treffers-Daller, Anusha Balasubramanian, Vasim Tamboli, & Abhigna Reddy

MultiLila – Multilingualism and multiliteracy workshop:

Multilingualism and Educational Challenges,

28 & 29 November 2019, Fitzwilliam College, University of Cambridge



MULTILINGUALISM AND MULTILITERACY: RAISING LEARNING OUTCOMES IN CHALLENGING CONTEXTS IN PRIMARY SCHOOLS ACROSS INDIA







- Oral narrative telling and retelling: what does it tell us about language and literacy acquisition?
- Narrative ability: issues of assessment & measurement of bi/multilingual competence
- Developmental factors in narrative ability: age, bilinguality, gender
- Development of school skills & role of medium of instruction: the case from global contexts & Indian primary level schools
- □ The cross-linguistic study
 - > Participants
 - Research Questions
 - > Task and method of administration
 - > Findings & discussion
- □ Work ahead: implications for language policy & ESL learning in India

Narrative telling and retelling: what does it tell us about language acquisition?



- have temporally and causally connected sequences of events (Nelson, 1996);
- require an understanding of linguistic, cognitive and social domains (Tager-Flusberg & Sullivan, 1994, Tsimpli et al. 2016); development of characters and their perspectives to express motivations and reactions (Stein & Glenn, 1979)
- ethnographic studies of L1 acquisition of young children (ages 2 to 6) show imaginative engagement with characters in stories and through narrative telling and retellings their linguistic, cognitive, and emotional skills are enhanced (Miller, Hoogstra, Mintz, Fung, & Williams, 1993; Rowe, 1998; Wolf & Heath, 1992).

Oral narrative telling and retelling: what does it tell us about literacy acquisition?



- moderately related to word decoding skills but strongly related to text level reading comprehension and writing skills of monolingual (Snow et al., 1998; Dickinson & Tabors, 2001) and bilingual (August & Shanahan, 2006; Oller & Pearson, 2002; Miller et al., 2006) learners of English.
- reading comprehension has its roots in the comprehension of narrative discourse which involves inference generation and prediction by relating to temporal and causal connects underlying the narrative structure (Oakhill & Cain 2007)

In L1 this ability develops simultaneously with other early language skills.

Narrative telling and retelling: what does it tell us about literacy acquisition?



- serve as a precursor to academic success because narratives contain important discursive forms and cohesive links that can directly or indirectly influence language and reading comprehension and account for individual variability in reading achievement (Snow, 2002);
- create links between oral and print form through which to talk about experience (Hadley, 1998; Westby, 2005);
- direct teaching of narrative skills improves comprehension and production of oral narratives as well as reading comprehension

(Hayward & Schneider, 2000; Swanson, Fey, Mills, & Hood, 2005).

Narrative ability: issues of assessment of bilingual competence



- serves as an entry point to understand bilingual learners' language abilities in home and school language (Gagarina et al. 2016); other ways of evaluating bilingual competence are rather challenging.
- is a valid tool as it goes beyond language specifics and can assess linguistic-cognitive-social dimensions underlying the narrative competence (Botting, 2002; Hughes, McGillivray, & Schmidek, 1997).
- is a rich source of collecting data in a non-intrusive and natural manner from children; therefore widely used by linguistics and clinicians to assess a range of linguistic-cognitive features crosslinguistically that mirrors L1 acquisition (Gagarina et al. 2016; Tsimpli et al. 2016; Gort 2019).

Narrative ability: measurement of bi/multilingual competence



Multilingual Assessment Instrument for Narratives [MAIN] (Gagarina et al. 2012)

=		
MACRO STRUCTURE ELEMENTS	MICRO STRUCTURE ELEMENTS	Comprehension (factual, inferential, global)
Text length	Lexical density	Episode 1: goal, IST
Story structure/grammar (episodic analysis) [goal-action-outcome]	Lexical diversity	Episode 2: goal, outcome
Structural complexity [combinations of GAO]	Clausal complexity	Episode 3: goal, IST
Internal state terms (perspective taking)	Syntactic complexity; L1 transfer in L2 acquisition	Predicting beyond the text

Developmental factors in narrative ability: AGE



Macro-structure expression improves with age and gets more refined across school years:

- 2-3 year olds describe pictures as isolated events and do not have a central theme;
- 4-5 year olds display developmental shifts in experience, thoughts and feelings by expressing fuller and organized story episodes with beginnings, settings and outcomes;

