

The Effects of Musical Fit on Consumers' Choice when Opportunity and Ability is Limited

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ABSTRACT

Two experiments were carried out to investigate the impacts of musical 'fit' on the choice between two products when the opportunity and ability to consider their relative advantages were either limited (Experiment 1) or ample (Experiment 2). Experiment 1 asked participants to read complex descriptions of two watches within a short time. The watches corresponded with either the luxurious stereotype of classical music or the modish stereotype of funk music. The participants chose between them while listening to either classical music, funk music or no music. Experiment 2 repeated the methodology except that the alternative choice scenario gave the participants more time to choose between the watches. In Experiment 1, when classical music was played, more participants chose the 'luxurious' watch and, when funk was played, more participants chose the modish watch. In Experiment 2, choices were not influenced by the music. This suggests that musical 'fit' influences the preferences between products, but only when opportunity and ability to consider them are limited.

Keywords: Music, consumers, choice, opportunity, ability

INTRODUCTION

Most studies of music and consumer behaviour have been geared towards Western culture. Academics in the West have studied many aspects of music, such as tempo and

modality effects, as well as variations in tempo, rhythm, harmony and dynamics. For example, North and Hargreaves' (2008) review highlighted the many different effects of music in advertising, retail, and leisure settings, and the varied theoretical mechanisms that have been proposed to underlie these effects. Similarly, Garlin and Owen's (2006, p.755) meta-analysis showed "small-to-moderate, yet quite robust

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effects” of background music on dependent variables such as value returns, duration of behaviour and affective response. There is, unfortunately, hardly any research on how music affects consumers living in Asian cultures, and probably no psychological literature at all on Asians being affected by music from their own culture. The present research explores the use of musical fit in Malaysia.

‘Musical fit’ refers to the tendency for customers to select one product over another on the basis of background music activating superordinate knowledge structures. In essence, music with characteristics that correspond with the central brand messages of a particular product should prime relevant beliefs about the product while consumers are actively considering it. For example, North, Hargreaves and McKendrick (1999) found that playing stereotypically French (e.g., accordion music) or German (e.g., bierkeller songs) music by a supermarket display of French and German wines led to greater selection of wines, at a ratio of three bottles to one, from whichever country was represented by the music playing at that time. This was explained as resulting from the national connotations of the music priming selection of wine based on country of origin. Similarly, Areni and Kim (1993) found that customers in a wine cellar spent more when classical music rather than top 40 music was played, arguing that this was because the affluent, wealthy stereotype of classical music primed customers to act consistently and spend money.

Music is a cultural phenomenon, and it is therefore reasonable to investigate whether there is any effect of music on behaviour that has been identified in one culture can also be identified in another. Moreover, much of the existing research on musical fit effects is based on participants sharing an understanding that a particular piece of music has certain extra-musical connotations. It is perfectly possible, for instance, that (n)either of the these processes occurs outside the Western samples that have been employed. Among a handful of studies conducted in an Asian setting investigating the effects of musical fit would be Yeoh and North (2009) and Yeoh and North (2010a). In the former, the authors investigated the impact of musical fit amongst Malaysian consumers of different ethnic backgrounds on product choice. They found that when ethnically Chinese Malaysian participants were presented with six pairs of product, each containing a Malay or an Indian version of the product in question, with corresponding Malay or Indian music playing simultaneously in the background, product choices corresponded with the ethnicity of the background music played. In a similar vein, Yeoh and North (2010a), investigated the impact of musical fit amongst Malaysian consumers of different ethnic backgrounds on food choices. It was found that food choices corresponded with the ethnicity of the background music played, but only when consumers did not have a clear pre-existing preference for one product over another (see also, Yeoh &

North, 2010b; Yeoh & North, 2010c; Yeoh, 2010). Most studies have investigated the effects of musical fit while ignoring the extent to which participants have the ability and opportunity to choose between the products in question: this is despite the fact that some consumer decisions are made after careful deliberation whereas others are made very quickly. The present research aims to extend these Malaysian findings by investigating the extent to which musical fit can prime product selection both when customers do and do not have the opportunity to select between competing products carefully.

