When in Rome: Immersion, Comprehension, and Enjoyment of Foreign Films

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In recent years, technology has made accessing films produced in languages other than the one we primarily speak much easier to access. As films and television can now be watched regardless of national, cultural, or linguistic barriers, research into how audiences react to such diverse content has grown exponentially. The concept of a global cinema (Naficy, 2010) and the ease with which we can access translated filmic content have made audio-visual translation a very important research topic moving forward.

Broad mass media audience outcomes of immersion, comprehension, and enjoyment are all impacted by various messages and form features of audio-visual content (Green, Brock, & Kaufman, 2004; Lee, Roskos, & Ewoldsen, 2013; Tukachinsky, 2014). As audio-visual translation is both a message content and form feature of "foreign" films, it stands to reason that audio-visual translation methods may have important effects on these types of outcome variables.

Effects of Audio-Visual Translation

Audio-visual translation (AVT) refers to the process of translating on-screen language (whether written or spoken) to another target language. The two most common forms of AVT are subtitling and dubbing. Subtitling refers to the process of translating the film's script and then the translated text is super-imposed onto the film or overlaid using digital software (Zilberdik, 2004). Dubbing is the process by which the script is translated and then voice actors record the translation which then replaces the film's original voice track (Matamala, 2010). Other, less popular, methods include translations that are read by one or two voice actors that are played over (i.e., along with) the original voice track so that both are heard, a method commonly used in

Poland (Sepielak & Matamala, 2014; Woźniak, 2012). The type of method used varies across

countries and languages, with most countries having a preferred method (Kilborn, 1993;

Stubbings, 2008; Szarkowska, 2005; Ugochukwu, 2013). Most research into audio-visual

translation has looked at the overall problems with translation (for a detailed overview, see

Rader, Neuendorf, & Skalski, 2016). Research into the effects of AVT have looked at various

cognitive and psychological outcomes, including learning, cognitive processing, enjoyment, and

immersion.

Foreign films that use subtitles provide a unique opportunity for language learners to gain

knowledge about both the language and the culture of interest. Studies have shown that subtitled

content can help with listening comprehension, communicative abilities, understanding, and even

some language acquisition (Borras & Lafayette, 1994; d'Ydewalle & Van de Poel, 1999;

Etemadi, 2012). The extent of language acquisition, though, has been shown to be somewhat

substantive, helping in vocabulary acquisition but not grammatical understanding (Etemadi,

2012) and helps more in children than adults (d'Ydewalle & Van de Poel, 1999).

A common assumption in the application of subtitling is that reading subtitles is

cognitively demanding and that they "overload" audience members and thus negatively impact

comprehension. This, however, has been shown not to be true (d'Ydewalle, Praet, Verfaillie, &

VanRensbergen, 1991; Yetka, 2010). Several studies have used eye tracking techniques to

illustrate that reading subtitles is an automatic behavior (d'Ydewalle et al., 1991) and there are

few to no tradeoffs between paying attention to subtitles and other visual information

(d'Ydewalle & DeBruycker, 2007). Even line segmentation of multiple line subtitles has been

shown to have little effect on comprehension of the film (Perego, Del Missier, Porta, & Mosconi,

2010). On the other hand, a recent study conducted by Lee, Roskos, and Ewoldsen (2013) has

shown some differences between local and global coherence of mental models. Subtitled content leads to greater local inferences whereas standard viewing (viewing the content in one's primary language) leads to more global inferences. This illustrates that the viewer's attention and memory may be taxed when viewing a subtitled film, negatively impacting elaborative inferences.

