

VOCABULARY ACQUISITION THROUGH CAPTIONED TV SERIES: ARE THERE ANY APTITUDE AND PROFICIENCY EFFECTS?

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GRAL Research Group

Theoretical Background

Dual Coding Theory (Paivio, 1986, 2007)

- **Verbal** and **non-verbal** systems
 - **Independent functioning** but **interaction**
 - **Activation** of one system **stimulates** the other
 - Greater **depth of processing** and better **recall**
-
- **Cognitive Load Theory** (Chandler & Sweller, 1991; Sweller, 1994)
 - Brain's **limited cognitive capacity**, should not be overloaded
 - Multimodality may increase cognitive load (CL)
 - **Subtitles** as a tool to **reduce CL** in language acquisition settings

Cognitive Theory of Multimedia Learning (Mayer, 2002, 2009)

“Students learn more deeply from a multimedia explanation than from a verbal explanation” (2002: 62)

Theoretical Background

Bimodal input (text and sound)

- **Better learning**

Bird & Williams, 2002; Grañena, Muñoz & Tragant, 2015

Multimodal input (text and video)

- **Beneficial for SLA**

Price, 1983; Baltova, 1999; Markham et al., 2001; Danan, 2004

- **Listening comprehension and vocabulary acquisition**

Vanderplank, 2010, 2016; Nagira, 2011; Rodgers, 2013; Montero Perez et al., 2013, 2014



Learners approach the task according to their **abilities** (Dörnyei, 2005)

Theoretical Background

Subtitled TV series

- Simultaneous presentation of L1/L2 text + L2 sound + video
- Verbal and non-verbal information
- Real language input
- Fun activity, range of multimedia materials available



Theoretical Background

L1 subtitles (standard subtitling)

- Recommended for **low levels**
- Improve **listening comprehension**
- Foster **automatic reading**

Danan, 2004

Plass & Jones, 2005

Peters et al., 2016

L2 subtitles (bimodal subtitling or captioning)

- **Positive** effects
- Associate **aural** and **written** forms
- Develop **segmentation abilities**

Vanderplank, 2010

Borrás & Lafayette, 1994

Charles & Trenkic, 2015

Theoretical Background

- **University learners**

Sydorenko, 2010; Etemadi, 2012

- **One-off studies**

Yuksel & Tanriverdi, 2009

Few exceptions: Rodgers, 2013; Frumuselu, 2015

- **Benefits not exclusive to advanced adult learners**

Rice et al., 1990; Koolstra & Beentjes, 1999

Theoretical Background

- **University learners**

Sydorenko, 2010; Etemadi, 2012

- **One-off studies**

Yuksel & Tanriverdi, 2009

Few exceptions: Rodgers, 2013; Frumuselu, 2015

- **Benefits not exclusive** to advanced adult learners

Rice et al., 1990; Koolstra & Beentjes, 1999

Very scarce research on:

- **Beginner and intermediate EFL learners**
- **Sustained exposure to multimodal input**
- **Classroom-based research with TV series**

Theoretical Background

Best procedures for class use?

- Good selection of videos and captions
- Instructional support

↳ Higher benefits than simply viewing videos in class



Vanderplank, 2010
Webb, 2015

Theoretical Background

Multimodal Input + Vocabulary & Aptitude

- Scarce research into sustained exposure to multimodal input + TV series class use
- (Rather) scarce research into vocabulary learning and aptitude
- Virtually no research into vocabulary learning through subtitles and language aptitude

Theoretical background

Aptitude & Vocabulary

- **Aptitude is multicomponential** (MLAT, LLAMA).
- Little research on how each subtest (i.e. aptitude component tapped by the test) influences language learning rate.
- Regarding vocabulary (lexical variety), using MLAT-EC/ES: inconsistent results (Rosa & Muñoz, 2013, Muñoz, 2014; Suárez, 2014)
- Regarding vocabulary (lexis, collocations), using LLAMA:
 - Greater gains for higher aptitude (LLAMA B – vocab learning) in a lexical test of formulaic sequences (Serrano & Llanes, 2012)
 - Positive significant correlations in highly advanced adult L2 learners (Grañena & Long, 2013)
 - Negative correlations: word-monitoring task tapping automatic use of L2 knowledge (Grañena, 2012 – except LLAMA D – sound recognition)