As hinted at already, research on musical fit that has employed Western samples has yielding encouraging results to date. In essence, almost all the research to date has argued that music should prime related schemas which, therefore, influence opinions of the product under consideration and its likelihood of selection. For instance, Baker *et al.* (1994) and Grewal *et al.* (2003) both reported that the 'upmarket' stereotype of classical music led to it causing perceptions of high-quality service and merchandise. Several studies argue that spending and product selection specifically can result from background music activating related schemas concerning 'wealth' and 'sophistication'. North and Hargreaves (1998) played classical music, pop, easy listening, or no music in a student café. Questionnaire responses indicated that classical music created an upmarket atmosphere, and when customers were asked to state the amount they were prepared

to spend on each of 14 items on sale therein, the mean total amounts were £17.23, £16.61, £14.51, and £14.30, respectively. North *et al.* (2003; see similar results in Wilson, 2003) similarly found that classical music in a restaurant was associated with higher spending per head (UK£32.52) than either pop music (UK£29.46) or no music (UK£29.73). Kellaris *et al.* (1993) found that music that 'fits' the commercial message in an advert can help reinforce commercial messages that are congruent with (as opposed to incongruent) the music. It is interesting though that a similar argument can also be found commonly in the literature on the effects of rap and rock music on young people.

Several studies on heuristics have shown that people who lack expertise in the field in question will be pre-disposed to rely on heuristics and stereotypes when making judgments. Gigerenzer (2000), for example, claimed that people make decisions through the selection and application of a variety of fast and frugal heuristics contained in our cognitive 'adaptive toolbox'. The adaptive toolbox is a repertoire of rules or heuristics available to a species at a given point in its evolution (Gigerenzer & Selten, 2001). According to Goldstein and Gigerenzer (1999, 2002), real-life judgements and decisions are guided by simple rules that pick out the simplest strategy applicable when the organism is presented with a problem (see also, Newell & Shanks, 2003; Scholler & Hertwig, 2005). Of particular relevance to the present research is the so-called recognition heuristic, which works

only in situations where knowledge is rather limited. There are two conditions whereby the recognition heuristic can be used. The first is that, if only one among a range of alternatives is recognized, then the recognized alternative will be chosen. The second condition is invoked when more than one of the alternatives are recognized and the recognition principle cannot provide discriminatory information. In such cases, people are assumed to have access to a reference class of cues or features subjectively ranked according to their validities: people are thought to search for cues until they discover a feature that discriminates one alternative from the others. Once this single discriminating feature has been found, it is then used to make the decision (Goldstein & Gigerenzer, 2002).

Although representing an apparently consistent set of findings, the existing consumer research on musical fit overlooks one obvious potential caveat. The majority of research on the phenomenon has investigated Western participants in a Western culture. This raises several interesting questions. First, can North *et al.* (1999) findings concerning the effects of music on preferences for otherwise similar types of wine be replicated outside Western culture? Second and more interestingly, would such an effect apply for all consumer decision processes? Two experiments were carried out to investigate these issues. In the first experiment, three different musical conditions were employed, classical music, funk music and no music. While one of these played in the background, participants

were shown a picture of two watches via a laptop, one of which was associated with the 'luxurious and affluent' stereotype of classical music and the other with the 'modish' stereotype of funk music. Below the pictures of both watches were technical, complex descriptions. The participants were given only 15 seconds to read the descriptions before the screen on the laptop would turn off (while music in the background continues) and they were then asked to choose either one of the watches. Previous research on musical fit together with that on the recognition heuristic suggests that participants who had heard classical music would choose the more 'luxurious' watch, whereas participants who heard funk would choose the modish watch. Since the participants had only 15 seconds and were unable to carefully read or think about the watches, the second condition for the application of the recognition heuristic applies: with limited knowledge of the options available to them, participants would have to rely on any cue that could help them in their decision, in this case the music. The second experiment was identical to the first, but allowed participants as much time as they needed to read about and choose between the same watches. It was predicted that musical fit would not affect participants' choices of watches. Since the participants would have the opportunity to read and think about the watches, they would not need to rely on any cue other than strictly on their own preferences, such that the recognition heuristic and musical fit would have much less scope to influence decision-making.

