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The Effect of Subtitling, Social Identity and Consumer Attitude in Foreign Language Video Instruction

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Abstract

In this paper the effect of subtitling, social identity and consumer attitude in foreign language video instruction is examined. Companies that operate internationally have been releasing such instruction videos, which showcase the use of their products, to increase both customer satisfaction with the product and post purchase customer engagement. To test the effectiveness of these videos an experiment with a between subject design was conducted in which the participants had to recreate the building of a Lego house in accordance to an instruction video which is narrated in Spanish. Five hypotheses were posed to analyse the outcomes of this experiment. The first two examined the effects of subtitle use on video attitude, difficulty perception and performance, i.e., correctness of building. The results showed that the use of subtitles enhanced the performance of participants in correctness of building, which means that participants who watched the instruction video with subtitles performed significantly better than participants who did not. However, there was no significant effect of subtitle use on video attitude and perceived difficulty. The latter three hypotheses were posed to analyse the effects of social identity and consumer attitudes. These hypotheses were posed as it is important for companies to know how the release of these instruction videos will affect the image of the product and task that is connected to it. It was found that social identity did not significantly influence foreign language attitude. Although, social identity was strong among participants it might have not shown an effect, as a strong social identity does not necessarily imply a strong sense of ethnocentrism. No significant relationship was found between foreign language attitude and video attitude. However, one of the items of foreign language attitude showed a tendency towards significance which could be further inspected. Lastly, it was found that participants who had a high attitude towards the video had a low attitude towards the subtitles. A possible explanation for this could be that they found the subtitles to be distracting from the video itself.

Introduction

In today's market it is essential for a company to maintain their public presence by publishing promotional material for their target groups. This is done to promote brand awareness and improve consumer attitudes. This promotional material can vary a lot depending on the company and product that is to be sold. Often promotional material is regarded as merely advertising efforts such as commercials, print advertisement or promotional events, however any aspect of customer care can be seen as promotional.

Philip Kotler et al. (2017) describe this in their new customer path model. Here, 5 A's are defined that showcase how to keep a consumer involved throughout the purchase cycle in order to secure them as a loyal customer. The 5 A's stand for: Aware, Appeal, Ask, Act and Advocate. The importance of each stage varies depending on the nature of the company and their products and services. Companies usually fall into one of the four industry archetypes in their customer path, i.e., doorknob, trumpet, goldfish and funnel (Kotler, Kartajaya & Setiawan, 2017). These archetypes differ in which stage is most emphasized in the purchase path. For brands that sell impulse purchase products, the Act stage is the most prominent in the cycle. These brands, concurrent with the doorknob archetype, are often highly competitive in the market and use extensive advertising. Here it is important to increase affinity and attitude towards the brand which can be accomplished by improving post purchase engagement. Something many companies have adapted as a post purchase engagement strategy is the publishing of instructional videos or webpages that help the consumer maintain, repair or assemble the purchased product.

The usual way of distributing such instructions was in the form of a written manual, but companies such as Ikea, Phillips and Apple have started uploading instructional videos on either their websites or the social media platform Youtube. This switch is partly due the apparent disregard of manuals, as around half of the callers of a helpdesk did not consult the manuals which are provided with the product beforehand (Gadget Helpline, 2009). Probably, the biggest influence on this development of instruction has been the creation of the Internet and Google (Pogue, 2017). Consumers can now look up instructions and tips online without much effort rather than searching through a manual. The format of instruction has changed greatly, as it has now moved from physical to digital, written to visual and local language to English or another foreign language. Instead of regarding this change as a negative development, marketers have taken the opportunity to create their own online content in order to secure customer engagement.

The aim of this study is to investigate how a variety of factors influence the effectiveness of a foreign language instruction video. Factors such as, use of subtitles, social identity and consumer attitude were investigated within the Netherlands. In order to justify the choice of material and investigated factors for this study an overview of previous research is given.

Theoretical Framework

Instruction manuals, no matter their format, serve the goal of aiding the viewer to understand given information and apply the acquired knowledge. As mentioned before, the transition from written manuals to instructional videos has only started in recent years, as it is still very typical to receive a written manual along with almost any product one buys. However, as new technologies have become available, instructors are likely to try to adapt to them and implement them to provide the best format of presenting information. Studies investigating which format of instructional method is the best tend to implement the learner centered approach (Mayer, 2014), which in contrast to the technology centered approach. The learner centered approach is concerned with how to adapt the available resources in order to facilitate cognition and understanding in the human mind. The premise is to find a way to most effectively teach a learner. In order to follow the learner centered approach one has to know which method of instruction fits the learner or user best.

The two main opposing modes of instruction are animation-based and static-based instruction. There has been a debate on whether animation enhances the learning experience when implemented in instructions or whether static information delivery is more beneficial. A study (Castro-Alonso, Ayres & Paas, 2015) investigating whether animated presentations are superior to static ones found that the overall accuracy score in recreating a Lego design was higher for animations than static. The highest advantage of animations was found when procedural/ motor skills were part of the instruction. On the other hand, static presentation was found to elicit better performance in a non-human movement task (Scheiter et al., 2006). This can partly be explained by a moderating effect of learning: the human movement effect (Paas & Schweller, 2011). It describes that learning manipulative tasks comes easy to humans as it is an evolved primary skill. This human movement effect cancels out the so-called transient information effect, which describes that educational material, that is permanently displayed on a paper or screen, elicits higher learning outcomes than temporarily displayed material (Singh, Marcus & Ayres, 2012). Transient information entails spoken information, fleeting images and, consequently, animations. According to this theory, animations should

be disadvantageous for the learning process. However, their theory was not supported by the outcome of the conducted experiment. In a meta-analysis by Höffler and Leutner (2007), the results and approaches of 26 primary studies which investigated animations and static presentations were compared and evaluated. An overall advantage was found in favour of animations regarding the learning outcome. They confirmed the aforementioned effectiveness of animation in procedural/ motor skills, as well as adding that if the role of the animation is purely decorational, rather than representational, they are not advantageous to static presentations.