Of all the research into audio-visual translation, few researchers have looked at immersion into and enjoyment of the film content. Wissmath, Weibel, and Groner (2009) studied the differences between subtitled and dubbed content and its impact on various measures of immersion (e.g., transportation, presence, flow) and enjoyment. While they found no difference in enjoyment of the film, they did find that across various measures of immersion, dubbed content performed better; however, post-hoc analyses illustrated that these differences were not significant. These results, though, were confounded by the fact that the study was conducted in Switzerland, where there are four official languages and both dubbing and subtitling are common (Wissmath et al., 2009). Extending Wissmath et al.'s work into an American context, Rader, Neuendorf, and Skalski (2016) tested whether the method of translation would directly impact enjoyment and recall. While no direct effects were found, intercultural experience was shown to be an important moderator for both enjoyment and recall outcomes.

Immersion

Engagement with media, usually discussed as immersion into the narrative or mediated world, is an important aspect of many mass media theories, especially those that look at narrative persuasion, entertainment education, and enjoyment of media (Tukachinsky, 2014). Engagement, or immersion, is here talked about in terms of presence.

While it is difficult to find a uniform explication of presence (Lombard & Jones, 2015), it is usually defined as "the perceptual illusion of non-mediation," (Lombard & Ditton, 1997), the feeling of "being there" within a mediated environment. Many factors have been shown to negatively impact the immersion state. Things like screen size, image quality, and even genre can have critical impacts on immersion (Bracken, 2005; Bracken, Pettey, Guha, & Rubenking, 2010; Bracken & Skalski, 2009; Tukachinsky, 2014). Similarly, translation method, as illustrated by Wissmath et al. (2009), can impact immersion, with subtitling leading to lower levels of immersion than dubbing. Extending Wissmath et al.'s work into an American context, we propose the following hypothesis, in hopes of replicated the results of Wissmath et al. (2009):

H1: Dubbed content will lead to greater levels of immersion as compared to subtitled content.

Immersion as a concept has been shown to have important effects on various other constructs including identification, enjoyment, and comprehension (Busselle & Bilandzic, 2009; Green at al., 2004). Identification can be fostered through the immersion process and along with immersion is often predictive of enjoyment (Cohen, 2001; Cohen, 2009; Green et al., 2004; Igartua, 2010). Thus the following hypothesis is put forward:

H2: Immersion will moderate the relationship between translation method and enjoyment such that the difference on enjoyment between those who see the dubbed version and those who see the subtitled version will be greater for those with high presence than for those with low presence.

Figure 1 shows a graphical representation of a relationship that would satisfy H2 (assuming that dubbing is associated with higher levels of immersion, following Wissmath et al., 2009).

Figure 1. Graphical Representation of H2
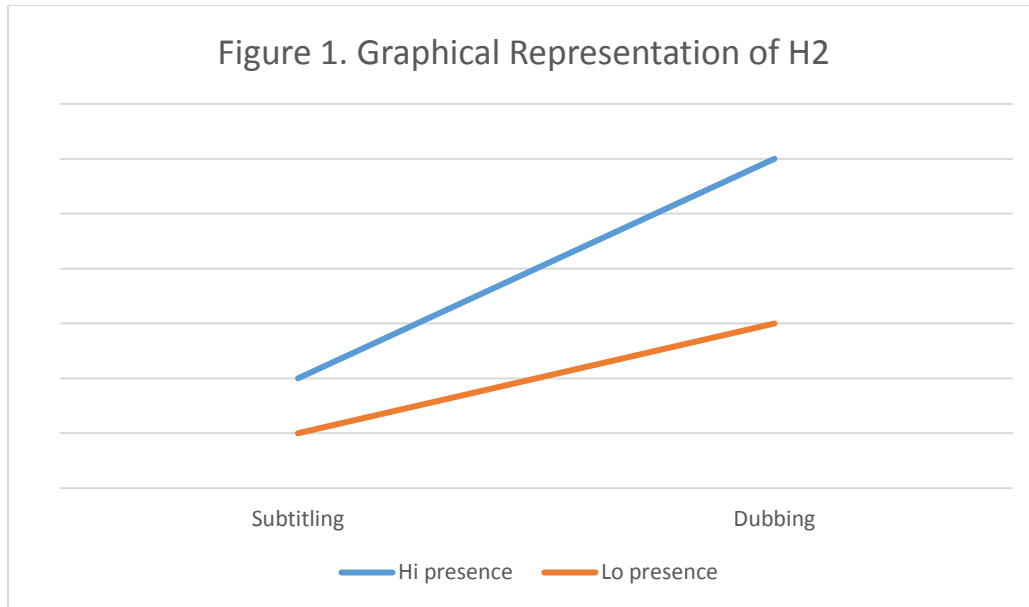
Busselle and Bilandzic (2008) consider immersion more as a process by which "a fluent and smooth construction of mental models" results in an immersive state (p. 272). Mental models are theorized to be how a person comprehends a story. As a story unfolds, audience members continually update their mental model of the story which allows them to comprehend what is happening and make inferences about the story (Rinck, Hahnel, & Becker, 2001; Zwaan, 1999; Zwaan, Langston, & Graesser, 1995).

