

**Incongruent background music –
The effect on ad evaluation and brand recall in a high- and
low need for cognition group**

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Executive summary

This is a study that aimed to explore the effect of incongruent background music on ad evaluation and brand recall in a high- and low need for cognition group. For this purpose a 2 (need for cognition: low vs. high) x 4 (background music: severe incongruent vs. mild incongruent vs. congruent vs. no music) experimental design was set up. The sample consisted of 166 students who were appointed to a need for cognition group on basis of standardized questions and to a music group randomly. In an online questionnaire respondents were asked to watch a video that showed an advertisement against child prostitution. After watching this video they answered questions regarding ad evaluation and brand recall. The outcome is that incongruent background music has a favourable advantage over congruent background music. In the low need for cognition group severe incongruent background music showed a strong interaction effect on ad evaluation. When in this need for cognition group severe incongruent background music was played participants evaluated the ad more positively than with other background music. A tendency for a main effect of need for cognition on ad evaluation and brand recall can be found as well.

Keywords: Interaction effect, Incongruent background music, Ad evaluation, Brand recall, Need for cognition

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1. Introduction

In order to spread out a brand name and product the most effective tool is an advertisement. According to the director of an Dutch advertising agency, every day an average person in the Netherlands is exposed to around 2,500 TV and print advertisements (Schreurs, 2004, New-wave-reclame section, ¶ 1). These advertisements compete with each other to be seen, remembered, and liked. That is not that easy, as nowadays consumers zap away when an advertisement block starts. Of the above mentioned 2500 advertisements only 75 are picked up by the consumer (Schreurs, 2004, New-wave-reclame section, ¶ 1). Therefore advertisers need to be innovative and unique to capture the attention of the consumer.

In the advertising branch there is a continual circulation of capital. The following example clarifies that this does not only include small numbers:

Several years ago, a New York Times story stated that the average cost of producing a 30-second national television commercial in 1999 was \$343,000. The Times said this figure came from a survey of 1,753 national spots produced by 20 agencies. Today however, the figure would be closer to \$500,000. According to a Bloomberg.com article published in January 2008, a 30-second spot on "American Idol" was going for \$780,000. A New York Times story in December 2007, said that the show, "Grey's Anatomy" was getting \$400,000 for a 30-second spot. At the top end of the spectrum, a 30-second spot in the 2007 Super Bowl ran about \$2,600,000. Those rates are all for only one run of the spot (Davis, n.d., <http://televisionadvertising.com/faq.htm>)

This example derives from the American market. Running a TV advertisement on the European market does not involve such an amount of money. However, this example stresses the importance of the effectiveness of an advertisement. Advertisers who spend so much on only one run of an advertisement have to be certain the advertisement accomplishes what they have in mind. When certain elements are not able to reach the specific goal, the budget will be spent inaccurately. Normally, an advertisement would be on air more often than once. However, when consumers watch the spot more often this means that they have more time to process it. It is then even more important to make certain that every element of the ad is supporting the message and intention you would like to spread.

Music is a very important part of an ad, which enhances the attention-gaining process. For instance, in Germany 88% of TV advertisements make use of it (Delventhal, 2008). As most of the advertisements make use of music, some better than others, it is very important to

know which music works best to gain attention, be remembered and be evaluated positive. Music can either make or break an advertisement. That is, wrongly used music can totally change the intentional message an advertisement wants to bring forward and inhibit positive evaluation.

The advertising branch is interested in the use of incongruent music, specifically background music. Music in advertising is considered incongruent when it evokes another meaning than the other ad elements (e.g. the visuals) (Hung, 2000).

Substantial research on the topic music and advertising has already been undertaken. Nevertheless much is still unknown about the function of music in relation to advertising. An undiscovered part of music research is the concept of misfit (or incongruity) regarding music. This is barely discussed and tested. Exploring the incongruity field will extend the thus far existing knowledge about fit and misfit towards an advertisement and music. Mostly, the conception of the researchers varies distinctively when it comes to the use of incongruity. Some researchers have proven congruity to be the most effective strategy for among others likeability (Goodstein, 1993). However, as there are also indications in favour of misfit, i.e. advertisement and music clash (e.g. Baker and Petty, 1994) it is important to know if and how advertisers can use this misfit to perform even better on the attention-gaining scale.

To shed a light on the varying notions the current thesis will be focussed on the use of musical incongruity in TV advertisements. The focus on musical incongruity in advertising will broaden the perspective of the research field that is concerned with music and advertising as the results of the current research will either support or reject the current notions concerning musical incongruity. The advertising branch could benefit significantly from the results of the research field, since any recommendations that can be drawn from the results will turn out to be helpful in selecting effective music. When incongruent music can be used this will enlarge the music variety that is used in advertising, therefore for the consumer too the results could turn out to be a refreshing new way of watching TV advertisements.

Since incongruent background music can be applied to various measures of advertisement effectiveness (e.g. message recognition, ad recall) for the purpose of clarity the current study focusses on two important aspects of a TV advertisement: brand recall and ad evaluation. Their results will mirror a possible effect of the incongruent background music. Extracted from Mandler's (1982) theory of incongruity, incongruent background music is separated into 3 sub-variables, that is severe incongruent-, mild incongruent-, and congruent

background music. To control the effect of the background music a no music control group will be used. Given that the human population can be split roughly into two different cognition groups, low- and high need for cognition (Cacioppo & Petty, 1982), this study also differentiates between these two groups. So, taking these considerations into account, this current study aims to answer the following research question:

What is the effect of incongruent background music in a low– and high need for cognition group on brand recall and ad evaluation?

To find the answer on this research question a 2 (need for cognition: low vs. high) x 4 (background music: severe incongruent vs. mild incongruent vs. congruent vs. no music) experimental design will be set up. First respondents watch a TV advertisement, then they fill out a survey where next to demographic questions also various questions regarding brand recall and ad evaluation are asked. Also respondents need to answer some need for cognition questions. Respondents are randomly appointed to a music group most likely leading to visible differences among groups concerning brand recall and ad evaluation. After completion of the survey, respondents will be appointed to a need for cognition group on the basis of their answers of the need for cognition questions.

The results of this study are based on the answers of (international) students from the University of Twente and the Zeeland University of Professional Education, the first situated in Enschede the latter in Vlissingen.

The next chapter will give insight into the theme of this thesis. This chapter includes the sections music, acoustic brand management, and incongruity. Chapter 3 presents the theoretical framework that will offer different results and notions out of the literature. Chapter 4 leads to the research question and the formulated hypothesis. Chapter 5 elucidates the research design. That chapter includes the pretest- and main design section. Chapter 6 describes the results and presents the conclusions, and the final chapter presents the analysis of the theoretical framework, limitations of the research and recommendations for further research.

2. Explanatory concepts

2.1 Music

What is music? Is it what you hear when you turn on the radio? Cross-cultural research has shown that there is no single and universal concept of what music might be (Nattiez, 1990). One possible answer to the question will say something about the detailed mechanics of music: notes, rhythm, instruments, harmony, tempo, and melody. Another answer is that music makes us feel good – it is enjoyable. Music creates emotions, or interacts with the emotions we already feel. Music is when singers sing and when musicians play. Abstractly, music is an art form consisting of sound and silence. It incorporates two elements: the acoustic material and the mental idea, which is transferred by the acoustic material. In music sound, noise and silence (also in the form of pauses) are united (Ringe, 2005).

Börger, H.M.(1992) lists three characteristics of music:

- Temporary existence of music: music can only be received as long as it sounds
- Intention of music: it is made by and meant for humans to achieve a specific effect
- Technical development: technical filing possibilities make it possible that music can be (re)produced and received independent of time and space.

The second characteristic relates to music as sounds consciously organized for a purpose: to communicate.

The possibility that the same music, heard in a laboratory, on a mp3-player, in a club or in a commercial, might be perceived differently is seldom mentioned. Pratt (1931/1968) explained the confusion between description and experience by saying: „music sounds the way emotions feel“. Music exists because people create it, perform it and listen to it (Dorrell, 2005). It does not have to be meaningful. Its main capacity is to make meaning possible. Therefore music is its own language (McLaren & Prelinger, 1998). Music can tell a story without words. It influences how people feel by affecting their emotions. It can bring them in a happy mood or make them cry.

Background music also enriches other purposes, such as relaxation, conversation, and influence. For this reason background music is seen as functional music, which calls specific associations. As music has such an effective influence on the human emotions the marketing branch is logically exploiting that effect.

In the next section acoustic brand management will be discussed: the process that makes use of the strong emotional influence of music.

2.2 Acoustic brand management

Acoustic brand management is a relatively new term used in the marketing branch. It is a structured process in which the „auditory“ becomes part of the brand and its identity. Acoustic brand management encloses every acoustic activity used to point the attention to one specific brand. For one thing this umbrella term audio branding: an action which with help of sound builds up an emotional relationship between sender and receiver, establishes an associative framework of recognition, communicates messages, and reports and strengthens an image (Ringe, 2005).

To accomplish this several musical genres have been developed which are especially meant for advertising use. The so-called advertising music guarantees the special needs of an advertisement. As an advertisement is used in different communication channels music must be flexible enough to function in those various channels. As part of the brand communication, advertising music tries to support the brand messages and develop a recognition value. With use of advertising music messages that are transported into various media channels will be supported and conducted. The advertising music itself will be differentiated into various types, which can be applied to several advertising media with different kinds of content.

Different types of music are used in advertisement. Firstly it can be used as background music. Thus it stays in the acoustical background and solely illustrates the content. It works as a guide through the images; it helps to anchor basic interpretations of the image, without necessarily being listened to (Bode, 2006).

Secondly it can also be used as a jingle and accompany the slogan or claim. A jingle is a short, easy to remember tone sequence or melody accompanied with a (singing) voice. It's one of the most well known types in acoustic advertisement and is used to profile the sender optimally. Thirdly, another usage of advertising music is as an audio logo. It's a short tone sequence, which usually takes place at the beginning or the end of a commercial. The audio logo does not have a direct connection to the advertising message and its primary goal is to position the company.

