



An Investigation of the Role of Cohesive Identity Chains in Narrative Comprehension

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Declaration of Authorship

I hereby declare that I am the sole author of this master thesis and that I have not used any sources other than those listed in the bibliography and identified as references. I further declare that I have not submitted this thesis at any other institution in order to obtain a degree.

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Signature

Abstract

This work examines how multimodal cohesive identity chains tied together in a visual narrative help viewers construct meaning while watching a film. The major contribution of this thesis is empirically-grounded research. The focus of the research was to study the effect of cohesive visual cues leading to the construction of cohesive identity chains on the narrative comprehension processes. For this purpose, data of 80 participants were collected and analyzed. The participants watched an extract of a film and were then presented with a questionnaire designed to assess their narrative comprehension. For this study, the visual cues and the temporal order in the extract were manipulated, which resulted in four experimental conditions. The results showed that the presence of the cohesive visual cues was essential for the participants' narrative comprehension. The absence of the cohesive visual cues led to disrupted establishment of the primary identity chain and the goal of the main character in the episode. It also resulted in participants' lack of confidence in responses even when those were correct. The temporal order in the selected extract was significant for the participants to establish the primary identity chain.

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1. Introduction

1.1 Narrative

It is essential to understand what narrative is and what its understanding implicates to answer the question of how people presume identities within told narratives. While the matter of narrative comprehension has been studied vastly by film theoreticians in the last decades, the use of narrative principles can be found everywhere and is applied not only in cinema studies but also in the nonfictional discourses of a wide range of professionals, such as historians, journalists, attorneys, educators, biographers, and psychiatrists (Branigan, 1992).

Some would argue that narrative has existed practically in all human activities (Howard, 1991) and that an implicit, basal and overarching narrative context can always be tracked in human culture (Fireman et al., 2003). Given that narrative is an essential aspect of our culture, narrative comprehension requires a group of interconnected cognitive abilities. To comprehend a narrative, one must not only be able to understand specific events of the story but also to be able to establish connection between different parts of it. The sensitivity to the structure of narratives, the ability to make inferences, and the ability to access background knowledge about various situations and facts are indispensable for narrative comprehension (Lynch et al., 2008).

Given all that, narrative is a way of organizing spatial and temporal data into a coherent chain of events with a beginning, middle, and end that embodies a

judgment about the nature of the events and represents how it is possible to know, and therefore to narrate the events (Branigan, 1992).

1.2 Cohesion in Linguistics

Suppose an English speaker hears or reads a language passage consisting of more than one sentence. In that case, he can normally determine if it forms a unified whole or is just a disconnected sequence of sentences. In Linguistics, text is referred to as any passage, spoken or written, of the language that forms a unified whole (Halliday and Hasan, 2014). There are certain linguistic features present in a passage containing more than one sentence that allow the reader to differentiate whether the passage can be perceived as a text or not. These features contribute to the unification of the text. (Halliday and Hasan, 2014) The following example shows what linguistic features help the reader to build the connection between the sentences:

“I saw a mountain. It reminded me of my hometown.”

The determiner *it* in the second sentence refers back to *a mountain*. The anaphoric function of the referring item *it* builds cohesion between two sentences, allowing the reader to interpret them as a whole. It is important to note that cohesion is affected not only by the presence of the referring item alone but also by the presence of both the referring item and the item that it refers to (Halliday and Hasan, 2014). The meaning of the cohesive relation between *it* and *a mountain* is that they refer to the same thing. These two items are co-referential.

1.3 Cohesion in Films

While it is comprehensible that narrative comprehension development is an essential topic in various other disciplines, the focus of this thesis is narrative comprehension in the most prominent form in which narratives are produced and consumed, films (Tseng and Bateman, 2010). The presence of chains of cohesive multimodal ties between narrative units is significant in films, while visual cohesion is a binding force in the construction of the meaning (Janney, 2010). But what exactly is cohe-

sion in films? Tseng, in her work on cohesion in film, extends the linguistic notion of cohesion in recent developments in functional linguistics because its analytical categories can be used to unravel how cohesive ties are established between characters, objects, settings and characters' actions in film (Tseng, 2013).

Given the importance of multimodal cohesive chains in films, this empirical research emphasizes on how the viewers perceive these chains as the narrative unfolds. This thesis builds on the analytical framework of cohesion in film, with a particular focus on filmic cohesive reference, for examining cohesive ties between characters, objects and settings across scenes in film developed by Tseng (Tseng, 2013). Based on the aforementioned framework, this thesis investigates the realization of cohesive chains in film and how these cohesive chains across scenes contribute to the unity in film. It examines how viewers' narrative comprehension changes when the crucial cohesive identity chain is missing and whether the temporal relation between narrative units can support viewers' in their understanding of the narrative despite the broken identity chain.

2. Literature Review

There is a substantial amount of related work studying different aspects of narrative comprehension. Researchers are interested in cohesion in film discourse (Tseng, 2013; Janney, 2010), the role of coherence in narrative comprehension (Hyvärinen, 2010), the development of mental models in narrative comprehension (Bower and Morrow, 1990), processes that support the construction of a coherent event model (Magliano et al., 2016; Hutson et al., 2018), the role of cultural background in the comprehension of video material for second language learning purposes (Tuffs and Tudor, 1990), and the development of narrative comprehension among young children (Lynch et al., 2008).

2.1 Analytical Framework of Cohesive Analysis in Film

This section introduces filmic identification system developed by Tseng (Tseng, 2013). It also demonstrates her application of the system to empirical analysis of cohesive identity chains in the first four sequences of the movie “Memento” (Nolan, 2000). Finally, it sets out what role cohesive identity cues play in the establishment and realization of different choices made within the proposed identification system.

Tseng in her work proposed analytical framework that makes it possible to examine cohesive ties between characters, objects and settings in film. For that she first developed filmic identification system building upon cross-modal

features incorporated into the system. The following example helps to grasp the complex concept of multimodality. If you are talking to someone in a cafeteria, exchanging verbal utterances accompanied by facial expressions, gestures, and variations in intonation, then you are interacting in a multimodal medium (Bateman et al., 2017). As Bateman defined the term in his book, multimodality is a way of characterizing communicative situations that rely on combinations of different forms of communication to be effective. There are different modes in the context of multimodal discourse that include pictorial, written, spoken signs and gesture, sounds, music, smells, tastes and touch (Forceville, 2006). For the purpose of the task of tracking identity in film, Tseng focused on the following modes:

- figures (people, places, and things) in the visual track;
- written text which viewers can read off the screen;
- spoken language;
- sound and music.

In the developed system of presenting identities, Tseng sets out the mechanisms in film that introduce the identities of characters, objects and settings into a film.

Identity in film can be presented in mono-modal or cross-modal ways (Tseng (2013), p. 40). An example of mono-modal presentation of an identity is verbal language, either spoken or written text. The identity of a character in a film can be presented with his/her face on the screen explicitly seen by the audience or with verbal language, written or spoken text, for example, the name of the character spoken or written on the screen. When an identity is presented through more than one of the modes, the realisation of the identity presentation is then cross-modal.

Tseng also talks about salience of film elements upon their presentation as an important element of analysis pursued in her study. Salient film elements, according to Tseng, stand out to attract attention of the audience and direct them across paths of narrative construction rather than leaving the audience with an exhaustive account of elements on the screen (Tseng (2013) p. 48). There are two ways to present a salient participant. The participant can either acquire a salient position immediately by being in the foreground upon his/her presentation or can be introduced as a non-salient element in the beginning and take on a salient

position gradually. Another distinction between participants being presented to the audience is their specific or generic type. A character can be a specific individual or a member of a generic group.

After the establishment of the identification system, Tseng explains how to examine the realisation of the systems in individual films through the establishment of cohesive identity chains that construct wholeness in film.

She further presents the empirical application of filmic cohesion by showing how identity chains may effectively unravel certain aspects of how viewers comprehend non-linear narratives in film. The material she analyzed is the beginning of Christopher Nolan's *Memento*. The story of the film is about a former insurance fraud investigator Leonard Shelby trying to find the killer of his wife who was killed during a burglary. Leonard suffers with anterograde amnesia, which he got after the attack on his wife, that makes his brain unable to store any new memories. The film is widely known because of its complex narrative structure. The events of the film unfold in two alternating narratives, one in black and white, and the other in color. The black and white narrative thread unfolds in chronological order, depicting Leonard sitting in a motel room and talking to an anonymous caller. The color narrative thread is structured in reverse order, demonstrating Leonard's investigation. Each color scene begins with Leonard losing his recent memory and being totally unaware of where he is or what he was doing and ends with the events of the scene fading from Leonard's memory.

Tseng conducts her cohesive analysis of narrative structure of *Memento* building on the Bordwell's statement on cohesive devices saying that:

Within the backward stream of action, Nolan deploys a host of cohesion devices to keep us oriented to the plot's progression. Scenes are linked by physical tokens: photos, facial scratches and bruises... Closure operates retrospectively, but the events still cohere through cause and effect (Bordwell (2006), p. 78-79).

This point was presented by means of cohesion analysis of the first seven minutes of the movie conducted by the author (Tseng (2013), p. 85). Fig. 1 is an example of Tseng's analysis of cohesive identity chains of the first color sequence in *Memento*. It represents six main participants in the sequence: Leonard (L) who is introduced

into the scene with physical prelude holding a photo (F), Teddy - the other man in the sequence (TD), gun (G), glasses (GI), building/setting (B). According to Tseng, these chains and, in particular, their interactions (Hasan, 1984), serve to construct a narrative event of the following form, more or less regardless of the temporal ordering employed: [Leonard] (L) takes a photo (F) of [Teddy] (TD, GI) and then shoots him with a [gun] (G) in the [building] (B).

The first color scene is followed by the first black and white scene in the motel room depicting Leonard as he narrates how he is feeling. Fig. 2 expounds the identity chains of the first black and white scene. As in the color sequence, Leonard is the main character and his identity can be tracked easily with very explicit reappearance due to the close-up shot at the outset (Tseng (2013), p. 88). Leonard's voiceover narration "*you are in some motel room*" is introducing the motel room as a new identity chain. The eighth chain of the analysis is the objects in the room (MT). The ninth chain of the analysis is tracking the elements related to *time* mentioned in this sequence.

