The effects of captioned video on processing and vocabulary learning under different genres

Roger Gilabert, M.Mar Suárez, Natasha Moskvina, Mayya Levkina, Júlia Barón, Lena Vasylets, Sara Feijoo

Universitat de Barcelona

Grup de Recerca en Adquisició de Llengües
Language Acquisition Research Group

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in 2017, worldwide Netflix **109,5** million subscribers HBO had **137** million subscribers

out of **7.66** hours of media use on average per day

an adult person watches on average **3.81 hours of TV** and spends 1.89 hours online

62.9% of the population watch TV series (MECD, 2015), more and more in English

In Spain in 2017 over six million media users joined Pay-TV platforms, and **50% of the population with internet access watched TV series** in platforms such as Netflix or HBO.

People increasingly watch TV series and films…and they are here to stay

In **SLA**
we are interested in the enormous **language learning potential** of captioned video

What's in them that makes them so addictive?

Why can such 'captivation/engagement' can be food for language learning?

WHAT WE KNOW

There is general **consensus** that simultaneous exposure to soundtrack in the FL and subtitles is *beneficial* for language learning.

Input > input processing > intake > output

It benefits **comprehension** and **vocabulary acquisition** (Yuksel & Tanriverdi, 2009).

Depends on:
language configuration of soundtrack/text (L1 subtitles, L2 or reversed); target language (Winke et al. 2013); proficiency (Muñoz, 2017; Suárez & Gesa, 2017; Muñoz & Chandy, 2016); age (Muñoz, 2017) (see Vanderplank, 2010 for a research synthesis).

WHAT WE KNOW

Captions not only support learning…

Rich target language environment
(Bird & Williams, 2002)

Reinforce L2 listening comprehension

- Modified input, by adding on-screen text (Chapelle, 2003)
- Reduce complex listening by chunking, decoding and aiding interpretation of the speech stream (Baltova, 1999; Garza, 1991; Hulstijn, 2007).
- Outweigh limited vocabulary size and helps overcome listening difficulties.
- Contribute to sound-script automatization.

Stimulate vocabulary learning
(Danan, 1992; Sydorenko, 2010)

- Captioning benefits depend on proficiency.
- Issue of when to change from subtitles to captions

Montero et al. 2013, meta-analysis
Webb & Rodgers 2017 on comprehension

Benefits

THEOR

Paivio's (1986) –

dual coding theory

Aural + written modes stimulate both verbal and imagery system, leading to better, more in-depth processing and recall.

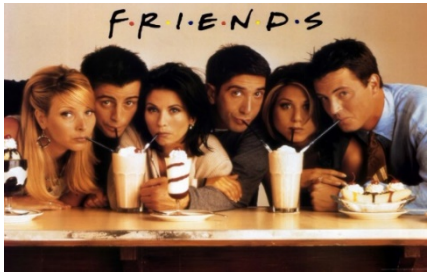
Mayer's (2001)

multimedia principle, states

Visual + verbal channel

"people learn better from words and pictures than from words alone" (Fletcher & Tobias, 2005, p. 117).

Genres



***Expository* documentaries** speak directly to the viewer, often in the form of an authoritative commentary employing voiceover or titles, proposing a strong argument and point of view.

The Merriam Webster dictionary defines '**edutainment**' as "entertainment (as by games, films, or shows) that is designed to be educational."

A **sitcom** is a genre of comedy performance in which recurring characters take part in humorous storylines centered on a common environment, such as a family home or workplace.

The **police procedural** drama is a subgenre of detective fiction that depicts investigations into several unrelated crimes in a single episode. Unlike traditional mysteries, police procedurals often reveal the perpetrator's identity to the audience early in the episode.

Genres

Kellners (1974) defined genres as consisting of "**a coded set of formulas** and **conventions** which indicate a culturally accepted way or organizing material into distinct patterns. Once established, genres dictate the basic conditions of cultural production and reception.

(Miller, 1984) "Because genre is not solely defined by form but by recurrence of social situations and actions, genres are **fluid** and there is no set list of genres, but rather "an open class with new members evolving, old ones decaying"

They may also dictate different conditions for L2 learning.

Research questions

RQs

1. Do people **recognize meanings** and **recognize forms** depending differently on the genre?
2. Is **eye-behavior** different depending **on the genre**?
3. Do different genres impact **comprehension** differently?
4. How are **individual differences in WM related to different genres**?