With these audio elements further acoustic brand elements can be developed. As it is possible to translate brand values into music and sound, they should therefore not be left to chance. Advertising music is under best circumstances adjusted with the corporate identity. In

many cases advertising music is used to increase recognition of a brand or product. This has to lead to product differentiation and in the end needs to enlarge the product sale. In advertising music often existing songs are utilised, songs that already have a specific image. In so doing the brand or product could benefit from this image. Using these existing songs however entails a great deal of expense. Another manner is to use soundalikes. These soundalikes are independent compositions that sound like original music compositions. This effect is reached by small changes in melody or the arrangement. The benefit of using these soundalikes is their relatively smaller costs for usage since the composers are less known.

With the increasing homogeneity of products the emotional experience will be the deciding differentiation point. In other words, those who are able to acoustically differentiate themselves in the differentiation process will be one step ahead of their competitors.

2.3 Incongruity

To be able to differentiate yourself you have to do things different than others. This means you have to be incongruent with the set standard. Being incongruent means that you violate the expectation. An unexpected concatenation of events, a conspicuous mismatching, an unlikely pairing of cause and effect-all of these have in common a violation of normal expectancy (Bruner & Postman, 1949). The human being became to depend upon a certain constancy in their environment. Yet incongruities are perceived. Incongruity is in the eye of the beholder. Expectations are built upon past commerce with the environment. An odd event will therefore be perceived as incongruous.

According to the online Oxford Dictionary (www.oxford.com, 2008) an exact definition of the word incongruous is as follows:

1. Lacking in harmony; incompatible
2. Not in agreement, as with principles; inconsistent
3. Not in keeping with what is correct, proper, or logical; inappropriate

In marketing congruence means: recognizing that some things go together. Incongruence on the other hand means that some things clash. The word incongruence has been associated with a somewhat vague concept in the marketing literature. Authors have used a multitude of terms. Some have used misfit, others have favoured dissimilarity or untypicality. Heckler and Childers (1992) have conceptualized congruity/incongruity as consisting of dimensions. The first one, relevancy of the association, is defined as the degree

to which the information contained in the stimulus favours (or hinders) the identification of the theme or message being communicated. The second one, expectancy, refers to the degree to which an item or information falls into a predetermined schema or structure evoked by the theme.

As authors have extensively defined the term congruence, although the main core points to a similar direction, it is not hard to find a definition for incongruence. Incongruence is namely the opposite of congruence. The term congruence is reserved for the description of compatible and complementary. This leads to the logical explanation of incoherent goals for the term incongruence. According to Lee and Schumann (2004), incongruity in advertising is a mismatch between a stimulus element (e.g. product, brand endorser, music or any other execution element in an ad) and the existing schema that one holds about the advertising stimulus. Lane (2000) focussed on incongruence, or the degree to which a brand extension is deemed surprising or unexpected, thereby being in line with the dimension of Heckler & Childers (1992). She also used the term fit in the sense of consistent leading to inconsistency or unrelatedness as a term used for incongruity.

In this thesis the term incongruity will be adopted from Lee and Schumann (2004). As the focus will be on incongruent background music this results in the following definition: incongruity in advertising is a mismatch between the background music in a TV advertisement of a particular product category and the existing schema that one holds about background music in TV advertisements of that product category.

3. Theoretical framework

A plethora of studies have been conducted with respect to incongruency. A theory that is developed from those studies is the schema theory. Several authors have examined and reported about it. Schema theory is in fact one of the cornerstones of social research. A schema is a knowledge structure or the semantic network structure regarding an object (Bobrow & Norman, 1975), which serves as a frame of reference in forming judgements (Osgood & Tannenbaum, 1955). It organizes past experience: structuring our experience and being structured by it. Schemas are representations of experience that guide both actions, perception, and thought (Mandler, 1982). They can be compared with a knowledge database. When the portrayal of the object does not match the configuration of the activated schema, because incongruent information is not represented by one's schema, schema incongruity may take place. The level or intensity of the incongruity is decided by the degree of match (or mismatch) between the representation of an object and the related schema (Meyers-Levy & Tybout, 1989; Peracchio & Tybout, 1996).

According to Mandler (1982), schema incongruity is an interruption of expectations and predictions. Such interruptions may cause autonomic nervous system (ANS) activity. ANS activity in turn determines the intensity of emotion or affect. The more intense the ANS arousal the more intense the experienced emotion (affect) will be. Arousal refers to a state of emotional, intellectual, and physical activity. The degree of ANS arousal depends on how much of an incongruity exists between what is encountered and what was expected.

3.1 Ad schema

The schema theory can also be applied to advertising. All individuals hold an ad schema, which reflects knowledge about advertising in a product category (Goodstein, 1993), i.e., individuals compare an ad to other ads in the same product category. Advertising knowledge is involved if consumers relate advertising to expectations concerning executional style (how a message is communicated) (Goodstein, 1993) or typical ad content (Olney, Holbrook & Batra, 1991). Belonging to the ad schema concept is the term ad evaluation. In general terms ad evaluation is conceptualized as a global evaluation of a specific execution. By MacKenzie & Lutz (1989) it is defined as “*a predisposition to respond in a favourable or unfavourable manner to a particular advertising stimulus during a particular exposure occasion*”.

When incongruity with the ad schema is concerned individuals will respond to the fact

that the execution is unexpected. Goodstein (1993) and Olney et al. (1991) show in their experiments that incongruity is described with adjectives like unique, typical, and different. These adjectives are quite similar to the expectancy dimension of Heckler and Childers' (1992) framework. Heckler and Childers (1992) proposed a two-dimensional conceptualisation of incongruity: expectancy and relevancy. Expectancy refers to the degree to which a piece of information falls into some predetermined pattern or structure evoked by an ad. Relevancy refers to the degree to which a piece of information contributes to the identification of the primary message communicated by the ad. Relevant components contain information useful to support the ad theme, while irrelevant ones do not. Unexpectancy is related to the concept of novelty, while expectancy relates to the usual.

3.2 Musical attention-gaining value

An ad that contrasts with its environment stimulates attention (Juntunen, 1995). This incongruity with the ad schema can be achieved by means of music. Hecker (1984) suggests that music “augments words, colours pictures, and adds a form of energy available through no other source”. It has a so called “attention-gaining value”, which refers to the activation or arousal potential of musical sound (Kroeber-Riel, 1979). It's ability to engage a listener's attention can stem from objective traits, such as speed and loudness, or subjective traits, such as suprisingness and have interestingness (Berlyne, 1974).

It is said by Ochsner (2000) that as affective stimuli (like music) capture attention, this might lead to speeded processing and/or increased rehearsal. Individuals detect emotional stimuli more rapid and more precise compared to neutral stimuli. This may lead to increased distinctiveness or add additional retrieval cues during encoding and, hence, support recall. In this thesis recall equals the also used term brand recall. In this perspective recall reflects how much is learned and remembered from an ad (Singh, Rothschild, & Churchill, 1988).

Contradictive to Ochsner's (2000) concept is Kroeber-Riel's (1979) intensity perspective, which suggests that intensity (activation of arousal, which results in a strong emotional feeling) narrows attention to the stimuli responsible for the emotional experience, thereby facilitating encoding and subsequent recall of these relevant stimuli. In case of incongruent music, the attention is drawn to the music stimuli thereby inhibiting brand recall.

As music can be described as being complementary to other ad cues, its fit is defined as consumer's subjective perceptions of the music's relevance (one of the dimensions of Heckler and Childers, 1992) or appropriateness to the central ad message. A lack of fit can be perceived by noting the impressions obtained from the tone of the music versus the visuals

and message in the ad, so music in advertising is considered incongruent when it evokes another meaning than the other ad elements (e.g. the visuals) (Hung, 2000). Adopted from Mandler's (1982) theory of incongruity (see also figure 4) incongruent music can be divided into mild incongruent and severe incongruent, which relates to the amount of arousal a musical piece elicits (i.e. the degree of evoking another meaning than the other ad elements). Mild incongruent music elicits a moderate amount of arousal whereas severe incongruent music leads to a high amount of arousal. Congruent music on the contrary prompts no arousal.

3.3 Optimal arousal

When individuals perceive a lack of fit (in an ad) they often find it interesting and it at least attracts their attention. In general, for individuals the common sense notion of interestingness seems to involve events that are at least slightly incongruous. Information that is incongruent with an existing schema is likely to provide high sensory stimulation (Mowen, 1998) and energy arousal (Thayer, 1978) because it often contains novelty, discrepancy and contradictions with conventional knowledge. Things are usually interesting or curiosity arousing because they deviate from the usual and the expected.

Events that are interesting may or may not be positively valued, though slight discrepancies that are easily assimilated are usually positively valued. Rauterberg (1994) states that investigators of novelty assume, that living systems (like mammals, especially humans) are motivated by an information seeking behaviour. In situations, which are characterized by sensory deprivation (the deliberate reduction or removal of any sensory impulses), humans are intrinsically looking for stimulation. They increase the complexity of the context or the perception of it. On the other side, humans try to avoid situations with a high amount of stimulation, dissonance, or stress. Rauterberg (1994) developed a model concerning this behaviour. He stated that if the complexity of the mental model (how you perceive an event) is less complex than the complexity of the context (how it really is), then humans try to optimise this positive incongruity. Seeking and explorative behaviour starts, when the positive incongruity sinks below an individual threshold or changes to negative incongruity (when the complexity of the context is less complex than the complexity of the mental model - deprivation). Behaviour of avoidance can be observed, when the positive incongruity exceeds an individual threshold (dissonance, stimulation overflow). See figure 1 for the visual reproduction of the difference between internal and external complexity:

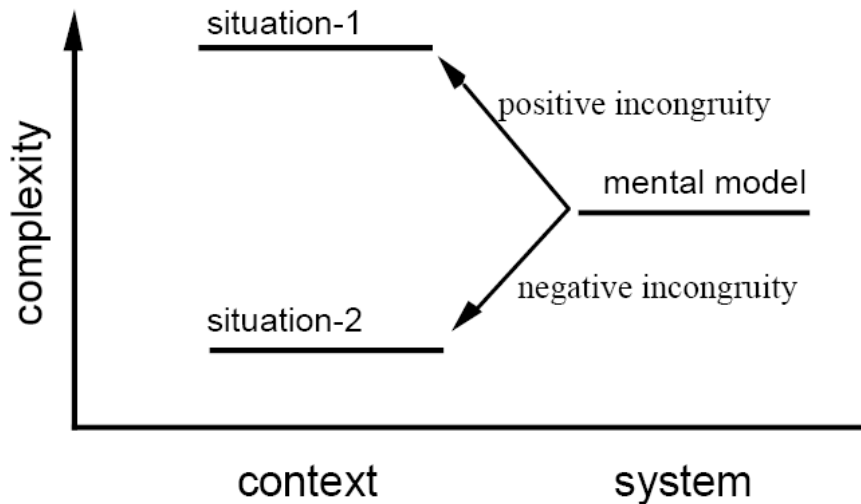


Figure 1. The difference between the complexity of the mental model (internal) and the complexity of the context (external).