Lee, Roskos, and Ewoldsen (2013) looked specifically at how translated audio-visual content is comprehended. They found that subtitled content (as compared to non-translated content) led to greater local coherence (i.e., referring back to something that happened in immediately previous scenes) instead of global coherence (i.e., "making elaborations outside of the narrative" (p. 413) such as predicting future events). As dubbed content is more similar to non-translated content (since both use the verbal modality to express verbal content and not the written modality to express such content as does subtitling (Etemadi, 2012)) than to subtitling,

these findings could possibly illustrate that there may be losses in comprehension of translated (here subtitled) content.

Similar to the work of Lee, Roskos, and Ewoldsen, Mayer (2009) presents the notion of multimedia learning. Multimedia learning is a dual-channel learning theory that proposes that there are two channels through which we can learn, verbal/auditory and visual/pictorial. The verbal channel consists of spoken words and the pictorial channel consists of things like graphs, illustrations, text, or videos. If a presentation contains pictures and spoken words, then the two systems can process equal proportions of the stimuli. However, if there are pictures and written words, this shifts the balance to the pictorial channel, taxing that channel.

Mayer's work complements that of Sadoski and Paivio's dual-coding theory (2001). Dual coding theory states that we code stimuli in one of two codes, nonverbal (visual objects or pictures) and verbal (written or spoken language). The coding of the stimuli can be done by one or both of the channels and varies based on the sense modality of the stimuli (e.g., visual, auditory, haptic, etc.). So when someone is speaking, we are verbally coding a message being expressed through the auditory mode. When we are reading a text that is again a verbal coding process of a message expressed through the visual mode. Modality-specific interference, according to Sadoski and Paivio (2001), occurs when one attempts to code multiple stimuli that exist in the same modality. This causes a disruption in the coding of one or both stimuli. "[S]ilent reading (visual task) may be disrupted by experiencing related visual images (visual task) at the same time," is an example of modality-specific interference that the authors give that sounds very similar to watching a subtitled film (Sadoski & Paivio, 2001, p. 46).

When we think about immersion as processing fluency and considering multimedia learning and the dual coding theory, the question then becomes how translation method might

impact comprehension, which in turn might impact immersion and vice versa. As dubbing is

very similar to non-translated filmic content and subtitles correspond to what Sadoski and Paivio

refer to as modality-specific interference, we suggest the following:

> H3: Dubbed content will lead to greater immersion than will subtitled content, which will
>
> lead to better comprehension.

Methods

Experimental Design

A post-test only between-subjects experimental design was utilized. Participants (*N*=168)

were randomly assigned to one of two conditions; they watched moving image content with

either dubbing (*n*=92) or subtitles (*n*=76). Each participant viewed the first 35 minutes of the

film *Life is Beautiful* (Braschi & Benigni, 1997), a film that is available on DVD that includes

both the subtitled and dubbed versions of the film, as supervised by the film's director.

Participants were recruited from communication courses at a mid-sized American urban

university in the Midwest where they were granted course credit for their participation. The

study was conducted entirely online through SurveyMonkey and the design and measures were

approved by the university's Institutional Review Board.