MATERIALS AND METHODS

Participants

Ninety participants took part in Experiment 1. Thirty participated in the funk music condition, 30 in the classical music condition, and another 30 in a no music condition. Each group comprised 15 females and 15 males. The participants' mean age was 25.90 years ($SD = 9.98$). In Experiment 2, a new sample was recruited. The participants' mean age was 22.10 years ($SD = 2.89$). All the aspects of the methodology were identical to Experiment 1, except that the participants in Experiment 2 were told that they had as long as they needed, and were asked to make their selection only once they felt ready. The participants were students from Universiti Putra Malaysia. Testing was conducted individually in a quiet room on campus.

Pilot study

A pilot study was carried out to ensure that the music that was to be used in the main experiment was clearly identifiable as either funk or classical music by a sample of 20 participants drawn from the same general population as the sample used in the main experiment. Each participant in the pilot study was played two types of music and they were asked to state the type of genre of the music being played. All the participants were able to clearly distinguish between the two pieces of music as either funk or classical. Pilot testing also established that the allocated time frame of 15 seconds was insufficient to read the full description of

each watch. This was to ensure that the participants would not have the opportunity to consider carefully which watch they would prefer on the basis of the technical information.

Design

The research employed a between-subjects design in which the participants were played either funk music, classical music or no music, while they were exposed to the two watches. Both watches appeared at the same time, side by side on the screen of the laptop. Watch A was on the left side of the screen and Watch B on the right side of the screen. The funk music was taken from the album *Musicology* by Prince and the track used from this CD was *Musicology*. Meanwhile, the classical music was taken from the CD *101 Classics – Classical Highlights from the Great Composers Vol. 1*. The track used from this CD was J.S. Bach's *Brandenburg Concerto No. 3 in G major*.

The participants in both the funk and classical music conditions heard this music via headphones attached to a laptop while they simultaneously observed the watches. The pictures used were of at least 100KB and downloaded from the internet. A caption beneath each picture stated 'Watch A' or 'Watch B'. Below the captions were complex descriptions for each watch. The pictures were displayed on the screen for 15 seconds before the screen turned off automatically. The music (or no music) continued until the participants finished answering a five item questionnaire.

‘Watch A’, representing the stereotype of classical music, was a picture of a pair of expensive, crystal-faced analogue watch with either black or white leather straps and a sparkling polished surface. ‘Watch B’, representing the stereotype of funky music, was a picture of a pair of modishly designed digital watches. These watches were in luminous bright pink, silver and shiny brown colours. The language used to describe the watches was technical in nature (e.g. “Watch A: Uses a co-axial escapement in conjunction with a free sprung-balance without index”; “Watch B: Made with polyurethane for flexibility and comfort and laser-etched with patterns for a crafted touch”).

Procedure

The participants were shown the two competing products while the music (or no music) was played at a constant volume, sufficient to be heard clearly. Once the screen displaying the watches switched off, the music continued playing while a five-item questionnaire was administered. Question 1 required the participants to state which watch they would choose. Question 2 asked them the extent to which they would prefer Watch A or Watch B by giving a rating between 0-10 (where 0 represented ‘strong preference for Watch A’ and 10 represented ‘strong preference for Watch B’). Question 3 asked the participants whether or not the music playing in the background influenced their choice of the watches. Question 4 asked the participants the extent to which the music being playing influenced their

choice of the watches. The participants responded to Question 4 by giving a rating between 0-10 with 0 representing ‘no influence at all’ and 10 representing ‘very strong influence’. Question 5 asked the participants to estimate how much the chosen watch would cost if bought at a local watch shop by selecting one of three options, namely ‘below RM500’, ‘between RM500-RM1000’, and ‘above RM1000’.

RESULTS AND DISCUSSION

In Experiment 1, a chi-square test was carried out to determine whether the choice of watches was associated with the type of music played. The result of this was significant ($\chi^2 (2, N = 90) = 13.32, p = 0.001$). Watch choice was cross-tabulated against background music in Table 1. This indicates that the participants had a strong tendency to choose Watch A when classical music was played and Watch B when funky music was played. When there was no music played, the participants did not show a preference for either watch.