When being faced with incongruity in their ad schema individuals tend to react as described by Rauterberg (1994). The studies of Olney et al. (1991) and Heckler and Childers (1992) support this. They suggest that the relation between incongruity and favourability of the ad evaluation is probably best to be described by an inverted U-shaped curve. See figure 2 for the visual reproduction.

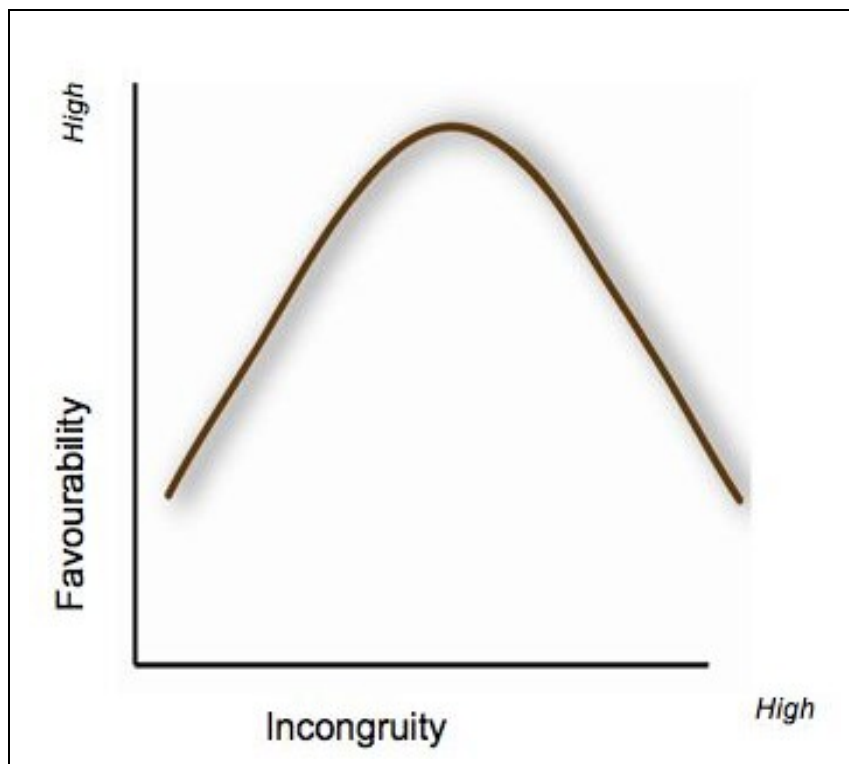


Figure 2. Relationship between incongruity and ad favourability

Olney et al. (1991) imply, which can also be drawn from the visual reproduction, that a moderate amount of unexpectedness is perceived as interesting and therefore evaluated more favourable than lower or higher levels of unexpectedness. This is also in line with Mandler's (1982) hypothesis. He states that mild incongruity can be resolved through assimilation (which will be discussed later on) and consequently the arousal results in favourable evaluations. Hence, individuals interpret arousal from incongruity with the ad schema as a favourable advertising experience as long as the unexpected ad does not involve to extreme levels of arousal. Mayer (1986) agrees by stating that when viewers are in an unpleasant state they experience decreased motivation. Berlyne (1971) developed a theory involving the optimal arousal: the optimal arousal theory. In short, this theory assumes that stimuli that are moderately novel, surprising, or complex will be preferred over stimuli that offer too much or too little novelty.

As stated by the theory all people:

1. feel good when arousal is at a moderate level. Too high (severe incongruity) or too low (congruity) arousal is experienced as unpleasant.
2. Seek pleasure and avoid displeasure.

The arousal theory states that we are driven to maintain a certain level of arousal in order to feel comfortable.

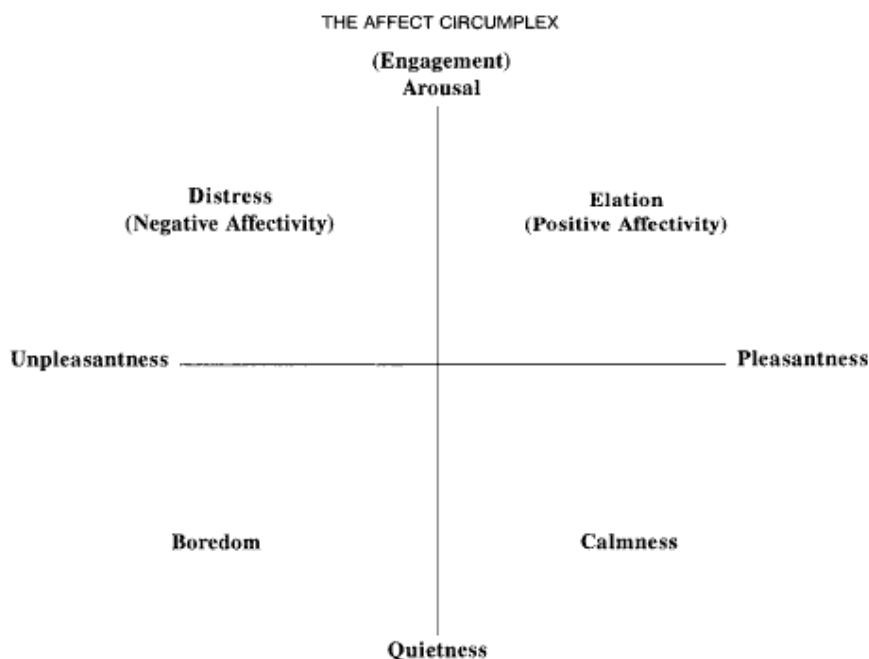


Figure 3. The affect circumplex

The affect circumplex of Russel (1980) backs up these statements by showing that only when an individual is pleasantly aroused, the affect will be positive. See figure 3.

The concept of arousal has been examined in connection with various variables such as the likeability of an item, the processing of an item, and the subsequent recognition or recall of an item. Concerning evaluation of an object the optimal arousal theory (Berlyne, 1971) states that only moderate amounts of arousal can enhance likeability or favourability of the item connected to the arousal. Too extreme levels of arousal are perceived as negative.

On the other hand, with regard to recall, arousal has been proven to be effective in high intensity as well. Pavelchack, Antil & Munch (1988) found that recall relates to arousal much more strongly than pleasure. Moreover, Bradley, Greenwald, Petry & Lang (1992) found that arousal is the only salient dimension underlying memory performance. They also discovered that not only moderate amounts of arousal have positive effects. In a recall task, they noticed that highly arousing pictures were better recalled than low arousing pictures. Zillmann (1983) proves that this is only true up to a certain point. He argues that when people are highly aroused they experience a cognitive impairment. After exposure to a stimulus that evokes arousal a period of impaired acquisition of information will occur. The more aroused and the more persistent the arousal the longer it takes to recover from that impairment and be able to process. In the context of advertising this means that individuals will not be able to process an ad accurately in which a high amount of arousal exists.

3.4 Processing incongruity

When individuals are being confronted with different levels of incongruity (i.e. low or high levels of arousal) they undergo different types of internal processes to resolve the tension caused by the incongruity. According to Mandler (1982) the amount of lack of fit with the activated schema is likely to determine whether individuals will employ an assimilation-, an alternative schema-, or an accommodation process (see figure 4).

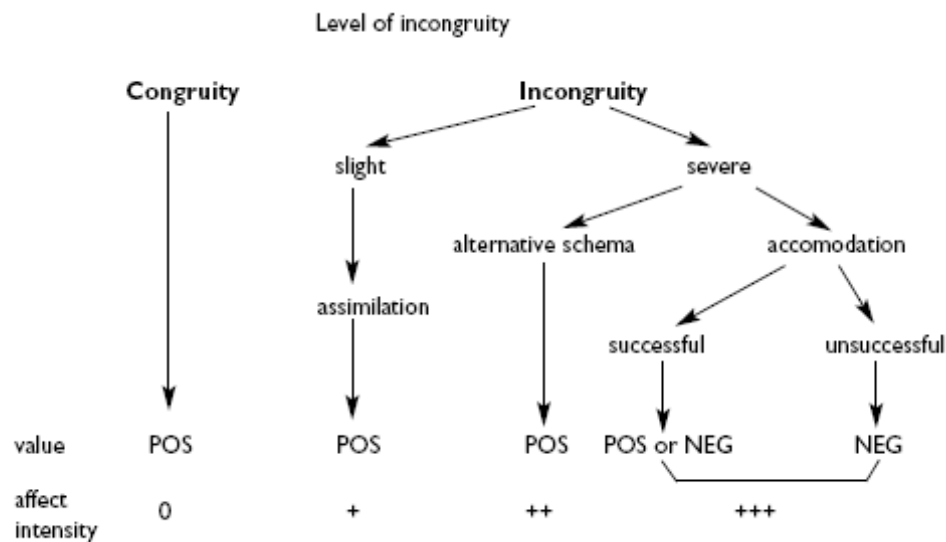


Figure 4. The schema theory of incongruity

Assimilation refers to the placement of incongruent information into existing schema. This type of processing is likely to happen when the level of incongruity is relatively mild and the incongruity can be easily incorporated into the existing schema. When individuals realize that it is relatively easy to solve a problem, this may elicit positive feelings toward the slight incongruity.

Alternative schema refers to using other schemas in order to resolve incongruities. In this way, information from the existing schema will be recalled and transferred in a new way as a result of a productive thinking process. Transferring prior knowledge into a new schema does not necessarily involve changes in current schema structures. In place of this, the active internal process uses other existing schemas to resolve the current incongruity. For instance, when individuals encounter a fruit-juice-tasting drink and are told it is a new sugar free soft drink, they may think, 'it is not really a softdrink, it tastes more of a fruit juice'. In this way, existing schemas and individual knowledge are used to facilitate judgements.

