

# **The Limitations of Musical Fit Effects**

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## **ABSTRACT**

This thesis examines the limitations of the impact of musical fit on consumers' behavior. Musical fit is a recent concept in the literature, concerning how a correspondence between the properties of a product and those of concurrent background music can influence choice between competing products or prime recall of those products. The first chapter reviews theories concerning the impact of music on consumer behaviour. Seven further chapters follow, each describing one or two lab-based experiments. The first study showed that musical fit cannot influence preferences between utilitarian products. Studies 2, 3 and 4 found that musical fit influenced consumers only when they do not have pre-existing product preferences and are motivated to consider competing products. Study 5 found that musical fit influenced product choices only when consumers had limited (rather than ample) time in which to consider competing products. Studies 6 and 7 suggested that musical fit operates by priming product-related thoughts: it led to greater recall of associated products and to these products being recalled more quickly. The concluding chapter summarises the findings, describes the limitations of the research (and provides guidance for future research), and addresses the theoretical and practical implications of the current work.

197 words

## **DEDICATION**

In loving memory of my late father, Yeoh Keat Chee whose spirit compels me.

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## CHAPTER 1 - Introduction

"Today's smart marketers don't sell products; they sell *benefit packages*. They don't sell *purchase value* only; they sell *use value*."

Philip Kotler *Kotler on Marketing*

In Malaysia, a typical scenario if your local supermarket is located in an urban neighbourhood where there is a mix of English-speaking Malays, Chinese and Indians is to have Western pop music playing in the background. However, if you live in a neighbourhood that is highly populated with Malays, it is very likely that your local supermarket would be playing Malay pop songs sung by artists from Indonesia and Malaysia. If you live in a neighbourhood substantially occupied by Chinese speaking Malaysians, it would be a common affair to walk into your local supermarket listening to the strains of Canto pop songs by Chinese artists from Hong Kong or Taiwan. Similarly, in a neighbourhood which is densely populated by Indian speaking Malaysians, it is the norm that Indian Bollywood songs be playing at such supermarkets.

Malaysia is clearly a country of diversity, rich in culture and traditions. Many Malaysian Chinese today are able to trace back their roots to mainland China, and likewise Malaysian Indians to India. Due to the influx of these people, who also brought with them their own culture and traditions, Malaysia today is a melting pot of diversity. Research and theorizing concerning music and consumer behaviour have been geared strongly towards Western culture. There is unfortunately hardly any research on how music affects people living in an Asian culture. Among only a handful of studies that have been carried out in the Asian market are those concerning how Chinese brand attitudes are affected by the match between script associations and brand associations (Pan & Schmitt, 1996); the attitudes of university students in Taipei towards classical music concerts; one study of general consumer behaviour (Chen & Hu, 2006); and the application of the Mehrabian-Russell model to two types of CD stores in Hong Kong (Tai & Fung, 1997).

In contrast, many western studies have addressed how consumers are affected by music. From studies exploring tempo and modality effects on consumers' responses to music

(e.g., Kellaris & Kent, 1991) to others considering the effect of variations in tempo, rhythm, harmony and dynamics on overtly commercial dependant variables (e.g., Alpert & Alpert, 1986, 1988) a detailed understanding is emerging of how consumers, particularly in retail and leisure settings, can be influenced by so-called background or piped music. A brief overview of the most prevalent theories concerning these effects in the current literature is presented below.

### ***1.1.1 Gestalt Theory***

The word Gestalt is German for ‘shape’ or ‘form’ and implies creativity. Gestalt psychology (see e.g., Sarris, 1989; Wertheimer, 2000; Wertheimer & King, 2005) proposes that holistic scenarios and not isolated components are responsible for human behaviour and perception, or to put it in the simple terms by which Gestalt psychology is popularly-known, that the whole is greater than the sum of its parts. One of the main principles of Gestalt theory is that conscious experience takes into account all physical and mental aspects of the individual. For example, if a certain piece of music conveys a happy mood, this activates both emotional and analytical parts of the mind. This approach also recognizes that individuals often have varying reactions, both in their perception and reasoning, to identical stimuli encountered on different occasions, such that that individuals are influenced by their past experiences. This theory has arguably influenced the development of several of the models (e.g., the cognitive priming model) which are discussed later in this section of the chapter.

### ***1.1.2 Kotler’s Model Of Store Atmospheric***

Another of the more general approaches that has influenced several more specific models of the role of music on consumer behaviour was proposed by Kotler (1973-1974).

Kotler states that qualities of the exterior and interior environment have an aesthetic impact on consumers. Store atmospherics are, “The effort to design buying environments to produce specific emotional effects in the buyer that enhance his purchase probability ... The main sensory channels for atmosphere are sight, sound, scent and touch” (Kotler, 1973). Kotler believes that a store’s atmosphere can affect purchasing behaviour in at least three ways. Firstly, it creates attention by making the premises stand out from others. Secondly, it acts as a message-creating medium in that it communicates the store’s intended audience, its level of concern for customers, and so on. Finally, it acts as an affect-creating medium that can contribute favourably to purchase probability.

One of the most frequently-cited studies within this approach was conducted by Baker, Grewal, and Parasuraman (1994). They found that classical music and soft lighting led to people inferring higher merchandise and service quality, when compared to the effects of top 40 music and bright lighting. Similarly, Thang and Tan (2003) found that consumers’ holistic attitudes about a given store atmosphere influenced their overall preference for that store; and Baker, Parasuraman, Grewal, and Voss (2002) investigated the simultaneous impact of multiple store environment cues (social, design, and ambient), showing that when store environment cues (e.g., carpeted floors, wide aisles) trigger ‘high image’ notions, it may be perceived as offering high quality and value, and subsequently influence perceived value.

Other research shows that store atmosphere has a more positive effect on consumers when the individual elements of this are congruent with one another. Mattila and Wirtz (2001) used lavender as a ‘low arousal’ scent and grapefruit as a ‘high arousal’ scent. Slow tempo classical music was matched with the lavender to create a low arousal setting. Fast tempo classical music was matched with grapefruit to create the opposite effect. They found that congruent scent and sound led to consumers feeling more excited, pleased and satisfied; and they also tended to stay longer in the environment, which led to increased spending. In a similar vein, Michon and Chebat (2004) found that an arousing citrus scent (a combination of orange, lemon and grapefruit) combined with fast tempo background music (96 bpm) had the strongest indirect effect on the perception of service quality. However, when slow tempo music (60bpm) was played together with the citrus odor, there was no effect on perception of service quality.

Babin, Chebat, and Michon (2004) argue that a consumer's perception of the appropriateness of a retail environment's characteristics is based on how well the ensemble elements match expectations of a shopping context. According to them, the level of appropriateness of a given environment is dependent on the individual consumer's own personal experiences. This means that a consumer's perception of level of appropriateness is subjective, depending on his / her own experiences. Their findings show that higher appropriateness leads to perceptions that the products on sale are of higher quality and to perceptions that the 'shopping experience' is more enjoyable.

Store atmospherics can also influence consumers on a more abstract level still. Hyllegard, Ogle, and Dunbar (2006) found that in a certain retail setting (one whose brand identity and corporate image was of environmental responsibility), customers who embraced certain personal values or identities may prefer store attributes congruent with these values. Furthermore, this congruency may in turn encourage customers' to visit the retail outlet again. The identity of customers as outdoor enthusiasts or environmentally responsible citizens shaped their attitudes toward hedonic consumption experiences, such as the opportunity to test products in a hands-on fashion.

Nor is the influence of store atmospherics limited to physical commercial environments. In a recent study on atmospherics in the cyber world, Falk, Sockel, Warren, and Chen (2006) explored the application of retail atmospherics to website designs. They noted that background music may have a very different effect on user behaviour in this e-tailing environment. According to Falk, et al., background music utilizes more bandwidth, which in turns slows down page downloads, and so may worsen the user's experiences. Secondly, many of the shoppers who shop online visit these sites at their convenience, which may be between meetings, short breaks at works or even during important events: background music on these sites may expose a shopper's online activity and thus cause embarrassment. Thirdly, the volume of the music depends on the user, and the quality of music reproduction depends on the quality of the speakers used. Indeed, consistent with these arguments, Abdinnour-Helm, Chaparro, and Farmer (2005, cited in Falk, et al., 2006) suggested that background music on e-tailing sites was regularly reported as annoying and resulting in lower user satisfaction.

### ***1.1.3 Bitner's Servicescape Model***

Arguably building upon Kotler's theory of store atmospherics and an adaptation of Gestalt theory, the term 'Servicescapes' was first introduced by Mary Jo Bitner (1992). It refers to the total image of the organization whereby ambient conditions (temperature, lighting, noise, etc.), spatial layout, functionality, signs, symbols, and artefacts play an important role in influencing the nature and quality of visitor interactions and the level of satisfaction that comes with these; and thus, how environments might be planned and designed to achieve particular retail objectives. The model suggests that consumers' personal characteristics may moderate how they respond to various dimensions of the physical store environment, which in turn can shape their cognitive, emotional and physiological responses to the store, as well as the desire to spend time there or make purchases.