Theoretical Background: LLAMA

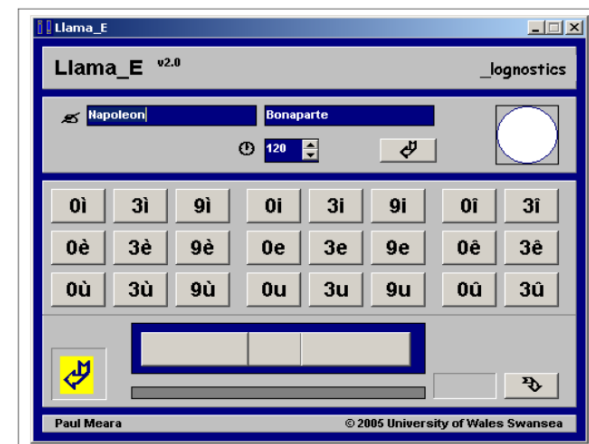
- According to Grañena (2013), LLAMA measures two kinds of language learning aptitude:
 1. Explicit learning aptitude (B, E, F): rote learning
 2. Implicit learning aptitude (D): implicit induction, memorization



B: Vocabulary learning
(word + image)



D: Phonetic memory
(no subtitles)



E: Sound-symbol
correspondence
(subtitles in L2)

Research Questions

1. Does **sustained exposure** to subtitled TV series lead to vocabulary learning?
2. Does **aptitude** have an effect on vocabulary learning from subtitled TV series?
3. Do **proficiency** level and **vocabulary size** have an effect on vocabulary learning from subtitled TV series?

Methodology

- Participants
 - 62 freshman students of Media Studies
 - N=39 allocated to the intervention group
 - N=23 allocated to the control group
 - 18-22 years old
 - Proficiency A2 to C1 (OPT)
 - Catalan / Spanish bilinguals



Methodology

▪ Instruments:

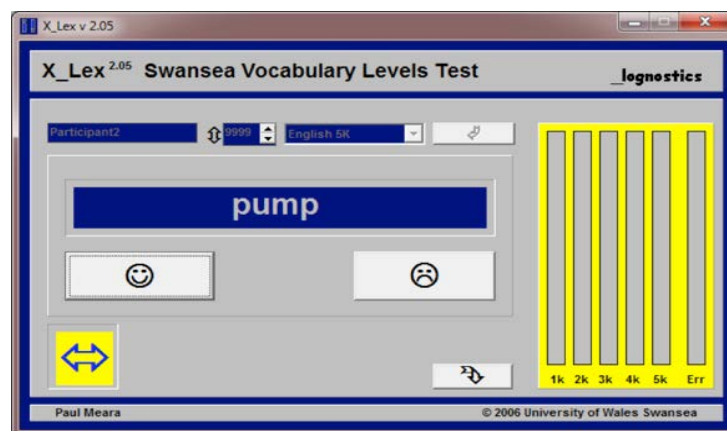
- Listening / grammar part of the *Oxford Placement Test* (Allan, 2004)
- *X_Lex / Y_Lex* (Meara & Miralpeix, 2006)

Methodology

- **OPT – Listening and grammar** (Allan, 2004)

- | | | | |
|----|--|----|-------|
| 1 | I gather you've been having trouble with your earring hearing . | 1 | _____ |
| 2 | A number of students are expected to join the advanced composition conversation class. | 2 | _____ |
| 3 | This beard of mine is awfully itchy. I'll be glad when it goes grows . | 3 | _____ |
| 4 | I doubt if he's very comfortable in his present prison bed. | 4 | _____ |
| 5 | Have you played Dennis tennis very much recently? | 5 | _____ |
| 6 | Martina lives in a great big freezing Friesian barn. | 6 | _____ |
| 7 | Do you have any idea how long ago it was found founded ? | 7 | _____ |
| 8 | Your letter must have crossed with my own mine . | 8 | _____ |
| 9 | One thing I really loved loathed in the late nineties was the style of the clothes. | 9 | _____ |
| 10 | My sister says he's she's a very nice person. | 10 | _____ |

- **X_Lex / Y_Lex** (Meara & Miralpeix, 2006)



Methodology

▪ Instruments:

- Listening / grammar part of the *Oxford Placement Test* (Allan, 2004)
- *X_Lex / Y_Lex* (Meara & Miralpeix, 2006)
- LLAMA aptitude test (Meara, 2005)