When individuals are faced with severe incongruity, they have to participate in an effortful cognitive process to be able to render incongruent information or reorganize their current schema structure. If they cannot use or transfer prior knowledge from an existing schema, as they do in assimilation or alternative schema, they need to set up a completely new schema.

This type of processing is called *accommodation*. This process demands much more cognitive effort and cognitive resources. In reaction to severe incongruity individuals might restructure their knowledge schema or build a new associative link between existing schemas that were not yet connected (Tesser & Leone, 1977). One means of setting up a new sub-node

within existing schemas is called 'subtyping'. It refers to the process of filtering out incongruity and encoding it as a special case, resulting in subcategories within a schema (Taylor & Crocker, 1981).

However, when the incongruity is too severe to be assimilated into existing schemas, one might need a completely new schema that may negate the already existing schemas in order to accommodate and hopefully resolve such severe incongruities (Mandler, 1982). This internal process is likely to be only useful for those individuals high in need for cognition because a high capability and motivation to process and categorize the incongruity is needed. Those low in need for cognition lack either the motivation or the capacity to comprehend on the incongruity. Individuals who are said to be high in need for cognition can be compared to high-involved consumers because their behaviour is similar. They are likely to organize, elaborate on, and evaluate the information they are exposed to. Individuals high in need for cognition should prefer a complex to a simple task. Those low in need for cognition can be compared to low-involved consumers. They are likely to respond to peripheral cues associated with a task and they should prefer a simple task to a complex one (Cacioppo & Petty, 1982; Petty & Cacioppo, 1986).

Accommodation can result into two types: successful accommodation and unsuccessful accommodation. Once the severe incongruity has been successfully accommodated, the affective response will likely be positive since individuals have succeeded in resolving the tension caused by the incongruity. Although the severe incongruity may first have been perceived as negative, once people successfully resolved the tension, their attitude toward the incongruity will likely be changed in a positive direction. The opposite is true for unsuccessful accommodation.

3.5 Processing musical incongruity

The above explained processes are also applicable to musical incongruity (i.e. music does not fit with the ad). The same as with information incongruity, incongruent music needs to be placed under a schema. As ads with incongruent music don't fit with the existing ad schema, individuals need to collaborate on the musical incongruity in order to resolve the tension caused by the misfit between music and ad. Mild incongruent music in an ad will most likely lead to assimilation and will therefore elicit positive evaluation. For severe incongruent music the individual either needs to set up an alternative schema or accommodate, which will result in a positive evaluation when the arousal has been resolved. However, when the music incongruity cannot be placed under an alternate schema or accommodated

successfully, arousal still exists. This eventually leads to a negative ad evaluation., because the still existing severe incongruity (i.e. a discomfortable high amount of arousal) is associated with the ad.

Hence, the concept of positive or negative evaluation depends on the resolve of the musical incongruity (arousal). The emotions after being able (relief and satisfaction) or unable (discomfort) to resolve the incongruity, will determine the evaluation of the ad.

3.6 Cognitive abilities to process incongruity

The processing of musical incongruity involves different amounts of incongruity and therefore employ different cognitive abilities. Lee & Schuman (2004) conceptualised that processing incongruities can vary from minimal (ignoring incongruity) processing, relatively low effort (peripheral) processing, to relatively high effort (central) processing.

Ignoring incongruity. Brobow & Norman (1975) suggest that when individuals select which information they attend to and process they realize their cognitive abilities and their existing schema guides the selection process. That is, individuals tend to make quick judgements when an item is congruent with their expectation (Peracchio & Tybout, 1996) or typical of a category. When individuals encounter information that is too incongruent with their schema they may choose not to engage in processing it because of the disturbance it causes in their cognitive system (Festinger, 1957). The individuals who do so are those low in need for cognition (Petty & Ciacoppo, 1982). They do not have the cognitive capacity to resolve a high amount of arousal and will therefore likely try to avoid the discomfort of the arousal. This ignorance will presumably happen when exposed to severe incongruity.

Peripheral processing of incongruity. Sometimes, individuals may not have the motivation and/or the ability to process information in an extensive way. These individuals are considered to be low in their need for cognition. When these individuals process, they may selectively attend to cues within the message environment. Often, contextual cues that are easily understood are used to form an attitude (Petty & Ciacoppo, 1986). This low effort processing is only possible when individuals are being confronted with congruity or mild incongruity.

Central processing of incongruity. When individuals are fully motivated to process incongruity, they will invest substantial processing effort and will be more likely to analyse the information that is presented in for instance an ad in a more systematic way. However, individuals do not only need to have the motivation, the ability to process incongruity is also of substantial importance. In adopting a systematic strategy in order to find

crucial information, they spend significant cognitive resources. These individuals who do so are said to be high in their need for cognition (Petty & Cacioppo, 1986).

3.7 Use of incongruity

Hence, it can be concluded that processing and resolving incongruity requires ability to use the existing schemas and transfer new knowledge to fill the gap in logic. When individuals are in high need for cognition they are motivated to process information via the central route (Petty & Cacioppo, 1986). Therefore it is expected that they will process incongruity in the same manner.

Individuals low in need for cognition generally do not engage in deep processing unless required. This may result in peripheral processing or even in ignoring the incongruity as predicted by Festinger (1957). However, incongruity, in its successful operation, can help motivate these individuals to pay attention and process incongruity in a more deliberate manner. In other words individuals that are low in need for cognition are stimulated by the incongruity to process it in a more central way (Petty & Cacioppo, 1986)

This shift of processing was revealed in a study regarding incongruent advertising of Loefer & Verlegh (2002). It presented that the incongruity with the ad schema changed the focus of information processing, which was indicated by the number of incongruity-related thoughts. The increased number of thoughts showed that the focus changed to central processing. This means, that individuals will engage in more extensive information processing.

Kroeber-Riel's intensity perspective (1979) also proposes that high levels of arousal (e.g. incongruity) lead to less peripheral processing. This proposition is backed up with results from MacKenzie & Lutz (1989) too. Initially a consumer is devoting little cognitive capacity to the advertisement stimulus (Lutz, 1985). Because the desire to process ad information does not exist, little cognitions are generated regarding the specific characteristics of the advertisement. However, MacKenzie & Lutz (1989) put forward that with attentive and effortful advertising stimuli (e.g. music) motivation can be stimulated and ad execution involvement is said to be "high". This high involvement can be expected to result in the allocation of more cognitive resources and more thinking (i.e. a growth of positive or negative cognitions). This could result in higher recall and in case of successful resolution to a more positive ad evaluation. Important to note however is that this is only the case with mild incongruent information as it can be assimilated relatively easily.

Generally, researchers do not have an overall consensus about the use of incongruity (e.g. incongruent music). Although they all state that incongruity by its attention-gaining

merit makes an ad stand out of the crowd, they have found different results regarding the use of incongruity in ads.

3.7.1 Indications of negative use of incongruity

On the one hand, researchers including Macinnis & Park (1991) found that with individuals low in need for cognition the incongruity created more negative and fewer positive emotions towards the ad. As with individuals with high need for cognition they found that the greater the incongruity, the more negative consumer's responses to the ad are. This in correspondence with the increasing difficulty of resolving the arousal caused by the incongruity. Lack of fit however created more negative emotions for low- than high need for cognition individuals, logically explained by the cognitive abilities spent on resolve of the incongruity.

3.7.2 Indications of positive use of incongruity

On the other hand, there are also results pointing to the advantage of using incongruity. Empirical evidence suggests that individuals presented with incongruity are more likely to engage in detailed processing than they are with congruity and may even respond positively to the incongruity (e.g. Baker & Petty, 1994; Meyers-Levy & Tybout, 1989; Sujan, 1985). Some researchers have found that incongruent information catches attention (Lynch & Srull, 1982), and is also recalled better than congruent expected information (Srull, 1981). Besides, Goodstein (1993) and Olney et al. (1991) have found that consumers watch ads with an unique execution longer than standard ads. Lee & Mason (1999) found in their experiment that the unexpected-relevant condition produced more favourable ad evaluation over the expected-relevant condition. The findings of Loef & Verlegh (2002) also show that the incongruity with the ad schema causes arousal, which resulted in relatively positive ad evaluations.

And Hastie (1981) suggested that while processing incongruity the average number of associative paths is greater than the number produced when processing congruity. As the number of associative paths is positively related to the chance of retrieving an item, the successful placement of the incongruity within a schema will result in greater memory for incongruity. However, he connects a condition to it. According to him this will only be the case when individuals are able to process the incongruity centrally and furthermore they need to make conscious attempts to resolve the tension. Thus, when speaking in terms of need for cognition only those high in need for cognition will show increased memory performance.

4. Research question and hypothesis

This chapter first states the research question and then gives the hypothesis formulated to test this question.

As a result the theoretical framework shows that researchers disagree about the effect of incongruity (e.g. incongruent music) in advertising. In order to give a clearer view of the effect, particularly on the important items brand recall and ad evaluation, the following research question is formulated:

What is the effect of incongruent background music in a low– and high need for cognition group on brand recall and ad evaluation?

For the research question to be answered a high- and a low need for cognition group will be created. Of these two groups the effect of incongruent background music on brand recall and ad evaluation will be compared.

An interaction effect of need for cognition and background music on brand recall and ad evaluation is expected. This leads to the following hypothesis:

Hypothesis: There is an interaction effect of need for cognition and background music on brand recall and ad evaluation

As different effects of background music in both need for cognition groups are expected, this hypothesis will be divided into two sections.

The high need for cognition group spends significant cognitive resources, thereby facilitating memory retrieval. Also they are motivated and able to process a high amount of arousal, which results in positive emotions. As the amount of arousal relates to the intensity of the affect, this leads to the first section of the hypothesis:

a. In the high need for cognition group severe incongruent background music will have the most positive effect on brand recall and ad evaluation followed by mild incongruent background music while congruent background music has the least positive effect

Individuals low in need for cognition are not motivated or able to process too high amounts of arousal, leading to ignoring or misinterpreting information or negative affect towards the incongruent stimulus. However, when the arousal does not involve too extreme levels they are stimulated to process incongruity by its attention-gaining value, leading to the second section of the hypothesis:

b. In the low need for cognition group mild incongruent background music will have the most positive effect on brand recall and ad evaluation followed by congruent background music while severe incongruent background music has the least positive effect

5. Research design

This chapter explains the design of the study in two parts. The first one specifies the pretest and the second one presents the main study.