Schlosser (1998) found that perceptions of social identity products (e.g., greeting cards, jewellery, or perfume) were influenced significantly by store atmosphere when compared to utilitarian, functional products (e.g., aspirin or toothbrushes). The perceptions of the social identity products were more positive when the store's atmosphere conveyed notions of 'prestige' rather than 'discount', while perceptions of utilitarian products remained unaffected. Consistent with her findings, Schlosser's second experiment confirmed that if the social identity products were presented within a more prestigious atmosphere, not only did it improve product perceptions but also increased consumers' intentions to return to that store when buying social identity items.

In a similar vein to Schlosser (1998), a recent study by Kaltcheva and Weitz (2006) found that consumers' motivational orientation can moderate the effects of environmentally-induced arousal on the pleasantness of commercial experiences. Kaltcheva and Weitz (2006) induced participants to adopt either a recreational motivational (hedonic) orientation or a task oriented motivational (utilitarian) orientation, and to visit a high-arousal shopping environment (which was created by increasing the number of non-redundant elements in an

environment, using warm colours such as red, yellow and higher color saturation) or a low-arousal shopping environment, that was similar to shopping over the internet. Participants were then asked to indicate the level of pleasantness of their experience. When consumers had a ‘recreational motivational orientation’ (hedonic), arousal had a positive effect on pleasantness. Conversely, when a consumer had a ‘task- oriented motivational orientation’ (utilitarian), arousal had a negative effect on pleasantness.

Furthermore, in a study concerning relationships between quality of service performance and future intentions to visit a zoo, Tomas, Scott, and Crompton (2002) found that when visitors were satisfied with their experiences (which included wildlife and generic features such as domains and staffing), they tended to have high evaluations of overall service performance which in turn reinforced intentions to visit the zoo again and also to spread positive ‘word of mouth’ communication. Similarly, Wansink (2004) stated that dimmed or soft lighting influences eating in two different ways, namely by increasing eating duration and by increasing comfort and disinhibition. Because people are less inhibited and less self-conscious when the lights are low, they are likely to increase their food consumption.

#### ***1.1.4 Mehrabian And Russell (1974) Environmental Model***

The notion that commercially-induced arousal can influence a range of other responses to a commercial environment is most commonly associated with Mehrabian and Russell’s (1974) model of environmental psychology, which has been used frequently within consumer research. The model argues that there are three fundamental responses to (in this case, commercial) environments, namely pleasure-displeasure (P), degree of arousal (A), and dominance-submissiveness (D), which are often referred to as the ‘PAD dimensions’. The theory states that arousal amplifies any effect of pleasure, and that pleasure leads to approach behaviours while displeasure leads to avoidance behaviours. Approach behaviours are characterized as a desire to stay or linger in the environment, to look around and explore the environment, to communicate with others in the environment and an overall enhanced degree

of satisfaction with the tasks performed. Conversely, avoidance behaviours are characterized as a desire to leave the environment, a tendency to avoid moving or interacting with others, to ignore communication attempts from other and an overall feeling of dissatisfaction with the tasks performed. For example, playing popular songs should boost shoppers' enjoyment, whereas unpopular music may do the opposite, and using arousing pop songs (e.g., those with raucous instrumentation) should amplify these effects. In non retailing environments, research generally supports the PAD model although dominance is sometimes not a major factor or simply not measured (Russell, 1980).

Russell and Mehrabian (1976) have attempted to explain this approach in terms of information theory. Within this approach, environments that include more complex, intense, unfamiliar, changing or uncertain stimuli possess a greater amount of information. Furthermore, increasing the information rate increases the arousing quality of stores. This in turn suggests that if a store environment is pleasant then a high information rate will cause higher arousal and maximize the positive impact of pleasantness on purchasing will be increased, and hence purchasing behaviour is maximized. Note, however, that other research outside consumer psychology (see coverage below Berlyne's theory and Konecni's arousal-based model) indicates that this relationship may not be so simple.

Several studies of the impact of music on consumer behaviour are perhaps best-viewed within this approach. Dube, Chebat and Morin (1995) showed that the more pleasure and arousal the music elicited from the consumer, the greater was the desire to have buyer-seller interactions. In low pleasure situations, arousal merely amplified the consumer's reported desire to interact, but no actual interaction behaviour took place. A similarly complex pattern of findings resulted from a study concerning the impact of arousal on consumer satisfaction by Wirtz, Mattila, and Tan (2000). By using video simulations, they were able to create four affective states, namely exciting, relaxing, irritating, and boring. To create a high target arousal environment, participants were asked to imagine a scenario of a lively and exciting social dinner with friends. Conversely, a version of a low target arousal was created by asking participants to imagine a scenario in which they hoped to relax after a long, stressful day. The findings in this study supported the PAD model, in that participants were more satisfied in pleasant conditions where arousal level was higher: in the low arousal condition, participants did not exhibit higher levels of satisfaction.

### *1.1.5 Berlyne's Psychobiological Model*

The notion of musically-induced arousal and pleasure is perhaps most commonly associated with Daniel Berlyne's theory of aesthetics. Berlyne himself was a competent pianist and had an insatiable appetite for music and art. His theory (e.g., Berlyne, 1974) states that liking for artistic or hedonic stimuli, such as music, is related to their collative properties, such as their degree of complexity, novelty, uncertainty, and conflict. These collative properties give rise to arousal in the listener's autonomic nervous system. Music that produces a moderate degree of arousal potential is liked best, and the degree of liking gradually decreases as the amount of arousal elicited by a particular piece is closer to the extremes of the arousal continuum. In other words, the relationship between preference and arousal potential is best-described as an inverted-U-shaped curve. Numerous lab-based studies support this theory, although 'real world' evidence is relatively scant. Nonetheless, it is interesting that Simonton (1980) analysed 15,618 musical themes by 479 classical composers, finding that pieces with moderate levels of originality were the most popular among his participants. Similarly, applause duration is an expression of the audience's enjoyment level and can be taken as a measure of their satisfaction, and Kellaris (1992) found that moderate tempo music led to the longest applause at American-Greek social events. Moreover, North and Hargreaves (1996a) found an inverted-U relationship between ratings of liking and complexity assigned to the music played in aerobic exercise and yogic relaxation classes.

Other research has tested the notion of musically-induced arousal in overtly commercial settings. Several studies of the impact of music on the speed of customer activity conclude that as music becomes more arousing (by being, for example, faster or louder) so the physiological arousal that this causes should cause customers to act more quickly. For example, Smith and Curnow (1966) manipulated the volume of in-store music to show that, despite there being no impact on the amount of money spent when loud or soft music was played, customers tended to spend less time in a store when loud rather than soft music was played. Similarly, Milliman (1986) found that fast tempo background music can

significantly increase the pace of consumers. In this study, restaurant patrons were exposed to either fast or slow tempo music. Patrons tended to stay longer when listening to slow music compared to fast music. Although the additional time did not result in an increase in food expenditure, it did lead to an increase in the amount spent on drinks. A replication of Milliman's study by Sullivan (2002; see also North & Hargreaves, 1996b) supports the notion that soft music can lead to longer meal durations than loud music.

### ***1.1.6 Konečni's Arousal-Based Approach***

It would be wrong to leave the discussion of Berlyne's theory without considering other research that directly addresses the extent to which it applies in naturalistic settings. Konečni was not only interested in how music causes arousal, but also in how this relationship is mediated by arousal caused by the immediate listening situation. He suggests that music is used to respectively supplement or reduce the amount of arousal induced by insufficiently- or overly-stimulating listening environments. For instance, Konečni and Sargent-Pollock (1976) found that participants would choose simple music over complex melodies when required to carry out complex mental tasks. This is because human information processing capacity is limited, and arousing music would reduce the amount of processing capacity that could be otherwise allocated to the concurrent task. Similarly, North and Hargreaves (1999) found that participants' lap times in a motor racing computer game were slowest when they had to hear arousing music. However, when participants were exposed to less arousing music, their lap times improved significantly.

Konečni, Crozier, and Doob (1976) went one step further by deliberately manipulating the arousal-evoking qualities of the environment. In this study, some participants were insulted by a confederate at the beginning of the experiment to increase their level of arousal. Participants' were then subjected to different melodies, varying in loudness and complexity, which according to Koenčni's framework, would also influence their level of arousal. Participants who were insulted were offered the opportunity to give electric shocks to the confederate who had originally insulted them. The most-highly

aroused participants, who were insulted and who had heard the loud, complex music, gave the most number of ‘shocks’ in order to dissipate this level of arousal; whereas participants who were insulted but had heard quiet, simple music, which itself would have reduced the arousal caused by being insulted, gave the least number of ‘shocks’, to the extent that in some cases, they were even less aggressive than participants who had not been insulted at all.

However, people may not always select music that brings about a moderate level of arousal. For example, when we are already relaxed and about to sleep, we do not listen to fast and lively music to moderate our arousal level. North and Hargreaves (2000a) suggest that people in such circumstances tend to listen to slow, quiet music that would further reduce their level of arousal, and the same study showed that people who are trying to exercise similarly prefer loud, fast music that would further increase their level of arousal. In other words, we sometimes choose certain music to help us achieve our goals, which may not necessarily moderate our arousal level. Findings such as these may eventually prove to have implications for interpretation of research reviewed in the previous section on the impact of musical tempo on the speed of customer activity under varying conditions of crowding.