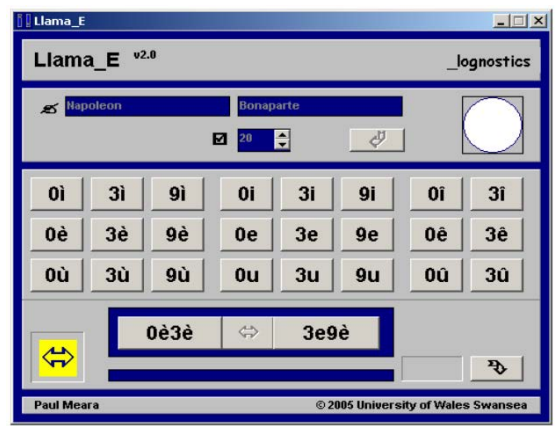
LLAMA



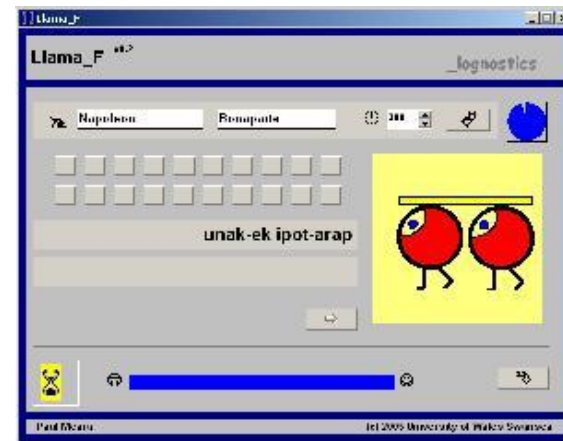
B: Vocabulary learning



D: Phonetic memory



E: Sound-symbol correspondence



F: Grammatical inference

Methodology

■ Instruments:

- Listening / grammar part of the *Oxford Placement Test* (Allan, 2004)
- *X_Lex / Y_Lex* (Meara & Miralpeix, 2006)
- LLAMA aptitude test (Meara, 2005)
- *I Love Lucy* TV series: 8 episodes of 22 mins approx. = 3 hours of multimodal input
- English audio + English subtitles (intervention)
- 5 Target Words (TWs) and 3 Target Expressions (TEs) per episode
- Total of 40 TWs and 24 TEs



Methodology

INTERVENTION GROUP (N=39)

1. PRE-TEST

(40 TWs + 24 TEs, form and meaning recall)

2. 8 VIEWING SESSIONS

2.1. PRE-TASK

2.2. EPISODE (x8)

2.3. VOCABULARY POST-TASK

(5 TWs and 3 TEs, form recall and meaning recognition)

3. POST-TEST

(40 TWs + 24 TEs, form and meaning recall)

CONTROL GROUP (N=23)

1. PRE-TEST

(40 TWs + 24 TEs, form and meaning recall)

~~2. 8 VIEWING SESSIONS~~

2.1. PRE-TASK

~~2.2. EPISODE (x8)~~

2.3. VOCABULARY POST-TASK

(5 TWs and 3 TEs, form recall and meaning recognition)

3. POST-TEST

(40 TWs + 24 TEs, form and meaning recall)

Methodology

PRE- and POST-TEST

1. A continuación escucharás veinte palabras. Escríbelas en inglés y tradúcelas al castellano o catalán. Si de alguna palabra conoces más de un significado, escríbelo. Escucharás cada palabra un total de dos veces.

Palabras

	Inglés	Castellano - Catalán
1		
2		
3		
4		
5		

Methodology

PRE-TASK

“Lucy Visits Grauman’s”

1. Fill in the blanks with the appropriate words; the first letter is already given for you. Use the definitions to help you.

- A) My father tends to use a c_____ to open the door because it is always blocked.
- B) If your partner s_____, it is really difficult to sleep with him / her! What a noise!
- C) Please, give me a big h_____ of bread. I’m starving and I haven’t eaten anything since yesterday.
- D) I always like to t_____ i_____ the blankets before I go to bed.
- E) The children were playing on the beach with their b_____ and spades.

Definitions

- A) A straight iron bar, usually with a curved end, used for forcing open boxes and moving heavy objects.
- B) To breathe noisily through your nose and mouth while you are asleep.
- C) A large piece of something that has been cut or broken from a larger piece.
- D) To make somebody feel comfortable in bed by pulling the covers up around them.
- E) An open container with a handle, used for carrying or holding liquids, sand, etc.