The identity chain of the motel continues in the next color sequence, when Leonard and Teddy come out of the main door and walk to the garage. In one of the following shots in the second color sequence the identity of the motel is confirmed in the written text "*Discount Inn*". Thus, viewers are given an explicit cue that the setting in the next shots of the second color sequence is the garage of the motel Discount Inn.

The fourth sequence and the last sequence in the analysis, is another black and white narrative thread. It depicts Leonard in the same motel room and has his voiceover narration continuing from the previous black and white scene in the same motel room. The model of identity chains in the sequence is similar to that in the previous black and white sequence - Leonard is the only character in the same motel room.

The results of Tseng's cohesive analysis of identity chains at the beginning of *Memento* showed that the formation of the identity chains across all sequences at the beginning of the film is cohesively constructed despite the alternating narrative threads. It is these cohesive ties that largely help viewers across the loosely specified temporal jumps between the scenes (Tseng (2013), p. 103). Tseng's analysis also demonstrated that the intercalation of the discontinuous

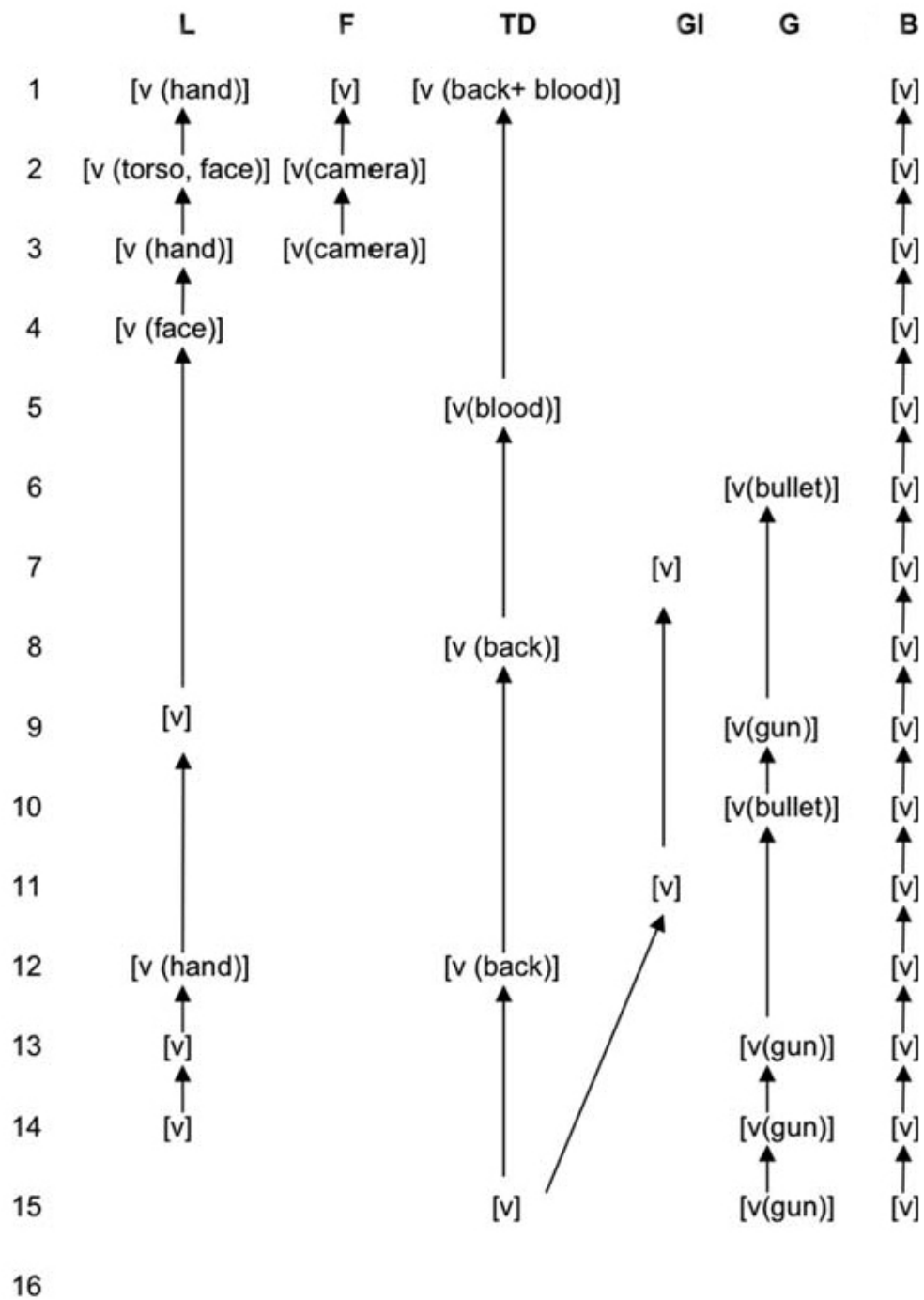


Fig. 1. Identity chains of the first color sequence in Memento. Arrows - pointing to pre-suming items, [v] - realized as visual figure, verbal text, numbers in the left column shot number (Tseng (2013), p. 87).

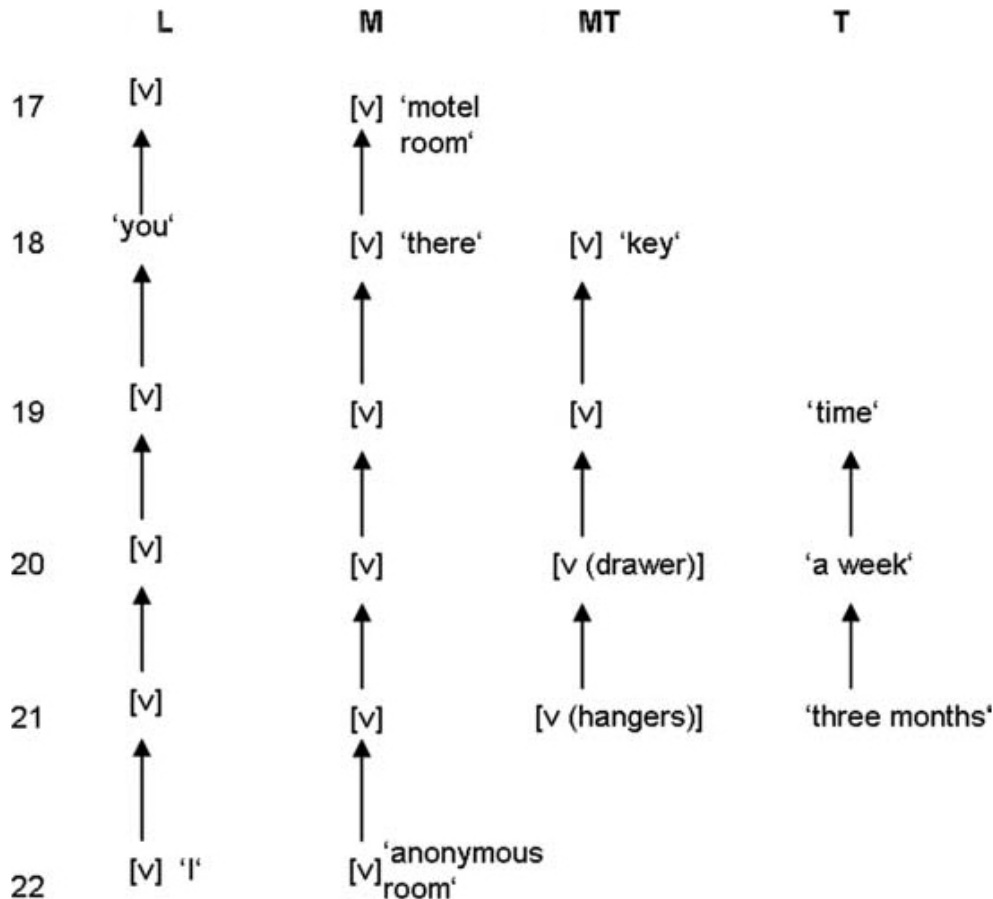


Fig. 2. Identity chains of the first black and white sequence in *Memento*. Arrows - pointing to presuming items, [v] - realized as visual figure, verbal text, numbers in the left column shot number (Tseng (2013), p. 95).

black and white sequence do not interfere with viewers' narrative comprehension even though the events depicted in the black and white sequence are discontinuous to that in the color sequence. Tseng explained it by the fact that at least two cohesive cues carry the narrative in both sequences: the explicit reappearance of Leonard's identity and the explicit verbal introduction of the scene transition to the motel room. The third sequence is not directly related to the second sequence. It starts with a polaroid photo of Teddy and is followed by Leonard's explicit reappearance. Again, identity chains are established with co-referential cohesive ties across different scenes in different sequences. Finally, the fourth sequence, black and white narrative thread, depicts Leonard in the same motel room again. As in the previous sequence, the identity of Leonard is tracked explicitly because he always reappears visually in the most direct way.

The assessment of cohesive referential cues of the first four sequences in *Memento* clearly shows that the film, despite its unconventional sequencing, is in fact coherent. Although the insertion of black and white sequences interferes with linearity of the narrative, the presence of cohesive identity cues of characters, objects and settings are actually straightforward and signalled to viewers to support them in the narrative comprehension and avoid disorientation.

This section has introduced Tseng's identification system in film and its application to empirical analysis. It illustrated what role the establishment of cohesive identity chains plays in the construction and realization of different choices made within that identification system.

2.2 Cohesion in Film Discourse

Janney, in his paper, addressed the notion of relations between parts in film (Janney, 2010). He approached film discourse cohesion from the point of view that might be compatible with language discourse approaches in linguistics. According to Janney, language and film share sequential characteristics in shot sequences with concepts adapted from studies of intra- and intersentential links in language discourse. He calls the bridging concept in this connection the concept of cohesion.