TABLE 1
Music x watch choice

		Watch	
		A	B
Music	No music	16	14
	Funk	10	20
	Classical	24	6

A second chi-square test indicated no association between the choice of watches and the participants’ statement of whether or not the music playing influenced their choice of watch (music conditions only) (Question

TABLE 2
Music x watch price

		Watch prices		
		Below RM500	Between RM500-RM1000	Above RM1000
Music	No music	11	16	3
	Funk	9	16	5
	Classical	9	16	5

3). The result of this was not significant, indicating that the participants were not aware of or at least were not willing to state the impact of the music on their selections.

A one-way ANOVA and an independent t-test were performed on data from the participants concerning the extent to which they preferred Watch A over Watch B (Question 2) and the extent to which they believed that their choice of watches was influenced by the music (in the music conditions only) (Question 4), respectively. The results of neither test were not significantly significant. This indicates that although the music did influence the choice of watches, the effects on the rating scales were not strong.

The frequency with which people selected each of the three price options is shown in Table 2. In all the three conditions, most participants rated the watches to be worth between RM500-RM1000, and a corresponding chi-square test was not significant.

In Experiment 2, the chi-square test was carried out to determine whether the choice of watches was associated with the type of music played. The result of this was not significant. Watch choice is cross-tabulated against background music in Table 3.

TABLE 3
Music x watch choice

		Watch	
		A	B
Music	No music	15	15
	Funk	12	18
	Classical	19	11

A second chi-square test was carried out on participants' statements of whether or not music influenced watch selection (Question 3) (music conditions only). The result of this was not significant ($\chi^2 (2, N = 90) = 3.22, p < .05$), indicating once again that the participants did not believe that they had been influenced by the music. The one-way ANOVA and an independent t-test were performed on data from participants concerning the extent to which they preferred Watch A over Watch B (Question 2) and the extent to which they believed that their choice of watch was influenced by the music (in the music conditions only) (Question 4) respectively. The results of the one-way ANOVA were significant ($F (2, 87) = 3.22, p < .05$), and means and SDs are reported in Table 4. The t-test results were not significant. These indicate that although Table 3 showed no effect of music on the main variable (namely, the watch

TABLE 4
Mean ratings in responses to the questionnaire

Music	Mean rating for watch	<i>SD</i>	Mean rating for music's influence on choice	<i>SD</i>
No music	5.27	3.27	N/A	N/A
Funk	6.00	2.98	4.63	3.30
Classical	3.93	3.33	3.97	3.16

TABLE 5
Music x watch price

		Watch prices		
		Below RM500	Between RM500-RM1000	Above RM1000
Music	No music	11	16	3
	Funk	11	15	4
	Classical	5	15	10

chosen), the music did at least lead to a slight preference for the associated watch, since funk led to ratings indicating a greater preference for the modish watch whereas classical music led to ratings indicating a greater preference for the more traditional watch. As such, there was an effect of musical fit, but it was not strong enough to affect the watches that participants actually selected. The result of the t-test was not significant, again indicating that the participants did not believe they had been influenced by the music.

The frequency with which people selected each of the three price options is shown in Table 5. Nonetheless, the chi-square test showed no significant association between the two variables.

CONCLUSION

Previous studies concerning musical fit have indicated that music can increase the amount

consumers' spend on the products that they select. In contrast, the research reported here demonstrates that musical fit is able to prime consumers' choice of products only when their ability to consider the alternatives is limited, consistent with earlier research on heuristics. Specifically, Experiment 1 showed that when classical music was played, the stereotypically 'classical' watch was selected, and when funky music was played, the modish watch was selected. However, when there was no music played, the participants were not primed to choose one over the other. Experiment 2, in which the participants had as much time as they wanted to make their decision, did not produce similar data. In this case, although a one-way ANOVA indicated that the music did lead the participants to have a slight preference in favour of the associated watch, the effect of musical fit in this case was not sufficiently strong

to influence participants when they were simply asked to choose one watch over the other. Although the results of Experiment 2 were of non-significant, it should be noted that they were not too far from meeting this statistical criterion. In more specific, the results are marginally significant (producing a p value of .0675 on the chi-square associated with the funk vs. classical manipulation), and so the effect would have been significant (95% confidence), had we increased the sample to 40 people instead of 30 (assuming the proportions remained the same). Nonetheless, the results are weaker than when the participants were given only limited time to reach their decision. In conjunction, the results of the two experiments here indicate that musical fit effects operate more strongly when the opportunity to choose between the options is limited, causing the participants to rely on musical cues when making their judgements.