Taking these findings of previous research into account, it is understandable that there has been an increasing trend towards the use of animated presentations of information. Easy access and low cost of technologies that facilitate this kind of presentation has prompted learning institutions and businesses to adopt a multimedia approach. Multimedia is the presentation of words (print or spoken) and pictures (e.g. illustrations, photos, videos etc.) at the same time. It is supposed to take full advantage of a human's capacity to process information as it uses more than one channel for transfer, which should reinforce the absorbed information (Mayer, 2014). This reinforcement has been observed to be effective enough to enhance performance of individuals with a low working memory capacity to the same level of individuals with a high working memory capacity in a multimedia instructional environment (Lusk et al., 2009). Working memory capacity refers to the ability to process and maintain relevant information of a primary task in the working memory while also being able to retrieve information of this task from the long term memory.

Depending on what the desired outcome of the multimedia instruction is, different methods need to be employed. According to Mayer (2014), there are three general goals of multimedia instruction: response strengthening, information acquisition and knowledge construction. Response strengthening is, for example, best facilitated through drill and practice, while information acquisition is easiest through the presentation of isolated information fragments. Knowledge construction is best achieved when the instructions show the learner what to pay attention to, how to organize the acquired information mentally and how it is related to previously learned information. In regard to instruction videos released by businesses for product assembly or maintenance it is most important to strengthen the response of the consumer, as they have to perform the task showed in the video. Information acquisition and knowledge construction are more useful if the consumer had to actually remember and reproduce information about the product. In order to produce an effective instruction video that enables this response strengthening, decisions about the content and

presentation of the material have to be made. Especially, if the video is to be released outside the country of origin it is important to consider which language is to be used and whether there will be translations depending on the location. If the company chooses for translating their material, a decision has to be made on what translation approach will be used.

Subtitles

A common tool which is supposed to foster understanding in videos, usually in the form of translation, are subtitles. They are majorly used in the entertainment industry so that movies can be viewed internationally even when the audience cannot speak the original language of the movie. They are, additionally, useful if a company or institution wants to release their content to an international audience without increasing production cost substantially (Kilborn, 1993). Subtitling in movies has been the topic of previous research; however, the findings and opinions of scholars are contradictory and only applicable to videos that have the purpose of entertainment (Perego, Del Missier, Porta & Mosconi, 2010; Koolstra, Peeters & Spinhof, 2002; Perego, Del Missier & Bottiroli, 2015). Instructional and educational videos are still largely neglected in research, despite the rise of foreign language videos in this category. This increase is partly due to the effect of globalization as it is more beneficial for companies and institutions to release videos in a language that is coherent with the location of their target audience. In order to find the best strategy for a company in terms of the language use in their videos one has to know the influence of foreign language narration and translation.

The consumption of videos which are both narrated and have subtitles requires processing of information on three different channels. Visually one has to process both the pictorial information, i.e., the video itself, and the textual information, i.e., the subtitles. Additionally, the auditory information is given through the narration. This simultaneous processing and integration of information has been theorized to be more cognitively demanding compared to when the information sources are presented separately. Bergen, Grimes, and Potter (2005) have conducted a study in which they compared the attentional demand of watching two different versions of a news broadcast. One of the videos followed a visually simple condition with only a news anchor and a visually complex condition with a news anchor and additional text on the screen. It was found that the visually complex format directs the attention of the viewer towards the auditory channel rather than the visual channel as the extensive information on the screen is too attentionally demanding. This suggests that the use of subtitles would be more cognitively demanding and therefore decrease

understanding yet increase mental effort. This corresponds to the split-attention theory (Ayres & Sweller, 2014) which states that in order to learn material, which includes multiple relevant sources of information, one must divide their attention to process all of them. The processing of multiple sources on the same channel, e.g. the visual channel, which hold different information, therefore, leads to a higher cognitive load. The Cognitive Load theory (Sweller, 1988) entails three types; intrinsic, extraneous and germane cognitive load. In context of multimedia learning and subtitling the extraneous cognitive load is most important to consider as it refers to the method of presenting information to the learner, and therefore, entails that instructions should be designed in a way to reduce the cognitive load.

More recent studies (Perego, Del Missier & Bottiroli, 2015), however, have found the opposite to be true. A comparison of a dubbed versus subtitled video has revealed that reading subtitles came easily to participants of the study and that they even depended on them for understanding, to some extent. The group exposed to subtitles in this experiment found the subtitles helpful for understanding the film and it aided in visual scene recognition when asked to recall a specific scene. This is described in the contrasting view that reading subtitles is a semiautomatic task which humans are performing without consciously putting effort into it (d'Ydewalle & De Bruycker, 2017). This was observed when simple and redundant information was presented to the subjects.

Furthermore, in a study about the effect of subtitling and dubbing on psychological immersion (Wissmath, Weibel & Groner, 2009), it was found that there was no significant effect of the translation method on the film experience and appreciation. This could indicate that the use of subtitles would not have a significant effect on the video attitudes of the consumer. However, as the research was conducted on a film, which was produced for entertainment purposes, it is unclear whether this would hold true for foreign language instruction videos.