5.1 Pretest

5.1.1 Respondents

The respondents for this pretest have been asked to fill out the short online survey to establish the fit of a musical piece with the ad.

In total 20 respondents did fill out the questionnaire. Of them 7 (35%) were man and 13 (65%) were woman. Their mean age is 23.7 years (SD: 3.25) with a range from 20 till 34.

35% of the respondents had the dutch nationality, 50% the german nationality and 15% had an other nationality.

5.1.2 Procedure/Material

The respondents were asked to answer some demographic questions and on a 6-point scale they indicated the degree of musical fit (very bad fit-very good fit) with a video. This video came from the German non-profit organisation Diakonie and its content showed an advertisement against child prostitution. The video was shown 7 times, each time with different music. These music pieces included:

Jens Lekman – Friday night at the drive in bingo

Iron & Wine – Jezebel

Mika – Lollipop

Jimmy eat world – Pain

Sunset rubdown – The mending of the gown

Piano music by an unknown interpret – White lake

Patrick Wolf – The magic position

Total misfit (severe incongruent music) was regarded when the mean of the video was between 1 and 2, the music in the video was considered mild incongruent when the mean was between 3 and 4, and the music in the video was congruent when the mean was between 5 and 6. In conformity with these conditions 3 music pieces were selected. Mika – Lollipop was selected to be the severe incongruent music piece with a mean of 1.65 (SD: 1.09), Iron & Wine – Jezebel was picked to be the mild incongruent piece and had a mean of 4.15 (SD:

0.93) and the piano music piece White Lake was shown to be the most congruent music piece with a mean of 5.40 (SD: 1.14). See also table 1.

Table 1

Means of the background music

Background music	μ	SD
Severe incongruent	1.65	1.09
Mild incongruent	4.15	0.93
Congruent	5.40	1.14

5.2 Main study

5.2.1 Respondents

The respondents of this research have been asked by email to fill out the online survey. In total 166 respondents did fill out the questionnaire. Of them 75 (45.2%) were man and 91 (54.8%) were woman. Their mean age is 22.8 years (SD: 3.10) with a range from 18 till 35.

They came from different educational institutions, 72 (43.4%) are student at an university of professional education, 91 (54.8%) are student at an university and 3 (1.8%) are studying at an other educational level. 76.5 % of the respondents had the dutch nationality and 23.5% had an other nationality (of which 14.5% german, and 9% other).

5.2.2 Procedure/Material

To conduct the research a 2 (need for cognition: high vs. low) x 4 (music congruency: severe incongruent vs. mild incongruent vs. congruent vs. no music) experimental between subjects design was set up. All respondents did fill out the demographic questions. Then the survey software randomly assigned a respondent to one of the four conditions. Three conditions were the actual test conditions and the fourth was a control group. All respondents were shown the same video from the german non-profit organisation Diakonie. However, in the test conditions different sorts of music were played (i.e. severe incongruent, mild incongruent, and congruent music), while the control group contained no music. The no music group is included in the design because next to examining the effect of incongruent background music on ad evaluation and brand recall with help of the hypothesis, for the purpose of interest additional analysis has focussed on whether (incongruent) background music has a beneficial effect on ad evaluation and brand recall compared to no music.

The respondents were divided equally over the groups (41 respondents each for the

severe incongruent music and the control group and 42 respondents each for the mild incongruent music and congruent music group).

High and low need for cognition was established by a standardized 18-item need for cognition scale.

The total questionnaire contained 80 statements, where the respondents partly needed to state on a 7-point Likert scale whether they totally disagreed-totally agreed to a statement and partly needed to select from 7-point semantic differential items.

5.2.3 Variables

Independent variables:

Need for cognition

The need for cognition (low or high) was determined by a standardized 18-item need for cognition scale. Statements included “thinking is not exactly my hobby” and “I prefer complicated above simple problems”, and the respondents reported their agreement (I totally disagree-I totally agree) on a 7-point Likert scale. See appendix A.

Total range of scores could lay between 18 and 126. After ranking, the number of respondents was divided by a median split. This means that the upper half of the respondents (those with the lowest value) were appointed to the low need for cognition group, the other half to the high need for cognition group.

Congruency of the music

The outcomes of the pretest resulted in three different music pieces, that is severe incongruent music, mild incongruent music, and congruent music. As a control group a no music group was created. This no music control group is used to emphasize the effect of the background music.

For the background music existing songs from different interprets were used. As the message of the video is rather sad, the severe incongruent music was very happy, the mild incongruent music was moderate happy, and the congruent music piece was moderate sad. As a result of this, the severe incongruent and the mild incongruent music did not fit (at all) and the congruent music did fit well.

Dependent variables:

Ad evaluation

After seeing the video with the corresponding music questions regarding ad evaluation were shown. Concerning the music in the video the respondents expressed on 7-point semantic differentials the degree of expectancy (expected-unexpected), the degree of relevancy (relevant-irrelevant), and the degree of novelty (novel-outdated). Also, they stated on a 7-point Likert scale, ranging from “I totally disagree” to “I totally agree”, how much they liked the music. These questions were asked as a check-up to elaborate on eventual dislikeability of the music which could result in minimizing or interfering with the effect of the (in)congruency.

To evaluate the ad 56 items were selected from Russell and Mehrabian's (1977) list with 151 emotion-denoting terms on 7-point semantic differential-type scales. These items were chosen on basis of their ability to best evaluate the ad considering its theme. These items include amongst others ‘powerfull-powerless’, ‘disgusting-attractive’, ‘important-unimportant’, and ‘aroused-calm’. This high number of items was chosen in order to be able to diminish those that scored low on the internal reliability test. However, the internal reliability of these items was high with a Cronbach's alpha of 0.82. Therefore all these items were combined into one variable named Adevaluation.

Brand recall

At the end of the video the name of the organisation (Diakonie) was visible. Respondents were asked at the end of the questionnaire if they remembered the organisation. They had the opportunity to state no or yes. Stating no was coded as no brand recall. However, when they stated yes they needed to write down which name they remembered. Their answer resulted in either an accurate reproduction (i.e. exactly writing down Diakonie), an almost accurate reproduction (e.g. Diakonie but with a missing vowel or double consonants) or a wrong reproduction (i.e. writing down another name). Brand recall was measured by coding the no brand recall and wrong reproduction as 0, the almost accurate reproduction as 1, and the accurate reproduction as 2.

6. Results

This chapter will describe the results of the study in four parts. The first part will give some manipulation checks on the background music variable to ensure that the manipulation succeeded as expected. The second part tests the hypothesis of this study in order to obtain an insight into the effect of need for cognition and background music on ad evaluation and brand recall. The third part will give additional analysis of the no music variable in order to have more insight into the effect of background music, and the fourth part will present the conclusions.

6.1 Manipulation checks

To start with, some analyses are made to certify that the background music variable that is used in the study corresponds with the requirements needed to test the hypothesis accurately. This means that a statistical test will show if the music that is selected to be severe incongruent, mild incongruent, and congruent, is indeed experienced as such. Also the likeability of the background music will be tested to avoid that musical likeability will distort the ad evaluation.

Although pretesting selected three musical pieces, to make certain that the background music that was used in the survey was indeed experienced as severe incongruent, mild incongruent and congruent in the survey three extra questions concerning the music in the ad were asked. The respondents needed to determine on a 7-point scale whether the music in the ad was expected-unexpected, relevant-irrelevant, and novel-outdated, the first two extracted from Heckler and Childer's (1992) framework. For all questions an ANOVA was run and when applicable a post hoc test was performed.

The ANOVA for the "*expected-unexpected*" question shows a statistical significant difference of the background music on the expectancy or unexpectancy of the music ($F(123)=63.86$, $p=0.00$). A post hoc test (Tukey) shows that the congruent background music falls in subset 1 and relates the most to the concept expectancy ($\mu=2.73$, $SD=1.23$), mild incongruent background music falls in subset 2 and has the tendency to be not remarkably expected or unexpected ($\mu=3.78$, $SD=1.53$) while severe incongruent background music falls in subset 3 and strongly relates to the concept of unexpectancy ($\mu=5.98$, $SD=1.24$).

The ANOVA for the “*relevant-irrelevant*” question shows a statistical significant difference of the background music on the relevancy or irrelevancy of the music ($F(123)=8.10$, $p=0.00$). Tukey’s post hoc test shows that the congruent background music ($\mu=2.46$, $SD=1.23$) and the mild incongruent background music ($\mu=3.12$, $SD=1.69$) fall in subset 1 while severe incongruent background music ($\mu=4.00$, $SD=2.15$) falls in subset 2, thereby indicating that congruent- and mild incongruent background music have the tendency to be appointed more to the concept of relevancy and severe incongruent background music is appointed more to the irrelevancy concept.

The ANOVA for the “*novel-outdated*” question appears to show that there is only a slight statistically significant difference of the background music on the novelty or being out of date of the music ($F(123)=3.10$, $p=0.049$). A post hoc test (Tukey) shows that severe incongruent background music is proven to be the most novel ($\mu=2.81$, $SD=1.63$), followed by mild incongruent- ($\mu=3.49$, $SD=1.47$) and congruent background music ($\mu=3.51$, $SD=1.27$), however they all fall in subset 1.

Thus, these figures make clear that the background music that is used in the survey is indeed experienced as assumed.

To diminish the possibility that the likeability of the background music would distort the ad evaluation, the survey contained the question “*I did like the music*”. Of this question an univariate GLM was run. In the high need for cognition group, mild incongruent background music has the highest mean ($\mu=5.11$, $SD=1.76$), followed by congruent- ($\mu=4.76$, $SD=1.60$) and severe incongruent background music ($\mu=4.14$, $SD=1.91$). In the low need for cognition group, congruent background music has the highest mean ($\mu=4.67$, $SD=1.31$), followed by mild incongruent- ($\mu=4.18$, $SD=1.92$) and severe incongruent background music ($\mu=3.67$, $SD=2.48$). However, the statistical test ($F(5)=1.57$, $p=0.18$) expresses that both need for cognition and background music do not reach a statistically significant effect, due to the minor differences of these means. This signifies that it can be assumed that the means for both need for cognition groups and for the background music groups do not differ significantly, thus the background music was liked equally.