To better explain the process of modeling cohesion in film, Janney describes the filmic units linked together in cohesive discourse and the typology of cohesive relation between filmic units that he compares with language discourse units. Most film theoreticians agree that the dramatic film's central structural units are the frame, the shot, the sequence, the episode and the narrative (Janney (2010), p. 247). When these units are compared with language discourse units, certain parallels emerge between the two modes' cohesive structure. For example, frames have functions in shots that can be linked to the operations of noun phrases in sentences of a language. As Janney argues, film narratives, like language narratives, result from smaller discourse units' progressive integration into larger ones. Frames are combined into moving images in shots; shots are combined into cohesive units of action in sequences; sequences are combined into narrative units with beginnings, middles, and ends in episodes; and episodes are combined into the bigger narrative structure telling the story. When the units are properly

connected, the spectator experiences a smooth progression of audio-visual filmic events.

The purpose of the paper was to demonstrate some surprising similarities between cohesive relations in language and film. However, the author agrees with Christian Metz's paradoxical observation that "*film is hard to explain because it is easy to understand*" (Metz, 1991), saying that, indeed, perceptions of cohesive relations in film often seem easier to understand than to explain. Cohesion in film discourse is not primarily a conceptual phenomenon but rather originally a perceptual one. The mental processes underlying concepts of cohesive relations are somehow different from those underlying percepts of cohesive relations. For its perceptual connectivity, film depends to a large extent on the presence of cohesive visual ties between frames in shots, shots in sequences, and sequences in larger narrative units. It depends on the filmmaker's ability to put the pieces together to make the individual shots in a narrative sequence interpretable based on interpretations of the shots and sequences preceding and following them.

2.3 The Role of Coherence in Narrative Comprehension

Hyvärinen, in his book, challenges the paradigm that the function of narrative and storytelling is primarily to create coherence with experience and that good and competent narrative always proceed in a linear, chronological way, from a beginning and middle to an end, which also forms a thematic closure (Hyvärinen, 2010). In his methodological approach, he suggested cases of narratives and storytelling that did not conform to the governing idea about narrative coherence. The cases he used involved storytellers that did not comply with the implicit norms of narrative theory - people with severe communication disabilities; or stories told in circumstances and settings that severely confined the telling.

One of the cases was a conversation between two elderly ladies, Martha and Catherine, living at an elder center in Sweden, who were diagnosed with Alzheimer's disease. One of the ladies, Martha, was talking to the other lady, Catherine, about her experience of getting a driver's license in the past. Hyvärinen

notes that Martha had severe problems organizing her story according to the conventional norms of storytelling. She had particular difficulties with the temporal and referential organization of the events in the story. She presented events without temporal progression, which commonly creates confusion in most listeners, who are expecting a temporally well-ordered story. However, Hyvärinen, in his evaluation of the conversation, pointed out the non-verbal aspects he observed during the interaction. Both of the ladies were physically close to each other. Martha, telling her story, put an arm on Catherine's, leaned and pointed towards her, and looked directly at her. They also had an overlapping talk. According to Hyvärinen, all these non-verbal actions signaled closeness, support, and agreement. Although the lack of conventional techniques in Martha's storytelling was apparent, she was still able to successfully engage her listener Catherine in the story using her arms, eye contact, etc. That is to say, the telling of autobiographical stories is not necessarily about positioning oneself in a story, but also about positioning oneself as a teller to the audience (Bamberg, 1997; Wortham and Gadsden, 2006). Furthermore, it is about the creative use of all available communicative resources to present and sustain identity. Through this example, Hyvärinen argued that the content of the narrative is of less importance in some cases. Instead, it is essential who is telling the story and to what audience.

2.4 Construction of Mental Models in Narratives

Gordon Bower, together with Daniel Morrow studied the construction of mental models in narratives (Bower and Morrow, 1990). According to the researchers, the internal representation of a narrative consists of two main aspects. The first aspect is the identities of the cast of characters, their occupations, relationships, and personal traits. These are important because they explain characters' actions, plans, and goals as the narrative unfolds. The second aspect is a mental map of physical environment where the actions take place. Bower and Morrow were interested in examining how readers search in memory for goals to explain actions as the plot develops and how they form mental representations of spatial situations. They investigated the mental model update process of readers who follow the characters' actions as they move around the physical environment to pursue their

goals. In the experiment, 40 Stanford University undergraduates were given the blueprints of two different buildings, a warehouse and a research center, which they were supposed to memorize. There were four rooms in each building, and each room had four labeled objects. Subjects studied and reproduced the layouts until perfect recollection. The buildings were where the future events of the story took place. As the researchers assumed, it would facilitate the subjects' mental update of the characters' locations as the subjects' mental maps of the spaces would correspond to the layouts they had studied before. After the first step of the experiment, subjects read a set of eight stories, with four stories taking place in each of the buildings. The stories described the characters' goals and the associated actions, thoughts, and plans as they moved from one room to another. The room the character just left was referred to as a source room, and the room the character just entered was referred to as a goal room.

The focus hypothesis was that the reader's mental representation of the goal room should be more active than that of a source room. Correspondingly, the mental representation of another room in the same building would be somewhat activated, and mental representations of rooms in the other buildings would be least activated. The hypothesis was supported by the grounded theory that readers focus attention on the character's "here-and-now" point in the progress of the narrative, thus facilitating the comprehension of the narrative by temporal activation of the memory.

To test the hypothesis, Bower and Morrow were interrupting the subjects' reading process with a question about the locations of objects in different rooms; the responding time to each question was calculated. The predictions were that the responding time should be the shortest for objects in the goal room, followed by the source room, then another room in the building, and the longest for the objects in a room in the other building. The results showed that the response times were ordered as predicted. The difference between goal room and source room was especially prominent, while the remaining differences were progressively smaller.

2.5 Processes that Support the Construction of a Coherent Event Model

Magliano et al. (2016) investigated static sequential picture stories. The researchers conducted an experiment where the viewers viewed six sequential picture stories depicting a boy, a dog, and a frog. Each story contained a three-image sequence that illustrated a beginning-state (boy running down a hill), a bridging-event (boy tripping over a tree branch), and an end-state (boy fell face down into a pond). The authors manipulated whether the bridging-event image was present or not. According to the researchers' predictions, when the bridging-event image was absent, viewers would need to generate a bridging inference to project the event shown in the end-state picture onto their event model based on the beginning-state image. Magliano et al. (2016) found evidence of this in a pilot study where the researchers asked the viewers to view the picture stories on a computer screen, one image at a time, and think aloud after each end-state image. As predicted by the researchers, in cases where an inferred bridging event was absent, the authors established that participants were more likely to mention the bridging event than in the present condition, as in the former case, the bridging event was more activated in working memory than when the bridging event was viewed. In a follow-up study, the authors had viewers view the picture stories at their own pace while their viewing times were recorded. The study's findings indicated that viewing times were longer when the bridging-event images were absent than when they were present.

Hutson et al. (2018) conducted a follow-up study to investigate why viewing times were longer in the condition where the bridging-event was absent. The authors conducted an eye-tracking study to investigate whether viewing time differences resulted from differences in either mean fixation durations or the mean number of fixations. The study results showed no differences in mean fixation durations, but there were approximately 20 % more fixations in the bridging-state absent condition than in the bridging-event present condition. According to the authors, this can be explained by the fact that the bridging event being absent in the image sequence may have required additional gathering of information,

which resulted in extra fixations. Furthermore, Hutson et al. (2018) empirically determined regions of the pictures that were informative for generating the bridging inference when the bridging-event was absent. The analysis results showed that the participants made more fixations in the bridging event-absent condition, beginning from the fifth fixation, which means that they were using the extra fixations to find information that would help them generate the bridging inference that was necessary to support a coherent event model in working memory. For the informativeness analysis, the authors asked participants to determine scene regions necessary for generating the inferences and then compared the eye movements of participants to the regions informative for the inferences. In the conditions where the bridging event was absent, participants were more likely to capture scene regions that they identified as informative for making the inference.

2.6 Cross-Cultural Problems in Video Material Comprehension

Tuffs and Tudor (Tuffs and Tudor, 1990) studied whether the information available in the visual channel used in second language teaching is exploited differently by native speakers and non-native speakers. In their study, they presented a video sequence, produced for ELT (English Language Teaching) purposes, to four groups of subjects: one group of British native speakers and three groups of non-native speakers. Subjects were required to watch the video sequence and infer the storyline of the sequence by writing a summary of the story and answering a set of comprehension questions. The initial hypothesis was that native speakers would benefit from the visual cues in the video due to their familiarity with the cultural background of the target sequence and would thus be more successful than the non-native speakers in comprehending the story and inferring the storyline. The results revealed that native speakers were significantly better able to infer the storyline and relate background information than non-native speakers, particularly from cultures further removed from that of the target video material, who were less able to recognize and benefit from the visual cues present in the video.

2.7 Narrative Comprehension Development among Children

Lynch, in her work, studied the development of narrative comprehension abilities among young children using theory-based measures of comprehension processes and their sensitivity to causal structure (Lynch et al., 2008). The children at the age of four and six were introduced to aurally and audio-visually presented narratives in turn, after which they were asked to recall the stories to assess the children's comprehension and if they were sensitive to the causal structure of a narrative.

The results showed that the children often mentioned events that were crucial to the story's causal structure leading to the conclusion of the story. To examine the relation between causal connections in a story and children's ability to recall it, Lynch categorized the events in each story in terms of the number of causal connections, which resulted in a gross number of seven categories: 0-1 connections, 2 connections, 3 connections, 4 connections, 5 connections, 6 connections, 7 or more connections. The results revealed that 6-year-old children recalled an average of 20.2% of the events with 7 or more connections and only 4.4% of those events with 0 or 1 causal connections. Likewise, 4-year-old children recalled an average of 11.8% of events with 7 or more connections and 1.5% of those with 0 or 1 connection.

To conclude, the children of both age groups have shown better recall of the events that had more causal connections as opposed to those with fewer connections, demonstrating the crucial role of causal structure in narrative comprehension development.

3. Methodology

This chapter gives insight into the empirical study I conducted to examine how the presence of cohesive identity chains in a film can affect the way viewers construct identities within a film and whether a broken cohesive identity chain can undermine their narrative comprehension. For the purpose of the study an episode from the movie “Julie & Julia” was selected. To better understand the cohesive structure and identity chains presented in the selected narrative, I first conducted a cohesive analysis of the identity chains in the episode, building upon the analytical framework introduced in the chapter 2.1.

