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Sounds Vague! The Influence of Omnidirectional Speakers and Background Music on Consumers' Preference for Construal Level Related Products

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Sounds Vague! The Influence of Omnidirectional Speakers and Background Music on Consumers' Preference for Construal Level Related Products

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Abstract

This study investigated the effects of omnidirectional sound and background music on people's preference for construal level related products. Sound emitted from an omnidirectional speaker, which was assumed to be difficult to localize, was compared to sound emitted from a conventional speaker while either background music (no audible singer) or foreground music (singer's voice audible) was being played. In a subsequent analysis, participants' preferences for products of two categories were examined. Within each category participants could choose between a product which displayed aspects associated with desirability (high construal level) and one which displayed aspects associated with feasibility (low construal level). Results suggest that omnidirectional sound enhances preference for desirable products while conventional sound enhances preference for feasible products. No such effect was observable with regard to the kind of music played. The results add to the evidence that atmospheric cues such as sound can alter people's construal level. The findings are discussed in the light of previous research regarding Construal Level Theory which showed that the amount of knowledge a person has about an object or event influences his or her construal level (Henderson & Wakslak, 2010). In this study, it is the lack of knowledge about the omnidirectional sound's source which is held responsible for increasing participants' construal level.

Keywords: Construal Level Theory, atmospheric cues, omnidirectional sound, background music

Sounds Vague!

Whenever a soccer match takes place in the stadium of the German Premier League Soccer Team FC Bayern Munich the teams are greeted with infernal music the moment they enter the field. Presumably it is FC Bayern Munich's intention to intimidate the guest team with the music (and judging by their success they must be doing something right); however, the attention of the audience in the stadium it is not only captured by the characteristic of the music, such as the tone and the melody, but also by the quality of the sound in that the sound seems to be omnidirectional and impossible to pin down to a specific place of origin. Could it be that sound which is difficult to localize is perceived as more abstract? And may this in turn alter the way people construe information, making them take greater risks and leading them to prefer desirability to feasibility? Will teams competing in FC Bayern Munich's stadium therefore take greater risks and play in a handsome yet possibly inefficient way?

Construal Level Theory

In this study we aim to demonstrate that the amount of information carried in a piece of music can influence people's preference for construal level related products. Precisely we expect pieces of music which carry abundant information to increase the preference for products displaying aspects related to feasibility (low construal level products), while we expect pieces of music which carry only a limited amount of information to increase the preference for products displaying aspects related to desirability (high construal level products).

Construal Level Theory (CLT) states that depending on the situation, people use different degrees of abstraction to construe information. A high level of mental construal differs in a number of aspects from a low level of mental construal. During a high level of construal, amongst other things, people tend to think in broader terms (Trope & Liberman,

2010), focus more on long-term goals (Fujita, Trope, Liberman, & Levin-Sagi, 2006) and pay higher attention to aspects of desirability (McCrea, Wieber, & Myers, 2012); during a low level of construal people tend to think in narrower terms, focus on immediate goals and pay higher attention to aspects of feasibility. One way to think to describe the difference in the level of construal is that people on a high construal level see the forest, while those on a low construal level see only the trees (Förster & Becker, 2012).

Past research has shown that the degree of abstraction with which people construe their environment can be manipulated by a variety of factors. Numerous studies performed on CLT have identified different dimensions of distances which determine a person's level of construal. Some of these distances are physical dimensions, such as spatial and temporal distance, whereas others are non-physical such as social distance (Liberman, Trope, & Wakslak, 2007). Liberman and Trope (1998) showed that as the temporal distance increases, so does the construal level. Using Vallacher and Wegner's (1989) levels of personal agency questionnaire, they asked participants to assign activities, for example "making a list", to one of two different categories. In this case "getting organized" was considered the high construal level category and "writing things down" the low construal level category. Participants were either assigned to a far future condition, in which they were told that the activities listed would occur "sometime next year" or to a near future condition, in which the activities were to occur "tomorrow". Participants in the far future condition were more likely to assign the activity to the high construal level category, whereas participants in the near future condition were more likely to assign the activity to the low construal level category. In another experiment, an increase in relative physical distance was found to result in an increases in the construal level (Williams & Bargh, 2008). In the experiment, participants were either assigned to a far distance group or a near distance group. Those in the far distance condition were asked to mark off two crosses far apart from each other on a Cartesian coordinate plane,

those in the near distance condition were asked to mark off two crosses close to each other. Thereafter, the participants had to read an embarrassing story and indicate how much they liked it. The results showed that participants who marked off two crosses far away from each other liked the story more than those, who marked off the two crosses close to each other. Activating spatial distance thus makes embarrassment easier for an individual to bear, because she or he feels somewhat removed from the discomfort- or embarrassment-inducing situation. Manipulating the closeness of an imagined relationship between participants and their family doctor tested the effect of social distance (Liberman & Förster, 2009). The construal level was assessed using Navon's task (Navon, 1977) which reveals whether participants pay closer attention to relational aspects, that is a high level of construal, or to particular aspects of an object, that is a low level of construal. The results showed that when closeness was high and distance low, participants processed information in a more concrete way; when closeness was low and distance high, participants processed information more abstractly.

It is believed that there is a bidirectional connection between distance and the level of construal. Several researchers argue that it is the differences in the quality and quantity regarding the available information a person has about proximal and distant objects or events that explain the link between distance and construal level: Some researchers, for example Trope and Liberman (2010), base their arguments on qualitative differences in the information available since detailed and specific information tends to be available on proximal objects or events and more general and unspecific information on distant objects or events. Henderson and Wakslak (2010), on the other hand, argue that there are quantitative differences in the available information since more information tends to be available on proximal and less information on distant objects or events. Henderson and Wakslak (2010) argue that since people tend to have less knowledge on hand about distant issues, such as

cities on a different continent or events in the future, it is adaptive to think about those topics in broader and more generalized terms (Henderson & Wakslak, 2010). It is noteworthy that it is not the distance itself that influences people's construal level but rather the discrepancy in knowledge about distant and proximal objects and events that is responsible for the differences in people's construal level. It should be noted in this context that following the notion that a picture is worth a thousand words Amit, Algom and Trope (2009) showed that it is easier for people to use pictures as a source of information regarding proximal objects and easier to use words as a source of information regarding distant objects. It appears that the abundance of information contained in a picture is more relevant for proximal objects while the lack of specific information a word provides is more relevant for distant objects.

Consequently, there are different lines of research showing that people's level of construal can be manipulated by concepts other than distance as well. Several studies showed that participants' construal level can be altered by inducing different mindsets, unconnected to distance. In one study (McCrea et al., 2012), using a task adopted from Freitas, Gollwitzer and Trope (2004), the researchers induced an abstract mindset (high construal level) in one group of participants by asking them to think of "why" they would pursue a goal, and a concrete mindset (low construal level) in another group by asking them to think of "how" they would pursue a goal. In a subsequent task participants had to rate people who put in an application for an open position regarding a number of traits. Results showed that participants in the abstract mindset condition processed information more broadly and therefore relied more strongly on stereotypes when thinking of others than those in the concrete mindset condition, who processed information in narrower terms (McCrea et al., 2012). In another study, depending on the induced mindset, participants were either more susceptible to bodily cues (concrete mindset) or less so (abstract mindset) while performing a task in which they were asked to assess the length of a hallway (Maglio & Trope, 2012). These findings show

that it is possible to influence a person's construal level without priming any form of distance.