Method

Participants: 41 adult learners of L2 English

Context: two ‘official schools of languages’ in Barcelona

Age range: 18-70

Proficiency: Selected from A2-B1 groups, their vocabulary size ranged from 3200 to 6724 Words

Design

Independent variables: genre

Mediating variables: proficiency, WM, attention switching, inhibition

Dependent variables: meaning recognition, form recognition, and eye-behavior

PRE-TEST

Target Word knowledge test
40 targets + distractors

COGNITIVE TESTS

Letter Span

Reading Span

Attention Switching

Inhibition (Mora)

Animal documentary	Multiple choice **comprehension** questions **Meaning recognition, form recognition**
Infotainment TED talk	Multiple choice **comprehension** questions **Meaning recognition, form recognition**
Comedy	Multiple choice **comprehension** questions **Meaning recognition, form recognition**
Procedural drama	Multiple choice **comprehension** questions **Meaning recognition, form recognition**

RETROSPECTIVE PROTOCOL ANALYSIS

About:
-Rating of **difficulty** and **motivation**

- Preference for genres
- Learning experience

Generalized Linear Mixed Model

Fixed effects: vocabulary tests, genres

Random effects: random slope for item by subject

DV for ‘early learning’:

- Pre-test and post-test results for meaning recognition
- Word recognition results

DV for eye behavior:

- Number of fixations
- Fixation duration
- Visit count
- Visit duration
- Deflections
- Skipped subtitles

Regressions Repeated-measures ANOVA Correlations

Method

Measurements

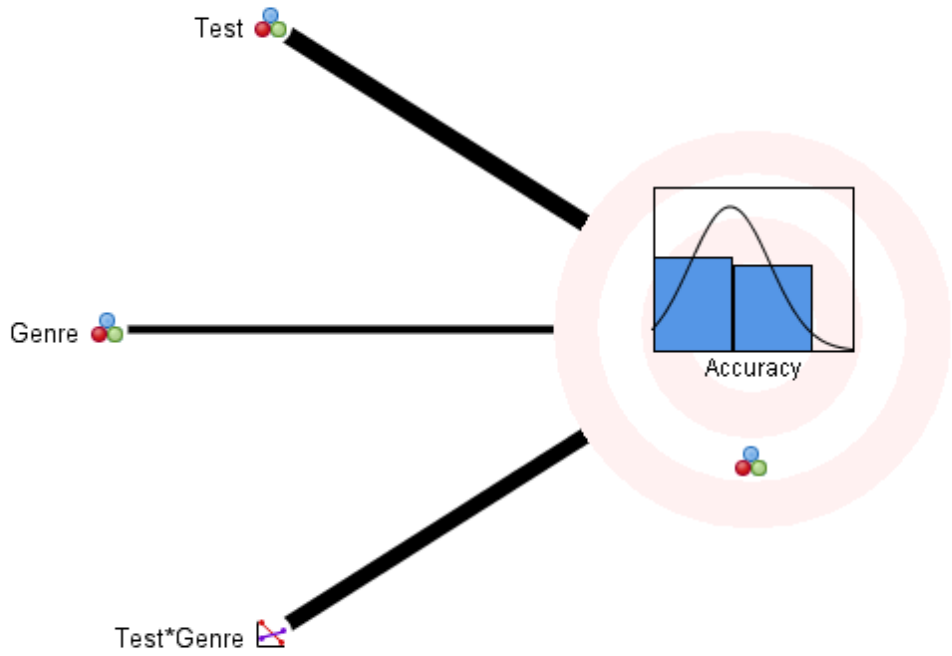
Deflection rate. Szarkowska et al (2011:386) define **deflection rate** as “the proportion of “jumps” between reading the caption and watching the image.” They excluded from the analysis the first visit (saccade) to the caption area after the onset of caption appearance. In other words “we calculated the number of times that participants, when watching a clip, came back with their eyes to the caption area of interest. Subsequently we calculated **an average number of deflection per caption by dividing the total deflection count by the number of captions in a video clip**.”