Methodology

VOCABULARY POST-TASK

"Lucy Visits Grauman's"

1. Escucharás cinco palabras en inglés. Cada palabra se va a repetir dos veces. Di qué significan estas palabras (opción a, b, c...). Si no sabes qué quiere decir alguna palabra, elige la opción (f) 'No lo sé'.

- | | |
|----------------|-------------|
| 1) _____ | 4) _____ |
| a) Pala | a) Enchufar |
| b) Palanca | b) Arropar |
| c) Taberna | c) Cubrir |
| d) Guardián | d) Estallar |
| e) Arrugar | e) Extraño |
| f) No lo sé | f) No lo sé |
| 2) _____ | 5) _____ |
| a) Traición | a) Negar |
| b) Implorar | b) Gracioso |
| c) Roncar | c) Placa |
| d) Resonar | d) Trozo |
| e) Pasear | e) Bebido |
| f) No lo sé | f) No lo sé |
| 3) _____ | |
| a) Masivo | |
| b) Oportunidad | |
| c) Envase | |
| d) Cubo | |
| e) Bolsillo | |
| f) No lo sé | |

2. Completa las siguientes expresiones en inglés. Ayúdate del contexto o definición que se da en cada caso.

- a) Si mientes a alguien o le quieres mantener al margen para que no descubra la realidad:

You are throwing him/her _____ the _____

- b) Cuando alguien o algo te pone la piel de gallina, puedes decir:

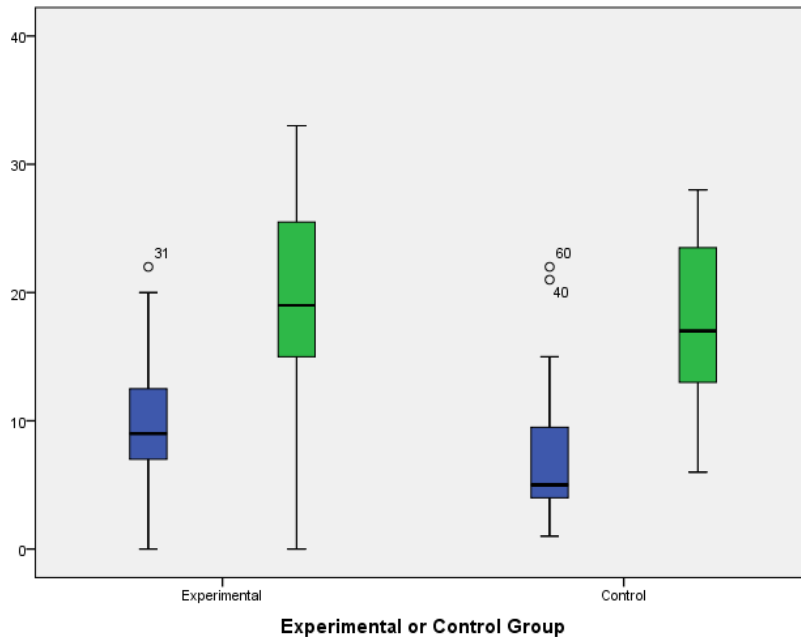
It _____ me _____!

- c) Cuando alguien parece haber perdido su sano juicio, le dices:

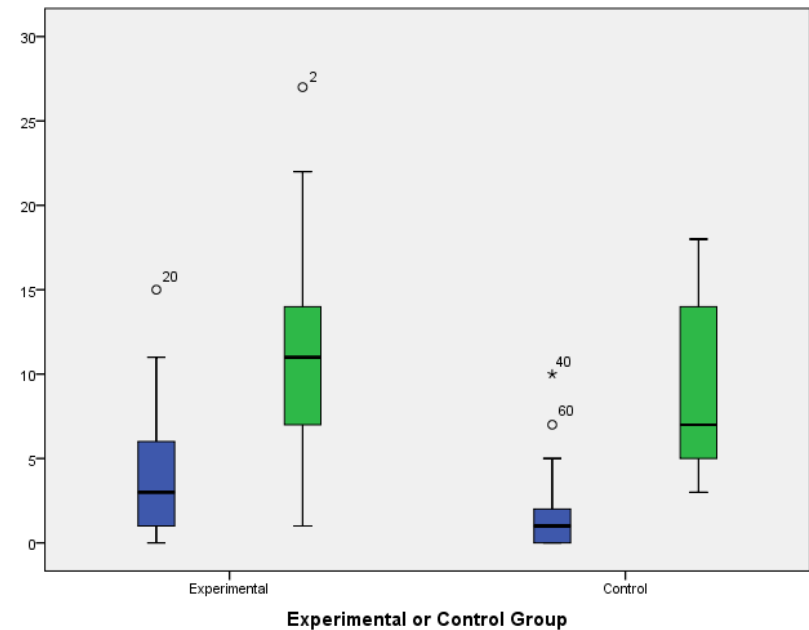
You are _____ of your _____!