### ***1.1.7 The Elaboration Likelihood Model***

The Elaboration Likelihood Model (ELM) was first proposed by Petty and Cacioppo (1981). Petty, Cacioppo, and Schumann (1983) argue that there are two routes to persuasion, the central route and the peripheral route. The central route refers to meticulous consideration of information relevant to a product or issue: processing occurs via this route when consumers are in a state of high involvement, such that they possess the ability, opportunity and the motivation to evaluate message arguments thoughtfully. In the peripheral route, however, individuals usually do not have the motivation, opportunity or ability to scrutinize message arguments carefully. This state of low involvement means that simple heuristics and cues are employed when considering information about the products or issues. These cues involve associating the product or issue with positive or negative

emotional responses to stimuli in the environment, such as liked or disliked music (Petty, Cacioppo, and Goldman, 1981).

Gorn's (1982) influential study suggests that peripheral influences such as background music may become associated with the advertised product, and hence influence product choice through classical conditioning. Participants were more likely to select a specific colour of pen if that pen had been paired with pleasant rather than unpleasant music, although this effect was found only for participants who did not know in advance that they would be asked to select between the pens. Bierley, McSweeney, and Vannieuwkerk (1985) provided evidence that classical conditioning can alter preferences for a wide range of stimuli; and Alpert and Alpert (1989) found that background music affected participants' moods and purchase intentions without necessarily affecting cognitive processes. However, research by Kellaris and Cox (1987) and Allen and Madden (1985), among others, have identified several weaknesses in Gorn's study. Perhaps most interestingly of all, Park and Young (1986) showed that background music can influence high involvement consumers as well as those in a state of low involvement. Background music had a positive effect for low-involvement participants via the classical conditioning route proposed by Gorn, but high involvement consumers were also influenced by music, and in particular by the degree of 'fit' between the music and the attributes of the advertised product.

### ***1.1.8 Musical Fit***

The influence of much of the research within the theories and approaches considered already can be detected in work on musical fit. Music that fits the attributes of the product in question can influence high-involvement consumers because it primes relevant information about the product. This primed information will therefore be more salient when the product is being considered. Similarly, this priming process means that the music may function as a cue for low involvement consumers also, since it provides guidance on which of several products is the 'best' option without the need for the consumer to resort to explicit thought processes. As an example of this priming process, *Mack The Knife* by Ella Fitzgerald may be

associated with the scat singing era, which is associated with the jazz movement in the mid-20<sup>th</sup> century, which may in turn be associated with other aspects of that period, such as racial discrimination. Hearing *Mack the Knife* may prime thoughts concerning any or all of these which in turn influences the perception of products presented concurrently. MacInnis and Park (1991) presented a similar argument with respect to their notion of 'indexicality'. Indexicality here is defined as the extent to which music arouses previous emotion-laden experiences, such that the emotions associated with the music become associated with the product in question. In other words, musical fit may operate by activating knowledge relating to the music or priming more overtly emotional reactions which themselves influence response to the product in question.

Perhaps the first study of musical fit in an overtly commercial context was carried out by Areni and Kim (1993). They found that customers bought more expensive wine when exposed to classical music rather than top-forty pop music in a wine cellar; and argue that this was probably due to the fact that, if consumers associate wine consumption with notions such as prestige and sophistication, then the stereotypical notions that we have concerning classical music provide a compatible cue. Following that, North, Hargreaves, and McKendrick (1999) found that supermarket customers were more likely to buy French wines when French music was being played and German wines when German music was being played. Despite very few participants citing music as a reason underlying their choice, North et al., explained that this was simply because participants based their decision on peripheral route processing. Similarly North and Hargreaves (1998) argued that musical fit influenced the purchase intentions of participants in a cafeteria. Participants were prepared to pay more for food items when classical music was played when compared to pop music, easy listening music and no music condition. The authors argued that this was because classical music primed notions such as sophistication and luxury. Similarly in another experiment by North, Shilcock, and Hargreaves (2003), customers were willing to spend more when the restaurant played classical music rather than either pop music or no music. Similarly, Grewal, Baker, Levy, and Voss (2003) found that classical music enhanced the image of a jewellery store by implying that it was a luxurious environment.

## 1.2 The Malaysian Context In The Present Research

Malaysia is a middle-income country, and is typically regarded as one of the most developed of the developing countries. The country has a population of 27.73 million ([www.statistics.gov.my](http://www.statistics.gov.my), updated 5<sup>th</sup> September 2008), and the national capital, Kuala Lumpur, has a population of around 1.5 million with the country's highest population density of 6,180 persons per square kilometre. People aged 14 years and less account for 32% of the population, the 15-64 years old group accounts for 63.5%, while the population over 65 years comprises 4.5% of the total population. Life expectancy at birth for both sexes has increased of late. In 1990, the life expectancy for males and females were 68.8 years and 73.5 years respectively. The life expectancy for males and females in 2008 has improved to 71.9 and 76.4 years respectively ([www.statistics.gov.my](http://www.statistics.gov.my), updated 10<sup>th</sup> December 2007). More than 60% of the population live in urban areas (WHO Country Cooperation Strategy – Malaysia 2006-2008). The distribution of ethnic groups in Malaysia as of 2005 (Saw, 2007) shows that ethnic Malays constitute 54.1% of the population, ethnic Chinese make up 25.3%, ethnic Indians make up 7.5%, indigenous peoples make up 11.8%, and that other groups constitute the remaining 1.3% of the population.

Malaysia's GDP is at 6.3% with private consumption remaining a strong driver of economic growth ([www.statistics.gov.my](http://www.statistics.gov.my), updated 4<sup>th</sup> September 2008). Strong consumer spending is encouraged by low interest rates and favourable terms of trade for agricultural exports such as natural rubber (which has raised rural incomes) ([www.bnm.gov.my](http://www.bnm.gov.my), updated 28th February 2007). According to WHO, the income per capita in 2004 is RM16,098 (and note that £1 = RM7.14), which averages to approximately RM1,300 (£182) per month: the overall poverty incidence is 2% in urban areas and 11.4% in rural areas, although this varies by ethnicity also. For instance, 7.3% of Bumiputeras have income below poverty levels, whereas the corresponding figures for ethnically Chinese and Indians are 1.5% and 1.9% respectively (WHO Country Cooperation Strategy – Malaysia 2006-2008). Malaysians tend to spend a high percentage of their income on food, groceries and personal care items, accounting for 22.6% and 22.2% respectively ([www.statistics.gov.my](http://www.statistics.gov.my)).

Average household income in Britain is £1,828 a month, which is obviously much higher than an average household income in Malaysia of RM1,300 a month. In Britain, the health industry has the highest earnings, with professionals at an average of £4076 a month, whereas in Malaysia, the highest paid sectors are in the government, education and health sectors which pays an average of RM6,514 a month. A large proportion of the British work in public administration, education and health, attracting an average salary of £1,821 a month. In Malaysia, the greatest proportion of people work in the IT, web and telecoms sector, attracting an average salary of RM4924 a month. ([www.statistics.gov.uk](http://www.statistics.gov.uk); Malaysia IT Salary Report 2006).

Despite this difference in income, many Malaysians can afford to eat out almost every day of the week and, depending on one's budget, there are a variety of international and local cuisines, from high end restaurants to hawker stalls. A typical Malaysian would usually eat local cuisine, as it is much cheaper than Western food. For instance, one could purchase a regular Malaysian meal for RM10, whereas the average cost of eating out in the UK is between £12 to £20 ([www.workgateways.com/working-cost-of-living.html](http://www.workgateways.com/working-cost-of-living.html)).

### **1.3 Retailing In Malaysia**

Enrolment in public universities across Malaysia has been increasing since 2000. Based on UNESCO's estimates, the tertiary education participation rate in Malaysia was around 25% in 2002 ([UNESCO](#), 2006). This compares well with other developing countries at the same level of socio-economic development. The Ministry of Higher Education in Malaysia expects the number to increase to 40% by 2010. This combined with rising incomes and the presence of high profile international retailers has led to Malaysian consumers becoming increasingly cosmopolitan / westernised. One particular manifestation of this is the recent emergence of hypermarkets which have seen tremendous growth in urban areas. Most hypermarkets are owned by foreign retailers, such as Giant (HK), Carrefour (French), and Tesco (British), and as of 2006, there are 40 foreign-owned hypermarket outlets in Malaysia (Shamsudin and Selamat, 2005). High and middle-income households

tend to spend most of their money at hypermarkets, followed by supermarkets and traditional grocery stores ([www.pwc.com/gx/eng/about/ind/retail/growth/malaysia.pdf](http://www.pwc.com/gx/eng/about/ind/retail/growth/malaysia.pdf)).

In rural areas, convenience stores and small operators are still in demand, although many independent grocers such as provision shops and mini-markets are gradually closing down in urban areas ([www.pwc.com/gx/eng/about/ind/retail/growth/malaysia.pdf](http://www.pwc.com/gx/eng/about/ind/retail/growth/malaysia.pdf)).