Method

Results

Results RQ1: vocabulary

Effects from pre-test to post-test

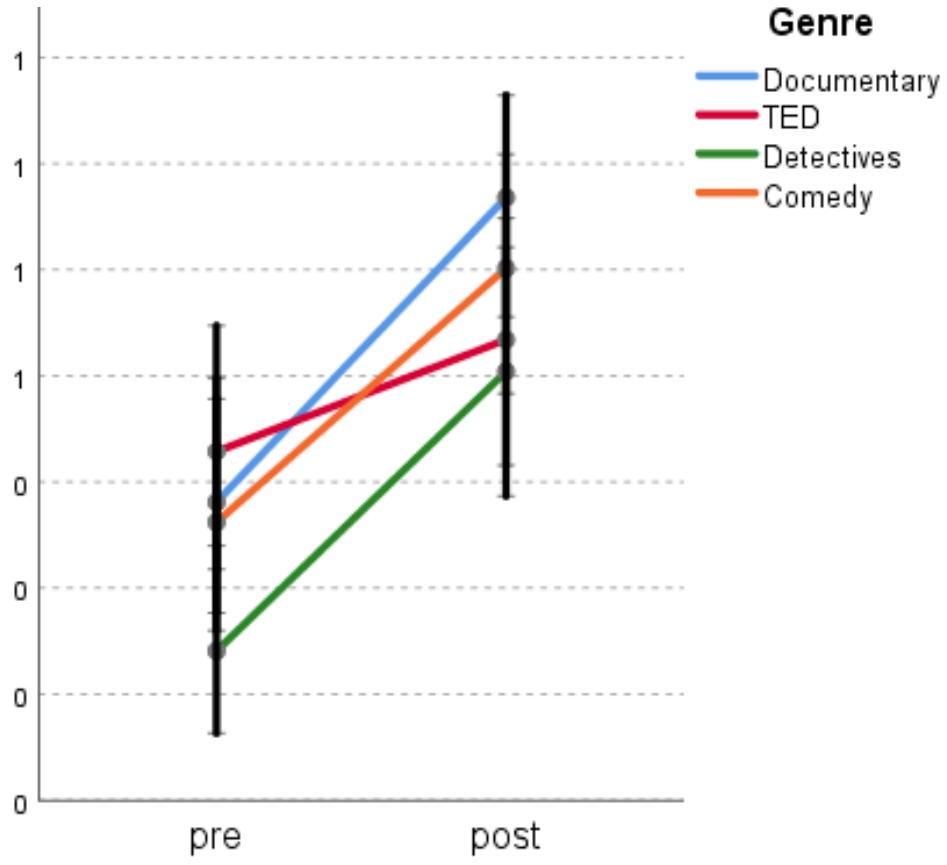


There was a significant improvement from pre-test to post-test.

Genre had an impact on meaning recognition.

Results RQ1: vocabulary

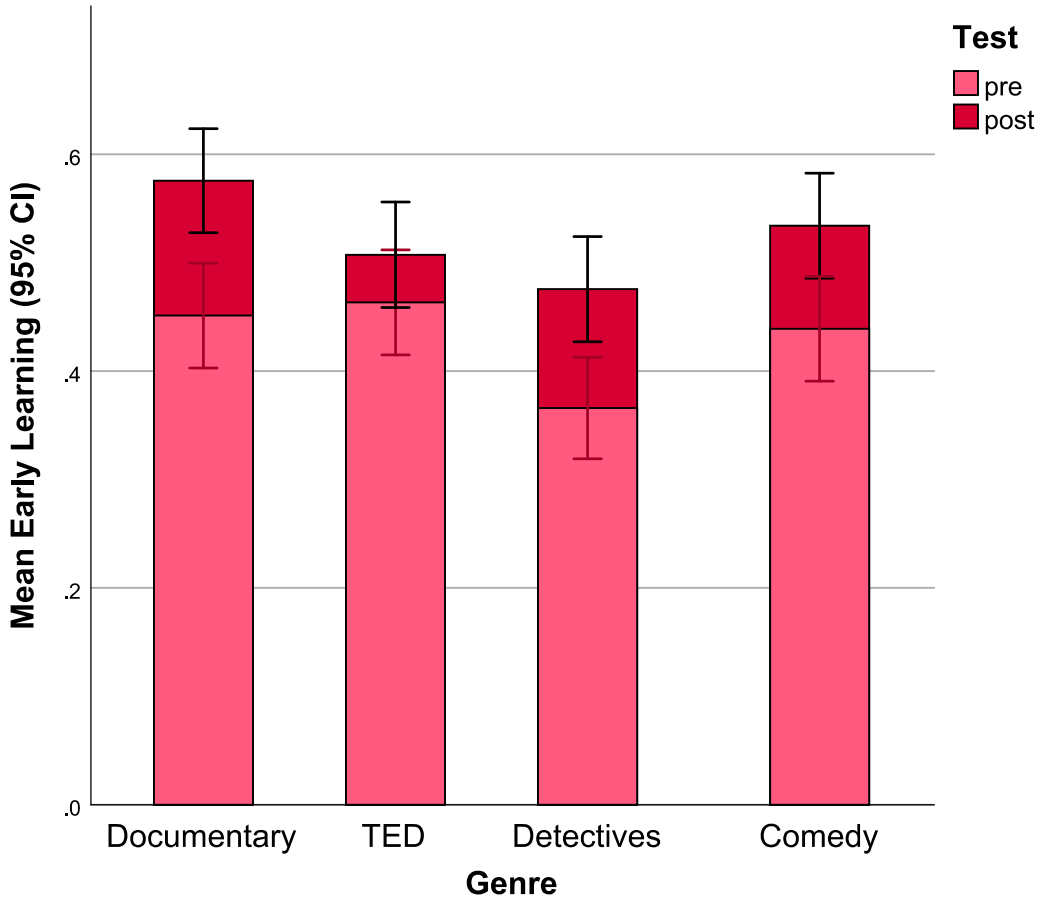
Effects on meaning recognition



All genres led to significant improvements but the changes from pre- to post-test varied depending on the genre.