3.1 Cohesive Identity Chains in Julie & Julia

The selected narrative is an episode in the movie “Julie & Julia” (Ephron, 2009). The entire extract is 34 seconds long and consists of four scenes (according to the Collins English Dictionary, parts of the film in which a series of events happen in the same place). It starts with a male character (MC) who is introduced into the scene with a camera pan movement following him as he walks into the living room, where there is a female character (FC) sitting and typing in front of a laptop. The male character’s immediate salience and the female character’s being in the foreground upon her presentation implies their specific types of characters in the narrative. The scene continues with the male character taking his bike while talking to the female character and leaving the room by going down the stairs. The camera stays focused on the female character as she continues typing on the laptop. The

furniture, the objects in the room, and the female character's outfit, which looks like a pajama, introduce the identity chain of the living room/home (LV).

The next scene presents a new identity chain of a butcher's shop with immediate salience and the written text "*K&T Quality Meats*". The female character explicitly reappears in the scene by walking into the butcher's shop (BS).

The following scene takes place inside the butcher's shop. The female character is explicitly represented to the viewers as she talks to the butcher who is turned to the camera with his back and whose outfit implies his affiliation with the generic type of butchers. The outfit and the setting of the butcher's shop, namely refrigerators filled with food and sausages hanging off the ceiling, confirm the butcher's shop's identity.

The last scene represents the female character in the kitchen, pouring wine into the pot as a part of the cooking process. The kitchen utensils, wine, and the apron the female character is wearing introduce the new identity chain of kitchen/food (K). The last shot is a close-up shot of the female character holding the bottle of wine with steam coming out of the frame. Fig. 3 depicts the transcription of the whole sequence.

The analysis of the cohesive identity chains in the selected sequence (Fig. 4) has set out the leading cohesive identity chains in the narrative. After being introduced in the first scene, the identity of the female character explicitly reappears in every scene across the whole sequence. The butcher shop's identity is introduced in the second scene and is explicitly confirmed in the third scene. The written text "*K&T Quality Meats*", outfit of the butcher, chunks of meat, sausages, refrigerators inside of the shop, these are the cohesive visual cues that support the identity of the butcher's shop, thus establishing it as crucial for the narrative. The female character's explicit reappearance in the last scene, the kitchen utensils, wine, and the apron are cohesive co-referential ties that connect the kitchen's identity with the butcher's shop identity.

3.2 Stimuli and Study Design

The purpose of the study was to examine whether there is a difference in narrative comprehension between the viewers watching the extract with the cohesive visual

Shot	Visualtrack	Image Description
1		MC walks into the living room and moves towards his bike at the staircase. FC is sitting in front of the laptop. MC talks to the FC all this time, takes his bike and goes down the stairs with his bike, leaving FC alone in the living room.
2		FC walks into the butcher's shop.
3		Inside of the butcher's shop: FC talks to the butcher, while he puts a piece of meat on the scales.
4		FC in the apron pours wine into the pot in the kitchen.
5		Close up shot of FC with the wine bottle and steam moving upward coming out of the frame.

Fig. 3. Transcription of the selected sequence, Julie & Julia (Ephron, 2009)

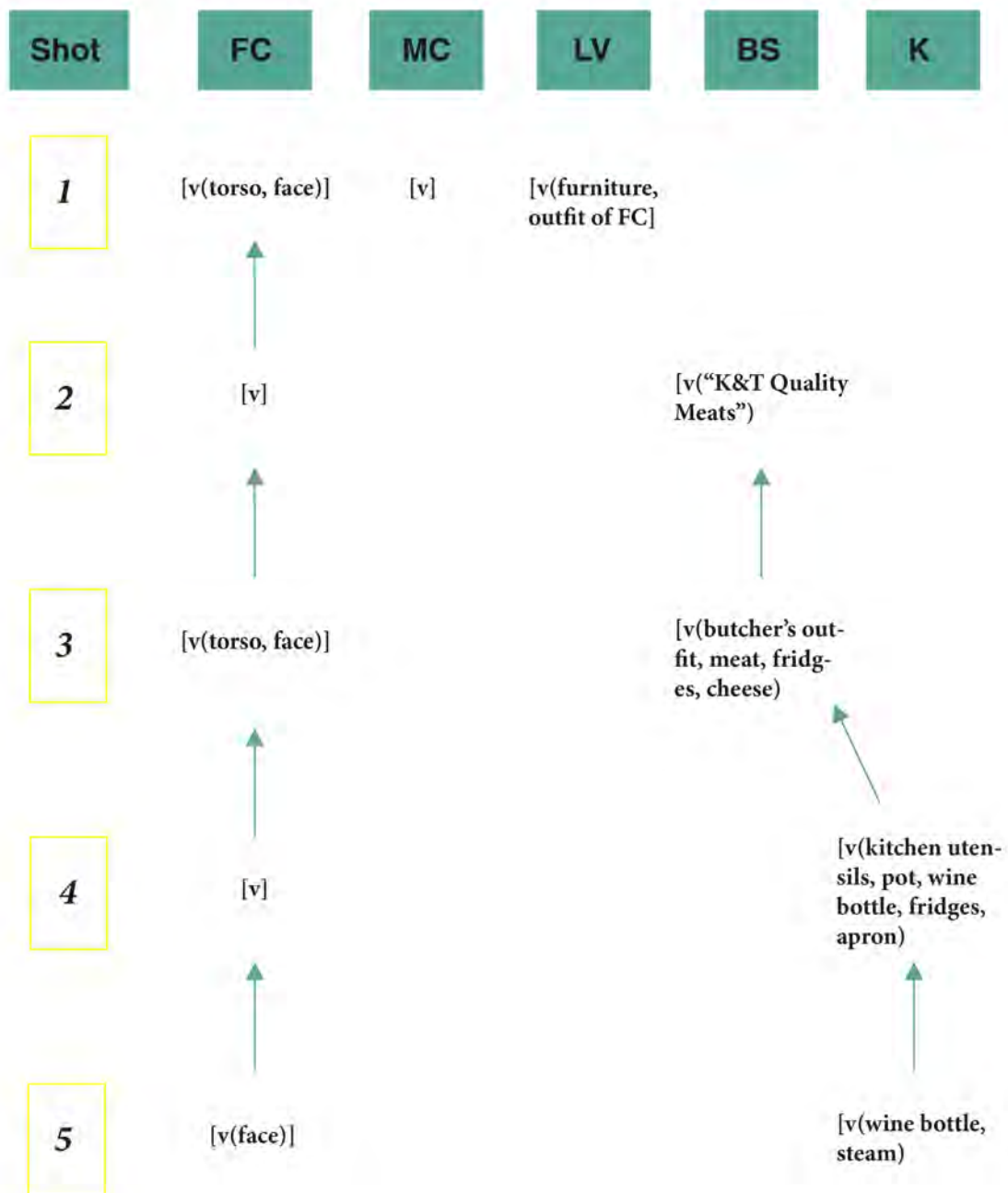


Fig. 4. Identity chains of the selected sequence (shots 1-5), Julie & Julia (Ephron, 2009), abbreviation of participants: FC - female character, MC - male character, LV - living room, BS - butcher's shop, K - kitchen; arrows - pointing to presuming items, [v] - realised as visual figure

cues and those watching it without the cohesive visual cues. After conducting cohesive analysis of the narrative selected for my study and establishing the cohesive identity chain of the butcher's shop, the goal was to break that identity chain and see how it will affect the comprehension of the narrative. For that purpose, I manipulated the narrative and eliminated/edited all cohesive visual cues leading to the identity of the butcher's shop, namely the text "*K&T Quality Meats*" written on the shop, the price tags for meat products on the window outside of the shop (Fig. 5); the butcher's outfit, meat, refrigerators, cheese, and other food products inside of the shop (Fig. 6). For the accurate visual manipulation of the narrative, I used the program Adobe After Effects.

The scene in the butcher's shop is followed by the scene in the kitchen, where the female character and other visual cues leading to food are present. This means that even if all visual cues leading to meat/food are eliminated from the butcher's shop scenes, viewers can still infer that the place in shots 2-3 is a food place due to logical support of temporal relation. To check that, I conducted another manipulation of the narrative, where I temporally separated the butcher's shop scenes from the kitchen scene by putting the latter one at the beginning of the narrative.

The two manipulations resulted in four experimental conditions (Fig. 7):

- Condition A - visual cues present, chronological order
- Condition B - visual cues absent, chronological order
- Condition C - visual cues present, non-chronological order
- Condition D - visual cues absent, non-chronological order

The study was conducted in a between-subject design meaning each participant watched one video clip. Due to the manipulation of the chronological order, I removed the original audio from the narrative in all four conditions and replaced it with the film soundtrack. The link to download all four versions of the extract used during the experiment can be found in the appendix.

Visual Cues
Present



Visual Cues
Absent



Fig. 5. Scene outside of the butcher's shop: The version with the visual cues present versus the manipulated version with the visual cues eliminated from the scene.

Visual Cues
Present



Visual Cues
Absent



Fig. 6. Scene inside of the butcher's shop: The version with the visual cues present versus the manipulated version with the visual cues eliminated from the scene.