To further understand the relationship of visual and verbal information input Mayer and Anderson (1991) tested the hypothesis that scientific understanding is promoted through the connection of words and pictures. They reinforced the dual-coding theory first developed by Paivio (1991), which states that mental representations of both visual and verbal stimuli, as well as connections between them, are created in the mind of a learner. The results of Mayer and Anderson's study (1991) showed that participants, who were exposed to words in combination with pictures simultaneously, outperformed other groups in terms of creative problem-solving involving reasoning. Compared to the group who was presented with words before pictures, the aforementioned group came up with significantly more creative solutions

to the problem which means that their ability to transfer information is better when exposed to visual and verbal information at the same time. This contradicts the perception that the intake of information on different channels is confusing. Rather the information is reinforced as it is presented on multiple channels that create a complete picture. However, the presented material is not the only influencing factor on the processing and evaluations of material by an individual. Aspects of the individuals themselves, such as their attitudes and identity, could play an influencing role as well.

Social Identity & Consumer attitudes

To understand what effect a foreign language video has on the attitude of consumers, one has to know which underlying attitudes and perceptions of foreign language already exist within the population. It has been found, that in interaction with people who speak a different language, emotions are evoked from associations one has with the social group the other person belongs to (Haddock et al., 1994). This reaction is called 'emotional associates'. These emotional associates steer the attitude of the listener depending on what relationship they have to the social group of the speaker.

The consumers' attitude is, furthermore, shaped by the social identity of the individual itself and their degree of ethnocentrism. A social identity is commonly characterised as a subjectively defined self-concept of an individual built on various social group memberships (Tajfel & Turner, 1979). Relative to this self-concept, the members of other social groups are evaluated. This social identity can vary among individuals in its strength and salience (Cargile & Giles, 1997). Here, strength refers to the extent to which an individual has internalized their identity, therefore, how strongly they feel about it. Salience is a trigger or "switch", which activates ones social identity in a given situation. This means that one might not be aware of ones identity in a given moment, but e.g. a negative statement about the social group one belongs to can trigger awareness. The social identity theory states that if one's group identity is stronger, it is also more salient, and therefore, makes one more likely to behave in favour of the intergroup (Taylor & Moghaddam, 1994).

Similarly to one's social identity a consumers ethnocentrism describes their feeling of belonging within their group and indicates what is seen as acceptable in their culture (Shimp & Sharma 1987). However, ethnocentrism implies an innate preference for products produced in one's own country. Consumer ethnocentrism has been positively correlated to patriotism while it was also found that there is a negative correlation to cultural openness (Sharma, Shimp & Shin, 1995). This could mean that consumers with a high degree of

ethnocentrism evaluate foreign advertising and products more negatively than consumers with a low degree.

Finally, the format of the video itself can have an influence on the attitude of the consumer. As aforementioned, it has not been established whether the use of subtitles has an effect on the overall attitude of the consumer towards foreign language instruction videos.

The present study aims to research the effect of subtitling, social identity and consumer attitude in foreign language video instruction. The video used, demonstrates a performative task with the purpose of replication. The effect of subtitle use was examined in terms of perceived difficulty of the task, video attitude and correctness of building. Additionally, the influence of social identity, foreign language attitude, subtitle attitude and video attitude were related to each other. To do this, the following hypotheses were posed:

H1: Instructions with subtitles in a foreign language instruction video will lessen the perceived difficulty of the task and improve attitude towards the video.

H2: Instructions with subtitles in a foreign language instruction video will improve correctness of building.

H3: Social identity influences attitude towards foreign language.

H4: There is a relation between subtitle attitude and video attitude.

H5: There is a relation between foreign language attitude and video attitude.

These hypotheses are derived from the discussed literature above as subtitle use, consumer attitudes and social identity were all studied separately within their domain. However, there is no prior research on their effect and interaction when applied simultaneously. It is hypothesised that this constellation of material will be advantageous for the learning process of consumers.

Method

Materials

The stimulus material for the present study consists of two versions of the same instructional video and a set of Lego bricks. The bricks come in five different colours (blue, red, green, yellow, white) and two sizes (2x4 and 2x2). The 4min 20sec long video showcases instructions on how to build a Lego house with specific Lego blocks. The video is narrated in Spanish, which is a foreign language to the participants, while one can see the arms and upper body of a person who is demonstrating how to build the Lego house. Both videos show the same procedure and the same person is executing the actions, however, in one of the videos Dutch subtitles are added. The subtitles displayed in the video are a literal translation of the Spanish narration. In the video the individual Lego blocks and different colours are introduced before the actual building of the house commences. Below, the final design of the house is displayed. Each layer has a unique colour and brick arrangement which is described in the video. The first four layers are alternating between blue and red, followed by a layer which is both white and green. Lastly, the roof consists of yellow bricks with a green chimney at the back.

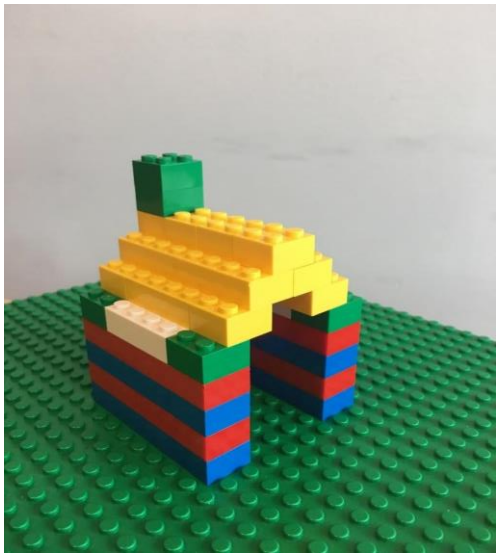

Figure 1. Lego House

Additionally, an online questionnaire was created, which is included in the appendix. The questionnaire was carried out in Dutch.