Results RQ1: vocabulary

Effects on meaning recognition



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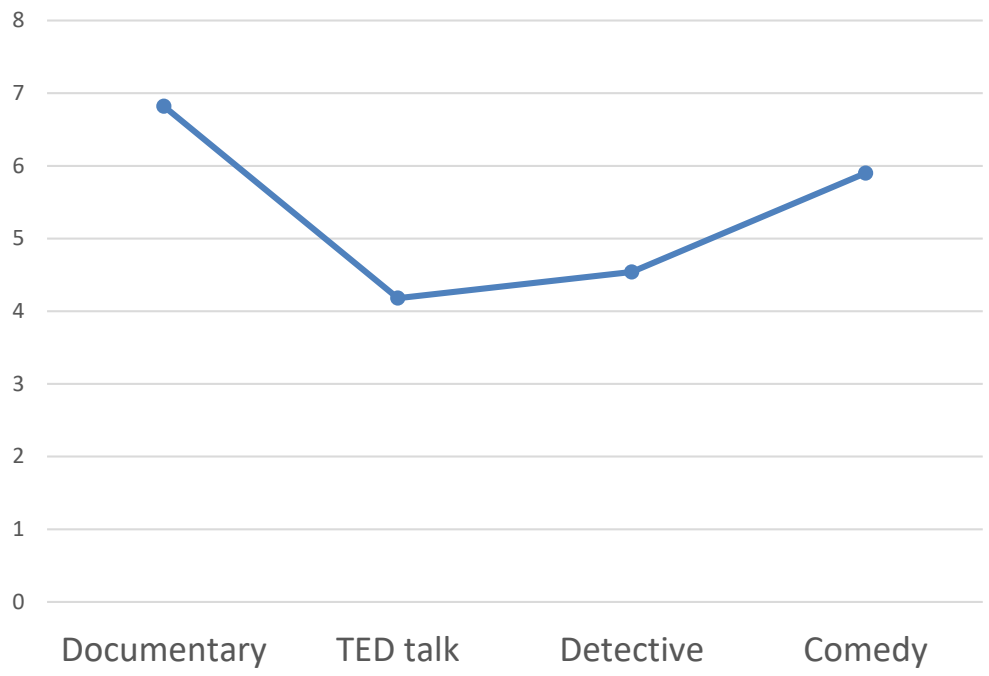
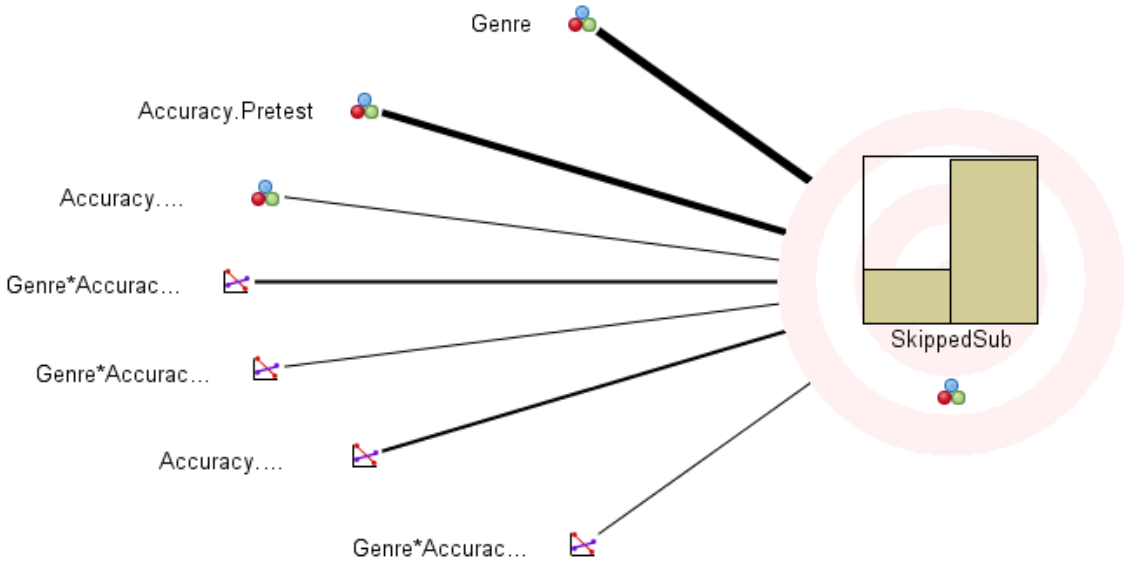


Some genres led to better word recognition immediately after viewing.