Results RQ1

- RQ1. Does sustained exposure to subtitled TV series lead to **vocabulary learning**?



Forms of words in English
(TWs L2)

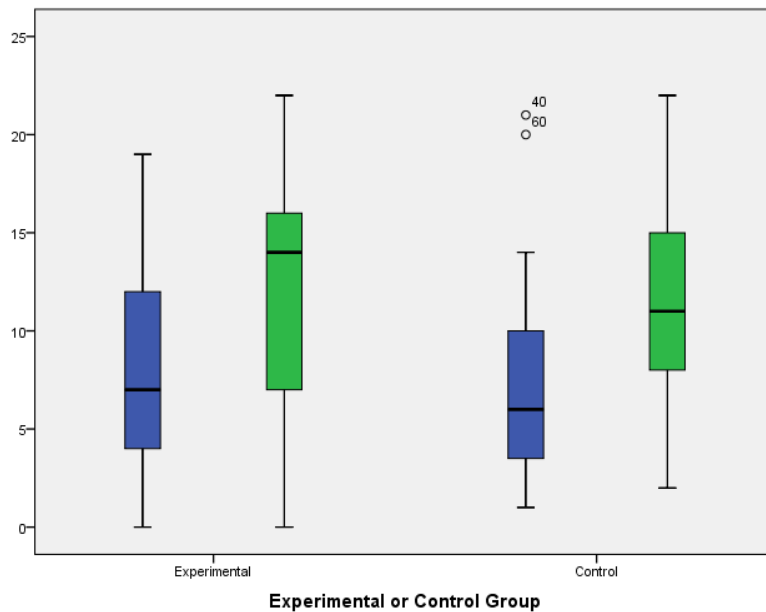


Meaning of words in
Catalan / Spanish
(TWs L1)

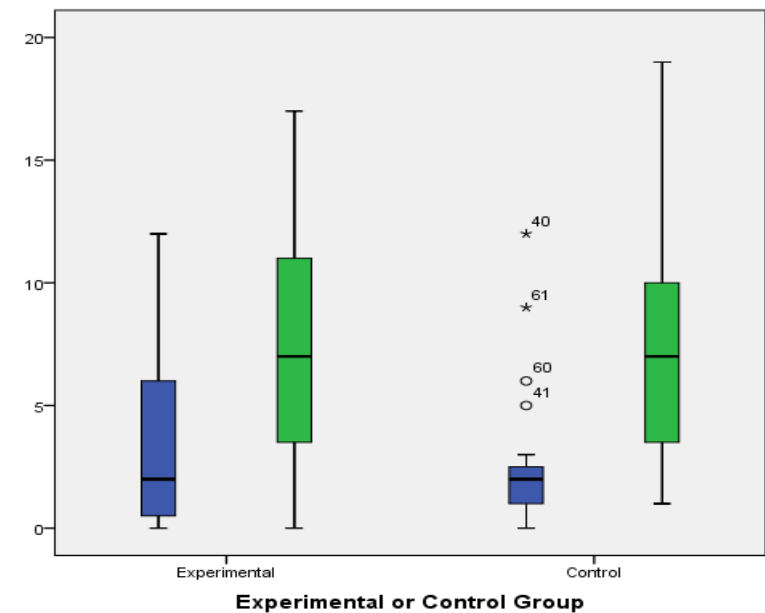
■ Pre-test
■ Post-test

Results RQ1

- RQ1. Does sustained exposure to subtitled TV series lead to **vocabulary learning**?