Subjects

The participants consisted of native Dutch speakers who have no to little prior knowledge of the Spanish language. A total of 105 subjects participated in the experiment, with 50 watching the video without subtitles while the 53 watched it with Dutch subtitles. The data of two of the participants of the without-subtitle group was excluded from the analysis as their mother tongue was not Dutch. The participants were eligible for the experiment only if Dutch is their mother language and they are either above 18 years old or have consent of their parents to participate. The participants ranged from the age of 17 to 79 (M= 29.9, SD= 15.48) and the distribution of age among participants was equal (t (99) = .848, p= .399). 53.4% of the overall subjects were male, while the other 46.6% were female. The distribution of gender was also equal between the two groups of subtitle use (χ^2 (1) = .01, p= .91). In the group without subtitles 54% of the participants were male and 46% were female while in the group with subtitles 52.8% were male and 47.2% were female. In regards to their educational level, 19.4% of participants went to the MBO, 33% visited the HBO, 42.7% visited the WO and 4.9% still went to middle school. The level of education was distributed equally among participants (χ^2 (3) = 6.94, p = .074). Additionally, participants should have normal or corrected to normal vision to ensure that they are able to see the Lego blocks in the video and read the subtitles clearly. Lastly, participants that are colour-blind are not eligible for the experiment as they would not be able to differentiate the coloured Lego blocks properly.

Design

In order to conduct the experiment, the participants were randomly assigned into two groups. One group was exposed to the video with subtitles and the other to the video without subtitles. A 1-factorial between-subject design with two factors, subtitle use and no subtitle use was utilized. The independent variables consisted of use of subtitles and social identity. The variable use of subtitles entails two levels; no subtitles and Dutch subtitles. Social identity was measured with three items in the questionnaire.

Instruments

The dependent variables that were measured in the questionnaire can be divided into two general categories: Attitude and Correctness of building. The questionnaire was carried out in Dutch, therefore the items and questions were translated into English here.

Attitude entails four items including: attitude towards the video, attitude towards audio, attitude towards subtitles, and attitude towards task. They were measured on a 5-point Likert scale, which ranged from strongly agree to strongly disagree. The reliability of the four items was measured respectively. The item attitude towards the video included six statements: I found the instruction video…: 1. Well structured, 2. Clear, 3. Not interesting, 4. Easy to remember, 5. Of good quality, and 6. Well portrayed. The reliability of attitude towards video was not acceptable: $\alpha = .61$, but improved further after deleting the item "not interesting" with $\alpha = .66$.

Attitude towards the audio was measured with six statements: The spoken language in the instruction video was…: 1. Easy to understand, 2. Difficult to follow, 3. Distracting from the task, 4. Supporting the task, 5. Too fast, and 6. Too informative. The reliability of attitude towards the audio was not acceptable with $\alpha = .63$, but improved slightly when the item "too informative" is deleted, with $\alpha = .64$.

The item attitude towards subtitles was also measured with six statements: The subtitles of the instruction video was…: 1. Difficult to understand, 2. Easy to follow, 3. Too slow, 4. Supporting the task, 5. Distracting from the spoken language, and 6. Distracting from the video. The reliability of attitude towards subtitles was not acceptable with $\alpha = .62$, but improved slightly after deleting the item "too slow" with $\alpha = .64$.

Lastly, the attitude towards the task was measured with 4 statements: I found the task in this instruction video…: 1. Nice to do, 2. Easy to do, 3. Boring to do, 4. More difficulty than expected. The reliability of attitude towards task was not acceptable with $\alpha = .47$. This reliability is considerably too low, therefore, the variable was not computed and analysed. The other items were still used for analysis as their scores come close to being acceptable, although they are not.

In the questionnaire the participants were, additionally, asked a set of questions to determine their degree of social identification and foreign language attitude. This was also measured on a 5-point Likert scale. The variable social identity included three statements: 1. I

am proud of being Dutch, 2. I feel connected to the Dutch culture, 3. I identify myself with other Dutch people. The reliability of social identity was very good with α = .981.

Foreign language attitude was measured with two questions containing two items respectively. The statements addressed comfort, feeling, importance and usefulness. The reliability for foreign language attitude items was not acceptable with α = .55. Therefore, the items were analysed separately from each other.

Finally, correctness of building was determined by the amount of correctly placed Lego bricks in terms of colour, shape and placement. A point was added for each of the conditions that was fulfilled, therefore a single brick could get the maximum score of 3 points. Each layer of the house was compared to the key layout and scored accordingly. An accuracy score was then calculated, with 144 (48x3) points being the highest achievable score. The scoring sheet is displayed below.