Furthermore, the findings of another study give reason to believe that it is possible to alter people's construal level using seemingly subtle atmospheric cues. In their study, Meyers-Levy and Zhu (2007) demonstrated that the ceiling height of the laboratory the study was conducted in was able to influence participants' construal level. When conducting the study in a laboratory with a high ceiling, participants displayed a higher construal level than when conducting the study in a laboratory with a low ceiling.

While there has been research showing that depending on temporal distance, participants listening to a poem paid closer attention to the whole of a poem (high temporal distance) or to its details (low temporal distance) (Förster & Becker, 2012), to our knowledge there has been no research showing that sound and/ or music itself can influence the preference for different aspects related to construal level, such as the preference for desirability (high construal level) and feasibility (low construal level).

Desirability versus Feasibility

High level and low level of construal differ in that they give emphasis to different aspects of desirability and feasibility. During a high level of construal aspects related to an object's desirability become more pronounced, while during a low level of construal aspects related to an object's feasibility become more pronounced (Liberman & Trope, 1998). In one study Sagristano, Trope and Liberman (2002) told participants that they could participate in a game of chance either at the end of the experiment (near-future condition) or after two months (distant condition). In the subsequent task participants were asked to indicate how desirable they found different games of chance to be. The results showed that in the distant condition participants preferred games of chance with a high payoff but a low probability of

winning, whereas participants who were assigned to the near-future condition preferred games of chance with low payoffs but a high probability of winning. The researchers argue that desirability is more important for people when a high level of construal is induced, making potential payoffs more important than the probability and that aspects associated with feasibility are more important when a low level of construal is induced, making the probability more important than the potential payoffs. The desirability of an object relates to the value of its outcome while the feasibility of an object relates to the difficulty of reaching this outcome (Sagristano et al., 2002).

One way to think of the differences between desirability and feasibility is to think of "why" versus "how" one should participate in an action (Vallacher & Wegner, 1987). When you ask a person why he or she is participating in an action, this person will tend to think about aspects related to the desirability of the outcome of this action; when you ask a person how he or she is planning to reach the intended outcome, this person will tend to think about aspects related to the feasibility of the outcome, that is how difficult it is to reach and about the necessary steps to reach this outcome. Similarly, when you ask a person, why he or she is playing a game of chance, he or she will most likely think about the potential payoff. When, on the other hand, you ask this person, how he or she wants to go about it to succeed in the game of chance, he or she will think about the odds, because they are crucial for winning in a game of chance.

Moreover, the time perspective differs when thinking about an object's desirability versus feasibility (Liberman & Trope, 1998). When thinking about aspects related to an object's desirability the time perspective is rather long because an intended outcome usually stands at the end of an action. When thinking about aspects related to an object's feasibility, on the other hand, the time perspective is rather short, because the necessary steps to achieve the intended outcome need to be taken at every stage of the action, including the beginning.

The fact that distant events are more salient when a high construal level is induced and that proximal events are more salient when a low construal level is induced explains the relatedness of high construal level and desirability on the one hand and low construal level and feasibility on the other hand (Liberman & Trope, 1998).

Desirability and feasibility are concepts which are of great importance in the context of consumerism in general. Most people will agree that there are certain products which are highly desirable, for example a sports car, and others which show aspects related to feasibility, for example a van. Knowledge whether in a certain situation aspects related to desirability or feasibility are likely to be viewed more favorably is therefore important both from a theoretical and practical point of view.

CLT in the Consumer Context

Research linking CLT to consumer behavior in the laboratory as well as in real life situations has been conducted in recent years. Leiser, Azar and Hadar (2008), for example, argued that increasing a person's level of construal will increase the probability of her or him committing to a savings plan for retirement, because a high construal level is associated with long term goals. A low construal level on the other hand, is associated with immediate goals, thus making it less attractive to save for the future. The preference for long term benefits instead of instant gratification during a high level of construal has also been demonstrated empirically (Fujita et al., 2006). Another study (Yan & Sengupta, 2011) revealed that participants paid closer attention to a product price when a high construal level was induced, while they paid closer attention to product specific attributes when a low construal level was induced. The researchers argue that a product price is an abstract piece of information which is rendered more relevant when a high construal level is induced. When, on the other hand, a low construal level is induced, detailed product specific attributes become more relevant.

Consumers are confronted with music in almost all stores, supermarkets and department stores they visit. Although numerous scientists have studied the effect of music on consumer behavior it is unclear in which way speakers and music with different characteristics enhance or attenuate the desirability and feasibility of a product.

Sound localization and CLT

Humans use two parameters to localize the source of a sound. One parameter is the difference in time it takes the sound waves to reach both ears. When a sound is produced to the left of a listener's ear, the sound waves reach the left ear slightly before they reach the right ear. The second parameter is the difference in sound amplitudes between the two ears (Pinel, 2007). Sound emitted to the left of a listener's ear has a higher frequency when its waves reach the left ear compared to the right ear because the head functions as a buffer (Wang & Brown, 2006).

Although there are direct and indirect sound waves, it is the direct sound waves that are crucial for the localization of sound. This is attributable to the fact that indirect sound waves are diluted through reverberation and therefore contain less information. When direct sound waves are undetectable, people must merely rely on indirect sound waves which as we conclude, makes it more difficult for people to localize the source of the sound. Moreover, we theorize that the inability to localize sound makes people process information more abstractly because it is rather uncommon for people to not hear direct sound waves, thus creating a feeling of ambiguity. Similar to the lack of knowledge about distant things or events, which increases a person's construal level, there too is less information and thus less knowledge about the source of a sound, when a person has to rely on indirect sound waves. When, on the other hand, a person is able to localize the source of a sound by means of direct sound waves, there is more information available. Consequently, a person has greater

knowledge about the source of a sound. These differences in the quantity of available information carried by the direct and indirect sound waves should lead to differences in a person's construal level: Indirect sound waves, which make the source of a sound difficult to localize, should increase a person's construal level, while direct sound waves which make it easy to localize the source of a sound, should reduce a person's construal level.

The notion that a sound which is difficult to localize should induce a feeling of ambiguity and thus influence the level of construal might seem a bit far fetched; however, consider a similar situation concerning a different sensual modality: Imagine standing in a mirror hall on a fair and seeing another person in the mirrors. Mirror halls usually consist of a large numbers of mirrors, all of which are positioned in different angles, thereby creating optical illusions, for example seeing a person in your proximity in different mirrors, making it impossible to determine where this person really is. Although you do in fact see the actual appearance of the person and are able to describe this person, it is really only the mirrors' reflections you see and you do not know where the actual source of these reflections is. The fact that mirror halls have been an attraction for a long time and attract people to this day makes it seem likely that visual uncertainty is indeed something that is on the one hand uncommon (otherwise it would not be an attraction) and on the other hand seems to amuse visitors, suggesting that sensual uncertainty has an effect on people.

Although we believe that it is indeed the inability to localize sound that alters a person's construal level, we cannot rule out alternative mechanisms a priori. First, it is possible that the inability to localize sound lets the room surrounding a person appear larger and therefore also lets the presumable source of the sound appear farther away. We believe that this could be the case because other rooms in which one is exposed to indirect sound waves are typically large, such as great cathedrals, where the reverberating sound waves create an echo. Thus, one could argue that it is really the perceived distance between the

participant and the sound source which is responsible for the changes in the level of construal.