In both the experiments, the participants failed to rate music as having a strong influence on their selections. Although it was unsurprising that this should have been found in Experiment 2, in which the music had little influence on judgements, it is more surprising that the participants in Experiment 1 should not have noticed, or at least been unwilling to admit, that music had influenced their choice of watches. Further research may investigate whether, under such circumstances, the participants are simply unwilling to admit the effect of musical fit or are instead unaware of it, and if so then why.

One other interesting aspect of the present findings concerned the amount of money that participants stated that they would expect to pay for the watches. In both the experiments, the participants were unwilling to pay large amounts for the watches, and this likely explained the non-significant results in respect of this variable. While this might be attributable to a simple floor effect, via which the participants were not presented with a sufficiently wide range of options at the lower end of the scale to capture any effects of musical fit, the possibility remains that this aspect of the findings is correct and that musical fit influenced product choice but not the monetary value that they placed on the products. Future research should investigate this.

These studies were conducted under strict laboratory conditions and on an individual basis. The results of these studies might not be similar if they were to be repeated under different, more naturalistic conditions. For instance, could the findings be replicated among a group of participants sat at home watching an advert break on TV? Similarly, would any effect obtained be strong enough to last until those people were actually in a commercial setting that required them to select between two competing products? Furthermore, in 'real' commercial settings, consumers often have to choose between three or more competing products, rather than the two products with which they were presented in the research here. Would musical 'fit' effects be diluted when the participants are given more than

two options to choose from? Also, would the participants' choices be different if they were told that they would be actually given the product at the end of the experiment?

Future research may also investigate if it is possible to adapt arguments made by Hansen and Hansen (1991) concerning cognitive priming by rock and rap music lyrics. These arguments lend themselves to hypotheses that can be made for subsequent research on musical fit effects on consumer behaviour. For instance, greater familiarity with the products in question reduces the processing load associated with weighing up their relative advantages. This in turn would reduce the likelihood of consumers being influenced by cognitive priming in general and musical fit specifically. In short, musical fit effects should be less likely to occur when consumers have previous experience of selecting between the products in question.

These findings may have implications for television and radio advertising, which tend to employ short exposure times that limit consumers' ability to enter into a detailed evaluation of the products in question. Advertisers would accordingly do well to ensure that adverts contain some degree of musical fit (see also Zhu & Myers-Levy, 2005; Keallaris & Cox, 1989; North *et al.*, 2004; MacInnis, & Park, 1991). However, there are possible limitations to these effects as well. For example, if consumers have no prior experience of the music used then chances are that they may not derive the appropriate communicative intent from that music. Rather, practitioners should employ either very well-known

pieces of unambiguous music or rely on the stereotypes associated with entire musical styles. Similarly, it remains to be determined whether too great a degree of musical fit could instead lead to the advert in question seeming somewhat hackneyed.

In theoretical terms, the research here suggests that heuristics and stereotypes are relevant to a consideration of the impact of music on consumer decision-making. Real life commercial judgements and decisions made in the presence of background music are guided by simple rules that pick out the simplest strategy applicable when presented with a problem or choice. Of particular relevance to the present research is the so-called recognition heuristic. This states, for example, that when one or more products are similar, then a single discriminating feature will be used to make a decision between them. Use of the 'right' music could be such a feature, although others may well play a role also. However, if such an assertion is correct then future research might investigate whether the factors that experimental work has shown to increase the likelihood of heuristic processing being employed also increase the influence of music fit. For example, if heuristic processing is more likely to be employed under conditions of high arousal or cognitive load, does this mean that there is more opportunity for musical fit effects to occur when a store is crowded or hot, or when people are listening to radio adverts in the car rather than in their living room?