Dependent Variables

After watching the film segment, participants were asked questions to assess their

immersion into and recall of the film. Immersion was measured using a shortened version of the

MEC spatial presence scale (Vorderer et al., 2004). The MEC scale is a well-established measure

of presence, which has been used across a variety of different media including traditional media

(Balakrishnan & Sundar, 2011; Weibel & Wissmath, 2011) such as film and television (Spence, Lachlan, & Westerman, 2009). Twelve items total were used, four each coming from the following subscales: Attention allocation, spatial situation model, and self-location. All items were measured on a seven-point scale, ranging from 1="I do not agree at all" to 7="I fully agree" Items included, "I devoted my whole attention to the video," "I had a precise idea of the spatial surroundings presented in the video," and "It seemed as though I actually took part in the action of the video." Cronbach's alpha for the combined 12-item scale was .952.

Several types of recall items were employed to measure comprehension. The construct was divided into three unique dimensions: Visual recall, dialogue recall, and narrative recall. Each sub-construct was measured with four items, two multiple choice questions and two open-ended questions. Visual recall asked questions that could only be answered using visual details that were not mentioned in the dialogue. Dialogue recall asked questions that could only be answered using information given solely in the dialogue. An example of this would be the answer to a riddle that one character poses to another. Finally, narrative recall was included to try and capture general narrative information that was not tied directly to visuals or dialogue and could be gathered from a variety of methods. As these items served as inventory style measures, testing for internal reliability is not necessarily appropriate ("Measurement," 2001; Streiner, 2003), however, the Cronbach's alphas are provided: visual recall α=.213, dialogue recall α=.667, and narrative recall α=.625. For the following analyses, the three dimensions were combined into a general recall scale (*M*=8.64, *SD*=3.1), whose Cronbach's alpha was .817.

Enjoyment was measured using an adapted version of the media enjoyment scale introduced by Krcmar and Renfro (2005). Of the 18 original items, 15 items were deemed appropriate for filmic content and used. Sample items include: "I would have paid to watch it (in

theater/rental)," "I felt good when I watched it," and "I will seek out additional information about the video." All items were again measured on a seven-point scale, ranging from 1="Strongly Disagree" to 7="Strongly Agree." Cronbach's alpha for the scale was .963.

Description of Sample

A total of 168 participants were recruited from a mid-sized urban university in the Midwestern United States. Of the 168 participants, 103 (61.3%) were female and 65 (38.7%) were male. With regard to ethnic/racial identity, 81 participants self-identified as White/Caucasian (48.2%), 53 as Black/African-American (32.7%), 10 (6%) as Arab, 10 (6%) as Latino or Hispanic, 5 (3%) as Asian, with 8 (4.8%) identifying as some other race or ethnicity. The average age was 23 ($SD = 7.43$).

Results

Analyses

To test the first hypothesis, which stated that dubbed content would lead to greater levels of presence when compared to subtitled content, a one-way analysis of variance (ANOVA) was conducted, presence by translation method. The results indicated a significant difference in the mean presence score between those who saw the film dubbed and those who saw it subtitled, $F(1, 166) = 6.45$, $p < 0.05$. Those who saw the film subtitled reported significantly higher levels of presence ($M = 3.39$, $SD = 1.01$) than those who saw the film dubbed ($M = 2.99$, $SD = 0.97$), the opposite relationship of what was expected. Thus the hypothesis was not supported

The second hypothesis, which stated that the relationship between translation method and enjoyment would be moderated by presence, was tested using hierarchical multiple regression. In the first step, translation method (which was dummy coded) and presence (which was first mean

centered) were entered. The interaction term between translation method and presence was then entered in the second step. As the interaction term did not explain a significant increase in variance, the moderation was not supported ($\Delta R^2 = 0.0037$, $F(1,162) = 0.614$, $p = 0.434$).