3.3 Measures

This section presents the measures I used to evaluate the narrative comprehension of the participants based on four dependent variables. The measurements were

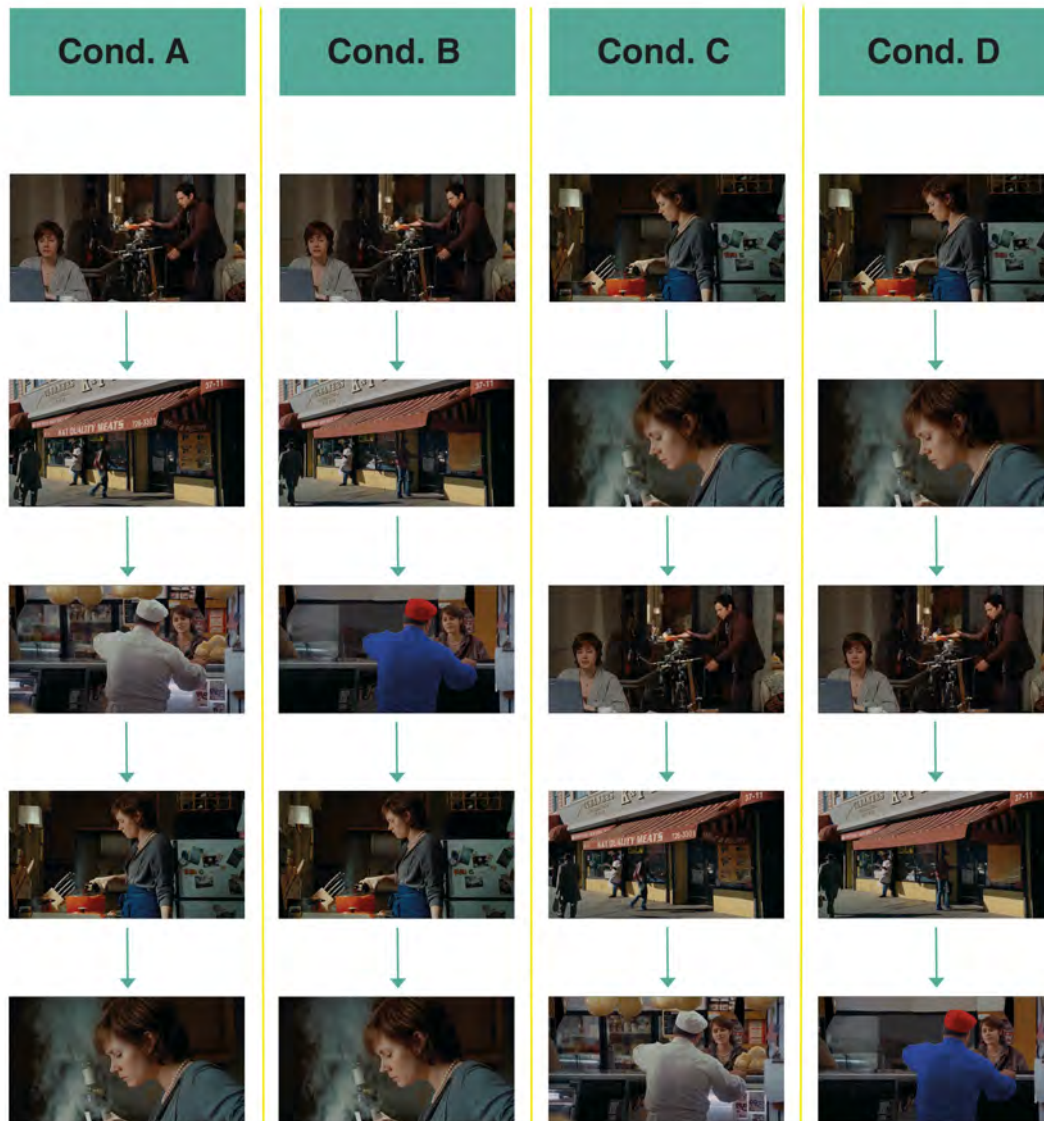


Fig. 7. Experimental Conditions

taken based on the participants' responses in the post-task questionnaire, where each question was designed to evaluate one of the four dependent variables:

- Establishment of the butcher's shop identity
- Causal relation between the scenes
- Level of confidence of participants
- Time perception

The establishment of the butcher's shop identity indicates how well participants across conditions were able to establish the identity of the butcher's shop based on two independent factors, visual cues and chronological order. Participants were

asked about the identity of the place the female character went to (*“In what kind of place was the female character when she was talking to the other man?”*).

The causal relation between the scenes was measured to assess how participants perceived the scene in the butcher’s shop with regard to the cohesive identity chain of kitchen/food. Participants were asked why they thought the female character went to the place to measure the correctness of their inferences (*“Why do you think she went there? Be specific.”*). The right response would indicate that the participants were able to infer the goal of the female character, which is to buy ingredients for cooking later on.

A five-point Likert scale question was designed to evaluate participants’ level of confidence in establishing the butcher’s shop’s identity and inferring the goal of the female character going to the shop. Participants were asked to self-assess how sure they were about their answers to the question of the butcher’s shop identity and the female character’s goal going there (*“How sure are you about your answer to the previous question?”*).

Time perception was measured to understand how participants built the temporal relation between the scenes, particularly the scene in the butcher’s shop and the cooking scene. Participants were asked to estimate the approximate time period shown in the video clip and were given the following options: 2 hours, 4 hours, one day, more than one day (*“Estimate approximate time period shown in the video clip”*).

To make sure that the participants were able to follow the non-manipulated part of the narrative, I asked the following questions:

- *How many characters are in the video clip (both main and secondary)?*
- *What was the female character doing when she was talking to the man in the living room?*
- *What was the man holding when he was leaving the living room?*

The screenshots of the original questionnaires are provided in the Appendix.

3.4 Procedure

The experiment was conducted over a period of one week in English and German. Participants chose their preferred language. Each session of the experiment

was conducted with one participant only. At the beginning of the experiment, the consent agreement (Appendix: Fig. 15) and demographic questionnaire in Google Forms (Appendix: Fig. 16) were filled out and participants were provided with general information about the procedure of the experiment. Participants then watched the episode on a large screen, while the experimenter was sitting further away in order not to distract the watching process. In the meantime, the experimenter was making notes to document any moments that could potentially be useful for the future analysis. After participants finished watching the video clip, they were asked to fill out the post-task questionnaire in Google Forms (Appendix: Fig. 17). After that was done, the experimenter made some additional notes about participants' responses or their overall experience of watching the extract during conversations with participants.

3.5 Participants

80 people were recruited to participate in the study. In total, data of four participants had to be excluded from the final evaluation for various reasons. Data of three participants were excluded from the final assessment because they had watched the movie before. Equipment failure led to the data exclusion of one more participant. The final sample included 76 participants (18 females, 58 males, average age of the participants = 26.4 (SD=5.4)). 58 participants were students, 17 were employed for wages, and one was self-employed. 60 participants reported watching movies at least once a month or more often.

3.6 Hypotheses

Null Hypothesis: There is no difference between participants' ability to establish the identity of the butcher's shop and the goal of the female character in the episode, as well as the level of confidence of participants drawing their conclusions across conditions.

Research Hypothesis: There is a difference between participants' ability to establish the identity of the butcher's shop and the goal of the female character in the episode, as well as the level of confidence of participants drawing their conclusions

across conditions.

The research hypothesis confirmed by the results of the designed study will indicate that the cohesive identity chains in the extract played an essential role in the participants' comprehension and interpretation of the narrative.

4. Results

This chapter reports the results of the empirical study analysis to investigate how the absence of cohesive visual cues affected participants' ability to establish the identity chain of the butcher's shop and the goal of the female character in the narrative and how the scenes were perceived by the participants in relation to each other. The measuring instruments used for the analysis were based on the participants' responses in the post-task questionnaire. The first part of the chapter provides the analysis results of the participants' comprehension of the non-manipulated part of the narrative. Furthermore, the chapter presents the results of the statistical analysis of the four dependent variables.

The software RStudio was used for the data analysis. For all statistical tests, an alpha level of .05 was used.

4.1 Comprehension of the Non-manipulated Part of the Narrative

To evaluate the comprehension of the non-manipulated part of the narrative, I analyzed the responses of all the participants to the basic narrative significant questions. The results revealed that 53 participants (70%) were able to correctly recall the number of the main characters in the narrative. 57 participants (75%) could remember what the female character was doing while talking to the male character in the living room. 70 participants (92%) remembered what the male

character was holding when leaving the living room.

4.2 Establishment of the Butcher's Shop Identity

The first dependent variable to test was the establishment of the butcher's shop identity. To assess the participants' ability to identify the place correctly, the responses of the participants were converted into points that ranged from zero to three, where zero indicated the least accurate answer, and three represented the right establishment of the butcher's shop. After considering several statistical tests, I first selected factorial ANOVA for the question about the butcher's shop identity. However, after checking the normal distribution of the model residuals, the Shapiro Wilks test revealed that the data failed the test for normality, $p < 0.05$. That did not let me use parametric factorial ANOVA for the mentioned dependent variable. After searching for a test that would suit the data the most considering its nature, the Scheirer-Ray Hare extension of the Kruskal Wallis and the Align-and-Rank transform tests were the possible alternatives. The Align-and-Rank transform test is considered by many (Wobbrock et al., 2011) to be an appropriate non-parametric alternative for parametric ANOVA and so was selected as an alternative for non-parametric factorial analysis. The statistical test results showed that the interaction effect between visual cues and temporal order was not significant, $p > .05$. Hence, the main effects of each independent variable, visual cues and temporal order, were analyzed separately.

The test results revealed that there was a significant main effect for visual cues, $p < .001$. Those who watched the extract with visual cues (Cond. A, C) received significantly higher scores (Mean (M) = 2.553, Interquartile Range (IQR) = 1) than those who had no visual cues in the extract (Cond. B, D) (M = 1.684, IQR = 0). The IQR of the responses in the conditions without visual cues indicates there was no variation in the middle 50% of the responses. The visualization of the density distribution in Fig. 8 shows that the participants in the conditions with visual cues were more likely to get scores of 2 and 3, while the responses of the participants in the conditions without the visual cues were highly concentrated around the value 2.

Four out of 38 participants who did not have the visual cues in the extract

identified the place as a dry cleaning. One participant mentioned it was because there was a sign on the next-door shop saying "*Cleaners*". One participant in the condition without visual cues in his inference identified the place as a post office. In total, three out of 38 participants who watched the episode without the visual cues could identify the place as a butcher's shop. Two of them explained it by the fact that in the countries of their origin, those meat stores are widespread as opposed to Germany, where people usually buy meat in bigger markets.