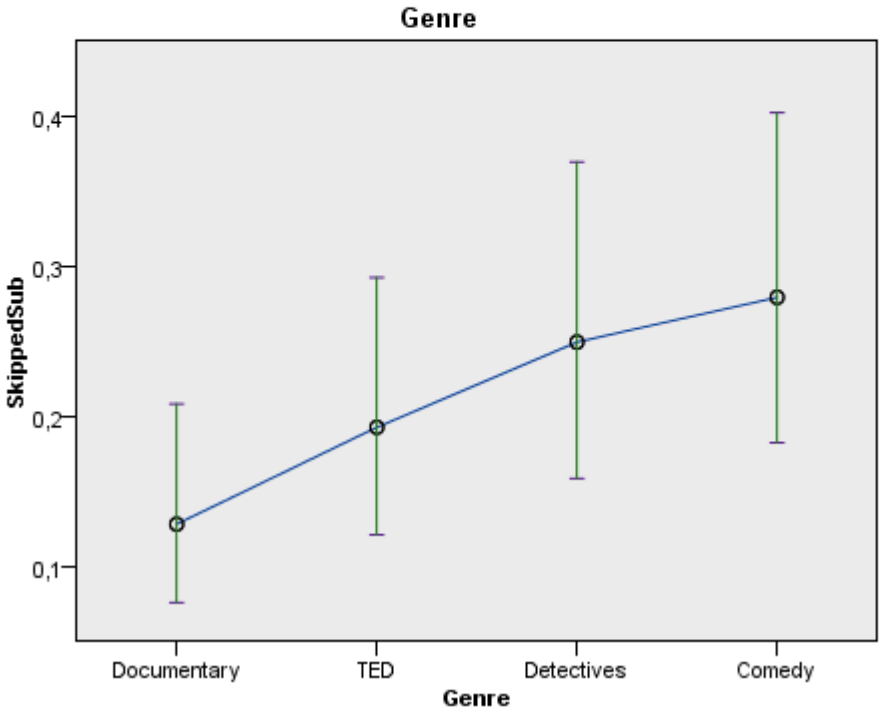
Results RQ2

Skipped subtitles



Results RQ2

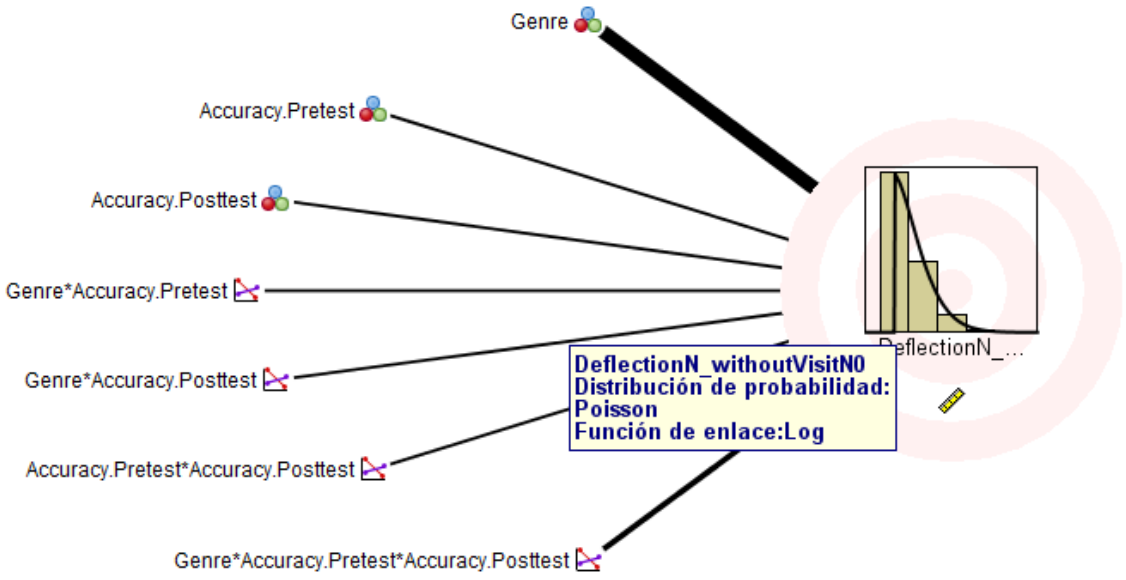
Skipped subtitles



Participants skipped more subtitles in the comedy than in documentaries.

Results RQ2

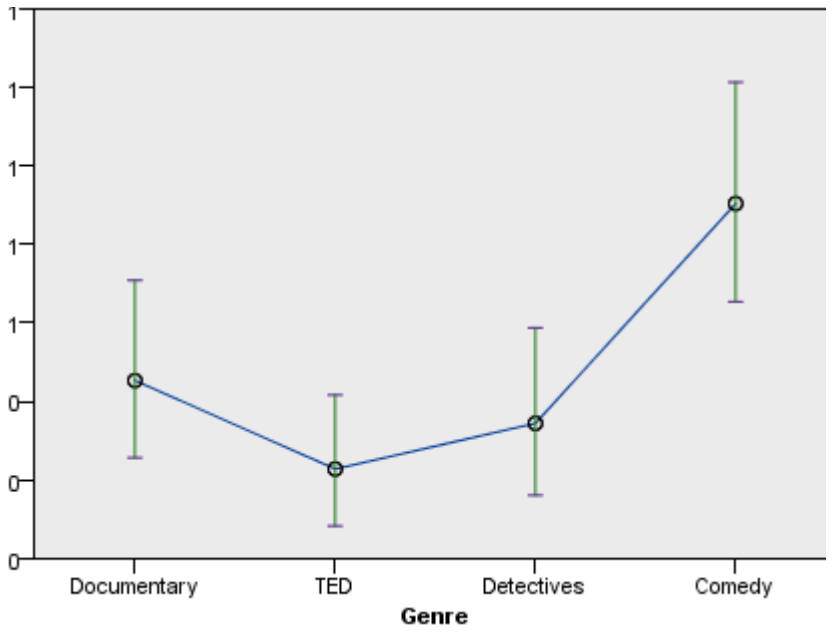
Deflections



There was a significant impact of genre on deflections.