Second, should a sound source that is difficult to localize really make rooms appear larger, it is possible that the estimation of the room size influences listeners' mood. It should be noted in this context that is has been shown that smaller rooms are considered more pleasant than larger rooms (Tajadura-Jiménez, Larsson, Väljamäe, Västfjäll, & Kleiner, 2010). Furthermore, it is a well established fact that positive mood is associated with a higher level of construal, negative mood with a low level of construal (Eyal & Fishbach, 2010; Huntsinger, Clore, & Bar-Anan, 2010). Therefore, the inability to localize the source of a sound may make a room appear larger, evoking a negative mood, which in turn might reduce the level of construal.

Background and Foreground Music

Although there has been research examining the effect of background music in the context of marketing (Alpert & Alpert, 1990), potential influences on the level of construal have been neglected. According to Zhu and Meyers-Levy (2005), it is possible to distinguish two pathways which explain the effect of music on people. The first is through the characteristics of a piece of music, such as the rhythm, speed, energy, and so forth. This effect is considered context independent. The second pathway through which music affects people is by its referential meaning. Referential meaning describes the associations that are attached to a certain piece of music, such as situations in which one heard the piece of music before. The second pathway is context dependent (Zhu & Meyers-Levy, 2005).

We assume that foreground music, which we define as a piece of music in which an artist's voice is audible, hinders a high construal level because the presence of a voice adds more characteristics to a piece of music and activates more associations, allowing less

interpretation for an individual. In the context of the two pathways mentioned above, foreground music is more concrete because it adds more texture to the music (i.e. the singer's voice; pathway one) and produces more associations (e.g. how one likes an artist; pathway two). While there is more information available about a song when a singer's voice is audible, there is less information, when no voice is audible. These differences in the knowledge a person has about a song should lead to differences in the level of construal, similar to the assumed differences evoked by direct and indirect sound waves.

Overview and Hypotheses

Speakers playing music are widely used in retail situations. Therefore, it is highly interesting to know whether the characteristics of the sound (easy to localize vs. difficult to localize) and of the music (foreground vs. background) have an effect not only on the level of construal but also on the customers' preference for specific products. In our study, sound which we expected to be difficult to localize was played by an omnidirectional speaker - henceforth referred to as omnidirectional sound -, while sound which we expected to be easy to localize was played by a conventional speaker - henceforth referred to as conventional sound. Taking all of the different lines of research into consideration, we conclude that:

> *Hypothesis 1*: Omnidirectional sound increases the preference for products displaying aspects related to desirability and attenuates the preference for products displaying aspects related to feasibility.

> *Hypothesis 2*: Background music increases the preference for products displaying aspects related to desirability and attenuates the preference for products displaying aspects related to feasibility.

Method

Participants and Design

Seventy-nine participants took part in the study (46 women, 33 men; M_{age} = 25.72, SD_{age} = 5.24, range = 20 - 62), 34 of who received course credit for psychology courses at the University of Vienna in exchange for their participation in the study. The remaining 45 participants were either acquaintances or recruited on the campus of the University of Vienna. Fifty-two of the participants were psychology students, 20 were students from other fields of study and seven participants were others. Each participant completed the study individually. The participants were pseudo-randomly assigned to one of four conditions (omnidirectional sound vs. conventional sound x foreground music vs. background music). It is important to note that the condition a participant was assigned to was determined before each session, though without considering who the participant was. Thus, no participant was intentionally assigned to a specific condition. A true randomization was not feasible because the installation and set-up efforts required before each session were extremely time-consuming, making it impossible to conduct the study within a reasonable timeframe. We believe that there was no systematic difference regarding the assignment of participants to the four experimental conditions.

Stimuli and Setting

Laboratory and Speakers. The study took place in a laboratory located in the basement of the Department of Psychology at the University of Vienna. The laboratory had no windows and was well insulated from external sounds. The room was approximately 5.5 m wide and 2.5 m broad. The participants sat in front of a desk which had been placed right in the center of the room. The participants faced the 5.5 m wide wall. On that wall hung a curtain made of card web, which is known not to alter sound waves. The purpose of the

curtain was to conceal potential speakers, without changing the sound. Placed above the curtain were four numbers (*1*,*2*,*3*,*4*), indicating potential locations of a speaker. The numbers 1 and 2 (to the left-hand side of the desk) and the numbers 3 and 4 (to the right-hand side of the desk) were 1 m apart from each other; the numbers 2 and 3 were two m apart from each other. The card web did not fully disguise the potential speakers, therefore two desk lamps were placed at the left and the right corners of the desk at which the participants conducted the experiment. The lamps were tilted in such a way that the illuminated light bulbs faced the participants, partially blinding the participants' view of the part of the wall where the potential speakers were assumed to be located. The card web in combination with the blinding lights allowed no visual hint as to where the actual speaker might be. In both conditions only one speaker was used to play music. Also, in both conditions the respective speaker was placed at location 2. The set-up of the laboratory is shown in the appendices (fig. A and fig. B).

Our study's design required the presence of both a conventional speaker and an omnidirectional speaker which only emits indirect sound waves that are more difficult to localize. We used New Tec's Cono Solo speakers to produce omnidirectional sound. New Tec claim that they developed a technology that radiates only indirect sound waves, making it more difficult to localize the source of the sound. For the control group we used a conventional speaker, Philips SBC 3207. Following New Tec's recommendation the omnidirectional speaker was attached to the wall at a height of 2 m. The omnidirectional speaker was equipped with a membrane at the bottom of the speaker, which radiates sound waves equally in all directions. The conventional speaker, on the other hand, faced the participants directly. Before each trial the volume of the music was calibrated to a volume of 80 dBA. According to one study (Terry, Jones, Davis, & Slater, 1983) a volume of 80 dBA equates to the sound produced by a vacuum cleaner.

Music. To test for differences between foreground and background music, we chose pieces of music which are available with and without a singer's voice. Consequently we chose songs which exist in a regular and in an instrumental version. Furthermore, we exclusively selected songs which were older than 10 years because we wanted to exclude the possibility that songs that were regularly being played in the radio at the time of the study might have an influence on participants' construal level, assuming that participants have more knowledge about current songs. The following four songs, which met these criteria, were selected: *Heart of gold* by Neil Young; *Nessaja* by Peter Maffay; *The Rose* by Bette Midler and *Das ist dein Tag* by Gregor Glanz. The foreground versions of the songs had a combined length of 15 min 4 s, the background versions a combined length of 15 min 41 s. Two of the songs were sung in German, two in English.

Procedure

Upon arrival at the laboratory, the participants were granted anonymity regarding their responses. Furthermore, they were told that the aim of the study was to test the influence of music on behavior.

The study was performed on a laptop placed on a desk in front of them. After completing tasks unrelated to this study, participants were told that music would be played for the remainder of the study. They were then asked to sit back and listen to the music for two minutes in order to ensure that the characteristics of the music and the sound had sufficient time to deploy their effects. After two minutes the experimenter asked participants to continue reading instructions on the laptop. Two tasks then assessed participants' preference for construal level related products. This was accomplished by confronting participants with two scenarios. In both scenarios participants had to decide between one of

two products. One of these products focused on aspects associated with desirability, the other on aspects associated with feasibility.

Apartments. In scenario one, participants were asked to decide between one of two apartments:

> Imagine looking for a new apartment. There are two apartments you are considering. One apartment is very close to your place of work. The other apartment has a pretty view over the city. Which apartment would you choose?