The third hypothesis predicted that presence would mediate the relationship between translation method and comprehension. To see if a more parsimonious direct relationship existed before testing the indirect relationship, an ANOVA was run to see if translation method led to differences in the mean comprehension score. The results indicated that a direct relationship did not exist in our data, meaning comprehension of the narrative was not directly impacted by the method of translation, $F(1,166) = 2.342$, $p = 0.128$. To test the indirect relationship as mediated by presence, the PROCESS Macro for SPSS was used (Hayes, 2012). As indicated by the ANOVA, AVT method was not associated with recall ($b = -0.1389$, $p = 0.7571$) but was associated with presence ($b = -0.39$, $p < 0.05$), however presence was associated with comprehension ($b = 1.2589$, $p < 0.05$). A bootstrap estimate of the indirect effect, was generated with 1000 samples and found an unstandardized indirect effect of -0.491 with a 95% confidence interval of 0.1436 to 0.9614. As our confidence interval does not contain zero, the model is significant and the hypothesis was supported.

Discussion

The findings of the test of the first hypothesis, subtitling leads to greater immersion (as measured by presence), was surprising. As a number of factors negatively impact immersion, it is not surprising that translation method of foreign films would act as such a factor. However based on previous research (Wissmath et al., 2009), it is surprising that it was subtitling and not dubbing that led to greater immersion. This is also surprising as there were reasons to expect that either method might impact immersion. The act of reading subtitles, while an automatic behavior

(d'Ydewalle et al., 1991), could have the potential to draw the viewer out of the narrative world, either by the distracting presence of the written translation or by overloading the viewer. Dubbing, on the other hand, can be very distracting as well. The dubbed voice acting may be less than believable (Diaz-Cintas, 1999) or the translated dialogue might not be synchronized to the lip movements of the actors. As we see in our results, whatever the mechanisms may be, dubbing does negatively impact immersion into the narrative. As these results are contrary to what Wissmath et al. (2009) found, we see that American audiences may be inherently different from those of Switzerland, at least in terms of their reactions to AVT content.

On one hand, the null results of the second hypothesis are slightly surprising, given previous research has found that in this situation (watching AVT content) certain moderators are important to the relationship between AVT method and enjoyment (Rader, Neuendorf, & Skalski, 2016). However, given that these results support those found by Wissmath et al. (2009), they are not completely surprising.

Given previous research into differences in comprehension between subtitled and natural language situations (Lee, Roskos, & Ewoldsen, 2013; Sadoski & Paivio, 2001), the results of the test of the third hypothesis, which found that immersion mediated the relationship between AVT method and recall, are fairly surprising. Our results, however, do not differentiate based on type of comprehension (e.g., global or local inferences). We also used recall measures to measure comprehension. So while immersion, as impacted by AVT method, may impact recall, it may not impact more complex concepts of comprehension.

One possible limitation of this study is that it represents the reactions to only one translated film that represents only one language. *Life is Beautiful* is an Italian film where all the characters speak Italian. As previous research has found that people react differently to different

accents (Dehghani, Khooshabeh, Nazarian, & Gratch, 2015), it may be possible that the results could be different for a different film in a different language.

As Rader, Neuendorf, and Skalski (2016) discuss, most past research has focused almost entirely on subtitled content. This systematic ignorance of dubbed content has led to a hole in extant research. This study illustrates that dubbed content negatively impacts immersion and comprehension via its impact on immersion. AVT method has been shown not to impact enjoyment for most individuals (Wissmath et al., 2009), though dubbing does negatively impact those who have higher levels of cosmopoliteness (Rader, Neuendorf, & Skalski, 2016). As we have shown, this relationship is not moderated by immersion as it is by cosmopoliteness.

This study adds to the research into how immersion impacts comprehension of a narrative. While there was no direct relationship between AVT method and comprehension, immersion mediated this relationship. It was also found that those who reported higher levels of presence illustrated better comprehension of the narrative. These results reinforce the idea extended by Busselle and Bilandzic (2008) that immersion is the process by which we fluidly comprehend a narrative. Obviously immersion is an extremely important factor in the narrative comprehension process.

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