Results RQ2

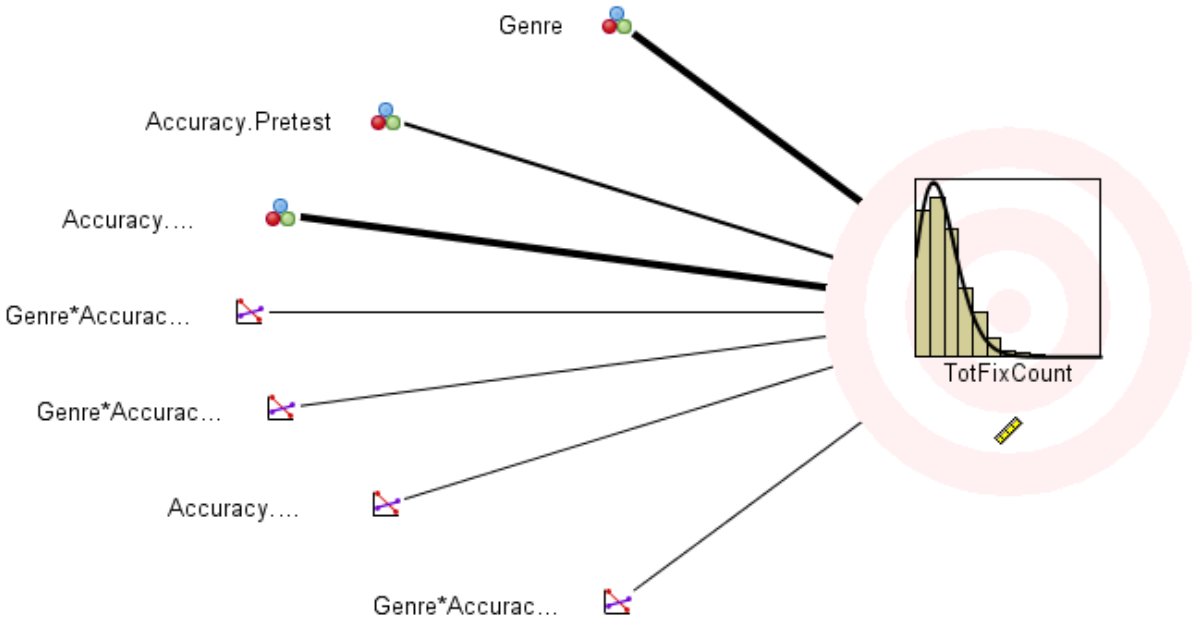
Deflections



They **deflected** more often in the comedy and documentary than on the detective or the TED talk.

Results RQ2

Total fixation count



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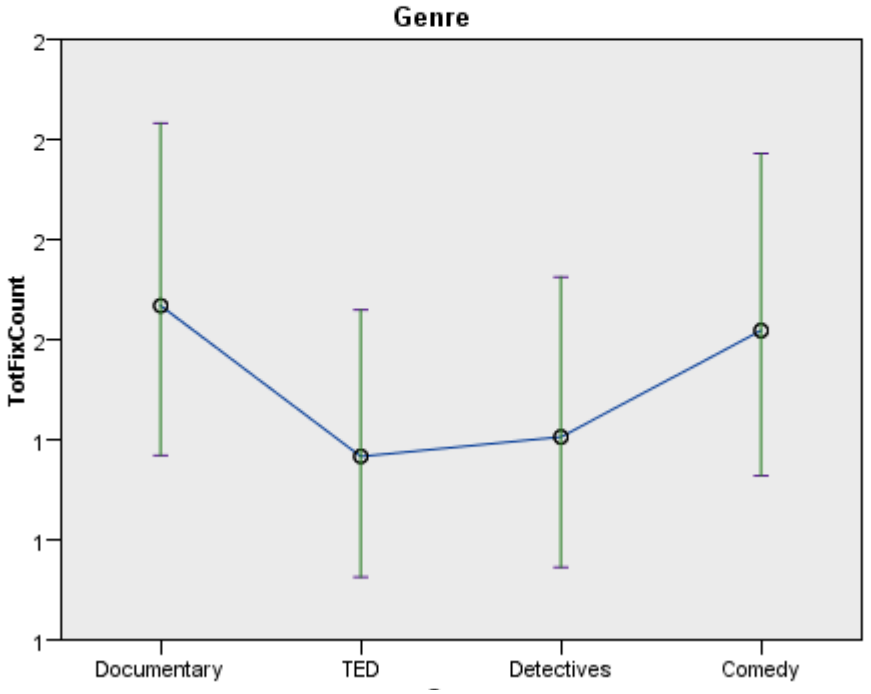