Games of chance. In scenario two participants were asked to decide between one of two games of chance:

> Imagine having the opportunity to participate in a game of chance. There are two games you can choose from. One game has a 70% probability of winning; the potential payoff is 30 Euro. The other game has a 30% probability of winning; the potential payoff is 70 Euro. Which game of chance would you rather participate in?

Participants indicated their preference on a six-point scale (1 = *strong preference for apartment close to work/ game of chance with 70% probability of winning; payoff 30€*. 6 = *strong preference for apartment with a pretty view/ game of chance with 30% probability of winning; payoff 70€*). 1 was analogous to a strong preference for a low construal level related product, 6 to a strong preference for a high construal level related product.

Scenario one was adapted from Liberman et al. (2007) who argued that apartments are classifiable regarding their degree of desirability versus feasibility and that the preference for a desirable apartment should increase when a high construal level is induced, while the

preference for a feasible apartment should increase when a low construal level is induced. In this context research has demonstrated that specific attributes of apartments are indeed classifiable in terms of their desirability and feasibility (Kim, Park, & Wyer Jr., 2009). With respect to our scenario, an apartment with a view over the city can be considered as desirable since a view is nice to have, yet not essential. Therefore, this apartment should be associated with the concept of desirability. An apartment close to work, on the other hand, can be considered as more practical. Therefore, such an apartment should be associated with the concept of feasibility.

The second scenario was adapted from Sagristano et al. (2002) who showed that the payoff at a game of chance is more important when a high construal level is primed, whereas the probability is more important when a low construal level is primed. Although the expectancy value is identical in both games of chance, we expected a high payoff to increase the desirability and a high probability of winning to increase the feasibility of a game of chance. When people play the lottery it is most likely the possibility of winning the jackpot they fantasize about and not the low probability to actually win. We therefore expected participants to regard the high potential payoff as the desirable option and the high probability of winning as the better-save-than-sorry and thus feasible option.

We then asked participants to estimate the size of the room they conducted the study in (in m^2). Thereafter a six-point scale (1 = *I did not like the music at all*; 6 = *I liked the music very much*) was used to assess how much participants liked the music. Participants did not rate each song individually, but indicated how much they liked the music over all.

Then, in order to test the assumption that sound produced by the omnidirectional speaker is more difficult to localize than sound produced by the conventional speaker, participants were asked to indicate where they believed the source of the sound was. Participants were informed that the music was emitted from one speaker only and asked to

indicate the number they believed represented the location of the speaker (i.e. 1,2,3,4). The distance between numbers 2 and 3 was larger than between the other numbers because we anticipated undecided participants to choose the middle. By eliminating an option in the middle we forced participants to choose a position either to their left- or their right-hand side. Furthermore, we asked participants to indicate how convinced they were that they had correctly identified the location of the speaker on a six-point scale (1 = *not convinced at all*; 6 = *very much convinced*).

In order to check for effects mediated by participants' mood, the German translation of the PANAS Scale (Krohne, Egloff, Kohlmann, & Tausch, 1996; Watson, Clark, & Tellegen, 1988) was applied.

At the end of the study, we asked participants to note what they thought the true purpose of the experiment was. Participants were debriefed thereafter.

Results

First, participants' answers regarding the assumed true nature of the experiment were analyzed. No participant was aware of the real purpose of the experiment, thus all 79 participants were included in the final analyses.

Manipulation Check

Of the 79 participants no one falsely identified locations 3 or 4 as the position of the music-emitting speaker. Out of the 40 participants who listened to the music emitted through the omnidirectional speaker, 35 (87.5%) correctly localized the speaker at position 2, five (12.5%) falsely localized the speaker at position 1. Out of the 39 participants who listened to the music emitted through the conventional speaker, 37 (94.9%) correctly localized the speaker, two (5.1%) participants falsely believed the speaker to be at position 1 (see Table 1).

Fisher's exact test (Fischer, 1922) failed to reveal an association between the type of speaker used and the ability to localize the source of the sound, $p = .23$. However, a one-way analysis of variance (ANOVA), in which the type of speaker used was the independent variable, and participants' certainty in having identified the correct speaker was the dependent variable, showed that participants who listened to music emitted through the omnidirectional speaker were significantly less convinced they had correctly identified the position of the speaker than participants who listened to music emitted through the conventional speaker, *Welch's* $F(1, 78) = 2.94$, $p = .05$, $\eta^2 = .037$ (one-tailed). When the conventional speaker produced the sound participants reported greater confidence in having identified the correct speaker, $M = 4.97$, $SD = .74$, than when the omnidirectional speaker produced the sound, $M = 4.60$, $SD = 1.15$. The results show that omnidirectional speakers do indeed impede the localization of sound.

Table 1
Speakers chosen as the source of the sound by participants

Condition	1	2	3	4	Total
Omnidirectional Sound	5	35	0	0	40
Conventional Sound	2	37	0	0	39
Total	7	72	0	0	79

Note. 1 = Speaker 1; 2 = Speaker 2; 3 = Speaker 3; 4 = Speaker 4

Scenario 1

In scenario one participants were asked to decide whether they would rather want to move into an apartment with a view over the city or into an apartment close to work. In order to determine whether the types of speaker and/ or music used had an effect on participants'

preference for the two apartments a 2 (omnidirectional vs. conventional speaker) x 2 (background vs. foreground music) ANOVA was carried out. Participants preference for one of the two apartments which participants indicated on a six-point scale (1 = strong preference for apartment close to work; 6 = strong preference for apartment with a pretty view over the city) served as the dependent variable. The results for the first scenario show a main effect for the type of speaker used, $F(1, 75) = 5.52$, $p = .02$, $\eta^2 = .069$. To be precise, the result shows that - as expected - the omnidirectional speaker appears to have increased the preference for an apartment with a view over the city, $M = 4.88$, $SD = 1.47$, while the conventional speaker seems to have increased the preference for an apartment close to work, $M = 4.03$, $SD = 1.69$. Contrary to our expectations no main effect was observed for the type of music played, $F(1, 75) = .08$, $p = .78$. The type of music played did not influence participants' preference for a particular apartment. Also, the ANOVA did not reveal an interaction effect between the type of speaker used and the type of music played, $F(1, 75) = .02$, $p = .89$ (see Figure 1).

As discussed earlier it is possible, however, that the different speakers might have affected participants' mood and that these differences in mood, not the speakers themselves, may in fact be responsible for differences in the preference for one of two apartments. Therefore, a 2 (omnidirectional vs. conventional speaker) x 2 (background vs. foreground music) analysis of covariance (ANCOVA) was performed, in which preference for one of the two apartments was the dependent variable, and positive and negative mood functioned as covariates. The results show that positive mood had an effect on the preference for an apartment, $F(1, 73) = 4.63$, $p = .04$, $\eta^2 = .060$, and that negative mood was unrelated to the preference for an apartment, $F(1, 73) = 3.11$, $p = .08$. To be precise, participants who displayed high values with regard to positive mood tended to favor an apartment with a pretty view, whereas participants who displayed low values tended to favor an apartment close to work. This is reflected in the positive relationship between positive mood and preference for

an apartment with a pretty view over the city, $r = .29$, $p = .01$. However, when controlling for the two covariates, the main effect of the type of speaker used on the preference for one of the two apartments remained, $F(1, 73) = 5.58$, $p = .02$, $\eta^2 = .071$. Neither a main effect for the type of music played, $F(1, 73) = .13$, $p = .73$, nor an interaction effect between the type of speaker used and the type of music played, emerged, $F(1, 73) = .07$, $p = .79$.