6.2 Hypothesis testing

Table 2 gives the means of ad evaluation and brand recall with different background music in the low or high need for cognition group. The means of the no music control group are included, because in additional analysis (paragraph 6.3) these will give more insight into the effect of background music.

Table 2

Means of ad evaluation and brand recall with different background music in high and low need for cognition

Dependent variable	Need for cognition	Background music	μ	SD
Ad evaluation	High	Severe incongruent	3.55	0.41
		Mild incongruent	3.71	0.39
		Congruent	3.70	0.36
		No music	3.68	0.31
		Total	3.66* ¹	0.36
	Low	Severe incongruent	3.98	0.54
		Mild incongruent	3.75	0.35
		Congruent	3.62	0.34
		No music	3.71	0.38
		Total	3.76* ¹	0.43
Brand recall	High	Severe incongruent	0.48	0.81
		Mild incongruent	0.63	0.90
		Congruent	0.41	0.80
		No music	0.36	0.76
		Total	0.46* ²	0.80
	Low	Severe incongruent	0.14	0.48
		Mild incongruent	0.50	0.80
		Congruent	0.17	0.48
		No music	0.24	0.66
		Total	0.26* ²	0.62

*¹: significant at a $p < 0.10$ ($p = 0.09$, $F = 2.91$)

*²: significant at a $p < 0.10$ ($p = 0.07$, $F = 3.27$)

These means express that on a $p < 0.10$ value a potential main effect of need for cognition on

brand recall and ad evaluation can be found. As the means also give an indication for an interaction effect, an univariate GLM will be conducted to see if such an effect exists.

Table 3

Univariate GLM: interaction effect on ad evaluation

Source	F	Sig
Background music * Need for cognition	3.49	0.02

The univariate GLM in table 3 expresses that on a $p < 0.05$ value an interaction effect of need for cognition and background music on ad evaluation can be found as well. To expand on the found effects, further analysis will be carried out. We will start with the interaction effect of need for cognition and background music on ad evaluation, proceed with the potential main effect of need for cognition on ad evaluation and end with the possible main effect of need for cognition on brand recall.

Interaction effect of need for cognition and background music on ad evaluation

Table 3 shows that on a $p < 0.05$ value there is an interaction effect of need for cognition and background music on ad evaluation. To further elaborate on this finding a MANOVA test has been carried out to examine the nature of the group differences. As the F-value is statistically significant the MANOVA test will find a canonical correlation. This correlation is useful for finding the linear combination of variables that produces the largest correlation with the second set of variables.

In table 4 the relevant figures from the MANOVA test for need for cognition within background music and in table 5 for background music within need for cognition can be found.

Table 4

MANOVA: Need for cognition within background music

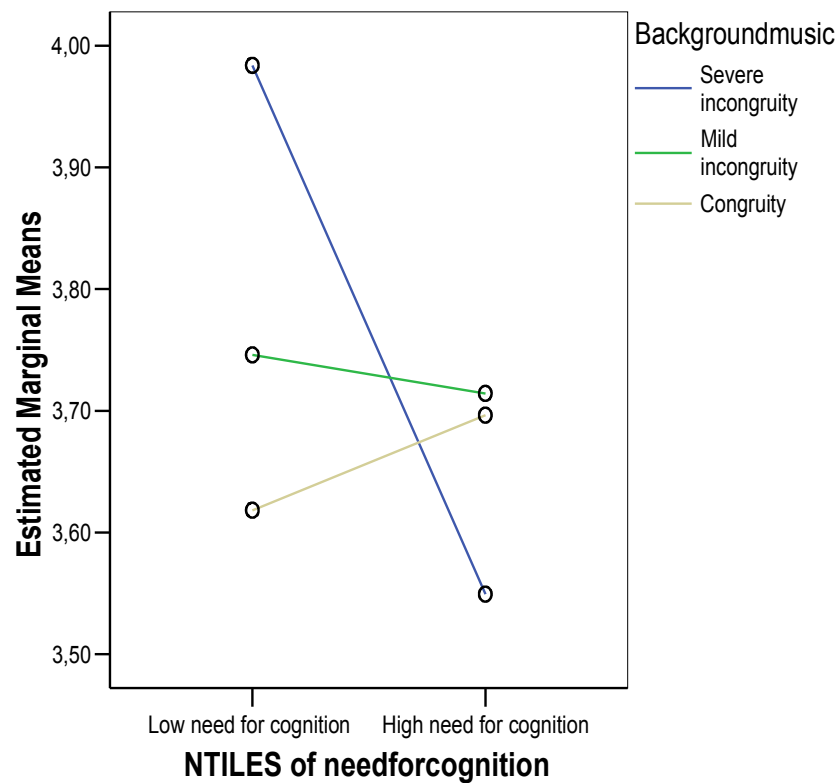
Source of variation	F	Sig of F
Need for cognition within severe incongruent background music	13.13	0.00
Need for cognition within mild incongruent background music	0.08	0.78
Need for cognition within congruent background music	0.63	0.43

Table 5

MANOVA: Background music within need for cognition

Source of variation	F	Sig of F
Background music within low need for cognition	3.45	0.02
Background music within high need for cognition	0.81	0.49

As tables 4 and 5 show, there is a significant effect in the severe background music group and also a significant result in the low need for cognition group. This means that there is an interaction between the severe incongruent background music and the low need for cognition group on ad evaluation. To visualize this interaction a graph of the interaction effect is plotted (graph 1).



Graph 1. The interaction effect of severe incongruent background music and low need for cognition on the means of ad evaluation.

Hence, individuals low in need for cognition score the highest on the ad evaluation variable when the ad is accompanied with severe incongruent background music ($\mu=3.98$, $SD=0.54$).

Mild incongruent background music shows to have the second best mean ($\mu=3.75$, $SD=0.35$) followed by congruent background music ($\mu=3.62$, $SD=0.34$). These findings are also statistically significant ($F(67)=4.33$, $p=0.02$).

In the high need for cognition group the mild incongruent background music tends to show the most positive effect on ad evaluation ($\mu=3.71$, $SD=0.39$) compared to congruent ($\mu=3.70$, $SD=0.36$), and severe incongruent background music ($\mu=3.55$, $SD=0.41$), however not statistically significant ($F(57)=1.10$, $p=0.34$) most likely due to the minor differences of the means.

Main effect of need for cognition on ad evaluation

Because the results give a tendency of the effect of need for cognition on ad evaluation we will now expand upon this finding.

An independent t-test ($t(164)=1.71$, $p=0.09$) shows that on a $p<0.10$ value low need for cognition tends to have a more positive effect on ad evaluation ($\mu=3.76$, $SD=0.43$) than high need for cognition ($\mu=3.66$, $SD=0.36$). See also table 6.

Table 6

Means of ad evaluation in high- and low need for cognition group

Need for cognition	μ	SD
High	3.66	0.36
Low	3.76	0.43

It is interesting to emphasize that there exists an interaction effect of need for cognition and background music and a tendency of a main effect of need for cognition on ad evaluation. The interaction effect however is with $p=0.02$ statistically significant and therefore more reliable than the main effect with $p=0.09$, which is a possible trend.

It can be seen in table 2 that the means of ad evaluation with different background music differ from the means of ad evaluation without taking background music into consideration. For example, the mean of ad evaluation with severe incongruent background music in low need for cognition is higher ($\mu=3.98$) than the mean of ad evaluation in low need for cognition without taking background music into consideration ($\mu=3.76$), whereas the mean of

ad evaluation with congruent background music in low need for cognition is estimated lower ($\mu=3.62$). Thus, the existence of background music in a need for cognition group can result in either a positive or negative effect on ad evaluation, depending on the background music.

Main effect of need for cognition on brand recall

Since the means in table 2 show the tendency for a main effect of need for cognition on brand recall we will give details about this result.

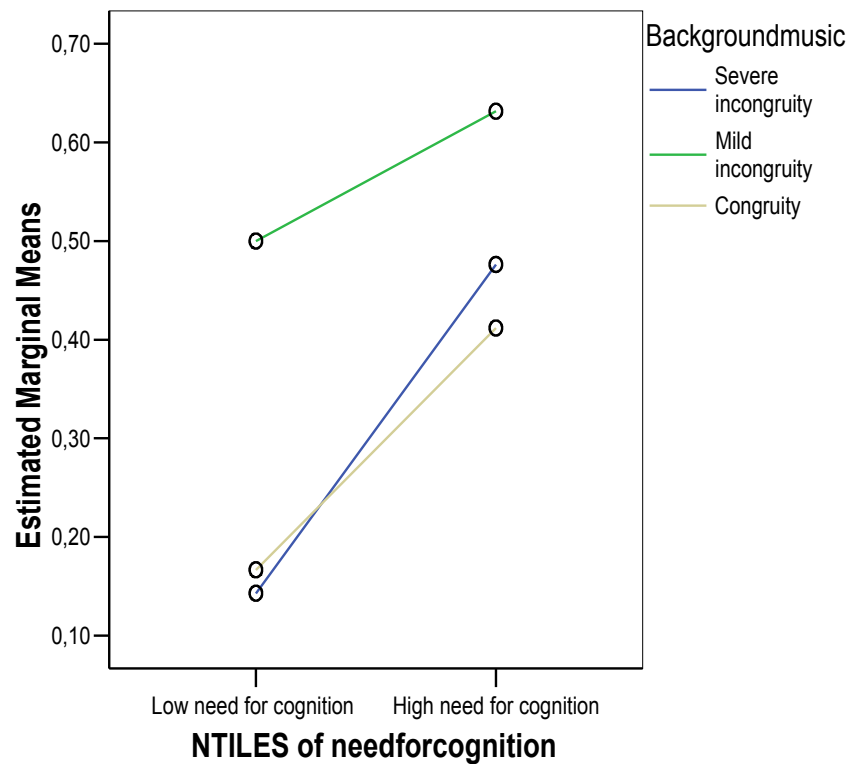
The possible main effect of need for cognition on brand recall can be derived from the figures presented in table 7. It shows that low need for cognition tends to affect brand recall ($\mu=0.26$, $SD=0.62$) negatively while high need for cognition tends to have a positive effect on brand recall ($\mu=0.46$, $SD=0.80$). As this finding is only significant at a $p<0.10$ value ($t(164)=-1.81$, $p=0.07$), the main effect is said to be a trend.