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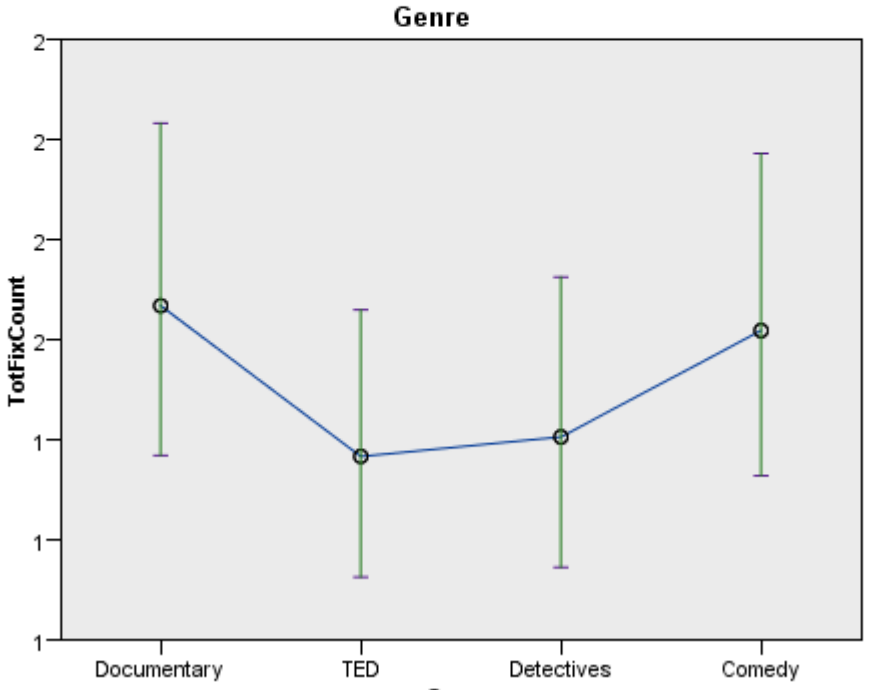
Total fixation count



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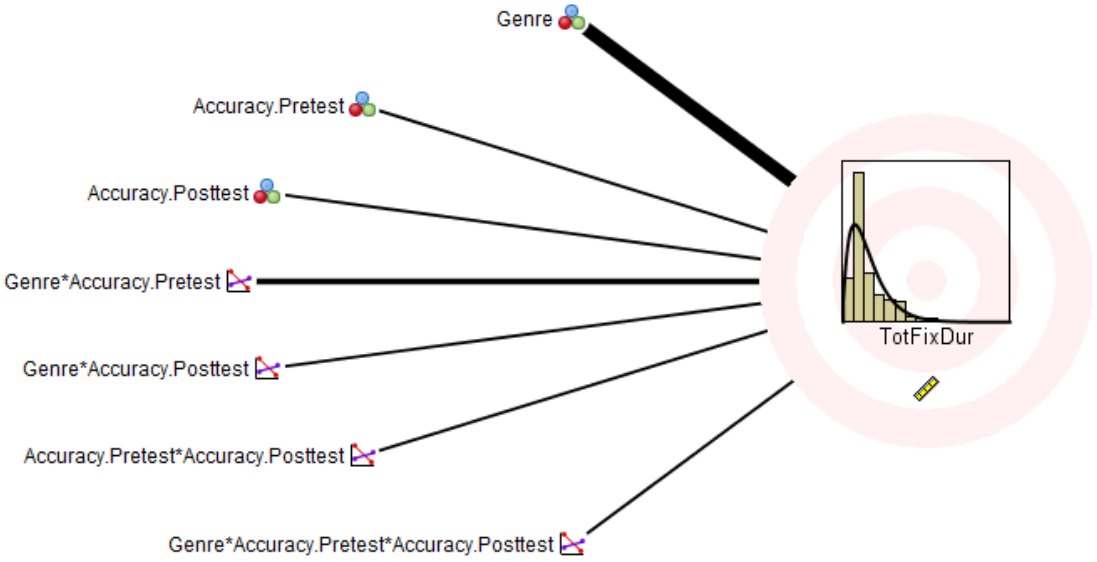
Results RQ2

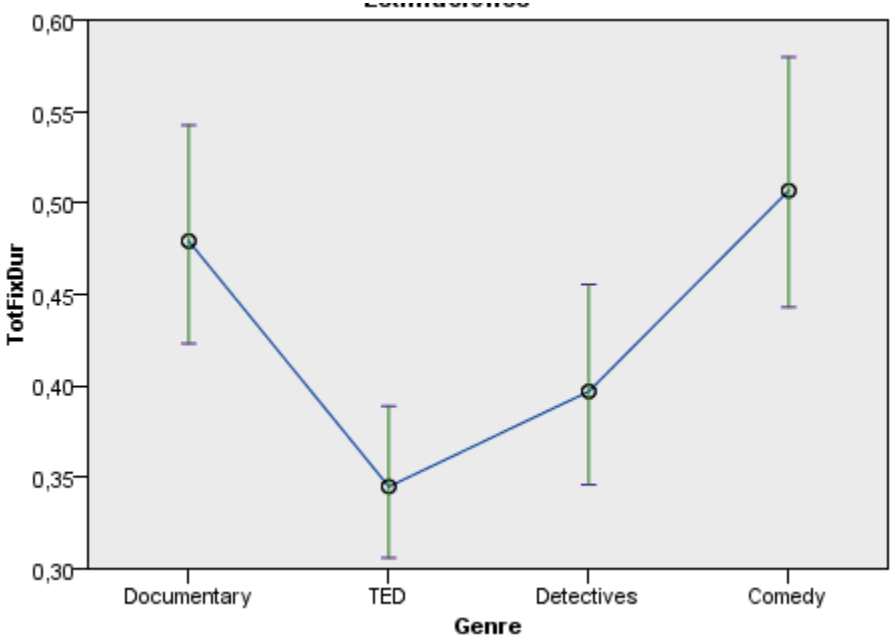
Total fixation duration



They **fixated** for a longer time depending on the genre

Results RQ2

Total fixation duration



They **fixated** for a longer time on the items in the documentary and the comedy than on the detective or the TED talk.