Subsequently, another 2 (omnidirectional vs. conventional speaker) x 2 (background vs. foreground music) ANCOVA, with preference for one of the two apartments being the dependent variable and the overall rating of the four songs played being the covariate, was carried out. This was done in order to determine whether negative or postive ratings of the music played was responsible for the preference for one of the two apartments. The results show that the rating of the songs was unrelated to the preference for the two apartments, $F(1, 74) = 3.23$, $p = .08$., and that the effect of speakers on the preference for one of the two apartments remained unchanged when controlling for the rating of the songs, $F(1, 74) = 5.63$, $p = .02$, $\eta^2 = .071$. When controlling for the rating of the songs neither a main effect for the type of music played, $F(1, 74) = .16$, $p = .69$, nor an interaction effect between the type of speaker used and the type of music played was found, $F(1, 74) = .08$, $p = .78$.

Next, we checked for possible differences perceived by the participants with regard to the size of the laboratory the study was conducted in. The assumption was that sound which is produced by an omnidirectional speaker and is more difficult to localize, might make a room appear larger, thereby increasing the perceived distance between a participant and the source of the sound. As discussed earlier, this perception could be responsible for an increase in participants' construal level (Williams & Bargh, 2008). An ANOVA was carried out to analyze differences in the perceived size of the laboratory, the type of speakers being the independent variable and the estimation of the laboratory's size being the dependent variable. Results show that, contrary to our assumption, it was the conventional speaker, which made

the room appear larger, $M_{\text{omnidirectional}}$ = 12.48 m^2, $SD_{\text{Omnidirctional}}$ = 3.58, $M_{\text{conventional}}$ = 14.46 m^2, $SD_{\text{Conventional}}$ = 4.78, $F(1, 77) = 4.37$, $p = .04$, $\eta^2 = .053$.

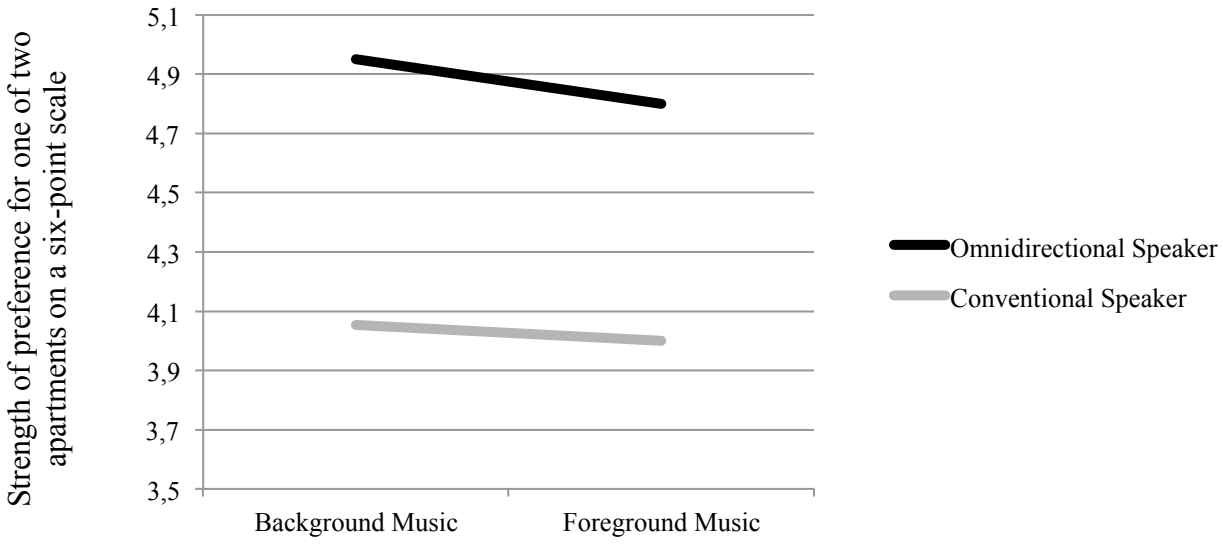

Figure 1. Main effect for the type of speaker used. High values indicate a preference for an apartment with a pretty view over the city; low values indicate a preference for an apartment close to work.

Scenario 2

Scenario 2 confronted the participants with a choice of two games of chance. Participants were asked to decide whether they would rather participate in a game of chance with a high payoff but a low probability of winning, or in a game with little payoff but a high probability of winning. A 2 (omnidirectional vs. conventional speaker) x 2 (background vs. foreground music) ANOVA analyzed the data, the preference for one of two games of chance being the dependent variable. Participants indicated their preference on a six-point scale (1 = strong preference for game of chance with high probability of winning; small payoff; 6 = strong preference for game of chance with low probability of winning; high payoff). Results

show that there was neither a main effect for the type of speaker used, $F(1, 75) = .62$, $p = .44$, nor for the type of music played, $F(1, 75) = .92$, $p = .34$. However, there was a marginally significant interaction effect between the type of speaker used and the type of music played, $F(1, 75) = 3.79$, $p = .055$, $\eta^2 = .048$ (see Figure 2).

Next, a 2 (omnidirectional vs. conventional speaker) x 2 (background vs. foreground music) ANCOVA was carried out to control for effects mediated by mood and/or the overall rating of the songs played. Preference for one of two games of chance served as the dependent variable, while positive mood, negative mood and overall rating of the song played were covariates. Results show that positive mood, $F(1, 72) = 3.13$, $p = .08$, negative mood, $F(1, 72) = .14$, $p = .71$, and the rating of songs, $F(1, 72) = 3.32$, $p = .07$, were unrelated to the preference for the two games of chance. Furthermore, when controlling for mood and the rating of the songs, the influence of the type of speaker, $F(1, 72) = 1.36$, $p = .25$, and music, $F(1, 72) = .01$, $p = .93$, on the preference for the two games of chance did not change and the interaction effect between the type of speaker used and the type of music played remained, $F(1, 72) = 5.42$, $p = .02$, $\eta^2 = .05$.

Although the results showed that the rating of the songs did not account for the preference for one of the two apartments, this finding need not be meaningful because participants rated how much they liked all four songs in their entirety after listening to the them. It is possible that when participants were occupied with Scenario 2 they were listening to a song they particularly disliked. Thus, it is imaginable that the opinion about a certain song might have indeed influenced the preference for one of the two games. Although it is impossible to determine how each individual song was perceived, an ANOVA, in which the overall rating of the four songs served as the dependent variable, revealed that participants who were assigned to the background music condition rated the music significantly more positive ($M = 4.38$, $SD = 1.07$) than did participants in the foreground music condition, $M =$

3.50, *SD* = 1.20, *F(*1, 77*)* = 11.99*, p* < .01, η^2 = .13. We therefore conclude that it is possible that participants' dislike for a particular foreground version of a song was so predominant that the type of speaker could not influence preference for the two games of chance. Consequently, we analyzed whether the type of speaker used influenced the preference for the two games of chance by only considering the background music condition. An ANOVA, in which the preference for one of two games of chance served as the dependent variable, revealed a significant effect for the type of speaker, *F(*1, 37*)* = 3.07*, p* = .04, η^2 = .08 (one-tailed). Precisely, participants' preference for the game of chance with a high potential payoff but a low probability of winning was greater when omnidirectional speakers produced the sound (*M* = 3.15, *SD* = 1.81) than when conventional speakers produced the sound (*M* = 2.21, *SD* = 1.51). Another ANOVA analyzed those participants' preferences for one of the two games of chance who were assigned to the foreground music condition. Results suggest that the type of speakers used had no effect on participants' preference for one of two games of chance in the foreground music condition, F(1, 38) = .85, p = .18 (one-tailed).