Since ambiguous information tends to be interpreted as consistent with primed schema,

this suggests that perceptions of ambiguous products may be influenced by music that primes certain specific perceptions (see for e.g., North & Hargreaves, 1998). Future research may follow-up the findings in this study on why participants did not appear to be aware of the impact of musical fit on their watch choices. A further possibility is that musical fit operates as, in effect, a form of demand characteristic, under which the participants feel compelled to respond in a particular way. Given the previous research, described earlier, indicating that musical fit effects exist in real commercial setting, this is perhaps less troubling than it might first seem. Indeed, it is far from clear what practical distinction there is between point-of-purchase advertising effects and demand characteristics.

Similar limitations on the generality of the present findings are suggested by the Elaboration Likelihood Model (see Petty & Cacioppo, 1981; Petty *et al.*, 1983). In the present context, this proposes that a crucial aspect of consumers' responses to advertising is the extent to which they have the motivation, ability, and opportunity to evaluate the product carefully. Future studies can examine if musical fit would still operate if participants were given the motivation to evaluate the products (i.e., being told that they actually will be given the product at the end of the experiment). There is clearly scope for further research, but the present findings do suggest that, under the right conditions, musical fit may influence choice for commercial products.

In the meantime, there are nonetheless other clear gaps in the literature on musical fit, and these should be investigated by future research. First, there is no direct evidence substantiating the claim that music primes product-related schemas, often demonstrated via enhanced recall and recognition. Second, if schemas and cognitive shortcuts underlie musical fit, the effect should vary depending on the nature of the products in question; interest in and familiarity with them; and concurrent cognitive load. Hence, it is possible to explain almost any finding in terms of the highly complex theories that have been produced concerning elaboration likelihood, involvement, and fit. For example, resource-matching explanations suggest that the presence of music in an advert may reduce recall because it detracts from the cognitive resources available for advert processing, whereas research on musical fit suggests that the presence of music may enhance recall providing it is congruous with expectations. Furthermore, Heckler and Childers (1992; see also, Houston *et al.*, 1987) argue that incongruity between different elements of an advert may improve recall by encouraging deeper processing, such that incongruous music may be optimal in facilitating recall of advertising. As such, any finding can be presented as 'consistent with previous research'. This is so problematic here because there are indeed numerous instances of studies yielding data inconsistent with the predictions of the approaches outlined above. For example, Morris and Boone

(1998) found few differences in brand attitudes and purchase intent when the participants were shown adverts with either no music or music that fitted the product playing in the background. Brooker and Wheatley (1994) found that differing musical tempi (with the different processing resources they require) had no effect on unaided recall of radio adverts. Such inconsistencies in research findings are no doubt due to the very complex stimuli and cognitive processes involved in advertising research. Future studies should investigate non-linear relationships between variables, and over the short-term at least, adopt very reductionist experimental methods that sacrifice ecological validity for the sake of greater insight into the conditions under which certain theories do and do not operate. In conclusion, musical fit has the potential to influence consumer decision-making, although the present research highlights one possible limitation on the generality of this, and further research is undoubtedly necessary before practitioners can reliably employ the effect in real commercial settings.

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APPENDIX 1

Screen shot of stimuli



The image displays two watches side-by-side. Watch A is a traditional mechanical watch with a white dial, Roman numerals, and a white leather strap. Watch B is a modern, flexible watch with a green digital display and a white strap.

Watch A

- Uses a co-axial escapement in conjunction with a free sprung-balance without Index.
- High precision chronometer with a stable accuracy over long periods of use.
- Meticulous finish, with circular graining, polished and beveled bridges and rhodium-plated surfaces.
- A synonym for accomplishment, completion, maximum perfection and crowning excellence.

Watch B

- Made with polyurethane for flexibility and comfort and laser-etched with patterns for a crafted touch.
- Streamlined, symmetrical silhouette equipped with a chronograph, time, date and alarm.
- Built with durable mineral glass crystal for high gloss luminous finish with one piece hinged buckle.
- A pioneering vision of cutting edge design, dynamic, vibrant, exciting and revolutionary.