## **1.4 Music In Malaysia**

In a country as diverse as Malaysia, music is equally varied. Of all forms of music, variants of pop are the most widespread and prevalent among Malaysians. English speaking urbanites in Malaysia are more inclined to listen to Western pop music although, apart from Western pop, each ethnic group also has their own distinct language which in turn perhaps helps to explain the existence of their own differing types of pop music. For instance, urban Malays would be more inclined to switch on radio stations which play Malay or Indonesian pop music, whilst urban Chinese would be more prone to listen to Chinese Canto-pop stations featuring Hong Kong, China and Taiwanese artists; and members of Malaysia's ethnic Indian community would be most likely to listen to stations playing Bollywood music.

Western art music is geared towards only a more elite group within society. Malaysians are rarely exposed to Western art music, as there are no radio or television stations here which air it. Exposure to Western art music is also limited to one location, Kuala Lumpur. There are only two established orchestras in Malaysia, and that in itself is a testament to how much Malaysians are exposed to Western art music. In general though, there is a growing trend whereby many urbanite Malaysian Chinese families have at least one member of their family playing a Western musical instrument.

The final genre of music worth mentioning here is Malaysian art music. This term encompasses three broad types of traditional Malaysian music. Ethnic Malay art music uses traditional Malay instruments such as the *gamelan*, *sape*, *serunai*, *rebana*, *gambus*, etc. The cultural art music of the Chinese has roots back in China, and Chinese music uses *er-hu*, *gu-*

*chen*, the Chinese flute, *pipa*, etc. Meanwhile, the cultural art music of ethnic Indians can be traced back to India: instruments such as the sitar and tabla are among the most popular. However, Malaysians' degree of exposure to these art musics is limited, relative to exposure to pop music.

There is also of course a wide variety of other music forms to be found in Malaysia such as jazz, underground music, heavy metal etc. Again, these more obscure forms are very much centered in and around Kuala Lumpur, with regular live performances a common feature of cultural life. In particular, jazz festivals are on the increase in Malaysia, with many corporate sponsors backing these live performances. However, away from the city centre, most Malaysians depend on radio stations for their daily dosage of music. Since radio stations play mostly pop music, exposure to other forms of music among the rural populace is low.

### **1.5 Purpose Of This Research**

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 effects in terms of background music and the dependents: value returns, behaviour duration and affective response".

The present research concerns the impact of musical fit on consumers in Malaysia. As the above literature review indicates, aside from representing arguably the most recent attempt to explain the impact of music on consumers, musical fit is perhaps the best approach to adopt in a Malaysian context since it explicitly recognizes the role of cultural factors in determining the impact of a given piece of music on consumers. For example, it acknowledges explicitly that there are culture-based stereotypes of differing musical styles

that influence consumers, and emphasizes that it is the individual's response to the music, rather the properties of the music per se, that are crucial. This recognition of cultural factors is particularly relevant when investigating music in a culture that contains three major ethnic groups, each with their own quite distinct musical heritage. Furthermore, unlike approaches such as the servicescape model, the notion of musical fit implicitly allows researchers to make very specific predictions about the impact of a given piece of music in a given commercial setting. Nor, however, does the present work assume that musical fit is a perfect model. Rather, the approach adopted here is to question the generality of any effects of musical fit, and use the opportunities offered by a strongly multicultural society to test several possible limitations of the approach.

Moreover, previous studies of musical fit have been geared towards Western society and culture, and studies in Asia are still lacking. Indeed, the potential limitations of having research based exclusively in the West can be illustrated by one specific example. In Western culture, Western art music, better known as classical music, is deemed as sophisticated, upmarket and refined (e.g., North & Hargreaves, 1999). As noted earlier, a few studies have employed this to influence Western consumers' perception of the value of goods and services. However, in Malaysia, exposure to such music is relatively scarce. How would Malaysian consumers (and by implication, consumers in any other culture with little exposure to Western classical music) respond to Western classical music? Similarly, exposure towards Malaysian art music has not been very widespread either, so would Malaysians be predisposed to regard Malaysian art music as elegant and exclusive, as more elegant and exclusive than its Western equivalent, and as elegant and exclusive as any of the other musics to which Malaysia's multicultural population is exposed? Music is an intrinsically cultural object and research must account for this. The present research, however, is also designed with relevance to wealthier, more influential Western markets in mind. In addition to investigating whether musical fit effects are limited by cultural factors, the experiments described in this thesis also investigate potential limitations of musical fit that may apply in any culture, be this in the East or the West.

The first study investigated the effects of musical fit on utilitarian items. Three different musical styles and a 'no music' control condition were employed over a period of five weeks in a large study room in a Malaysian student dormitory. On each evening, either

Western classical music, Western pop music, ethnic Malay music or no music was played. Participants were shown pictures of products and asked to state the maximum that they would be prepared to pay for each item. Following that, participants were also shown pictures of two competing utilitarian products, one being a more 'upmarket' version than the other, and participants were asked to choose one of them. Western research leads us to expect that Western classical music will lead to participants being prepared to pay more for the products and to them selecting the more 'upmarket' of the two alternate products with which they are presented (see North and Hargreaves, 1998). However, as noted earlier, Schlosser (1998) found that quality perception of products, the store's social image and purchase intentions concerning social identity products (e.g., greeting cards, jewellery, perfume) were influenced more by store atmosphere than were perceptions and intentions concerning utilitarian products (e.g., aspirin, toothbrushes). Following this, an alternate hypothesis is that the different types of music employed here might have no influence on the amount that customers are willing to spend on utilitarian products or on preferences for 'upmarket' versions of those products.

Following that, the second study investigated issues concerning musical fit on choice between two competing products, rather than on the amount of the money that customers are willing to spend. To date, only one study (North, Hargreaves, and McKendrick, 1999) has investigated the impact of musical fit on choice between two competing products, with all the remaining research addressing the amount of money that customers spend: the present research set out to investigate whether North et al's finding could be replicated outside Western culture. This study also investigated whether the effect would be sufficiently robust to determine preference even when one product enjoyed a clear advantage over another. The two experiments in this study tested participants' choice of food when they were exposed to music which either did or did not fit that food. Cultural factors mean that people will sometimes have clear preferences for certain types of food over others. For example, people in the West are far more likely to eat Western rather than Eastern food, and vice versa. In the first part of this experiment, Malaysian participants were asked to choose between their Malay or Western food, while in the background they heard either Western or Malay music. Under these circumstances, the Malay food enjoys a clear advantage over the competing alternative, and musical fit effects might not be sufficiently robust to influence participants'

food choices significantly. The second part of the experiment followed from this. Malaysians of Malay, Indian, and Chinese ethnic background were asked to choose between Indian and Malay food. These two types of food are reasonably similar to one another (certainly relative to the distinction between Malay and Western food). Nonetheless, to the ethnically Malay participants, the Malay food would still be expected to be preferred over the Indian, whereas the ethnically Indian participants would still be expected to prefer the Indian food. However, the ethnically Chinese participants would have no priori reason to choose one type of food over the other, and so when Indian and Malay music are played in the background, we might expect the food preference of the ethnically Chinese participants to be influenced by this.

Study 3 sets out to determine the generality of effects obtained in Study 2. Two different musical styles and one 'no music' control condition are employed. Ethnically Chinese Malaysians listened to either Indian, Malay, or no music while being presented with 24 pairs of products. For each pair, participants were required to state which of the two products they preferred. Within each of six 'test pairs' however, one of the options was clearly Malay whereas the competing alternative was clearly Indian. The total number of Indian and Malay products selected was calculated, and it was predicted that within the test pairs, participants who heard Indian music would select Indian products, whereas participants who heard Malay music would prefer Malay products.

Study 4 investigated whether musical fit can influence consumers when they do not have existing preferences. Whereas previous studies did so on ethnic grounds, this study considered simply whether participants were (not) regular users of the brands in question. Specifically, it considered the effects of musical fit on competing alternate petrols, by displaying adverts for two petrol brands, namely Caltex and Esso. Two contemporary pop songs were employed which either did or did not fit the advert. Half of the participants were asked to watch two adverts, one for Caltex with music that fitted the Caltex brand and another for Esso with music that did not fit the Esso brand. Similarly, another group of participants were required to watch an advert for Caltex with music that did not fit the Caltex brand and another for Esso with music that did fit the Esso brand. Participants were then required to state which of the two petrols they preferred. It was predicted that regular users of Caltex petrol would still choose Caltex petrol whether or not the music used fitted the

advert; and similarly that regular users of Esso would choose Esso irrespective of the degree of musical fit in the adverts with which they were presented. It was also predicted, however, that the non-regular-users of Caltex and Esso petrols would be influenced to choose the brand that was advertised with music that fitted it.

Study 5 investigated the effects of musical fit on consumers under two conditions, namely when ability to consider the products is limited, and the other when ability to consider the products is not limited. This study employed two different experiments, both of which employed three different musical conditions, namely classical music, funk music and a no music condition. While one of these played in the background, participants were shown a picture of two watches on the laptop, one of which was associated with a luxurious stereotype of classical music and the other a modish stereotype of funk music. Below the picture of the watches were technical descriptions. In the first experiment, participants were given only 15 seconds to read the descriptions before the screen on the laptop would turn off and they were requested to choose one of the watches. It was predicted that participants who had heard classical music would choose the luxurious 'classical music watch'. Similarly, participants who heard funk music were expected to choose the modish 'funk music watch'. In the second experiment, participants were given as much time as they needed to read the descriptions while the music played throughout. It was predicted that participants would not be affected by the music playing.