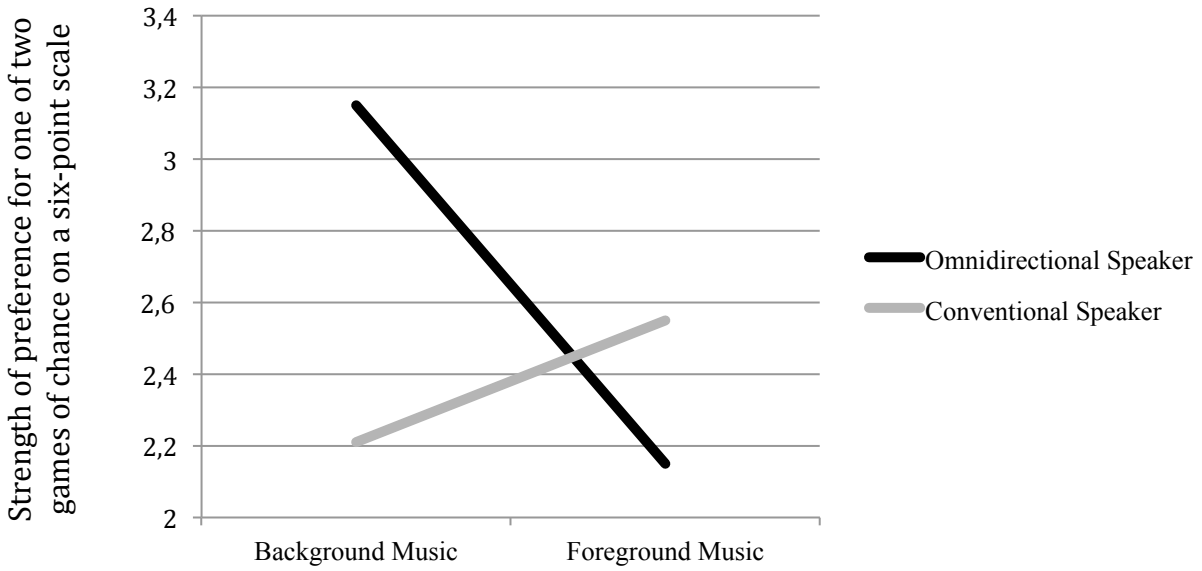

Figure 2. Marginally significant interaction between the type of speaker used and the type of music played regarding participants' preference for one of two games of chance. High values indicate a preference for participating in a game of chance with a high payoff but a low probability of winning; small values indicate a preference for participating in a game of chance with a low payoff but a high probability of winning.

Discussion

The study investigated the influence of different types of speakers and the influence of background versus foreground music on participants' preference for construal level related products. The results indicate that the type of speaker used did have an influence on participants' preference for construal level related products. Participants displayed a stronger preference for products which are associated with a high level of construal, that is for desirable products, when an omnidirectional speaker produced the sound. When a conventional speaker produced the sound, participants displayed a stronger preference for products which are associated with a low level of construal, that is for feasible products. Furthermore, results show that sound produced by omnidirectional speakers was more

difficult to localize than sound produced by conventional speakers. We therefore conclude that sound which is relatively difficult to localize leads to a high construal level which, in turn, leads to a preference for desirable products. On the other hand, sound that is produced by conventional speakers and that is relatively easy to localize leads to a low construal level which, in turn, leads to a preference for feasible products.

The results further suggest that the type of music played was unrelated to the preference for construal level related products. Neither background nor foreground music appeared to systematically influence participants' preference for these products.

The fact that the type of speaker used influences participants' preference for construal level related products is important both from a theoretical and a practical point of view. While most research involving CLT primed the level of construal by manipulating the perceived distance (spatial, temporal, social, etc.), very little research to date has focused on alternative ways to alter people's construal level. This study fits into a line of research which demonstrated that people's level of construal can be altered by seemingly subtle atmospheric cues and by means other than the manipulation of individuals' mindsets. McCrea et al. (2012), for example, showed that it is possible to manipulate participants' construal level by inducing different mindsets, unrelated to distance, and Meyers-Levy and Zhu (2007) showed that an atmospheric cue such as ceiling height can influence people's construal level. Our results support these findings by ruling out the possibility of alternative explanations. One could argue that it was not the difficulty of localizing the sound produced by the two kinds of speakers which was responsible for the differences in participants' preferences for construal level related products, but rather the perceived distance between the participants and the source of the sound. We did not specifically ask participants to rate the distance between themselves and the source of the sound, but asked them to estimate the size of the room. We believe that this metric is good enough to test for the alternative explanation because the size

is an estimation of the laboratory's two dimensions, particularly in view of the fact that the speaker was positioned directly at the wall. Therefore, the room size should have increased with the perceived distance between the participants and the source of the sound. If the distance between the participants and the source of the sound had been responsible for the observed effect, the laboratory would have had to be rated larger when omnidirectional speakers produced the sound. Contrary to this assumption, we found that the laboratory was estimated larger when the conventional speaker produced the sound, ruling out the alternative explanation.

One could also argue that the type of speaker used influenced participants' mood and that these differences in mood influenced, in turn, participants' construal level. It is indeed possible that the omnidirectional speaker produced sound that is not only difficult to localize but at the same time more pleasant for the listeners' ears, simply because the omnidirectional speaker is of superior quality to the conventional speaker. When statistically controlling for mood, the speakers' influence was found to have remained unchanged, ruling out the alternative explanation that participants' mood was responsible for differences in the preference for construal level related products.

We believe that the difficulty in localizing the sound produced by the two types of speakers explains the observed differences in the preference for construal level related products. Participants found it relatively easy to localize the sound produced by the conventional speaker and relatively difficult to localize the sound produced by the omnidirectional speaker. These differences are likely to be attributable to the fact that conventional speaker radiated direct sound waves, which contain more information regarding the source of the sound, while the omnidirectional speaker radiated indirect sound waves, which contain less information about the source of the sound. When less information is available it is adaptive for people to think in broader terms, increasing the construal level. A

similar concept was suggested for the effect of distance on the level of construal (Henderson & Wakslak, 2010). According to Liberman and Förster (2009) distance can be regarded as an object or an event a person has no or little experience with. When thinking about distant events an individual usually has limited information available, leading her or him to think in broader and more abstract terms; when an individual reflects on a proximal event, on the other hand, she or he usually has more information on hand, leading her or him to think in more narrow and detailed terms. It is important to note that it is not the distance itself that influences the level of construal, but rather the knowledge about an event or the lack thereof that influences a person's construal level (Henderson & Wakslak, 2010). We therefore conclude that it is the lack of knowledge about the source of the sound produced by the omnidirectional speaker that increased the construal level.

Furthermore, CLT states that aspects related to the desirability of an object become more important when the level of construal is high, whereas aspects of feasibility become more important when the construal level is low (Liberman & Trope, 1998). While desirability is associated with the value of an outcome, feasibility is associated with difficulty of reaching this outcome, for example the steps required to reach this outcome (Sagristano et al., 2002). The time perspective for reaching a certain outcome is usually rather long, whereas the time perspective for the actual steps necessary to reach the final outcome tends to be shorter (Liberman & Trope, 1998). If a person has only limited knowledge about an event a high construal level ensues, highlighting events in the distant future and increasing the importance of aspects associated with desirability. If, on the other hand, abundant knowledge is available about an event, a low construal level is induced, emphasizing events in the proximal future and increasing the importance of aspects associated with feasibility. Much in the same way, it was the lack of knowledge about the source of the sound produced by the omnidirectional speaker that increased the importance of aspects of desirability regarding construal level

related products in the participants, while it was the greater knowledge about the source of the sound produced by the conventional speaker that increased the importance of aspects of feasibility regarding construal level related products.