Table 7

Means of brand recall in high- and low need for cognition group

Need for cognition	μ	SD
High	0.46	0.80
Low	0.26	0.62

Neither the effect of background music on brand recall reaches a statistical significance ($F(2)=1.87$, $p=0.16$) nor does there exist a statistically significant interaction effect of background music and need for cognition on brand recall ($F(2)=0.20$, $p=0.82$), for the purpose of interest graph 3 gives the outline of the means of brand recall of the different types of background music. It shows that in both cognition groups (i.e. high and low need for cognition) mild incongruent background music is apt to have the most positive effect on brand recall. The next best option varies depending on the need for cognition group.



Graph 3. The effect of background music on the means of brand recall in the high- and low need for cognition group.

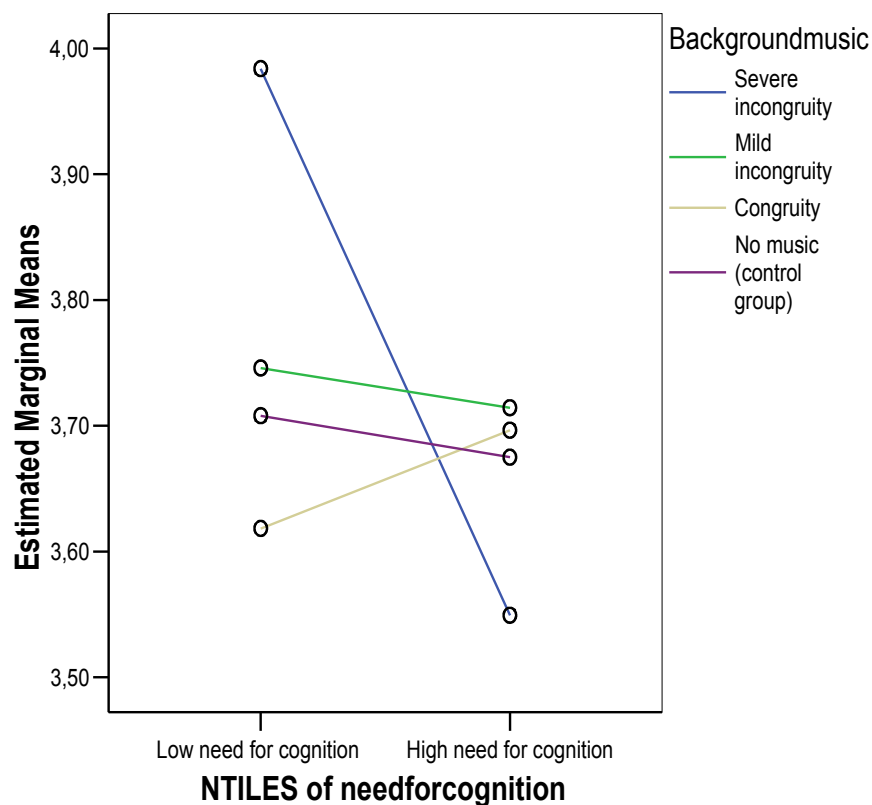
6.3 Additional analysis

The means of ad evaluation and brand recall of the background music will be compared with the means of ad evaluation and brand recall of the no music control group. This is to emphasize the effect of background music.

A statistical test ($F(3)=3.12$, $p=0.03$) shows that in low need for cognition the mean of ad evaluation with severe incongruent background music is $\mu=3.98$, mild incongruent background music has a mean of $\mu=3.76$, the mean of congruent background music is estimated at $\mu=3.62$. The no music control group has a mean of $\mu=3.71$.

Visible here is that the no music control group has a more positive effect on ad evaluation than the congruent background music, which can be seen at graph 4 also. Regarding ad evaluation, this points towards a preference of no music in an ad over congruent background music.

Graph 4 shows that in high need for cognition the mean of ad evaluation with severe incongruent background music is estimated at $\mu=3.55$, mild incongruent background music has a mean of $\mu=3.71$, the mean of congruent background music is estimated at $\mu=3.70$. The no music control group has a mean of $\mu=3.68$. Unfortunately, these results are not statistically significant ($F(3)=0.89$, $p=0.47$). Nevertheless, noticeable here is that the no music control group has a tendency to show better ad evaluation than severe incongruent background music, possibly aiming towards a preference of no music over severe incongruent background music in an ad.



Graph 4. The effect of background music on the means of ad evaluation compared to no music.

This means that depending on the need for cognition group in which an ad is evaluated, specific background music may cause a negative effect on ad evaluation compared to no music.

In the low need for cognition group the mean of brand recall with severe incongruent background music is $\mu=0.14$, mild incongruent background music has a mean of $\mu=0.50$, and the mean of congruent background music is estimated at $\mu=0.17$. The no music control group has a mean of $\mu=0.24$. Alas, these results are not statistically significant ($F(3)=1.55$, $p=0.21$). However, noticeable here is that the no music control group tends to show better brand recall than severe incongruent- and congruent background music, most likely aiming towards a preference of no music over severe incongruent- and congruent background music in an ad.

In high need for cognition group the mean of brand recall with severe incongruent background music is estimated at $\mu=0.48$, mild incongruent background music has a mean of $\mu=0.63$, the mean of congruent background music is estimated at $\mu=0.41$. The no music control group has a mean of $\mu=0.36$. These figures are provided by a statistical test ($F(3)=0.43$, $p=0.73$) and are shown to be not statistically significant. Nonetheless, visible here is that the no music control group does not tend to have a more positive effect on ad evaluation than any of the background music. Regarding brand recall, this tend to point towards a preference of background music in an ad over no music.

This means that depending on the need for cognition group in which brand recall is measured, specific background music may cause a negative effect on brand recall compared to no music.

6.4 Conclusions

The main purpose of the study is to answer the following research question:

What is the effect of incongruent background music in a low– and high need for cognition group on brand recall and ad evaluation?

This research question will be answered with help of the hypothesis, so in order to give a correct answer first the hypothesis will be examined.

To reject or accept the hypothesis “*there is an interaction effect of need for cognition and background music on brand recall and ad evaluation*” the previous analyses of the results will be used to accept or reject the sections a “*in the high need for cognition group severe incongruent background music will have the most positive effect on brand recall and*

ad evaluation followed by mild incongruent background music while congruent background music has the least positive effect” and b “in the low need for cognition group mild incongruent background music will have the most positive effect on brand recall and ad evaluation followed by congruent background music while severe incongruent background music has the least positive effect”.

In the high need for cognition group the hypothesis predicts that severe incongruent background music will have the most positive effect on both brand recall and ad evaluation, followed by mild incongruent background music while congruent background music would have the least positive effect. This prediction turned out to be incorrect. For the high need for cognition group there turned out to be no statistically significant effects of background music on ad evaluation, due to minor differences of the means. Nevertheless the results tend to give the direction of the effect of the background music. The overall mean of ad evaluation in the high need for cognition group is estimated at $\mu=3.66$. As severe incongruent background music fails ($\mu=3.55$) to reach a higher mean, it can be concluded that the background music in high need for cognition that have a more positive effect on ad evaluation appear to be mild incongruent- ($\mu=3.71$) and congruent background music ($\mu=3.70$).

The results have a tendency to express the advantage of mild incongruent background music with regard to brand recall. It is assumed to have the most positive effect on the mean of brand recall ($\mu=0.63$) followed by severe incongruent- ($\mu=0.48$), and congruent background music ($\mu=0.41$). Alas these results did not demonstrate a statistically significant effect.

Therefore, section a of the hypothesis needs to be rejected. The results fail to present a statistically significant effect of the background music in high need for cognition due to minor differences of the means. Besides, the sequence of the background music does not represent the one predicted by section a of the hypothesis.

In the low need for cognition group the hypothesis predicts that mild incongruent background music would have the most positive effect on ad evaluation and brand recall followed by congruent background music while severe incongruent background music would have the least positive effect. This prediction has shown to be incorrect. The results demonstrate that in the low need for cognition group severe incongruent background music has the most positive effect on ad evaluation ($\mu=3.98$) resulting in a higher mean of ad

evaluation. Mild incongruent background music turns out to be second best after that ($\mu=3.75$), followed by congruent background music ($\mu=3.62$). This sequence however is different from the sequence predicted by section b of the hypothesis. It is also interesting to emphasize that both an interaction effect of background music and need for cognition and a potential main effect of need for cognition on ad evaluation exist. The overall mean of ad evaluation in the low need for cognition group is estimated at $\mu=3.76$. As only the severe incongruent background music succeeds to have a higher mean ($\mu=3.98$), it can be concluded that the only background music in low need for cognition that has a positive effect on ad evaluation is severe incongruent background music. The other background music (i.e. mild incongruent, and congruent) fail to reach this level.

The results have a tendency to expect mild incongruent background music to have the greatest positive effect on brand recall ($\mu=0.50$) followed by congruent- ($\mu=0.17$) and severe incongruent background music ($\mu=0.14$), however this effect was not statistically significant. Moreover, the sequence of the background music does not represent the one predicted by section b of the hypothesis. Taking this into consideration, section b of the hypothesis needs to be rejected.

Consequently, on basis of the sections a and b, the hypothesis “*there is an interaction effect of need for cognition and background music on brand recall and ad evaluation*” needs to be rejected. Although an interaction effect of background music and need for cognition has been found, this effect has shown to be different from the predictions made by the sections a and b. Moreover, as some results did not reach statistical significance the hypothesis could not be answered with a certainty that is necessary in statistics.

The results of the study tend to point towards an advantage of using incongruent background music in a low- and high need for cognition group with regard to brand recall and ad evaluation. It can be concluded that in a low need for cognition group severe incongruent background music has the most positive effect on ad evaluation and although not statistically significant mild incongruent background music tends to result in higher brand recall. Remarkably, the no music control group tends to show better ad evaluation than the congruent background music. This may aim towards a preference of no music over congruent background music in an ad. Also, the no music control group tends to show better brand recall than severe incongruent- and congruent background music, most likely aiming towards a preference of no music over severe incongruent- and congruent background music in an ad.