Study 6 investigated the effects of musical fit on consumers' memory for products. If musical fit operates by priming certain thoughts then this elevated degree of activation ought to also make it easier to recall the associated products. Previous studies have claimed that music can prime the selection of certain products and subsequently raise the salience of certain products and behaviours associated with the music. The possibility that music can raise the salience of associated products has not been tested directly, however, and ought to manifest itself through enhanced ability to recall the products in question when associated music is played. The study employs two different musical styles, Western rock music and Western classical music. While one of these played in the background, participants were shown 20 products via a Powerpoint presentation, some of which were associated with either the rebellious stereotype of rock (e.g., marijuana, an electric guitar) or the affluent stereotype of classical music (e.g., a cigar, champagne). Participants were then asked to recall the

products they had seen. It was predicted that participants who had heard rock music would be better able to recall rock-related items and to recall these earlier than other items. Similarly, participants who heard classical music were expected to be better able to recall classical music-related items, and recall these earlier than other items.

The final study investigated the effects of musical fit on consumers' ability to recall, in the context of those ethnic factors addressed in earlier studies. Participants were asked to list as many Malay and Indian food items as they could while listening to either Malay or Indian music. It was predicted that among ethnically Chinese participants, more Malay food items should be recalled when Malay music is played and more Indian food items when Indian music is played. It was also expected that ethnically Malay and Indian participants should be more likely to recall food from their own cultures, irrespective of the music played.

## **CHAPTER 2 - The Effects Of Musical Fit On Purchase Intentions And Choice Of Utilitarian Products**

This study investigates the effect of music fit on purchase intentions in Malaysia. In the West, Areni and Kim (1993) showed that playing classical music led to customers buying more expensive wine than when Top 40 music was played in a wine cellar. North, Hargreaves, and McKendrick (1999) found that customers were more likely to buy French wine than German wine when French music was played from a supermarket display, whilst German wines were selected when the display featured German music. Both these studies illustrate how music can prime consumers' choices. In the former study, the authors argued that classical music 'fitted' a stereotype involving notions such as 'expensive' and 'luxurious', which was why consumers bought the more expensive wine when classical music was being played. In the latter study, music 'primed' or activated consumers' knowledge related to the products displayed, for example German music primed knowledge associated with German wines and French music, French wines.

Similarly, North and Hargreaves (1998) argued that musical fit influenced the purchase intentions of participants in a cafeteria. Participants were prepared to pay more for food items when classical music was played when compared to pop music, easy listening music and a no music condition. In response to a questionnaire, customers stated that classical music expressed notions such as sophistication and luxury. Follow up experiments by North, Shilcock, and Hargreaves (2003), Lammers (2003), and Wilson (2003) showed that customers were willing to spend more when a restaurant played classical music than either pop music or no music. Research conducted by Grewal, Baker, Levy, and Voss (2003) found that classical music made a jewellery store seem more luxurious. In the context of advertisements, North, Hargreaves, MacKenzie, and Law (2004) constructed adverts for a range of products which featured music that either did or did not reflect aspects of the products concerned. For example, the music for a sports drink was itself dynamic, quick-paced, and otherwise energetic. Such music was able to facilitate recall of the brands concerned.

Several consumer psychologists (e.g. MacInnis & Park, 1991) have argued that music that fits the advertised product influences subsequent purchase intentions because it primes superordinate knowledge structures which relate to relevant product information. 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 researchers in this field have drawn explicitly on cognitive priming theory (e.g., Berkowitz & Rogers, 1986) in arguing that exposing people to violent or sexist music videos should prime cognitions concerning related violent or sexist acts, such that the latter are subsequently regarded as more acceptable or are more likely to be displayed (e.g., Anderson, Carnagey, & Eubanks, 2003; Hansen, 1989; Hansen & Hansen, 1988, 1990, 1991; Hansen & Krygowski, 1994; Johnson, Jackson, & Gatto, 1995; and Ward, Hansbrough, & Walker, 2005). Although carried out independently, this research itself mirrors studies within experimental aesthetics carried out during the same period indicating that liking for a given piece of music is influenced by the extent to which it activates related knowledge structures; and several studies have supported various manifestations of this approach such as, for example, Martindale's *preference for prototypes* model (see e.g., Hekkert & van Wieringen, 1990; Martindale & Moore, 1988; Martindale, Moore, & Borkum, 1990). In short, studies within consumer psychology, media psychology, and experimental aesthetics suggest that music that fits a particular product or commercial behaviour is effectively a type of cognitive prime that activates superordinate knowledge and therefore raises the salience of certain aspects of consumers' knowledge of the world.

No research so far has investigated the possibility of corresponding effects in non-Western cultures. Previous research on musical fit has focused on the impact of classical music on sales of 'upmarket' products, and it is by no means clear that corresponding effects would be found in other cultures where classical music may not have the same meaning to customers as in the West. Accordingly, the present research aims to investigate if Western classical music would prime Malaysians to perceive associated products as expensive and luxurious and therefore influence the maximum amount that they would be willing to pay for them. Furthermore, the emphasis in existing research on classical music means that the work has focused on 'upmarket' products such as wine sales or restaurant meals. We know nothing about the impact of musical fit on preferences between competing versions of

*utilitarian* products. If music primes the salience of related products then participants should choose a luxurious version of a utilitarian product over a cheaper alternative when Western classical music is played.

The present study employed three different musical styles and a ‘no music’ control condition over a period of five weeks in a large study room in a Malaysian student dormitory. On each evening, either Western classical music, Western pop music, ethnic Malay music or no music was played. Participants were shown pictures of products and asked to state the maximum that they would be prepared to pay for each item. Following that, participants were also shown pictures of two competing utilitarian products, one being a more ‘upmarket’ version than the other, and participants were asked to choose one of them. Western research leads us to expect that Western classical music will lead to participants being prepared to pay more for the products and to them selecting the more ‘upmarket’ of the two alternate products with which they are presented. However, Schlosser (1998) found that quality perception of products, store’s social image and purchase intentions concerning social identity products (i.e. greeting cards, jewellery, perfume) were influenced more by store atmosphere than were perceptions and intentions concerning utilitarian products (i.e. aspirin, toothbrushes). Specifically, the perceptions of social identity products were more positive when the store’s atmosphere conveyed notions of ‘prestige’ versus ‘discount’; while perceptions of utilitarian products remained unaffected. Following this, an alternate hypothesis is that the different types of music employed here might have no influence on the amount that customers are willing to spend on utilitarian products or on preferences for ‘upmarket’ versions of those products.

## **2.1 Method**

### ***2.1.1 Participants***

120 participants took part in the study, having been divided into four groups of 30 participants each. Each group comprised 10 ethnic Malays (5 males, 5 females), 10 ethnic Chinese (5 males, 5 females), and 10 ethnic Indians (5 males, 5 females). All participants were aged 18-24 years (mean = 20.05,  $SD = 1.37$ ). Participants were students from University Putra Malaysia. Testing was conducted in groups of 5-10 in a quiet room on campus.

### ***2.1.2 Materials and Design***

The research used a between subjects design in which Malay, Indian and Chinese participants were played either ‘no music’, Classical music, pop music or Malay music. Equal numbers of participants from each of the ethnic groups were exposed to each of the four different music conditions.

Apart from the ‘no music’ condition, participants heard music in each condition while they completed the questionnaire. These music conditions employed a CD representing one of three musical styles, namely ethnic Malay music, Western classical music and Western pop music. The Western classical music was taken from *101 Classics – Classical Highlights from the Great Composers Vol.1*. The tracks used from this CD were Bach’s *Brandenburg Concerto No. 3 in G major*, Handel’s *Concerto Grosso No.6, 2<sup>nd</sup> movement in F major*, and Bach’s *Jesu, Joy of Man’s Desiring*. The Western pop music was taken from *1*. The tracks used from this CD were U2’s *Beautiful Day*, Sheryl Crow’s *Everyday Is A Winding Road*, and Vanessa Carlton’s *A Thousand Miles*. The ethnic Malay music was taken from the CD *Muzik Tarian Malaysia*. The specific tracks used were *Puteri Ledang*, *Serampang Pantai* and *Bunga Bunga Di Taman*. The music was played through a portable CD player with speakers positioned at the back of the room.

The products used in this questionnaire were bought from a local hypermarket. The pictures were then taken with a Casio digital camera. Once the pictures of all the products were taken, an Adobe version of the questionnaire was designed.