There are practical conclusions which can be derived from this study's findings. Consumers are often confronted with music, both in advertising and at the point of sale. It is known, that consumers appreciate congruence between atmospheric cues and products (Mitchell, Kahn, & Knasko, 1995) and that music can affect consumers' shopping experience (Bitner, 1992; Morrin & Chebat, 2005). Our results further enhance these findings by showing that a fit between construal level related sound and construal level related products can positively affect consumers' willingness to purchase a specific product. For example, a real estate agent may find it easier to sell an apartment with a beautiful view when omnidirectional speakers play music, while he or she may find it easier to sell an apartment close to a commercial district, when conventional speakers play music. Similarly, a car dealer might find it easier to sell a sports car when omnidirectional speakers emit music in the showroom and might find it easier to sell a van when conventional speakers emit music, assuming that a sports car is associated with aspects of desirability and a van with aspects of feasibility.

There are several limitations regarding the study. First, it is possible that certain songs played in our experiment did have an effect on participants' mood and that the differences in mood influenced their preference for the construal level related products. Future research needs to replicate the study by using songs that evoke equal or at least similar feelings in the participants. This is especially important for the foreground versions of songs, which, in our study, seem to have evoked particularly pronounced negative feelings. The observation that the foreground versions of songs evoked stronger feelings in the participants might also be responsible for the fact that the type of music played had no noticeable influence on

participants' preference for construal level related products. Second, the experiment was based on the assumption that it is indeed possible to differentiate products in terms of their desirability and feasibility with the construct desirability representing a higher level of construal and the construct feasibility representing a low level of construal. Although Liberman et al. (2007) argue that apartments are classifiable in terms of these aspects, it has not been empirically proven that an apartment close to work does indeed represent feasibility and an apartment with a beautiful view desirability. For example, employees who have to commute long distances between their home and workplace might consider an apartment close to work as being highly desirable and an apartment's view as rather unimportant. Furthermore, even if an apartment with a view is regarded as more desirable and an apartment close to work as more feasible, it needs to be demonstrated that a preference for an apartment with a view is associated with a high construal level and that a preference for an apartment close to work is associated with a low construal level. Third, although the results show that different speakers can alter participants' preference for construal level related products, it remains to be demonstrated that consumers will indeed change their consumer behavior depending on music played by different speakers. Hence, it remains unclear to what extent practical conclusions can be derived from these findings.

Our study showed that it appears to be possible to alter people's preference for construal level related products depending on the kind of sound waves emitted by different speakers. While past research has focused on manipulating people's construal level by inducing various forms of distance, our study gives support to the theory that it is the amount of knowledge a person has about an object or an event that determines a person's construal level. In our case, it were differences in the amount of knowledge regarding the sound's source that we believe to be responsible for differences in people's preference for construal level related products. This body of research gives support to the notion that subtle

atmospheric cues such as sound can alter people's construal level and in turn their preference for construal level related products.

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Appendices

Figure A

Picture showing the desk, the participants conducted the study at. The card web in combination with the blinding lamps disguised potential speakers

Figure B

Picture showing the wall participants faced. The four numbers represented potential locations of the speaker

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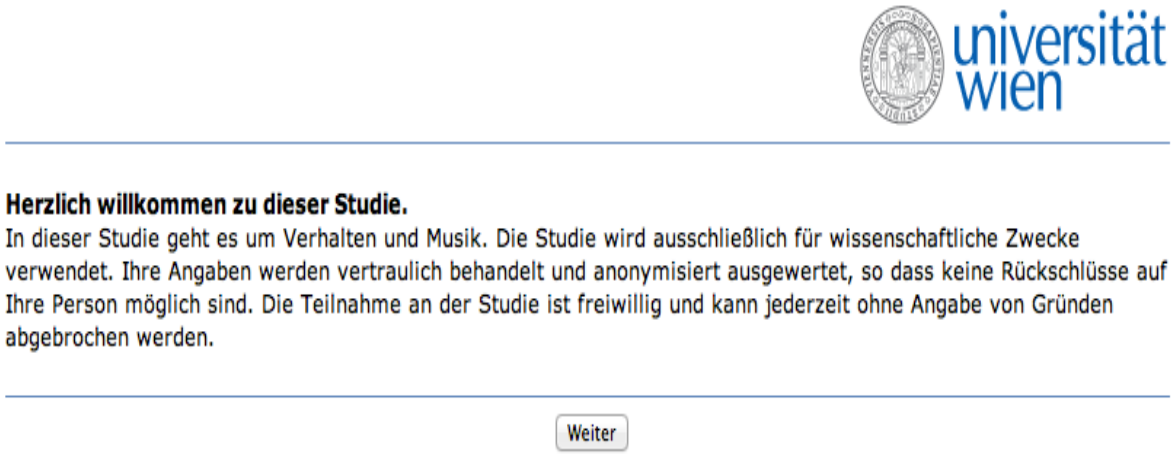
Material

Presentation of Instructions, Scenarios and Questions

Granting of anonymity



Instructions regarding the continuous presentation of music

Nachdem es in unserem Experiment, wie bereits eingangs erwähnt, um den Zusammenhang von Musik und Verhalten geht, wird ihnen sogleich Musik vorgespielt. Die Musik wird ihnen während des Restes der Testung weiter vorgespielt. Wir möchten sie bitten der Musik erst einmal **2 Minuten** zu lauschen und sodann mit der Bearbeitung der weiteren Aufgaben zu beginnen. Bitte teilen sie ihrem Versuchsleiter nun mit, dass sie bereit sind, Musik zu hören.

Weiter

Instructions regarding Scenario 1 and Scenario 2

Im Folgenden werden sie mit Entscheidungen konfrontiert, bei denen sie zwischen zwei zur Auswahl stehenden Produkten wählen sollen. Falls sie keine Erfahrung mit den ihnen präsentierten Produkten haben oder ihnen keines dieser Produkte zusagt, entscheiden sie sich bitte in diesen Fällen für das Produkt, dass sie am ehesten Anspricht. Bitte lesen sie die beschriebenen Entscheidungssituationen sorgfältig und beantworten sie sodann die Fragen.

Weiter

Scenario 1

Sie sind auf Wohnungssuche. Zwei Wohnungen befinden sich in der engeren Auswahl. Die eine Wohnung befindet sich in der Nähe ihres Arbeitsplatzes, die andere ist weiter entfernt, hat dafür aber einen schönen Blick über die Stadt. Für welche der beiden Wohnungen würden sie sich entscheiden?

Bitte geben Sie auf der 6-stufigen Skala an, wie stark ihre Präferenz für eine der beiden Wohnungen ist.

Starke Präferenz für Wohnung in Nähe Arbeitsplatz					Starke Präferenz für Wohnung mit Blick
○	○	○	○	○	○

Weiter

Scenario 2

Sie haben die Möglichkeit an einem von zwei Gewinnspielen teilzunehmen. Bei dem einen Gewinnspiel beträgt die Gewinnwahrscheinlichkeit 70%, der mögliche Gewinn beträgt 30,- €. Bei dem anderen Gewinnspiel beträgt die Gewinnwahrscheinlichkeit 30%, der mögliche Gewinn 70,- €. An welchem der beiden Gewinnspiele würden sie lieber teilnehmen?