DISCUSSION

People show initial vocabulary learning (in terms of form and meaning recognition) under all genres

Genre makes a difference. They learned more with ‘documentaries’ and ‘comedy’ that they did with TED talk or police procedural. Their eye-behavior also changed depending on genre:

- They skipped fewer subtitles in documentaries than they did in any other genre.
- They **deflected more often with comedy.**
- **They fixated more often on words in the documentary and comedy**
- **They fixated for a longer time on words in the documentary and comedy**

genres

DISCUS

Confirms previous findings (Peters et al. 2016; Montero Perez, 2014; Winke, Gass, & Sydorenko, 2010, 2014). In our case, from a single viewing and a single exposure.

Conditions differ considerably from genre to genres. Animal documentaries use **concrete** words (audio + written form) that **co-occur** with images in close-up shots that are also long.

Despite skipping subtitles in the comedy, they still learned more new vocabulary than in other genres.

Comedies show **action**, interlocution, **facial expressions**, exaggerated gestures that may draw attention away from the subtitle.

They also found them to be the most interesting and motivation.

However…

There is no correlation between eye-behavior and initial vocabulary learning.

Exposed to	1640 words
Unknown	935 words (57%)
Fixated on	713 unknown words (76%)
Fixated and learned	255 unknown words (36%)
Skipped	222 unknown words (24%)
Skipped but learned	68 unknown and unseen words (7%)

Learning takes place beyond what they look at.

We **do not know enough about how attention is divided** between attending to written words or to the audio.

Out of 1640 words the group were exposed to, they had 935 unknown words to learn (57%). They looked at 713 (76%) and they learned 255 words (36%). They missed 222 words (24%) but they still learned 68 words (7%) of the total that they did not fixate on.

Word characteristic may be playing a role.

Transparency, imagery, co-occurrence, degree of abstractness…(Peters et al. 2016)

DISCUSSION

DISCUS

Larger vocabulary size facilitates learning of new words

The more words they know, the more new words they recognize (in form and meaning) when encountering them during viewing (Peters et al. 2016).

Working memory partially explains overall performance but does not seem to play a strong role in initial vocabulary learning in the context of captions.

People with higher WM did better in the tests in general, but they showed no gains or a different eye-behavior.

We still need to look at attention switching ability and inhibition.

IDs

Thank you
Gràcies
Gracias

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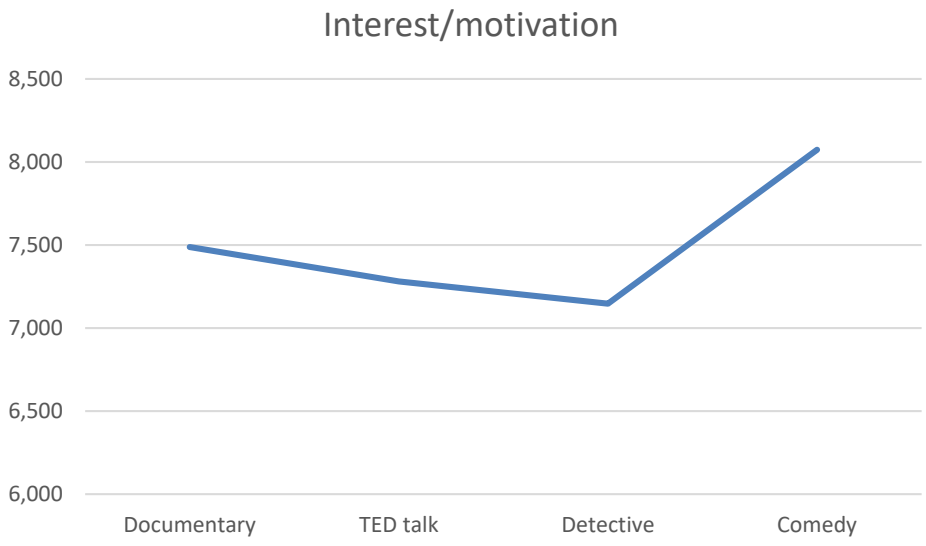
Interest/motivation
8,500
8,000
7,500
7,000
6,500
6,000
Documentary
TED talk
Detective
Comedy

DISCUSSION

Larger vocabulary size facilitates learning of new words

The more words they know, the more new words they recognize (in form and meaning) when encountering them during viewing (Peters et al. 2016).

31% of the variance for ‘documentary’ for form recog, 25% in pre-test, 25% in post-test, ns for gains, 28% for pre+post

Working memory partially explains overall performance but does not seem to play a strong role in initial vocabulary learning in the context of captions.

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