### ***2.1.3 Procedure***

The study was carried out between 8.30pm and 10.30pm over five weeks in July and August. The room chosen was a huge study room at one of the dormitories in University Putra Malaysia, and this time of day was chosen because most students would be back at their dormitories at this time. Participants were recruited via posters asking people to volunteer for research in which they would complete a questionnaire in return for five Ringgits. Participants were required to answer all the questions in the questionnaire and they were given unlimited time to complete it while music (or no music) played at a comfortable background volume level. The questionnaire had four introduction questions. Question 1 asked participants how often they go shopping for household items, and participants were given three options, once a week, once a fortnight or once a month. Question 2 asked participants what type of store they normally shopped in for household items. Participants were given four options, hypermarket, supermarket, local shop and other. Question 3 asked participants how much they spent the last time they went shopping for household items and to give an estimate to the nearest 10 Ringgit. Following that, the questionnaire was then divided into two sections. Section 1 of the questionnaire consisted of 18 utilitarian household products, (for example, cooking oil, a photo frame, and an umbrella) asking participants to state the highest price they would be willing to pay for each item to the nearest Ringgit. Section 2 of the questionnaire consisted of 17 products asking participants to choose either an 'upmarket' version of a utilitarian product or a 'less upmarket' version (for example, Duracell batteries versus Eveready batteries; Carrefour detergent powder and Trojan detergent powder), which were included on the basis of a small pilot study to establish 'upmarket' and 'less upmarket' versions of products.

## **2.2 Results**

A MANOVA was carried out to investigate any differences between the three musical styles and no music in the maximum amount that participants were prepared to pay for the

utilitarian products in question. The result of this was not significant ( $F(57, 297) = .95, p = 0.579$ ). Univariate tests indicated that two of the items were associated with significant differences between the conditions, and means for these were in the predicted direction. These were the Ikea wastepaper basket ( $F(3, 115) = 3.07, p = .031$ ) and the High Sierra knapsack ( $F(3, 115) = 3.43, p = .019$ ). A chi square test was also carried out to investigate any association between the frequency with which participants selected the upmarket or less upmarket alternative and the type of music (or no music) playing in the background. The result of this was not significant.

### **2.3 Discussion**

The results of this experiment provide clear evidence that different musical styles (and no music) did not influence the maximum amount participants would pay for utilitarian products. The results for the wastepaper basket and knapsack are arguably better attributed to a type 1 error, a false positive based on the number of products tested. The results also provide clear evidence that participants may not necessarily choose the more 'upmarket' version of a product when exposed to different musical styles (and no music). As these results are non-significant, it is of course impossible to state their cause. However, one particular possibility seems a strong candidate. The utilitarian products shown in this questionnaire were everyday items. As noted earlier, Schlosser (1998) found that purchase intentions concerning social identity products (i.e. greeting cards, jewellery, perfume) were influenced more by store atmosphere than were intentions concerning utilitarian products (i.e. aspirin, toothbrushes). Following this, having different musical styles would have no bearing on the maximum price participants would be willing to pay in the present research, since the items themselves were not social identity products.

This explanation cannot be ruled out. Note, however, that balanced against it is the finding by North and Hargreaves (1998) that classical music played in a cafeteria increased the amount that customers were prepared to pay for rather mundane items of food and drink, such as chocolate bars or cans of pop. In this case, classical music influenced participants

even though the products were arguably utilitarian and were not associated clearly with the music.

This then raises another possibility, namely that the effects of classical music identified in Western studies do not apply to non-Western participants. This may be due to the fact that they regard classical music as 'Western' rather than 'upmarket', and so the music would not encourage participants to pay more or to favour the more expensive of two alternative products. The remainder of this thesis goes on to consider other possible limitations on the generality of musical fit.

## **CHAPTER 3 - The Effects Of Musical Fit On Choice Between Two Competing Foods**

The present research explores the impact of musical fit on product choice. Musical fit refers to the tendency of customers to select one product over another on the basis of background music activating superordinate knowledge structures and therefore either being suggestive of only one of the competing alternatives or increasing the propensity to spend more when background music implies notions of affluence or wealth. Chapter 1 describes evidence showing that, for instance, customers were more likely to buy French wine from a supermarket display when French music was played from that display, whereas they tended to select German wine when the display featured German music (North, Hargreaves, & McKendrick, 1999). Although the present research investigated simply whether a similar effect could be identified among Malaysians, the primary aim was to investigate a potential limitation of the effect, namely whether it occurs only when customers do not have strong preferences between the competing products in question.

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 the ability of (classical) music to prime purchasing of more expensive alternative products. Only one study to date (North, Hargreaves, and McKendrick, 1999) has shown that music might influence consumers' preferences between similar products. This raises several interesting questions. First, can North, Hargreaves, and McKendrick's (1999) findings on the effect of in-store French and German music in promoting sales of French and German wine be replicated outside Western culture? Second and more interestingly, would such an effect apply for all consumer decision processes? It seems very likely that it would not. It is noteworthy that North, Hargreaves, and McKendrick (1999) explained at length how they attempted to ensure that one type of wine enjoyed no other advantage over the other that might influence preference for it. For example, the French and German wines considered by the research were similarly priced, of a similar degree of dryness / sweetness, and were even alternated between the left- and right-hand sides of the supermarket display to control for customers being predominantly right-

handed. The present research investigated instead whether similar musical fit effects could occur when one of the competing products had an obvious advantage over the other. As such, the present research represents a much stricter test of the musical fit hypothesis than has hitherto been attempted. Since Garlin and Owen's (2006) meta-analysis reported that the effects of music in commercial contexts were only small to moderate, we might expect that the impact of musical fit is insufficient to over-ride any effect on customer preferences attributable to one product enjoying a natural advantage over another.

Two experiments were carried out to investigate these issues. The two experiments here tested the participants' choice of food when they were exposed to music which either did or did not fit that food. Cultural factors mean that people will sometimes have clear preferences for certain types of food over others. For example, people in the West are far more likely to eat Western rather than Eastern food, and vice versa. In the first experiment here, Malaysian participants were asked to choose between Malay or Western food, while in the background they heard either Western or Malay music. Under these circumstances, the Malay food enjoys a clear advantage over the competing alternative, and musical fit effects might not be sufficiently robust to influence participants' food choices significantly. The second experiment followed from this. Malaysians of Malay, Indian, and Chinese ethnic background were asked to choose between Indian and Malay food. These two types of food are reasonably similar to one another (certainly relative to the distinction between Malay and Western food). Nonetheless, to the ethnically Malay participants, the Malay food would still be expected to be preferred over the Indian, whereas the ethnically Indian participants would still be expected to prefer the Indian food. However, the ethnically Chinese participants would have no a priori reason to choose one type of food over the other, and so when Indian and Malay music are played in the background, we might expect the food preference of the ethnically Chinese participants to be influenced by this.

## **Experiment 3A**

### **3.1 Method**

### ***3.1.1 Participants***

90 participants took part in the study, having been divided into three groups of 30 participants each. Each group comprised 10 Malays (5 males, 5 females), 10 Chinese (5 males, 5 females), and 10 Indians (5 males, 5 females). All participants were aged 18-26 years (mean = 19.82, *SD* = 1.79). Participants were students from University Putra Malaysia. Testing was conducted in one-on-one sessions in a quiet room on campus.

### ***3.1.2 Materials and Design***

The research used a between subjects design in which Malay, Indian, and Chinese participants were played either ‘no music’, Western music, or Malay music. The Western and Malay music chosen here were both instrumental ‘classical’ music, a genre not necessarily well known to the participants, but nonetheless distinct enough for them to be able to differentiate easily between the two. Equal numbers of participants from each of the ethnic groups were exposed to each of the three different music conditions.

Apart from the ‘no music’ condition, participants heard music in each condition while they completed a series of simple maths questions (to disguise the true purpose of the research). These music conditions employed a CD representing one of two musical styles, namely Malay music or Western music. The Western classical music was taken from *101 Classics – Classical Highlights from the Great Composers Vol.1*. The tracks used from this CD were Bach’s *Brandenburg Concerto No. 3 in G major*, Handel’s *Concerto Grosso No.6, 2<sup>nd</sup> movement in F major*, and Bach’s *Jesu, Joy of Man’s Desiring*. The ethnic Malay music was taken from the CD *Muzik Tarian Malaysia*. The specific tracks used were *Puteri Ledang*, *Serampang Pantai* and *Bunga Bunga Di Taman*. The music was played through a portable CD player with speakers positioned at the back of the room.

The study used two types of halal food, one Malay and one Western. The two types of food were of the same size, made from the same ingredients and did not emit a strong

aroma. The Malay food was *kuih bhalu*, and the Western food was cupcakes. *Kuih bhalu* was chosen for this experiment because of its similarity to cupcakes. The *kuih bhalu* was purchased from a Malay restaurant in Subang Jaya. The cupcakes were purchased from a friend of the author who custom made the cupcakes to the size of the *kuih bhalu*. Both types of food on the table were concealed inside a non-transparent container of the same size and make. The only difference visually was the pictures and posters that surrounded the containers, showing Malaysian and English culture respectively.