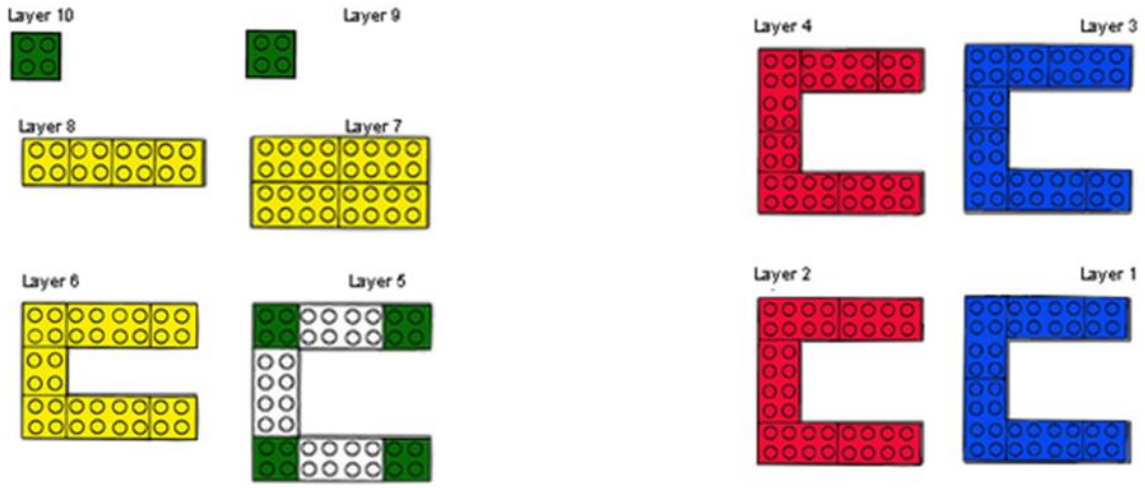

Figure 2. Layer layout

Procedure

The participants were mostly recruited in Nijmegen, or the hometowns of the researchers throughout the Netherlands. Once the participants were selected, they were sat at a table with the necessary pieces to build the Lego house and a screen in front of them, that shows them the instructional video. The set-up can be seen in the picture below.

Figure 3. Experiment set-up

They were asked to follow the instructions from the video to the best of their ability and try to be as accurate as possible with their placement of the Lego bricks. The participants were not allowed to stop the video, they were instructed to try to follow the video as it was playing. After the video has ended and the houses were built, the participants were asked to fill out an online questionnaire, which was written in Dutch. The experiment took around 20min per participant and was conducted in closed environments with as few distractions as possible. At times headphones were used, if necessary, to ensure the concentration of the participants. Some subjects that showed interest were debriefed on the purpose of the study after the experiment.

Statistical Treatment

To test the hypotheses multiple statistical analyses were used. Three one way multivariate analyses were conducted in addition to a correlation analysis.

Results

One of the main premises of this study was to test the effect of subtitle use on a variety of variables which influence the usefulness and perception of the video and task. To do this multiple one-way multivariate analyses were conducted.

First the effect of subtitles on perceived difficulty and attitude towards the video were analysed. A one way multivariate analysis for perceived difficulty and video attitude, with subtitle use as factor, found no significant multivariate effect between participants who used subtitles compared to those who did not ($F(2, 101)= .52$, $p = .598$).

Furthermore, it was tested whether the use of subtitles would improve the correctness of building of the Lego houses. A one way multivariate analysis for correctness of building, correctness of shape, correctness of colour and correctness of place, with subtitle use as factor, found a significant multivariate effect of subtitle use ($F(4, 98)= 8.83$, $p < .001$). The univariate analysis showed an effect of subtitle use on correctness of building ($F(1, 101) = 4.46$, $p= .037$). Participants that watched the video with subtitles had an overall higher correctness of building ($M= 124.51$, $SD= 18.36$) than participants who did not ($M= 116.22$, $SD= 21.42$). The univariate analysis showed an effect of subtitle use on correctness of shape ($F(1, 101)= 13.69$, $p<.001$). Participants that watched the video with subtitles had a higher correctness of shape ($M=39.34$, $SD= 7.42$) than participants who did not ($M= 33.36$, $SD= 8.95$). The univariate analysis showed no effect of subtitle use on correctness of colour ($F(1, 101) = 3.88$, $p= .052$). However, since the p-value is very close to being significant ($p= .052$), a tendency can be observed. The univariate analysis showed no significant effect of subtitle use on correctness of place ($F(1, 101)= .015$, $p=.904$).

Table.1 Means and Standard Deviations of perceived difficulty, video attitude, correctness of building, correctness of shape, correctness of place and correctness of colour depending on use of subtitles (N=103)

Variable	Video Attitude *M(SD)* *Range 1-5*	Perceived Difficulty *M(SD)* *Range 1-5*	Correctness of building *M(SD)* *Range 0-144*	Correctness of shape *M(SD)* *Range 0-48*	Correctness of colour *M(SD)* *Range 0-48*	Correctness of place *M(SD)* *Range 0-48*
With Subtitles (N=53)	2.23 (.58)	2.04 (.75)	124.51 (18.36)	39.34 (7.42)	44.85 (4.33)	40.32 (8.19)
Without subtitles (N=50)	2.32 (.58)	2.01 (.84)	116.22 (21.42)	33.36 (8.95)	42.82 (6.04)	40.52 (8.50)

Next various attitudes of the participants were measured.

To test whether there is a relationship between social identity and foreign language attitude a correlation analysis was conducted. No significant correlation was found between identity and the four separate items of foreign language attitude: usefulness ($r(103)= -.002$, $p= .982$), importance ($r(103) = -.104$, $p = .294$), feeling ($r(103) = .079$, $p = .430$) and comfort ($r(103) = -.104$, $p = .297$).

Moreover, it was tested whether there is a relation between subtitle attitude and video attitude. A significant negative correlation was found between video attitude and subtitle attitude ($r(52) = -.29$, $p = .04$). Participants with a high attitude towards the video were found to have a lower attitude towards the subtitles. To showcase this correlation a scatterplot of the two variables is shown in figure 2 below.