Expressions in English
(TEs L2)



Expressions in Catalan / Spanish
(TEs L1)

■ Pre-test
■ Post-test

Results RQ1: Descriptive statistics

		Pre-test				Post-test			
		Form words in L2	Meaning words in L1	Form express. in L2	Meaning express. in L1	Form words in L2	Meaning words in L1	Form express. in L2	Meaning express in L1
Interv.	M	10.10	3.67	8.21	3.49	19.36	11.21	12.46	7.74
N 39	SD	5.365	3.444	5.449	3.493	7.805	6.092	6.043	4.962
Control	M	7.26	1.83	7.61	2.52	17.57	8.91	11.43	7.26
N 23	SD	5.602	2.534	5.383	2.952	6.591	5.062	5.367	4.693
All	M	9.05	2.98	7.98	3.13	18.69	10.35	12.08	7.56
N 62	SD	5.582	3.242	5.388	3.312	7.374	5.579	5.778	4.830

Pre-test → Intervention > Control in Form and Meaning of Words
 Intervention = Control in Form and Meaning of Expressions

Results RQ1: Post-test

Group	Form words in L2	Meaning words in L1	Form expressions in L2	Meaning expressions in L1
Intervention	.000	.000	.000	.000
	92% huge	205% huge	52% very large	122% huge
Control	.000	.000	.000	.000
	142% huge	387% huge	50% very large	188% huge

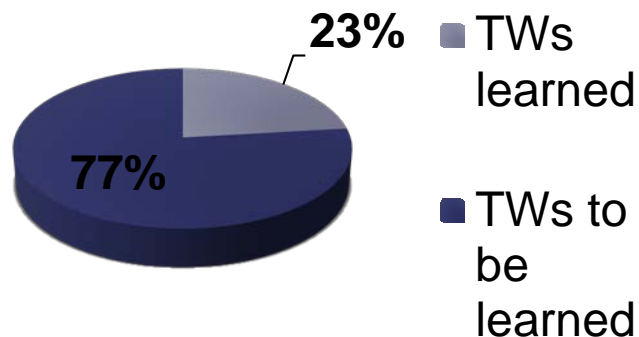
Mann-Whitney U Test Control vs. Intervention - No significant differences

	Form words in L2	Meaning words in L1	Form expressions in L2	Meaning expressions in L1
Post-test	.246	.150	.377	.661
Gains	.545	.468	.558	.572

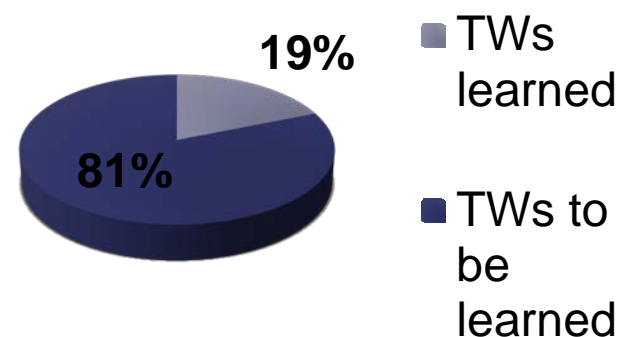
Results RQ1

Increase **not significant** in size for the **Intervention** group.