(Stein & Glenn, 1979; Morrow, 1985; Westby, 1991;; Crais & Lorch, 1994; Berman and Slobin 1994; Heilmann, Miller, & Nockerts, 2010; Mun`oz, Gillam, Pen`a, & Gulley-Faehnle, 2003; Ukrainetz et al., 2005; Mavis, Tuncer & Gagarina 2016) Developmental factors in narrative ability: AGE



Macro-structure expression improves with age and gets more refined across school years:

- 6-7 year olds narrate complete story episodes with problems, characters goals, plans to solve problems, and a logical ending and attempts with resolutions;
- 9-12 year olds (and older children) use internal state terms and affective attributes of the protagonist more effectively; expressive elaboration and perspectives about events, characters gradually become more matured.

(Stein & Glenn, 1979; Morrow, 1985; Westby, 1991;; Crais & Lorch, 1994; Berman and Slobin 1994; Heilmann, Miller, & Nockerts, 2010; Mun`oz, Gillam, Pen`a, & Gulley-Faehnle, 2003; Ukrainetz et al., 2005; Mavis, Tuncer & Gagarina 2016) Developmental factors in narrative ability: BILINGUALITY



Macro-structure expression improves with age & with development of proficiency in the target language:

- 5-8 year old Spanish-English bilinguals develop narrative structure abilities (Gutiérrez-Clellen, 2002; Montanari, 2004)
- 2-7 year old Turkish-German bilinguals show developmental changes in story structure and structural complexity except in internal state terms

(Mavis, Tuncer & Gagarina 2016)

5 year old Slovak-English bilinguals' performance on narrative structure developed in the target language over a period of 12 months in a pattern similar to L1 acquisition (Kapalkova, Polisenska, Markova & Fenton2016) Developmental factors in narrative ability: GENDER



Some studies show that macro-structure expression, elaboration, coherence, internal responses is higher in girls than boys perhaps because girls are more aware of thoughts and feelings and are more social and expressive; this trend is found from pre-school up to 7 years

(Eriks- son et al., 2011; Roulstone, Loader, Northstone, & Beveridge, 2002; Sheldon & Engstrom, 2005; McEwen 1996; Buckner, & Goodman, 2000; Tuncer & Gagarina 2016)

But other studies report that only gender does not give significant difference in story retelling; it has a combined effect with age; girls at 11 years continue to produce more elaborate narratives with more elements of story grammar.

(John et al. 2003; Hutchinson 2012; Mainess, Champion, and McCabe 2002)

Development of school skills & role of Mol: the case from low SES contexts



Iarge differences between the language skills of struggling bilingual students usually arise from the confluence of factors such as low socioeconomic status (SES), home language other than English, & low levels of parental education

(Ucelli & Paez 2007; UNESCO 2014; Marphatia, Reid & Yasnik 2019);

although independent effects of these co-occurring factors are hard to disentangle, when poverty and low levels of parental education are both present, the academic performance of bilingual students is at greatest risk, as is the case of Spanish/English bilingual students from low-SES families (Snow, Burns, & Griffin 1998; Ucelli & Paez 2007). Development of school skills & role of Mol: the case from low SES contexts



 children who study at primary level in their home language as Mol for at least six to eight years have better learning outcomes than those who do not (Ouane & Glanz 2010; Romaine 2013).

 vocabulary learning from instructional context varies widely between low and high SES learners with the former being at a disadvantage even at ages between 8-12 and the gap widens even beyond there by lowering their chances of academic success later
(Bradley & Corwyn 2002; Hoff 2006; Maguire et al 2018) Development of school skills & role of Mol:

the case from low SES Indian primary level schools



When preschoolers & 7 year old children have print exposure in English at home their literacy acquisition and narrative abilities in the target language is high.

(Sankaranarayanan, 2003; Kalia 2007)

Primary level low SES government schools have children who do not have book reading practice at home, have low rates of learning in word decoding, spelling and lag from age appropriate levels of literacy acquisition in the target language(s) across the years of schooling.

(Adlof, McLeod, Leftwich 2014; Fletcher & Reese, 2005; Alcott & Rose 2017; ASER reports 2016, 2018; Marphatia, Reid & Yasnik 2019).