### **3.1.3 Procedure**

The study was carried out between 11am and 2.30pm over five weeks in September and October. This time of day was chosen because it represented an advantageous time to offer food. Participants were recruited via posters asking people to volunteer for research in which they would be asked to complete maths questions in return for free food. Participants were tested individually. On entering the room where the research was carried out, participants were asked to complete maths questions, compatible to a 12 year old level. Participants were led to believe that their ability to answer the questions was the focus of the research, and they were given 10 minutes to answer as many questions as possible while music (or no music) played at a comfortable background volume level. A table positioned at the back of the room offered two types of halal food, one of which was Malay and the other Western. After 10 minutes of working on the maths questions, the participants were led to the back of the room and were told that they had 10 seconds to decide which food they would like as a reward for participation. A stopwatch was used to determine the 10 seconds time frame, which was considered adequate for participants to decide on which food they would choose. Participants were not allowed to touch the items on the table. After making their choice, the music played in the background was stopped and a questionnaire containing five questions was administered. The last three questions were applicable only to those in the Malay music and Western music conditions. Question 1 asked participants if there was a reason for choosing either the Malay or Western food. Question 2 asked participants if they preferred Malay food or Western food and to give a rating between 0-10 with 0 being 'I strongly prefer

Malay food' to 10 'I strongly prefer Western food'. Question 3 asked participants if they remembered the type of music playing while the participants were doing the math sums and to give a rating from 0-10 with 0 being 'I don't remember what type of music was playing at all' to 10 'I have a very clear memory of what type of music was playing'. Question 4 asked participants what type of music (i.e. Malay vs. Western) was playing while they were doing the math sums, and responses confirmed that all participants identified the music correctly. Question 5 asked participants if the type of music influenced their choice of food and to give a rating from 0-10 with 0 being 'not at all' to 10 being 'very much'.

### 3.2 Results

A chi-square test was carried out to determine whether the type of food chosen was associated with the type of music played. The result of this was non-significant ( $\chi^2 (2, N = 90) = 1.35, s^2 = 3.21$ ). Food choice is crosstabulated against background music in Table 3.1 This indicates that participants had a strong tendency to select Malay food whatever music was played. More simply, when participants had a clear culture-based reason for selecting one product over another then there was no evidence of effects consistent with musical fit.

<b>Music</b>	<b>Western Food</b>	<b>Malay Food</b>
No Music	10	20
Western	11	19
Malay	7	23

Table 3.1 Music x food choice in Experiment 3A

Responses to the questionnaire indicated that none of the participants stated that the music was the reason for their choice of food. When participants were asked to state their general food preference, there was a strong preference for Malay food, with mean = 3.40,  $SD = 2.37$ . When participants were asked if they recalled the music, the resulting mean (mean = 8.12,  $SD = 2.10$ ) indicates that participants were able to recall the type of music playing during the experiment. When participants were asked explicitly if the music playing influenced their choice of food, the resulting data (mean = 1.88,  $SD = 2.95$ ) indicated that participants did not report being influenced by the music that was played.

### **Experiment 3B**

A second experiment replicated the methodology of the first, with two exceptions. First, in Experiment 3B the two types of food were replaced with others that Malaysian participants could be expected to have more ambiguous preferences between. Second, Experiment 3B used different music that did or did not fit the food employed.

## **3.3 Method**

### ***3.3.1 Participants***

180 participants took part in the study, and were divided into three groups of 60 participants each. Each group comprised 20 ethnic Malays (10 males, 10 females), 20 ethnic Chinese (10 males, 10 females), and 20 ethnic Indians (10 males, 10 females). All participants were in the 18-26 age bracket (mean age = 21.79,  $SD = 2.04$ ). Participants were students from University Putra Malaysia.

### ***3.3.2 Materials and Design***

Experiment 3B investigated preferences between Malay food and Indian food. The Malay food offered in this experiment were *popiahs*, and the Indian food offered here were *samosas*. These two types of food are made from similar ingredients and neither emits a strong aroma. The *popiahs* were purchased from the canteen at the host university and the *samosas* were bought from an Indian foodstall nearby the university. The Malay music used here was taken from a Malay CD ‘Muzik Tarian Malaysia’. The three tracks used were *Puteri Ledang*, *Serampang Pantai* and *Bunga Bunga Di Taman*. The Indian music used was taken from Master Pieces by Dr N. Rajam – Raga Deshi. The track used here was *Raga Deshi*.

### ***3.3.3 Procedure***

The study was carried out between 11am and 2.30pm between November and December. All other aspects of the methodology other than those described above were as per Experiment 3A. Note that responses to Question 4 on the questionnaire indicated that all participants were able to correctly identify the ethnic grouping represented by the different types of music involved.

## **3.4 Results**

A chi-square test was carried out to determine whether the type of food chosen was associated with the type of music played. The result of this was significant ( $\chi^2(2, N = 180) = 13.46, p = 0.001, s^2 = 4.20$ ). Table 3.2 shows food choices crosstabulated by the type of background music used. This indicates that when Malay music was played, Malay food was

more likely to be chosen than Indian food, whereas Indian food was more likely to be chosen when Indian music was played. Table 3.3 breaks down these data across the three ethnic groups from which participants were drawn. This indicates that the Indian and the Malay participants tended to choose their respective ethnic food type no matter which type of music was being played. Table 3.3 also indicates however that the significant association between background music and food choice was attributable to the behaviour of the ethnically Chinese participants whose ‘own food’ was not included in the research design.

<b>Music</b>	<b>Malay Food</b>	<b>Indian Food</b>
No music	27	33
Malay	38	22
Indian	18	42

Table 3.2 Music x food choice in Experiment 3B

<b>Ethnicity</b>	<b>Music</b>	<b>Malay Food</b>	<b>Indian Food</b>
Malay	No music	18	2
	Malay	20	0
	Indian	14	6
Chinese	No music	7	13
	Malay	15	5
	Indian	3	17
Indian	No music	2	18
	Malay	3	17
	Indian	1	19

Table 3.3 Participant ethnicity x music x food choice in Experiment 3B

As in Experiment 3A, no participants stated that the music was a reason for their choice of food. Table 3.4 contains the means (and *SD* values) for questions 2, 3, and 5 from the questionnaire, broken down by ethnic group. These indicate that Chinese participants did not have a strong preference for either Malay or Indian food, as compared to Indian participants who had a strong tendency to choose Indian food and Malay participants who had a strong tendency to choose Malay food. In all three ethnic groups, participants were apparently able to recall the type of music they had been exposed to. Finally, ratings indicated that, when asked about this explicitly, participants did not believe that the background music had influenced their choice of food.

<b>Ethnicity</b>	<b>Food preference</b>	<b><i>SD</i></b>	<b>Memory for the music</b>	<b><i>SD</i></b>	<b>Influence of music on choice</b>	<b><i>SD</i></b>
Chinese	5.78	1.97	6.00	3.39	1.93	3.28
Indian	8.43	2.17	8.10	2.26	2.33	3.48
Malay	1.60	1.83	8.05	2.05	3.53	3.54

Table 3.4 Mean ratings in responses to the questionnaire in Experiment 3B

### 3.5 General Discussion

Although several studies indicate that musical fit can increase the amount that customers spend, the results of Experiment 3B provide a second demonstration that the process can influence the selection of one product over another. They also provide the first demonstration of ‘musical fit’ outside the West. Specifically, the pieces of music played were apparently able to activate superordinate knowledge that subsequently primed the

selection of one product over another. Perhaps more importantly, the results of the two experiments reported here indicate a clear limitation to the scope of musical fit effects, namely that they may occur only when participants do not otherwise have a clear preference between the competing products in question. Experiment 3A and the data from ethnically Malay and Indian participants in Experiment 3B indicates that when participants had a strong a priori reason to favour one alternative over another, then background music had no significant impact on their preferences. Musical fit effects were observed only in Experiment 3B when ethnically Chinese participants, who otherwise had no a priori reason to favour one over the other, were asked to select between Malay and Indian food.

The present findings point out some potential caveats to the conclusions of previous research on musical fit that was discussed earlier. For example, Areni and Kim (1993) found that customers bought more expensive wine when exposed to classical music rather than Top Forty pop music. Furthermore, as noted earlier, several other studies have found that (particularly classical) music can encourage spending if it promotes notions of wealth and affluence. However, it is suspected that the extent of effects of this nature would be much smaller among customers on a tight budget for whom, as in the case of Areni and Kim's findings, the cheaper wines would have enjoyed a greater advantage over their more expensive competitors. Similarly North, Hargreaves, and McKendrick's (1999) British supermarket customers were more likely to purchase French wines when French music was played and German wines when German music was being played because both types of wine were otherwise rather similar. It is doubtful, however, that similar findings would have been obtained in a French or a German supermarket, or among customers who had a strong preference for wines from the Loire or Rhein regions. Musical fit can affect product choice, and do so outside Western culture, but the present data and arguments provide grounds to suspect that there are limitations to the generality of the effects.

## **CHAPTER 4 - The Effects Of Musical Fit On Choice Between Competing Pairs Of Cultural Products**

The research reported in this chapter draws on the same literature as that described in Chapter 3. In the previous chapter, musical fit effects were clearly demonstrated among ethnically Chinese participants who had no priori reason to choose the Malay food or Indian food, and hence their choices depended on the music played. The research reported in this chapter further explores the potential of musical fit to explain choices between two cultural products. More specifically, it asks whether ethnically-Chinese participants prefer Malay goods over Indian goods when these are presented in the context of Malay music, but prefer Indian goods over Malay goods when these are presented in the context of Indian music? Accordingly, participants in the present research were given six opportunities to choose one cultural product over another.