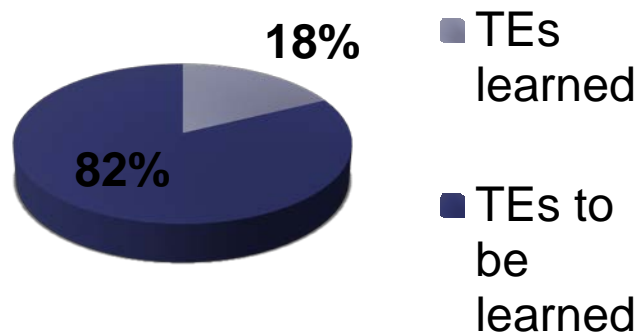
Words in L2



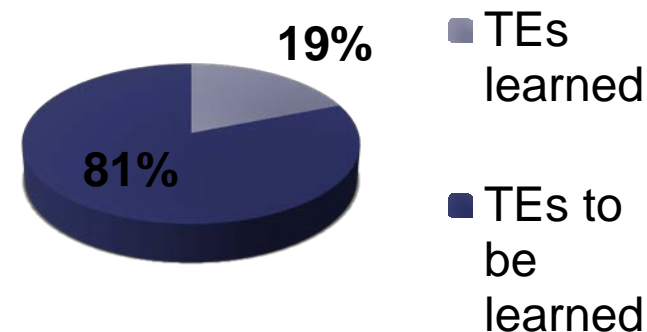
Words in L1



Expressions in L2



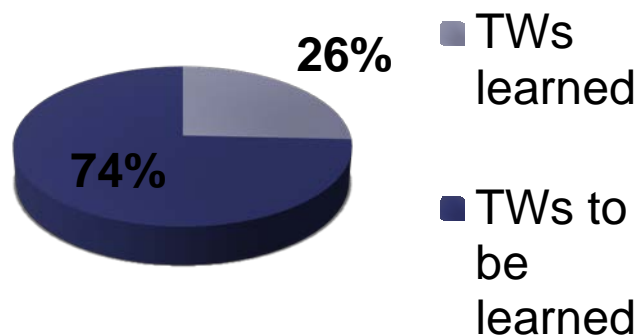
Expressions in L1



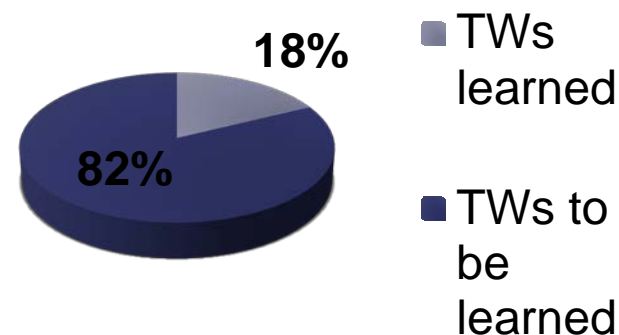
Results RQ1

Increase **not significant** in size for the **Control** group.

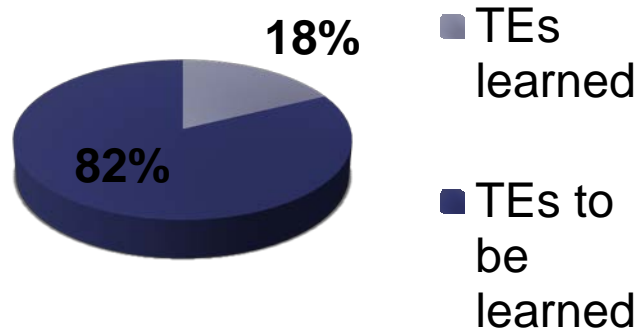
Words in L2



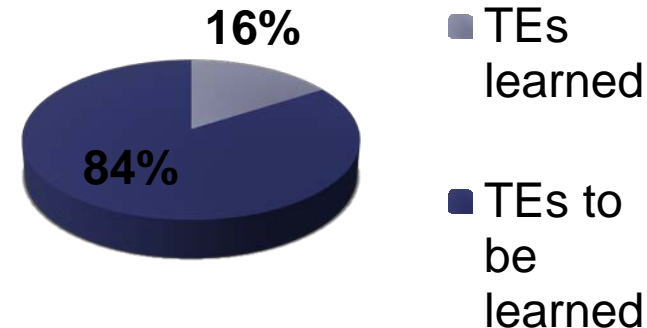
Words in L1



Expressions in L2



Expressions in L1



Discussion RQ1

Does sustained exposure to subtitled TV series lead to **vocabulary learning**?

- Yes, but so does exposure to TWs & TEs through the pre- and post-tasks only, with no multimodal exposure to them.
- Other learning mechanisms come into play: learning strategies, memorization, note-taking, focusing on TWs and TEs only.
- Deliberate / Intentional learning
(Laufer, 2005, 2006; Nation, 2001; Schmitt, 2008; Webb & Kagimoto, 2011; Peters 2012)
- Same behavior in the long run?
- There was potential for much more learning in both cases.

Results RQ2

Intervention

	LLAMA B	LLAMA D	LLAMA E	LLAMA F	LLAMA TOTAL
Gains TWs L2	.095	.133	.177	.255	.191
Gains TWs L1	.344* .016	.126	.211	.100	.255
Gains TEs L2	.018	.023	-.083	-.056	.005
Gains TEs L1	.054	.201	.017	.020	.091

* p 0.05 level – 2-tailed

** p 0.01 level – 2-tailed

Results RQ2

Control

	LLAMA B	LLAMA D	LLAMA E	LLAMA F	LLAMA TOTAL
Gains TWs L2	.295	-.047	.423* .022	-.154	.251
Gains TWs L1	.231	.079	.277	.018	.392* .032
Gains TEs L2	.289	.210	.295	.014	.431* .020
Gains TEs L1	.345	.207	.294	.208	.509** .007

* p 0.05 level – 2-tailed

** p 0.01 level – 2-tailed

Results RQ2

Intervention

- High (N=21) > Low (N=18) aptitude

Only in LLAMA D (phonetic memory) $p.050$ for Meaning of TWS (Spearman correlation)

Control

- High (N=14) > Low (N=9) aptitude

Only in LLAMA Total (B+D+E+F) $p.004$ for Meaning of TEs (Spearman correlation)

Discussion RQ2

Does **aptitude** have an effect on vocabulary learning from subtitled TV series?