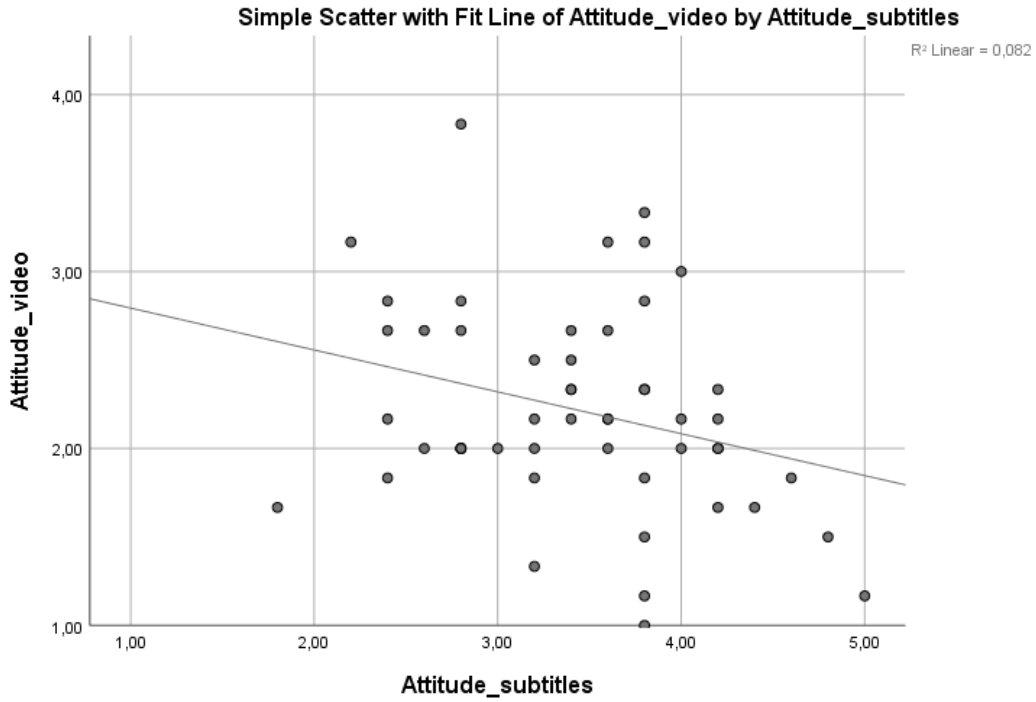

Figure 4. Scatterplot of correlation of video attitude and subtitle attitude

Lastly, no significant correlation was found between video attitude and the four items of foreign language attitude: usefulness ($r(103) = -.071$, $p = .474$), importance ($r(103) = -.118$, $p = .234$), feeling ($r(103) = .186$, $p = .06$) and comfort ($r(103) = .173$, $p = .08$). However, the p-value for the item of feeling ($p= .06$) showed a trend towards significance.

Table. 2 Means and Standard Deviations of Identity, video attitude, subtitle attitude and four language attitude items: usefulness, importance, feeling and comfort. (Range 1-5)

Variable	Identity (*N*=103)	Video attitude (*N*=103)	Subtitle attitude (*N*=52)	Usefulness (*N*=103)	Importance (*N*=103)	Feeling (*N*=103)	Comfort (*N*=103)
M (SD)	1.86 (.72)	2.27 (.58)	3.43 (.70)	1.79 (.79)	2.17 (.95)	2.51 (.85)	2.97 (1.02)

Discussion & Conclusion

The purpose of this study was to investigate the effect of subtitle use, social identity and consumer attitude in foreign language instruction videos. The objective of instruction videos, which are released by companies, is to help the consumer carry out a task connected to the company's products. At the same time these videos should create a favourable image of the company and its product and engage the consumer even after their purchase is complete. Therefore, it is essential for these companies to know how these videos influence the consumers' attitudes, their perception of the task and their performance of executing the task. Furthermore, to analyze how best to cater to the target group it is beneficial to investigate consumer characteristics like their social identity and their predisposed attitudes. This study gave some insight into these factors by testing five hypotheses.

The first two hypotheses were posed in order to investigate the effect subtitles have in a foreign language instruction video. Previous research has found that the translation method of foreign films, i.e. whether it is dubbed or subtitled, did not have a significant effect on the film experience and appreciation (Wissmath, Weibel & Groner, 2009). This was also shown in the results of this study, as no significant effect of subtitles on video attitude was found. This means that, subtitles do not majorly influence the consumers' attitude towards the video in neither entertainment nor instructional videos. Based on this result, companies can release foreign language videos with subtitles without fearing to influence the attitude of consumers negatively. This is not only more efficient but also more cost effective.

As the function of instruction videos, generally, is to help consumers to perform a task, its perceived difficulty under the condition of subtitle use needed to be tested. No significant effect of subtitle use was found on perceived difficulty. The mean score of perceived difficulty was quite low and did not differ greatly between the two groups. This means that the participants generally perceived the task to be not that difficult. Accordingly, if the task was not perceived as difficult to begin with, the inclusion of additional information

is not likely to influence this perception. Additionally, as the perceived difficulty did not increase with the use of subtitles, one can explain this result with the theory of d'Ydewalle and De Bruycker (2017), which describes reading subtitles as a semiautomatic task. According to this theory, reading subtitles does not require conscious effort of humans. Therefore, the perceived difficulty would not increase.