The effect of incongruent background music in a high need for cognition group is neglectable, as the means of ad evaluation and brand recall are almost equal. Mild incongruent background music however tends to be the most affecting with regard to ad evaluation and brand recall, however not statistically significant. It is noticeable that the no music group inclines to have a more positive effect on ad evaluation than the severe incongruent background music.

Regarding ad evaluation, this could point towards a preference of no music in an ad over severe incongruent background music. Regarding brand recall, the no music control group does not tend to have a more positive effect on ad evaluation than any of the background music, pointing towards a potential preference of background music in an ad over no music.

Hence, the results, some statistically significant some a tendency, show that compared to congruent background music (and in one event no music) in both high- and low need for cognition severe incongruent- and mild incongruent background music are apt to have the greatest effect on brand recall and ad evaluation, which results in higher brand recall and higher ad evaluation.

7. Discussion

This chapter is divided into three parts. The first part explains the results with help of the theoretical framework. The second part presents the limitations of this study and finally recommendations for further research are given.

7.1 Literature review

With help of the literature theoretical support will be provided in order to get insight into the results of the current study.

The accepted view in research is that individuals low in need for cognition do not engage in deep (i.e. central) processing unless required. In case of incongruity, this may result in peripheral processing or even ignoring it. However, incongruity may stimulate the individuals low in need for cognition to process it in a more central way, hence in this study transfer the incongruent background music in a new schema or restructure an existing schema (e.g. Petty&Cacioppo, 1986). Nevertheless they prefer stimuli that can be easily assimilated (i.e. mild incongruent- and congruent background music).

In this study however, in the low need for cognition group severe incongruent background music has the most positive effect on ad evaluation while congruent background music has the least positive effect. To try to explain this result Mandler's (1982) theory of incongruity and the attention-gaining value of incongruent background music will be used. Although Mandler (1982) states that individuals low in need for cognition when confronted with severe incongruent background music will likely avoid this incongruity due to inability or no motivation to process it, when they are able to resolve the incongruity this will most likely result in very strong positive affect. Since severe incongruent background music in this ad is unexpected, incongruity with the ad schema occurs. This incongruity needs to be structured. By the attention-gaining merit of the severe incongruent background music the individuals low in need for cognition are attracted to the ad and their motivation is stimulated.. This results in more deliberate processing of the incongruity (i.e. central processing). The individuals in the low need for cognition group most likely succeeded in their attempt to resolve the severe incongruity, which led to a strong positive affect (i.e. high ad evaluation). With congruent background music, Mandler (1982) proposes that although

congruent background music has a positive value there is no strong affect (i.e. no high ad evaluation).

Mild incongruent background music was found to most likely lead to higher brand recall whereas severe incongruent background music may have the least positive effect. Concerning brand recall the literature gives some “starting points” to explain this effect. It was said by Ochsner (2000) that music captures attention. According to him this leads to additional retrieval cues during encoding and therefore support brand recall. Also the concept of arousal relates to memory performance. Arousal leads to a shift of peripheral processing to central processing. However, when the arousal is too extreme this may lead to cognitive impairment as said by Zillmann (1983). It is assumed that the mild incongruent background music in this design relates to moderate arousal, however this is not certain. Nonetheless, it is expected that the mild incongruent background music possibly benefitted from moderate arousal, which enhances brand recall whereas the severe incongruent background music by its assumed extreme arousal inhibited brand recall as the cognitive capacities of the individuals were appointed to resolving the incongruity.

The accepted view in research is that individuals high in need for cognition are able and motivated to process information centrally and are therefore well-equipped to resolve severe incongruity by setting up a new schema or restructuring an existing schema.

In this study however, in the high need for cognition group mild incongruent background music was apt to have the most positive effect on ad evaluation while severe incongruent background music has the least positive effect. It is stated by several researchers (e.g. Mayer, 1986; Berlyne, 1971; Zillmann, 1983) that moderate amounts of arousal are preferred. Mild incongruent background music can be easily assimilated, which results in a positive affect hence a positive ad evaluation (Mandler, 1982). However, as individuals high in need for cognition are generally able and motivated to resolve extreme amounts of arousal, which we here assume to be connected to severe incongruity, it is striking that severe incongruent background music proves to have the least positive effect. Using Mandler’s (1982) theory of incongruity it can be said that possibly the individuals high in need for cognition did not succeed in resolving the severe incongruity either due to a lack of motivation or the inability to do so, leading to a strong negative affect.

For brand recall it was found that mild incongruent background music tends to have the most positive effect while congruent background music has the least positive effect.

According to some researchers arousal relates to memory performance, because it stimulates the shift of processing from peripheral to central (e.g. Loef & Verlegh, 2002; Srull, 1981). The average number of associative paths is greater when processing incongruity. The condition for this is that individuals need to make conscious attempts to process the incongruity and resolve the tension (Hastie, 1981), however the individuals high in need for cognition are motivated and able to do so. Therefore mild incongruent as well as severe incongruent background music inclines to lead to higher brand recall. Congruent background music however does not stimulate as much as mild- and severe incongruent background music. So, although congruent background music stimulates brand recall, this effect appears less strong than with mild- and severe incongruent background music.

7.2 Limitations of the study

Initially, the fact that all participants were students could indicate a limitation of the study and also a concern regarding the generalization of the results. Nevertheless, the participants were tested to determine their need for cognition. Based on this, the participants were not treated as students anymore but as individuals with a high or low need for cognition. As a conclusion, the results may be valid for the overall population with a high level of education.

The first limitation of the study is caused by the different structure of the background music. Where the music for mild incongruent- and severe incongruent background music is more uptempo and more in the direction of pop music, the congruent background music is a slow piano music piece in the direction of classical music. This structure may have led to a shift in the results or may have caused unexpected effects.

Second, the video used in this design did not represent a product or service, but tried to draw attention to the child prostitution problematic and stimulate donation. Another effect of incongruent background music may be found with an ad representing a product or service.

Third, measurement of brand recall in this design is limited. Its measurement should include knowledge about whether respondents processed the incongruity centrally or peripherally as brand recall is supposed to differ between these two processing strategies.

Fourth, arousal has not been measured. In this design it is assumed that the degree of

incongruent background music relates to the degree of arousal, however due to a lack of certainty the results could not be explained accurately. Therefore, the results may likely have been the result of another factor instead.

The above mentioned limitations may have produced the non-significant values of some results. This resulted in the inability of answering the hypothesis and research question completely.

7.3 Recommendations for further research

In order to have a wider applicability of these results, it is recommended that further research will be carried out with individuals with a lower level of education. It may bring a different insight into the effects of incongruent background music as it might be that these effects will turn out to be very strong for those individuals with a lower educational level.

It might be beneficial to increase the number of participants as well. Although this study had an overall 166 participants, this number became spread when they were classified into low- and high need for cognition. Also they were appointed to a background music group leading to a relatively small group size. Consequently, during analysis of the data, it appeared that there were some differences between groups but they were not statistically significant. Perhaps these differences would have been statistically significant if the sample would be larger.

To see maximum effect of incongruent background music in an ad it is recommended that the structure of the music pieces is similar. This can be achieved by for example self-composing the musical pieces or structure-analysis of musical pieces.

Further research could focus on a similar ad used in this study (i.e. an ad that draws attention to a problem and that stimulates to donate, e.g. a greenpeace ad, an ad of Unicef) but with a larger sample size. This may lead to stronger effects of incongruent background music. An extension of this study can also be found in using ads that represent a product or service. The effect of incongruent background music may be stronger when connected with an ad with a different goal (i.e. “selling” a product or service).

Given that brand recall differs with central- or peripheral processing, to explore the effect of incongruent background music on brand recall more extensively, it is recommended that further research focusses on whether the incongruity (i.e. incongruent background music) is processed centrally or peripherally. This can be achieved by asking respondents about the ad theme.

In this design it is assumed that arousal is the factor that influences brand recall and ad evaluation. However, as arousal has not been measured it could not be indicated with certitude to be the factor affecting the results. For this reason, future research should focus on arousal in order to provide extra insight into the results.

Finally, extra attention can be paid to the unexpected positive effect of severe incongruent background music on ad evaluation in the low need for cognition group. In-depth extension of this part may lead to a bigger understanding about this effect. Also, further research may shine a light on whether this effect is also visible with other ads.

Overall, this study has shown that mild incongruent- and severe incongruent background music have the possibility to positively affect ad evaluation and brand recall. Further research needs to find out whether there are more advantages of using incongruent background music.

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Appendices

Appendix A. Validated need for cognition 18 item scale

APPENDIX A

Validated need for cognition 18 item scale

	totally disagree				totally agree	
1. I enjoy a task where I need to find new solutions for problems	1	2	3	4	5	6
2. I like being responsible for taking care of situations where I need to think a lot	1	2	3	4	5	6
3. Thinking is not really my hobby	1	2	3	4	5	6
4. I rather do something where I don't need to think much instead of doing something where I need to think a lot	1	2	3	4	5	6
5. I rather think of small daily things instead of long term things	1	2	3	4	5	6
6. I rather do things I know well and where I don't need to think too much	1	2	3	4	5	6
7. I favor complicated problems instead of simple problems	1	2	3	4	5	6
8. I try to avoid situations where I might have to think deeply	1	2	3	4	5	6
9. It brings me satisfaction when I need to think long and thorough	1	2	3	4	5	6
10. I only think as much as needed	1	2	3	4	5	6
11. I like the idea of reaching the top by relying on my intellect	1	2	3	4	5	6
12. I don't feel enthusiastic about learning new ways to think about things	1	2	3	4	5	6
13. In daily life I like being confronted by problems for that I have to find new solutions	1	2	3	4	5	6
14. The idea of thinking abstractly is attractive to me	1	2	3	4	5	6

15. I prefer an intellectual, difficult, and important task above a task that is important but doesn't cost too much thinking	1	2	3	4	5	6
16. I rather feel relieved than satisfied after completing a task that cost much effort	1	2	3	4	5	6
17. Prominent is that something works, I don't care about why and how it works	1	2	3	4	5	6
18. I always think about things, also when they don't concern me personally	1	2	3	4	5	6