Bitte geben sie auf der 6-stufigen Skala an, wie stark ihre Präferenz für eines der Gewinnspiele ist.

Starke Präferenz für Gewinnspiel mit Gewinnwahrscheinlichkeit = 70%; möglicher Gewinn = 30€					Starke Präferenz für Gewinnspiel mit Gewinnwahrscheinlichkeit = 30%; möglicher Gewinn = 70€
○	○	○	○	○	○

Weiter

Estimation of the room's size

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Wir möchten sie nun bitten einige Fragen zu dem Raum, in dem sie sich befinden, zu beantworten.

Wie groß schätzen sie den Raum ein?
Bitte geben sie ihre Antwort in qm an.

Wie hoch schätzen sie den Raum ein?
Bitte geben sie ihre Antwort in cm an.

Wie wohl fühlen sie sich in dem Raum?
Von ich fühle mich "überhaupt nicht wohl" bis ich fühle mich "sehr wohl"

überhaupt nicht wohl					**sehr wohl**
○	○	○	○	○	○

Wie geräumig empfinden sie den Raum?
Von "gar nicht geräumig" bis "sehr geräumig"

gar nicht geräumig					**sehr geräumig**
○	○	○	○	○	○

Weiter

Overall rating of the four songs played

universität wien

Wir möchten sie nun bitten einige Fragen zu den Lautsprecher und der Lokalisierung der Musik zu beantworten.

Aus welcher der vier Lautsprecher wurde Musik gespielt?
Bitte beachten sie, dass die Musik lediglich aus einem Lautsprecher ertönt ist. Die Nummern der Lautsprecher hängen über den eigentlichen Lautsprechern.

1	2	3	4
○	○	○	○

Wie sicher sind sie sich ihrer Entscheidung?

gar nicht sicher					sehr sicher
○	○	○	○	○	○

Wie einfach fiel ihnen die Entscheidung?

gar nicht einfach					sehr einfach
○	○	○	○	○	○

Weiter

PANAS Scale

Dieser Fragebogen enthält eine Reihe von Wörtern, die unterschiedliche Gefühle und Empfindungen beschreiben. Lesen Sie jedes Wort und tragen dann in die Skala neben jedem Wort die Intensität ein. Sie haben die Möglichkeit, zwischen fünf Abstufungen zu wählen.

Geben Sie bitte an, wie Sie sich **in diesem Moment** fühlen.

	ganz wenig oder gar nicht				**äußerst**
aktiv	○	○	○	○	○
bekümmert	○	○	○	○	○
interessiert	○	○	○	○	○
freudig erregt	○	○	○	○	○
verärgert	○	○	○	○	○
stark	○	○	○	○	○
schuldig	○	○	○	○	○
erschrocken	○	○	○	○	○
feindselig	○	○	○	○	○
angeregt	○	○	○	○	○
stolz	○	○	○	○	○
gereizt	○	○	○	○	○
begeistert	○	○	○	○	○
beschämt	○	○	○	○	○
wach	○	○	○	○	○
nervös	○	○	○	○	○
entschlossen	○	○	○	○	○
aufmerksam	○	○	○	○	○
durcheinander	○	○	○	○	○
ängstlich	○	○	○	○	○

Weiter

Assumptions about the true purpose of the study

Zum Schluss möchten wir sie noch bitten ihre Gedanken bezüglich des Experiments aufzuschreiben. Was denken sie, war der Grund des Experiments? Kamen ihnen Aufgaben bekannt vor?

Weiter

Zusammenfassung

Die vorliegende Diplomarbeit untersucht den Einfluss omnidirektionalen Klangs sowie den Einfluss von Hintergrundmusik auf die Präferenz für verschiedene Produkte, die mit dem sogenannten Construal Level in Zusammenhang stehen. Dabei handelt es sich um den Abstraktheitsgrad der Informationsverarbeitung von Personen. Aus früherer Forschung ist bekannt, dass mit einem hohen Abstraktheitsgrad der Informationsverarbeitung eine Präferenz für Produkte einhergeht, die eine hohe Wünschbarkeit aufweisen, wohingegen mit einem niedrigen Abstraktheitsgrad eine Präferenz für solche Produkte einhergeht, die einen hohen Grad an Umsetzbarkeit aufweisen (Liberman & Trope, 1998). In der vorliegenden Studie wurde versucht den Abstraktheitsgrad der Informationsverarbeitung sowohl durch den Einsatz omnidirektionaler Lautsprecher als auch durch das Spielen von Hintergrundmusik zu manipulieren. Omnidirektionale Lautsprecher zeichnen sich dadurch aus, dass sich der Klang aus indirekten Schallwellen zusammensetzt und daher schwieriger zu lokalisieren ist; bei Hintergrundmusik handelt es sich um Musik, bei der keine Stimme eines Sängers oder einer Sängerin vernehmbar ist. Die Versuchspersonen wurden einer von vier Experimentalbedingungen zugeteilt (Omnidirektionaler vs. konventioneller Klang x Hintergrund- vs. Vordergrundmusik). Die Ergebnisse legen den Schluss nahe, dass wie erwartet, omnidirektionaler Klang die Präferenz für solche Produkte steigert, die eine hohe Wünschbarkeit aufweisen und die Präferenz für Produkte abschwächt, die eine hohe Umsetzbarkeit aufweisen. Der Beobachtete Effekt wird auf die Tatsache zurückgeführt, dass der schwerer zu lokalisierende omnidirektionale Klang für die Versuchspersonen weniger informativ war. Aus früherer Forschung ist bekannt, dass eine geringe Verfügbarkeit von Informationen eine abstrakte Informationsverarbeitung begünstigt (Henderson & Wakslak, 2010). Entgegen der Annahme scheint Hintergrundmusik keinen Einfluss auf die Produktpräferenzen gehabt zu haben.

Curriculum Vitae

Personal Data

Name	Rouwen Peter Hirth
Date of Birth	December 30, 1985
Place of Birth	Munich, Germany
Citizenship	German
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Education

Since 2007	University of Vienna, Austria; Field of Study: Psychology
July/ August 2009	Summer school course at UC Berkeley, USA.: "The American History from the Civil War until today"
2006	Abitur (Graduation from German Grammar School; GPA: 1.9)
1995 – 2006	Pater-Rupert-Mayer Grammar School in Pullach (near Munich)
2000 – 2001	Freshman at Drew College Preparatory School in San Francisco, USA

Internships / Research Experience

Since fall 2012	Research Assistant at the Department of Psychology at the University of Vienna
2011 – 2012	Research Assistant at the Department of Strategic Communication at the Zeppelin University Konstanz, Germany
July/ August 2011	Internship at the Department of Psychology at the University of Vienna
July/ August 2010	Analyst at Locus Analytics LLC, New York City, USA
July/ August 2008	Internship at the Fachklinik für Psychiatrie und Psycho-therapie (Psychiatric Clinic) in Gauting near Munich
2006 – 2007	Compulsory Community Service (in lieu of Military Service) in a clinic specializing in pulmonary disorders near Munich

Skills and Qualifications

Languages	German (native), English (fluent), French (basic), Latin (basic)
Computer skills	SPSS, AMOS, MS Office