The effect of subtitles was also measured in terms of how they influence the performance of the participants, i.e. their correctness of building the Lego houses. The second hypothesis, which investigated this, was confirmed for most of the tested items. There was a significant effect of subtitle use on the general correctness of building. Participants who watched the video with subtitles had a significantly higher correctness of building in terms of correctness of shape and overall correctness. The effect on correctness of shape is reasonable, as the Lego blocks were placed very quickly one after another, therefore the additional information transferred through the subtitles aided comprehension. This is in line with the dual-coding theory developed by Paivio (1991). It states that stimuli such as visual or verbal information travels on distinct cognitive channels. This stimulus is then stored in the form of mental representations. Since the information had to be received at a high speed, the subjects who read the subtitles were aided as they had access to information from both the visual imagery (video) and verbal associations (subtitles) and, accordingly, achieved a higher score. However, as both are processed visually in combination with the additional processing needed for the auditory Spanish narration, one could assume that the high cognitive load would impede the performance of the participants, as stated in the cognitive load theory of Sweller (1988). Since this did not occur, the results of this study once more support the theory of d'Ydewalle and De Bruycker (2017) which states that processing subtitles is a semiautomatic task.

The results for correctness of colour were not significant, however, the p-value was very close to being significant. Therefore, one can make the assumption that there is a general tendency, which implies an effect of subtitle use on correctness of colour. This tendency could become more apparent by increasing the sample size of participants. This would not only make the sample more representative but also the results more reliable.

Furthermore, there was no effect found of subtitle use on correctness of place. This result was expected, as the placement of the Lego blocks is easily identifiable by merely using the visual information channel. Additionally, the participants had time to finish their houses after the video ended, which gave them the opportunity to verify the approximate placement of the blocks as wrong placement would stand out. This might have influenced the

final scoring of correctness as many participants were observed to rebuild parts of the house according to the still image of the finished house at the end of the video. This effect could be counteracted by either removing the still image at the end of the video or by stopping the building process as soon as the video stops.

As the purpose of this study includes investigating which form of instruction video will be best received by the consumers, it is crucial to examine the consumers' attitudes towards various aspects of the video. This is the focus of the last three hypotheses.

The third hypothesis was posed to investigate whether there was a relation between the social identity of the participants and their attitude towards foreign language. The analysis showed no significant correlation between the two variables in all their items. The mean score for Identity was quite high, which means that in general the participants had a rather strong sense of social identity. An explanation for these results could be that, although their social identity was high, their degree of ethnocentrism was not. This means that the participants might be proud to be Dutch but do not necessarily perceive themselves to be in a higher position compared to other cultures, as ethnocentrism is negatively related to cultural openness (Sharma, Shimp & Shin, 1995).

Next, to link subtitle use to the consumers attitude, it was analysed how the attitude towards subtitles is related to the attitude towards the video. The analysis showed a significant negative correlation between the two variables. This means that participants who had a high attitude towards the video had a more negative attitude towards the subtitles. Recalling the first hypothesis where it was found that the use of subtitles did not significantly affect the attitude towards the video, this result is intriguing. A possible explanation for this could be that the participants who enjoyed the video found subtitles to be distracting, as they would divert the attention away from the video itself. This explanation would then concur with the split attention theory developed by Ayres and Sweller (2014), as the attention would be divided in order to process multiple information sources. However, it would be reasonable to assume that, if video attitude affects subtitle attitude, there should also be a difference between the group that used subtitles and those who did not. The relationship of these two results would be interesting to investigate in future studies.

Lastly, it was analysed whether there is an effect of consumers predisposed foreign language attitudes on their opinion of the instruction video as it has been theorized that people of a social group are influenced by emotional associates during interaction with other social groups (Haddock et al., 1994). To concur with this theory the results should have

indicated that there is an influence of foreign language attitude on the video attitude. However, this was not the case as no correlation was found between the two variables. Only for one of the items of foreign language attitude, feeling, a trend towards significance was observable. Since the direction of the almost significant correlation was positive, this could indicate that positive feelings towards foreign languages is related to a positive attitude towards the video. A future study with a larger, more representative sample could help to demonstrate whether this effect is noteworthy.

There were some limitations to this study. First, a convenience sample method was used, as the researcher recruited the participants either at their home university in Nijmegen or in their respective hometowns. This means that the sample is not completely generalizable for the whole Netherlands. The sampling size could have also had an effect on the variety of attitudes expressed by the participants. By making the sample deliberately more diverse, with e.g. people of different immigrational backgrounds or political and religious beliefs, the attitudes recorded would have been more likely to be different from each other. This can be improved in future studies, in which the sampling is more inclusive and geographically spread out. Furthermore, in the questionnaire, some variables were only measured with one or two questions. By extending the questionnaire in future studies and asking more detailed questions about concepts like e.g. social identity, the data would have been much more detailed and would have measured the concept in a more precise manner. It moreover, has to be mentioned that most of the items that were analysed did not reach a significant reliability score. Although, almost all of them came fairly close, the variables have to be re-examined and adapted in order to make the analysis reliable. A final limitation, that was voiced by some participants, is that the speed of the video was too fast so they had trouble keeping up, which might have influenced their performance score and their attitude towards the task. This could be counteracted by either decreasing the speed of the video or making the video interactional so the viewer can stop and rewind the video at any time.

As aforementioned, further future research could improve upon the results of this study by selecting a bigger, more representative sample size as some scores showed tendencies towards significance but did not reach it. Additionally, there were some surprising results, e.g. the correlation between subtitle attitude and video attitude while there was no effect of subtitle use on video attitude between the two groups. These results should be re-evaluated and tested. Finally, some adaptions to the experiment itself can be made. Different influencing factors could be investigated such as interactivity and the effect of other

languages in the narration. The results for correctness of building might have been different if the participant was able to stop and rewind the video. Similarly, it would be interesting to investigate whether changing the narration language to e.g. Chinese would have an effect on consumer attitudes as associations differ from language to language. There are many possible variations one could apply to this experiment.