Development of school skills & role of Mol:

the case from low SES Indian primary level schools



- Such schools have either state Mol or English Mol and classrooms abound in multilingual practices (Mohanty 2010; Meganathan 2018); if this is not done to make up for the lost print exposure at home then there are negative consequences on literacy and school skills (Bhattacharya 2013).
- If home language is not used in class, multilingual resources of children are devalued (Durairajan 2018)



The cross-linguistic study

Learner demographics (10.8% of the pool)



Site	ΜοΙ	Number of children N=270 (81m, 189f)	Range in years	Age mean (SD)	Child Bilinguality (%)	Mol Overlap with home language (%)
Hyderabad (slum & non- slum)	Telugu	n1=90 (22m, 68f)	8 - 12	9.81 (1.37)	60 (0.24)	80 (0.18)
	English	n2=90 (37m, 53f)		9.92 (1.30)	94.44 (0.05)	0 (0)
Patna (town, non- remote rural)	Hindi	n3=90 (22m, 68f)		9.61 (1.34)	93.33 (0.06)	100 (0)
	F (df=2,267)			1.67, n.s.	28.84, n.s.	467.25*, p<0.05

Home background: low SES, negligible print exposure at home; parents not literate



Mol-wise bi/mutlilinguality of the learners







Mol-Hindi (Patna) N=90 Mol-Telugu_(Hyderabad) N=90 Mol-English (Hyderabad) N= 90





Narrative Retelling Task: THE CAT STORY

(VISUAL STIMULUS)





One day there was a playful cat that saw a butterfly sitting on a bush. He jumped up because he wanted to catch it. A cheerful boy was coming back from fishing with a fish in a bucket and a ball in his hands. He saw that the cat was chasing the butterfly.

The cat wasn't quick enough and the butterfly escaped. The boy was surprised and the ball fell from his hands. He shouted: "Oh no! There goes my ball!" The boy was sad and wanted to get his ball back. Meanwhile, the cat noticed the fish in the boy's bucket and wanted to eat it. He thought "That is going to be delicious!"

Text (aural input)



The cat grabbed the fish that the boy had left in the bucket. At the same time, the boy began pulling his ball out of the water. The boy was glad that he had his ball again. He did not notice that the cat was eating the delicious fish.

And that is the end of the story.

Two sets of episodes marked in two colours.

Research Questions



- Does Mol affect children's performance in narrative ability measured through -
 - (i) story structure/grammar,
 - (ii) structural complexity,
 - (iii) internal state terms, and
 - (iv) text length?

1

2. Which factors - Mol, literacy in the Mol, gender, age, and Mol overlap – are able to predict learners' narrative ability measured through (i) to (iv)? Narrative ability measurement



TASK: Narrative retelling in language of Mol or any language the child is comfortable.

Story structure/grammar: Episode structure analysis

3 episodes; each depicts a single goal (G), attempt (A), and outcome (O) and two internal state terms, yielding a total of 15 structural elements with 1 mark for each element; 2 marks are given to setting of the story [total = 17 marks]

Structural complexity (frequency count):

AO sequence, single G without A/O, GA or GO sequence, GAO sequence

Internal state terms (frequency count)

Text length: total number of words



FINDINGS OF THE STUDY

RQ1: Narrative ability across 3 MoI



Descriptives & Anova analysis for three Mols

Narrative ability	ENGLISH	HINDI	TELUGU	F value	df	p value
i. Story structure/ grammar	4.88 <mark>a,b</mark> (8.3)	8.33 <mark>0</mark> (3.5)	7.77 <mark>b</mark> (4.7)	55.43*	2, 267	0.05
ii. Structural complexity [AO sequence]	0.37 <mark>a,b</mark> (0.51)	0.81 <mark>a</mark> (0.5)	0.57 <mark>b</mark> (0.5)	8.50*	2, 267	0.05
iii. Internal state terms	1.44 <mark>a,b</mark> (2.7)	5.45 <mark>a</mark> (6.5)	4.41 <mark>b</mark> (4.4)	85.12*	2, 267	0.05
iv. Text length	57.88 <mark>a,b</mark> (12.3)	95.56 <mark>0</mark> (7.93)	69.15 <mark>b</mark> (21.1)	45.38*	2, 267	0.05
Literacy_Mol	78.49 (51.1)	95.11 (22.1)	77.39 (8.16)	17.18	2, 267	9.54
Mol overlap with home language	0 (0)	100 (0)	80 (0.18)	467.25*	2, 267	0.05

Post scripts show significant differences between specific pairs of mean scores on post hoc t-test with Bonferroni correction (p<0.0167).