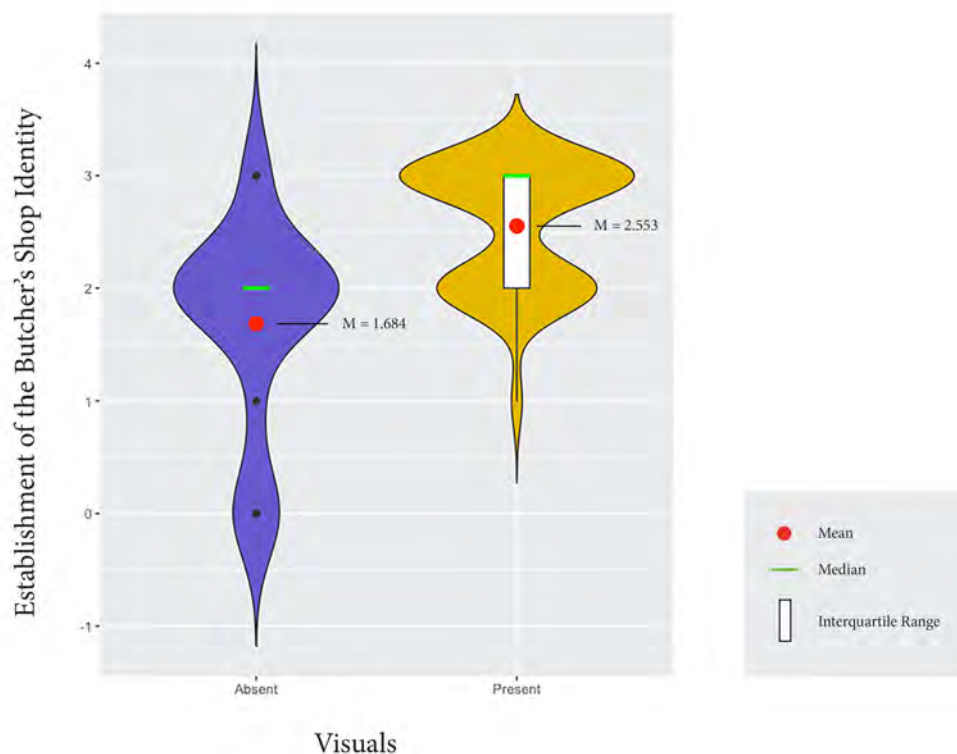


Fig. 8. Main Effect of Visual Cues on the Establishment of the Butcher's Shop Identity

The manipulation of the chronological order was done to test if the logical support of temporal relation would compensate for the absence of the visual cues and contribute to the right establishment of the butcher's shop identity despite missing visual cues. After establishing no significant difference between the conditions as to the interaction effect, the effect of temporal order was analyzed separately. The main effect of the temporal order was significant, $p = .038$, indicating that the average score was significantly higher in the non-chronological version (Cond. C, D) ($M = 2.237$, $IQR = 1$) than in the chronological version (Cond. A, B) ($M = 2$, $IQR = 0$). The IQR of zero means no variation was found in the middle 50% of

the responses of the participants who watched the versions with chronological order. The shape of the distribution in Fig. 9 indicates that the responses of the participants in the non-chronological conditions were mainly condensed around the values 2 and 3, whereas the responses of the participants in the chronological conditions were more likely to get a score of 2.

The results demonstrated that the responses to the question about the establishment of the identity of the shop were significantly more accurate in the manipulated version with the non-chronological order.

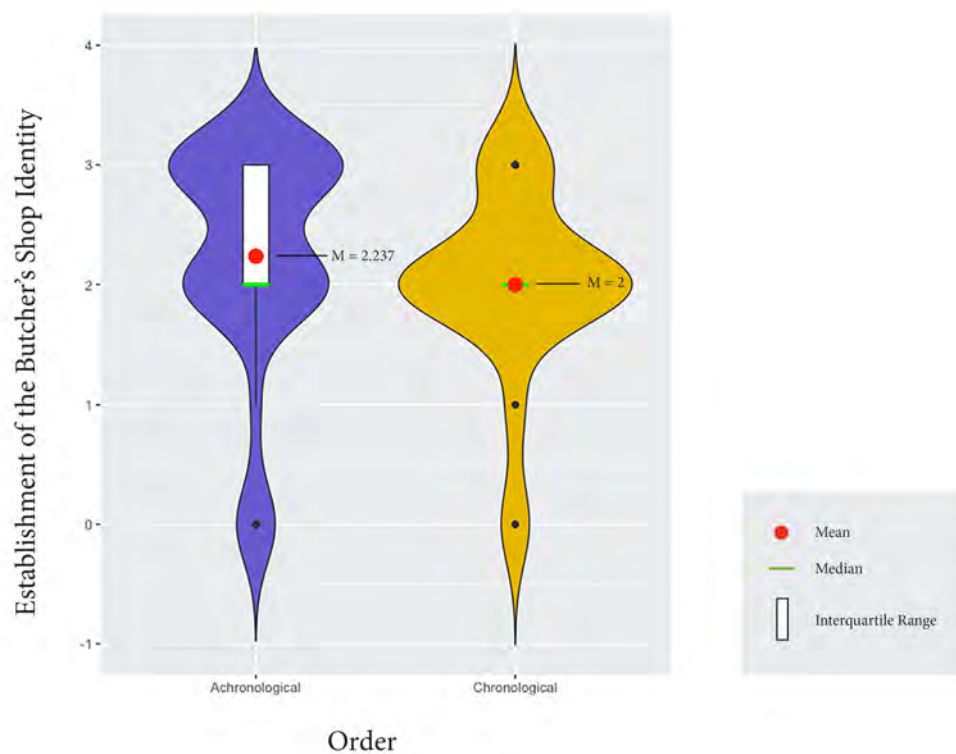


Fig. 9. Main Effect of the Temporal Order on the Establishment of the Butcher's Shop Identity

4.3 Causal Relation between the Scenes

The next dependent variable to test was the causal relation between the scenes. For the analysis, the responses of the participants were converted to the points, ranging from zero to three, where zero represented the least accurate responses, more specifically, responses indicating that the participants did not affiliate the scene in the butcher's shop with the cohesive identity chain of kitchen/food at

all, and where three represented the right inference, which is to buy ingredients for the cooking later on. Similarly to the establishment of the butcher's shop, I first considered two-way ANOVA to test the effect of two independent variables, visual cues and temporal order, on the dependent variable. After checking the requirements for the statistical test, it was established that the data failed the test for normality. Considering the similarity of the data nature to that of the dependent variable of the butcher's shop identity, I conducted the Align-and-Rank transform test for a two-way analysis of variance.

The Align-and-Rank transform test revealed no significant interaction effect between the independent variables, $p > .05$. Thus, the main effects of visual cues and temporal order were analyzed independently from each other. The results illustrated that the main effect of visual cues was significant in establishing the goal of the female character in the extract, $p = .013$, such that the average score was significantly higher in the conditions with visual cues (Cond. A, C) ($M = 2.132$, $IQR = 0.75$) than in the conditions where the visual cues were absent (Cond. B, D) ($M = 1.632$, $IQR = 1$). Fig. 10 depicts that for the conditions where the visual cues were absent, the distribution of the participants' responses lay at the value 2. In contrast, the scored responses of the participants in the conditions with visuals were more likely to take on the values 2 and 3.

Some of the participants' responses from the conditions with visual cues to the question "*Why do you think she went there?*" included "*She was buying ingredient for cooking*", "*She probably want to buy some ingredients for the dinner*" while some participants who had the visual cues removed from the scene responded "*She went there to get lunch*", "*womöglich um sich irgendwas zu kaufen*" (*perhaps to buy something*), "*send a package*", "*to pick up some parcel*". The effect of temporal order was not significant, $p > .05$.

4.4 Level of Confidence of Participants

One of the goals was to examine how confident the participants were making their inferences as to the establishment of the identity of the place the female character went to and her goal when doing that. The dependent variable was tested based on the participants' responses to the five point Likert-Scale question,

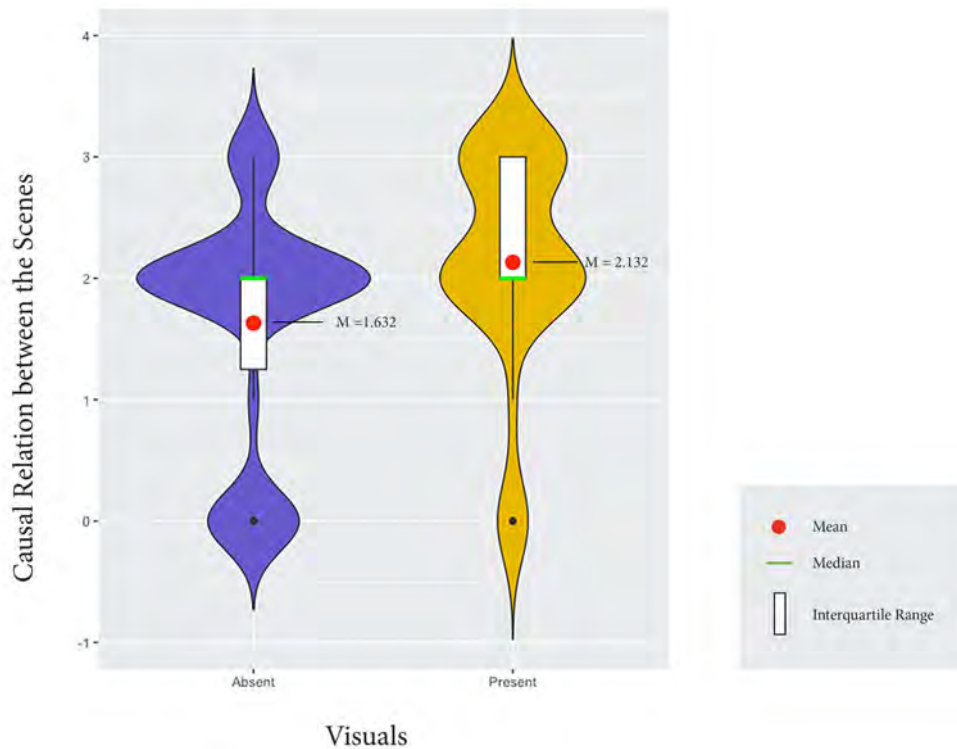


Fig. 10. Main Effect of the Visual Cues on the Establishment of the Causal Relation

where 1 represented “*very unsure*” and 5 - “*very sure*”. After the data met all requirements for ANOVA to give valuable results, I conducted two-way ANOVA to test the dependent variable.