Drawing from this study, a couple suggestions can be made for the production of foreign language instruction videos, which are released to showcase the usage of a product. First, as it was found that the use of subtitles has no significant influence on video attitude, companies can freely make use of subtitles as a mode of translation without facing negative repercussions in regards to the consumers attitude towards the video. The use of subtitles was also shown to increase the correctness of building, i.e. the performance of the viewer in following the instructions. This means that the use of subtitles is not only the cheapest and most convenient option for the company, but also helps the viewer execute the task with more ease.

In this study the social identity of the viewers did not influence their foreign language attitude, however, one cannot generalize these findings to an international audience as they only apply to Dutch participants. Similarly, there was no correlation found between foreign language attitude and video attitude in this sample, which means that the application of a foreign language did not influence the Dutch consumer attitude significantly. Consequently, to investigate what role these factors play for the foreign consumer, further research has to be conducted on the influence of social identity and foreign language use in different regions of the world.

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Appendix

Questionnaire:

Below the questionnaire for condition with subtitles is displayed. For the condition without subtitles the question "De ondertiteling van de instructievideo was" was removed.

Radboud University

Wat vond je van de taak?
Ik heb de taak...

helemaal begrepen	○	○	○	○	○	helemaal niet begrepen
helemaal goed uitgevoerd	○	○	○	○	○	helemaal niet goed uitgevoerd

Geef voor de volgende vragen aan wat je mening het beste weergeeft.

Ik vond de instructievideo

	helemaal eens				helemaal oneens
goed gestructureed	○	○	○	○	○
duidelijk	○	○	○	○	○
niet interessant	○	○	○	○	○
makkelijk te onthouden	○	○	○	○	○
van goede kwaliteit	○	○	○	○	○
goed in beeld gebracht	○	○	○	○	○

Ik vond de taak in deze instructievideo

	helemaal eens				helemaal oneens
leuk om te doen	○	○	○	○	○
makkelijk om te doen	○	○	○	○	○
saai om te doen	○	○	○	○	○
moeilijker dan ik had verwacht	○	○	○	○	○

Hoeveel mentale inspanning heb je geinvesteerd in deze taak om het te voltooien?

extreem kleine hoeveelheid	kleine hoeveelheid	gemiddelde hoeveelheid	grote hoeveelheid	extreem grote hoeveelheid

De gesproken taal in de instructievideo was ...

	helemaal eens				helemaal oneens
makkelijk te begrijpen	○	○	○	○	○
moeilijk te volgen	○	○	○	○	○
afleidend van de taak	○	○	○	○	○
ondersteunend aan de taak	○	○	○	○	○
te snel	○	○	○	○	○
te informatief	○	○	○	○	○

De ondertiteling van de instructievideo was

	helemaal eens				helemaal oneens
moeilijk te begrijpen	○	○	○	○	○
makkelijk te volgen	○	○	○	○	○
te langzaam	○	○	○	○	○
ondersteunend aan de taak	○	○	○	○	○
afleidend van de gesproken taal	○	○	○	○	○
afleidend van het beeld	○	○	○	○	○

Wat vond je van de instructievideo in het algemeen?

In vergelijking met een papieren handleiding is de instructievideo

	helemaal eens				helemaal oneens
makkelijker	○	○	○	○	○
leuker	○	○	○	○	○
informatiever	○	○	○	○	○

Stel dit was de handleiding voor het in elkaar zetten van een kast, wat had je liever?

- instructievideo
- papieren handleiding
- beide

Wanneer heb je voor het laatst met LEGO gebouwd?

- Afgelopen week nog
- Afgelopen maand nog
- Langer dan een jaar geleden
- Langer dan 5 jaar geleden
- Langer dan 10 jaar geleden

Welke van de volgende talen spreek je en hoe goed?

	heel goed	goed	matig	niet goed	helemaal niet
Engels	○	○	○	○	○
Duits	○	○	○	○	○
Spaans	○	○	○	○	○
Nederlands	○	○	○	○	○

Als ik een taal hoor die ik niet ken, voel ik mij:

Comfort	comfortabel	redelijk comfortabel	neutraal	redelijk oncomfortabel	oncomfortabel
Gevoel	goed	redelijk goed	neutraal	redelijk slecht	slecht

Het herkennen van een taal buiten mijn moedertaal is:

Belang	belangrijk	redelijk belangrijk	neutraal	redelijk onbelangrijk	onbelangrijk
Bruikbaarheid	bruikbaar	redelijk bruikbaar	neutraal	redelijk onbruikbaar	onbruikbaar

Identiteit

	Eens	Redelijk eens	neutraal	redelijk oneens	oneens
Ik ben trots dat ik Nederlands ben	○	○	○	○	○
Ik voel me verbonden met de Nederlandse cultuur	○	○	○	○	○
Ik kan me vinden in andere Nederlanders	○	○	○	○	○

Je bent

- man
- vrouw
- zeg ik liever niet

Hoe oud ben je?

Wat is je moedertaal?

- Nederlands
- Engels
- Duits
- anders, namelijk

Wat is je opleidingsniveau?

- MBO
- HBO
- WO
- Ik zit nog op de middelbare school, namelijk (vul hier je schooltype in bv. VMBO)