RQ1: Narrative ability across 3 MoI



- 1 When there is Mol-home language overlap, performance in narrative retelling ability is significantly higher.
- 2 Narrative ability (in all four components) is higher in Hindi and Telugu where the Mol overlap is 80% to 100% than in English where there is no overlap.
- Whereas,
- literacy scores are not significantly affected by Mol overlap; literacy score in Telugu is as high as in English.



- Telugu Mol, literacy & narrative length
- In case of 26% of children with Telugu Mol, their sentence and paragraph reading ability was **nil** but their text length was between 55 to 101 words.

So, L1 oral narrative ability is observed even when ageappropriate literacy in that language is low/nil (an impact of low SES & print exposure in L1 at home); Mol-home language overlap accounts for L1 literacy skills in 74% of the children, but with a two year lag.



English Mol, literacy & narrative length

In case of children from English Mol, narrative ability in L2 was at a higher level of linguistic-cognitive difficulty (Gibbons, Anderson, Smith, Field, & Fischer, 1986; John 2001) and the following trends were observed:

- 1 13% of the children who had 100% literacy score, produced longer narratives ranging from 65 to 241 words.
- 2 83% of the children who had more than 60% literacy, produced narratives ranging between 25 to 241words.
- ³ 13% of children who had **nil** sentence and paragraph reading ability, their narratives were between 16 to 40 words.

So, oral narrative ability was present when literacy in L2 was adequate. But age-appropriate L2 literacy was unavailable, again an impact of low SES & print exposure at home, either of L1 or L2. So lack of Mol-home language overlap negatively affected literacy and oral skills in L2. Mol-home lang overlap, literacy in Mol & narrative length







Generalized model analysis was performed with

DV: Each of the four components of narrative ability IVs:

- (i) Mol,
- (ii) Mol overlap
- (iii) Mol literacy
- (iv) Gender
- (v) Age



Only two of the four components of narrative ability were found to be significantly related to a combination of the five IVs in varying proportions –

- (i) story structure/grammar
- (ii) text length



Higher performance on <u>Story Grammar</u> are predicted by MoI overlap & official MoI (Telugu and Hindi); and literacy in MoI; but not with gender and age.



Factors that predict narrative length



Longer narratives are predicted to be significantly linked to official Mol (Telugu and Hindi), gender; but not age. 200 80 -175 -70 150 -60 Text length 125 -**50** · **Fext** length 40 100 78.89 66.15 30 75 · 20 50 95.57 69.16 10 57.79 25 -0 Female Male 0 English Telugu Hindi Gender **Official Mol**



Longer narratives are predicted to be significantly linked to literacy in Mol. This is most prominently observed in Hindi.



Mol-home lang overlap, literacy in Mol & narrative length







The findings from the study show that a predictor of literacy skills and oral skills in L2 is a combinatorial effect of Mol-home language overlap and low SES (an indicator of low or nil print exposure).

Oral narrative skills in L1 can predict literacy acquisition in L1 even in the absence of print exposure at home as the language is used to express thoughts and experiences with parents and society at large and narrative oral tradition exists in Indian communities. But in English as exposure to the language is mainly through the instructional context and text books, so literacy acquisition predicts oral narrative skills in that language.

The impact of print exposure on literacy & language acquisition in the case of L2 as state language vs. English is yet to be delineated.

Conclusion



What does the cross-linguistic comparisons tell us about children's language development in L1 and L2 from challenging contexts?





- If low SES and lack of Mol overlap affect children's performances in vocabulary and literacy skills then to what extent can instructional materials and translanguaging methodology as combined aspects of 'quality of input' help?
- What are the specific learning trends of story grammar/structure across children's L1 and L2 with respect to a more fine-grained episode structure analysis and what does this tell us about linguisticcognitive learning that low SES children show in the age range of 8 to 12 years?
- What are the trends in syntactic acquisition in Mol of primary level children from low SES as found from the responses on narrative retelling task?

Project Investigators







Suvarna Alladi, NIMHANS, Minati Panda, JNU Lina Mukhopadhyay, EFL-U

28/11/19

References





Thank you for your attention!

Many thanks to the project investigators, RAs, consultants and the participating schools, children and teachers.

For more information visit us at:

https://www.mam.mml.cam.ac.uk