The test revealed no significant interaction effect for visual cues and temporal order, $p > .05$. After testing the main effects separately, a two-way analysis of variance yielded a significant main effect for visual cues on the confidence level of participants, $p < .001$, indicating that the confidence level was significantly higher in the conditions with visual cues (Cond. A, C) ($M = 3.5$, $SD = 1,033$) than in the conditions with no visual cues (Cond. B, D) ($M = 2.474$, $SD = 0,893$). The effect of temporal order on the confidence level was not significant, $p > .05$.

The results of ANOVA showed that participants were significantly more confident about their responses to the questions about the identity of the shop and the goal of the female character going there when they had visual cues while watching the extract (Fig. 11). There was no one among those who watched the extract without the visual cues who assessed their confidence in the given responses at a rate of 5 standing for “*very sure*”. While no single participant watching the extract with the visual cues rated his confidence at a level of 1,

standing for “*very unsure*”. As shown in Fig. 12, in cases when participants were correct in establishing the butcher’s shop identity, those in the group with the visual cues absent were still less confident in their responses than the participants in the group with the visual cues present. A similar pattern can be seen in Fig. 13, where the participants’ level of confidence from two groups, visuals absent and visuals present, is plotted against their ability to establish the causal relation between the scenes.

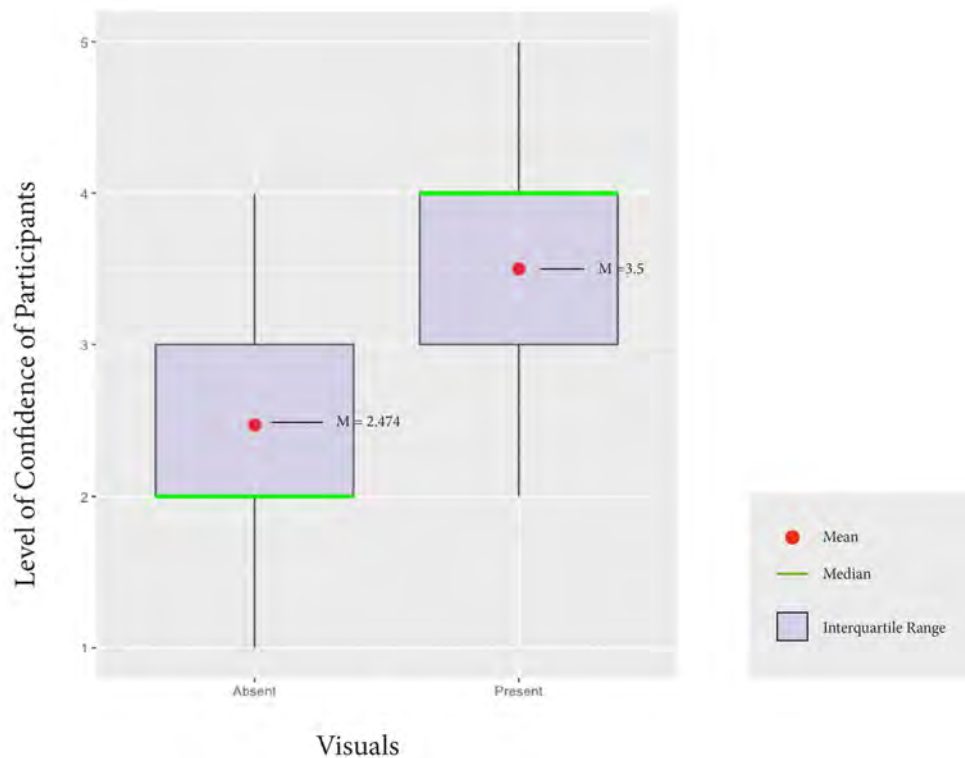


Fig. 11. Main Effect of the Visual Cues on the Level of Confidence

4.5 Time Perception in the Narrative

The dependent variable of time perception in the narrative was tested. For the statistical analysis, the responses were converted into the points from one to four. After the Shapiro Wilks test revealed non-normal data distribution for the variable, the Align-and-Rank transform test was conducted as the best alternative to parametric analysis of variance. The Align-and-Rank test showed there was no significant interaction effect, $p > .05$. The main effect of visual cues on time perception was not significant either, $p > .05$, whereas there was a significant main

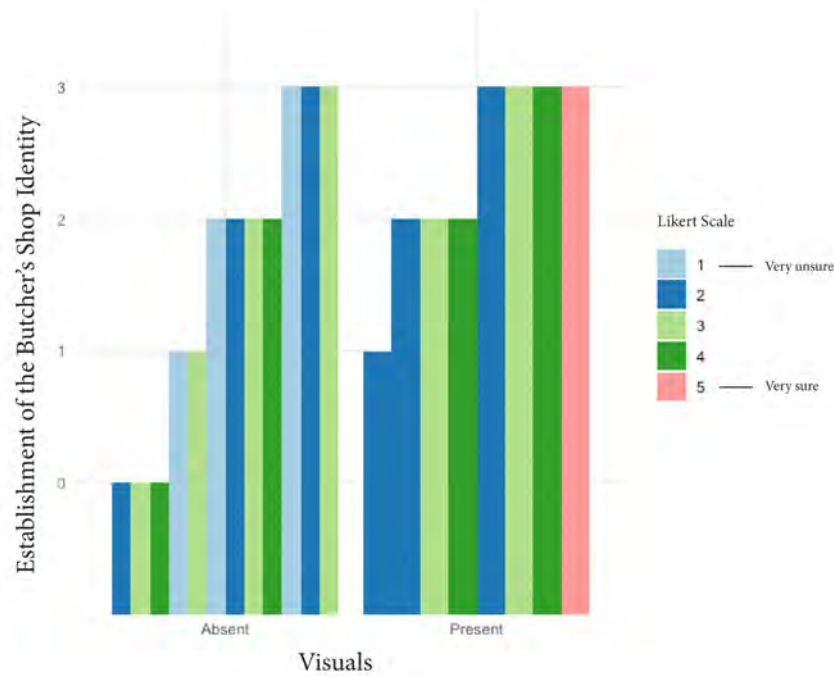


Fig. 12. Projection of the Participants' Level of Confidence over the Effect of Visual Cues on the Establishment of the Butcher's Shop Identity

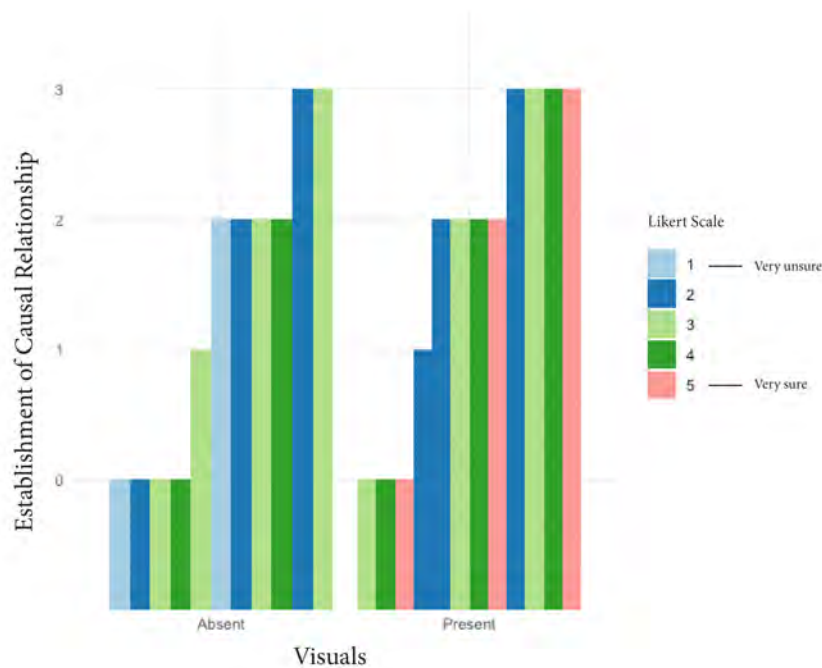


Fig. 13. Projection of the Participants' Level of Confidence over the Effect of Visual Cues on the Establishment of the Causal Relation

effect of temporal order, $p = .024$, showing that the approximate time period shown in the video clip was estimated by participants in the conditions with chronological

order (Cond. A, B) to be temporarily longer ($M = 2.105$, $IQR = 0,75$) than in the conditions with non-chronological order (Cond. C, D) ($M = 1.737$, $IQR = 1$). The visualization of the data distribution in Fig. 14 represents that the responses of the participants in the non-chronological versions are mainly located at the value 1, while the responses of the participants in the chronological conditions are highly concentrated at the value 2. The results indicated that those participants watching the chronological version perceived the events shown in the episode to be temporarily longer than those who watched the non-chronological version.