- LLAMA B (word + image) does have an influence on the learning of meaning of words though only in the subtitles condition.
- Aptitude does not seem to have an effect on the supposed benefits of being exposed to subtitles in the intervention group.
- Different scenario for the control group, where aptitude (LLAMA total) affects learning of TWs' meaning and TEs' form and meaning.

└─→ Explicit learning aptitude

Results RQ3: Vocabulary Size & Proficiency

Intervention

	Vocab. size	OPT Listening	OPT Grammar	OPT Total
Gains TWs L2	.278* .045	.461** .002	.473** .001	.510** .000
Gains TWs L1	.309* .030	.331* .020	.392* .007	.421** .004
Gains TEs L2	.123	.175	.120	.158
Gains TEs L1	.361* .018	.337* .013	.598** .000	.560* .000

* p 0.05 level – 2-tailed

** p 0.01 level – 2-tailed

Results RQ3: Vocabulary Size & Proficiency

Control

	Vocab. size	OPT Listening	OPT Grammar	OPT Total
Gains TWs L2	.206	.058	.257	.110
Gains TWs L1	.365* .043	.493** .008	.540** .004	.509** .007
Gains TEs L2	.121	.116	.228	.138
Gains TEs L1	.522* .005	.423* .022	.635* .001	.622** .001

* p 0.05 level – 2-tailed

** p 0.01 level – 2-tailed

Results RQ3

Intervention High (N=21) vs. Low (N=18) Proficiency + Vocabulary size

	Vocab. size	OPT Listening	OPT Grammar	OPT Total
Gains TWs L2	.017	.021	.007	.003
Gains TWs L1	.013	.043	-	.016
Gains TEs L2	-	-	-	-
Gains TEs L1	.009	.000	.002	.037

Control

- High (N=13) > Low (N=10) Proficiency + Vocab. size

In Meaning of TEs for proficiency (OPT grammar $p=.009$; OPT total $p=.009$) and vocabulary size ($p=.044$)

Discussion RQ3

Do **proficiency** level and **vocabulary size** have an effect on vocabulary learning from subtitled TV series?

- In the intervention condition, they clearly play a role in learning the form of new words and meaning of both new words and expressions, as opposed to aptitude. Higher proficiency relevant to learning form and meaning of TWs and meaning of TEs.
- In the control group, proficiency is only relevant to learning the meaning of new words and expressions in one's L1, not to learning the form of new words and expressions in L2.
- Therefore, extra exposure (and proficiency) relevant to learning of TWs (meaning + form) and TEs (meaning), but not to TEs (form). Number of occurrences? Cognitive load for multiword expressions?
- [Intentional learning + learning strategies + proficiency / voc. size] > cognitive aptitude(s) or extra exposure, as shown in the results for RQ1 & RQ2.

Conclusion



- Intentional learning
 - Learning strategies
 - Proficiency
 - Vocabulary size
- Cognitive aptitude(s)
 - Extra exposure

Limitations & current research

- No comparison **subtitling / non-subtitling** conditions
- Only one term
- **Training effects** towards session 3 of the intervention
- Lack of **motivation** in the control group

- In-depth study on **vocabulary learning**:
 - § Word Features – Frequency, saliency, cognateness, PoS
 - § Retention effects – Delayed post-test

- Other **language skills**:
 - § Content comprehension
 - § Speech segmentation
 - § Spelling

THANK YOU!
OBRIGADOS!



The 18th
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Results RQ2

All participants

	LLAMA B	LLAMA D	LLAMA E	LLAMA F	LLAMA TOTAL
Gains TWs L2	.156	.067	.274* .031	.135	.199
Gains TWs L1	.290* .022	.105	.224	.063	.274* .031
Gains TEs L2	.140	.097	.031	-.050	.121 .020
Gains TEs L1	.146	.176	.125	.082	.217

* p 0.05 level – 2-tailed

** p 0.01 level – 2-tailed