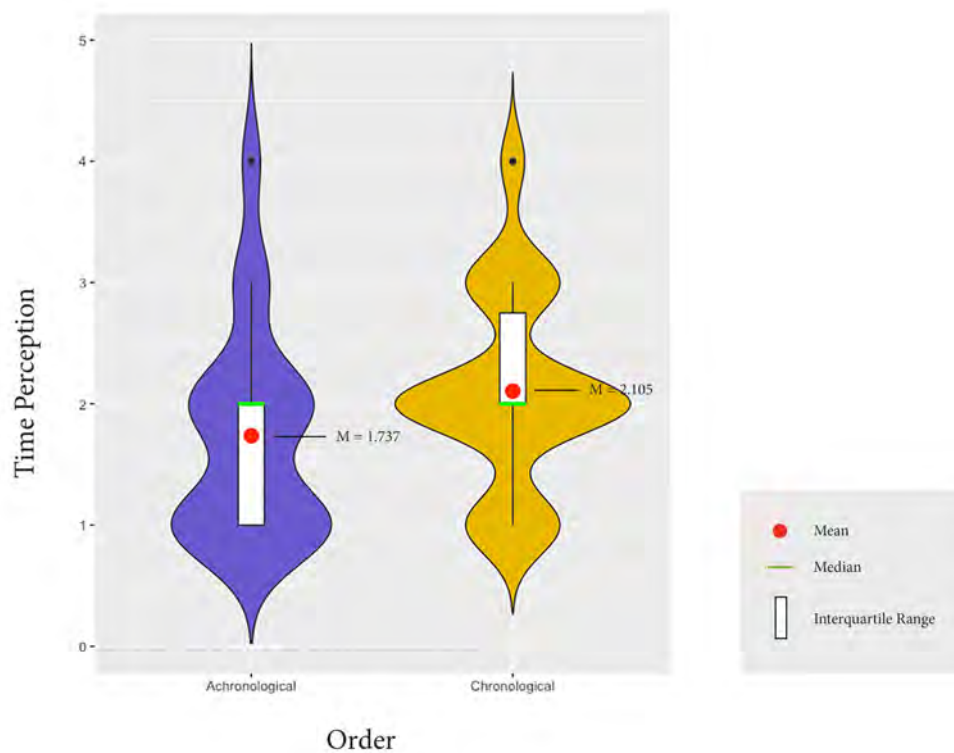


Fig. 14. Main Effect of the Temporal Order on the Time Perception

5. Discussion

The results of the analysis showed that manipulating the cohesive visual cues in the narrative led to significant differences in the accuracy of establishing the butcher's shop cohesive identity chain across the groups. Participants watching the extract without the visual cues performed significantly worse when they were asked about the place the female character was in. The fact that four out of 38 participants who did not have the visual cues in the extract identified the place as a dry cleaning demonstrated that the participants were looking for a visual cue in the form of a written text that would help them identify the place. The written text "*Cleaners*" on the next-door building was the visual cue that signaled the participants that the setting in the following two shots was a dry cleaning (Tseng, 2013). One of the reasons why one participant in the condition without the visual cues identified the place as a post office could be that in the preceding scene the female character was writing something on her laptop. Inferring that the third shot is a continuation of the events potentially requires one to infer events that fill the gap between those explicitly depicted in the shots (Hutson et al., 2018). The comments of two participants after their successful establishment of the identity of the butcher's shop in the conditions without the visual cues, saying that such butcher's shops are common in the countries of their origin, indicated that cultural background influenced the way the participants perceived the identities in the narrative. This finding aligns with the results of the empirical study conducted by the researchers Tuffs and Tudor presented in the chapter 2, who argued that

background of cultural knowledge is an important factor in the comprehension of video material set in a different culture from that of the viewer (Tuffs and Tudor, 1990).

The results showed that the visual cues in the extract played an essential role in helping participants make the right inference about the place the female character went to. The absence of the visual cues such as the written text "*K&T Quality meats*", meat, food inside the shop and the outfit of the butcher led to undermined establishment of the identity chain of the butcher's shop, which was crucial for narrative comprehension.

The analysis of the manipulation of the temporal order revealed more accurate responses as to the identity of the place among those who watched the non-chronological order version. One reason for that could be that the manipulation set up an alternative coherent structure of the narrative that led to a better comprehension of the narrative. It may be that having the cooking scene with the co-referential visual cohesive ties leading to food before and not after the actual scene in the butcher's shop influenced the way participants perceived the butcher's shop scene, making them pay attention to the details that are potentially leading to a food place.

As results revealed, the manipulation of the visual cues in the butcher's shop scenes and the cooking scene led to significantly less accurate responses to the question of why the female character went to the place among those who watched the no visual cues version of the narrative. The absence of the cohesive cues led to confusion for participants who did not have the visual cues watching the extract. Even though a lot of them were able to connect the butcher's shop to a food place, the causal relation to the cooking scene was notably undermined. The absence of the visual cues in the episode undermined participants' ability to establish the goal of the female character. Thus, the manipulation of the visual cues in the episode resulted in disrupted comprehension of the narrative as the right comprehension of the narrative implies understanding the goals of the main characters (Lynch et al., 2008).

The evaluation of time perception in the extract was another way to test how participants connected the butcher's shop scene with the cooking scene. In the manipulated non-chronological version of the extract, the cooking scene, which in

the original version is following the scene in the butcher's shop and thus consolidating the cohesive identity chain of food, is put at the beginning of the extract to separate it from the rest of the narrative temporally. According to the results presented in the chapter 4, those participants watching the chronological version perceived the scenes shown in the extract as lasting longer than those who watched the non-chronological version. One explanation for it could be that the manipulation of the temporal order suggested an alternative narrative structure that modulated the participants' temporal perception of the narrative. In the chronological version, the cooking scene is the last scene in the narrative and, according to some of the responses, was perceived as a preparation for the following dinner, which is traditionally an event taking place in the evening, whereas the events in the butcher's shop scenes take place during the day. I assume that it could possibly be the reason why participants watching the extract in the original order perceived the events in the narrative temporally longer when compared to those who watched the non-chronological versions.

Overall, the manipulation of the visual cues and the temporal order in the extract resulted in significant difference between participants' ability to establish the identity of the butcher's shop and the goal of the female character in the episode, as well as the level of confidence of participants making their key inferences about the narrative. Therefore, the null hypothesis of this thesis can be rejected.

6. Conclusion and Future Work

6.1 Conclusion

Building upon the analytical framework of tracking identities in film developed by Tseng, this thesis provided a detailed analysis of cohesive identity chains in an extract of "Julie & Julia" (Ephron, 2009). The significant contribution of this research is an empirically-grounded study, that was conducted to examine the participants' comprehension of the narrative building upon the proposed identification system of filmic cohesive elements, in particular, visual cues leading to the construction of the cohesive identity chains in film. The results of the analysis presented in this thesis clearly show that the presence of the cohesive visual cues was crucial for the viewers' ability to construct the cohesive identity chains and thus played an essential role in the narrative comprehension. The cohesive visual cues in the extract used in this empirical study were essential for the participants to make the right inferences about the identity of the butcher's shop and the goal of the main character and thus contributed significantly to the overall understanding of the narrative. Although the changes to the visual cues were comparatively minor, the manipulation still had a large effect on the participants' narrative comprehension. The absence of the visual cues resulted in the viewers' lack of confidence in the key inferences made about the narrative even when those were correct. The analysis results of the manipulation of the chronological order indicated that the temporal order was essential in the narrative, and altering it led to differences in

the viewers' level of comprehension of the narrative across conditions.

In conclusion, this thesis presented an empirical study that investigated the role of cohesive identity chains in narrative comprehension in film. The key finding of this work is that cohesion played an essential role in the participants' understanding of the narrative. The main contribution of this work is that it encourages the further investigation of narrative comprehension processes as well as mental processes necessary for the construction of a coherent event model in film with a particular focus on cohesion.

6.2 Limitations and Future Work

Continuing the research on the role of cohesive identity chains in narrative comprehension offers multiple directions. While the focus of this thesis was the examination of the role of cohesive visual cues in narrative comprehension, audio plays an essential role in meaning making processes in filmic discourse and is one of the modes in which identities are presented to viewers (Tseng, 2013). A quantified assessment of narrative comprehension based on visual cues as well as sound and voices that represent participant identities can help to gain a better understanding of narrative comprehension processes. Future work concerns proposals to include eye-tracking devices as one of the evaluation methods to better understand the development of narrative comprehension. The effect of the cohesive identity chains on viewers' attentional selection in the narrative would be of particular interest. The current stimuli may also be useful for future studies examining narrative identity-constructing processes in cooperation with neuroscientists. Lastly, this thesis proposes some further investigation of the role of cultural background in viewers' establishment of cohesive identity chains in film.

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9. Appendix

You can download the four versions of the extract used during the experiment under the following link:

<https://drive.google.com/file/d/1noj89XOFwc0hGm-7SOWyM2gt8yv3c9Q6/view>

Consent

ID _____

Study: Film Study **Organization:** University of Bremen **Conductor:** Dayana Markhabayeva

Description: You are invited to participate in a film study. Please read this form carefully and ask any questions you may have before agreeing to take part in this study.

Duration: Your participation will take approximately 10 minutes.

Procedure: If you agree to this study, you will be asked to:

- Watch a video clip
- Fill out a questionnaire
- Answer some demographic questions

Purpose: The study serves as data collection method for the conductor's master thesis.

Benefits: Your participation contributes to the film studies.

Rights: Your participation in this study is voluntary. You may refuse to participate or cancel the study at any time. You have the right to not answer any questions asked or withdraw from answering completely. If you have problems or concerns at any time during the study, you may report them to the conductor.

All information will be kept confidential and anonymous.

Consent: With your signature below, you will certify that you have read this document carefully and agree to:

Participate in this research experiment under the conditions described above.

Date, Signature: _____

Fig. 15. Consent

Demographic Questionnaire

Answer the following demographic questions:

***Required**

Type in your ID number *

Your answer _____

What is your age? *

Your answer _____

What is your gender? *

- Female
- Male
- Other
- Prefer not to answer

Which categories describe you? Select all that apply to you. *

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic, Latino or Spanish Origin
- Middle Eastern or North African
- Native Hawaiian or Other Pacific Islander
- White
- Some Other Ethnicity
- Prefer not to answer

What is your employment status? *

- Employed for wages
- Self-employed
- Unemployed(currently looking for work)
- Unemployed(not currently looking for work)
- Homemaker
- Student
- Military
- Retired
- Unable to work

What is the field of your professional or academic specialization? *

Your answer _____

On average, how often do you watch movies? *

Every day

At least once a week

At least once a month

At least once a couple of months

Rarely

Don't watch movies

Have you watched Nora Ephron's movie "Julia & Julie", from which the video clip you just watched was extracted?

Yes

No

Don't remember

Submit

Fig. 16. Demographic Questionnaire

Questionnaire

Please answer the following questions:

***Required**

Type in your ID number *

Your answer

How many characters are in the video clip (both main and secondary)? *

Your answer

What was the female character doing when she was talking to the man in the living room? *

Your answer

What was the man holding when he was leaving the living room? *

Wine

Bike

Cat

In what kind of place was the female character when she was talking to the other man? Why do you think she went there? Be specific. *

Your answer _____

How sure are you about your answer to the previous question? *

Very unsure 1 2 3 4 5 Very sure

2 hours

4 hours

one day

more than one day

Submit

Fig. 17. Post-task Questionnaire