The present study employed two different musical styles and one ‘no music’ control condition. Ethnically-Chinese Malaysians listened to either Indian, Malay, or no music while being presented with 24 pairs of products. For each pair, participants were required to state which of the two products they preferred. Within each of six ‘test pairs’ however, one of the options was clearly Malay whereas the competing alternative was clearly Indian. The total number of Indian and Malay products selected was calculated, and it was predicted that within the test pairs, participants who heard Indian music would select Indian products, whereas participants who heard Malay music would prefer Malay products.

## 4.1 Method

### 4.1.1 Participants

Ninety ethnically-Chinese Malaysians took part in the study. They were divided into three groups of 30, with each group comprising 15 females and 15 males. Mean age was 25.13 years ( $SD = 8.80$ ). Participants were recruited by approaching students at the library in University Putra Malaysia. Testing was conducted individually in a quiet room on campus.

### 4.1.2 Materials and Design

A pilot study was first designed to ensure that the music chosen was recognisable as either classical Malay or classical Indian music among the population from which the sample for the main study was drawn. The time frame for presenting each pair of products was also tested with the pilot study group. It was concluded that seven seconds time frame was the most appropriate and reasonable time frame for participants to decide between the product shown in either 'picture A' or 'picture B'.

The research employed a between subjects design in which participants were played either Malay music, Indian music or 'no music'. The classical Malay music was taken from the CD *Muzik Tarian Malaysia*. The specific track used was *Serampang Pantai*. The classical Indian music was taken from the CD *Master Pieces* by *Dr N. Rajam*. The track used here was *Raga Deshi*. The music was played through a pair of headphones attached to the laptop that also presented the pictures of the products.

Each pair of products was presented on a Powerpoint slide on a laptop. The pictures of products were of at least 100KB and were downloaded from the internet. Pictures of two similar products (e.g. a Canon digital camera and a Kodak digital camera) were positioned

side by side on one slide. Beneath each picture was a statement of the product shown (e.g. “A. Canon digital camera”).

There were 24 pairs of products employed, but the only pairs of interest were six featuring a choice between Indian and Malay versions of the same type of product. The first pair was a choice between a plate of Indian *tikka masala* and a plate of Malay *rendang* curry. The second pair was a choice between a Malay *gambus* and an Indian *sitar*. The third pair was a choice between Malay *keropoks* and Indian *papadams*. The fourth pair was a choice between an exhibition of Malay and Indian cultural dancing. The fifth pair was a choice between a Malay *gendang* and an Indian *tabla*. The final pair was a choice between Malay *popiahs* and Indian *samosas*. The six pairs of Indian and Malay items appeared as the fourth, eighth, twelfth, sixteenth, twentieth and twenty-fourth slides in the Powerpoint presentation.

#### **4.1.3 Procedure**

Participants were tested individually between 10.00am and 9.30pm over two weeks in a quiet study room at the library in University Putra, Malaysia. Participants were shown the 24 pairs of products on a laptop and heard music via headphones attached to this. The music was played at a constant volume which was considered to be sufficient to be heard clearly. Immediately after seeing each pair of products, participants stated their preference between them by writing ‘A’ or ‘B’ on a piece of paper.

#### **4.2 Results and Discussion**

A one-way ANOVA was carried out to determine whether the different types of music (and no music) influenced the number of times that each participant chose the Malay over the alternative Indian product. The result of this was significant ( $F(2, 90) = 10.16, p < .001, \eta^2 = .19$ ). The mean number of times (and *SD*) that a Malay product was

chosen when Malay music was playing was 3.53 (1.17); and the mean number of times (and *SD*) that an Indian product was chosen when Malay music was playing was 2.47 (1.17). Conversely, the mean number of times (and *SD*) that an Indian product was chosen when Indian music was playing was 3.93 (1.46), and the mean number of times (and *SD*) that a Malay product was chosen when Indian music was playing was 2.07 (1.17). The mean number of times (and *SD*) that a Malay product was chosen when no music was playing was 2.80 (1.13), while the mean number of times (and *SD*) that an Indian product was chosen when no music was playing was 3.20 (1.13). Tukey HSD tests indicated that there were significant differences between the Malay and Indian music conditions in the number of Malay products recalled. There were no differences between either of the two music conditions and the no music condition on this measure.

The results of this experiment provide clear indication that musical fit can influence product choice, and do so outside the West, and with non-Western music. Specifically, the pieces of Indian and Malay music played were able to activate knowledge that primed the selection of one corresponding type of product over another. However, when there was no music played, participants were not primed to choose one product over the other, and data indicated that they did not show a preference for either Indian or Malay items.

Although this supports the musical fit hypothesis, the results reported in the previous chapter suggest the strong possibility that a similar pattern of findings may not have been found among ethnically-Malay participants (who may well have favoured the Malay versions of the products, irrespective of the music played) and also among ethnically-Indian participants (who may well have favoured the Indian versions of the products, irrespective of the music played). Indeed, it is possible that the effect may be more general than this, such that, when participants are unfamiliar with the products in question, they may be particularly susceptible to the role of cues such as musical fit. A second potential limitation of the present findings is that participants in this study had seven seconds to decide between each of the two competing products, which arguably provided ample time for musical fit effects to influence their choices. Chapter 6, however, indicates that differing response times may lead to differences in the potential of musical fit to influence participants. The effects reported in the present chapter may not be found under longer response times. Finally, as with the one previous study on the effect of musical fit on product choice (North, Hargreaves, &

McKendrick, 1999), the present research was limited to an ethnically-based choice: the research reported in the next chapter presents a test of musical fit where the music and the products in question are not based on ethnicity.

## **CHAPTER 5 - The Effects Of Musical Fit On Consumers' Preferences Between Competing Alternate Petrols**

Chapter 3 and 4 illustrated that the effects of musical fit on product choice may be limited to participants who do not have prior preferences between products, and established this by employing ethnically-based products and music. In contrast, the research reported in this chapter investigates the effects of musical fit on consumers' preferences without reference to ethnicity. Furthermore, given the findings of the ethnically-based research reported earlier, the present research also investigated whether similar musical fit could influence product choice when one of the competing products was nonetheless preferred by participants prior to the research commencing. Hence, this chapter draws upon the same literature as Chapter 3.

The present study employed adverts for two petrol brands, namely Caltex and Esso. Two contemporary songs were employed which either did or did not fit the brand in question. Half of the participants were asked to watch two adverts, one for Caltex with music that fitted the Caltex brand followed by the advert for Esso with the same music that fitted the Caltex brand (which means that the music did not fit the Esso brand). The remaining participants were required to watch an advert for Caltex with music that fitted the Esso brand followed by an advert for Esso with the same music that fitted the Esso brand. Participants were then required to state which of the two petrols they preferred. It was predicted that regular users of Caltex petrol would still choose Caltex petrol whether or not the music used fitted the advert; and similarly that regular users of Esso would choose Esso irrespective of the degree of musical fit in the adverts with which they were presented. It was also predicted, however, that participants who were not regular-users of Caltex or Esso petrols would be influenced to choose the brand that was advertised with music that fitted it.

Further support for these hypotheses is provided by research on heuristics. This has shown that a lack of expertise in the field in question leads to people being particularly pre-disposed to rely on heuristics when making judgements. More specifically, the recognition heuristic was introduced by Goldstein and Gigerenzer (1999, 2002) as the prototype of fast and frugal processing under conditions of limited knowledge. 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 (see Gigerenzer & Hoffrage, 1995; Gigerenzer, Todd, & the ABC Research Group, 1999; Newell & Shanks, 2003; Scholler & Hertwig, 2005; and Ritche & Späth, 2006). 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).

Borges, Goldstein, Ortmann, and Gigerenzer (1999), for example, conducted a study on German and American stock market experts and amateurs, asking them to decide which companies they wanted to include in a portfolio. The amateurs tended to select companies they had heard of and made more successful investment decisions than the experts, who based their investment decisions on knowledge about the companies. In the same vein, Goldstein and Gigerenzer (2002) showed that people can make inferences about a city's population on the basis of whether they recognized its name: they reason that the size of a city may be reflected in how often it is mentioned in the person's environment, and that this can drive population estimates.

This means that when faced with two competing products, one familiar and the other less familiar, people should be more likely to select the familiar option. In the context of the present research, it means that when one brand of petrol is more familiar than another then people should select the former. However, this cannot take place when *both* objects in question are equally (un)familiar: the two objects are equally (un)recognisable, and so the heuristic cannot help in selecting between them. Under these circumstances, research on the recognition heuristic states that people have to choose between the objects on the basis of the first cue found that discriminates between them (Gigerenzer & Goldstein, 1996). In the context of the present research, when the recognition heuristic fails to help people select between alternatives, the cue provided by musical fit should guide product selection between competing petrol brands.

## **5.1 Method**

### ***5.1.1 Participants***

Ninety people took part in the study. They were divided into three groups of 30, with each group comprising equal numbers of both males and females. The first group of participants were recruited via signs in the library at University Putra Malaysia requesting “regular users of Caltex petrol”, the second group of participants were “regular users of Esso petrol”, and the third group of participants were “not regular users of either Caltex nor Esso petrol”. Participants’ mean age was 24.89 years ( $SD = 9.54$ ). Testing was conducted individually in a quiet room on campus. The participants were all fluent English speakers.

### ***5.1.2 Materials and Design***

The first group of 30 participants, who were regular users of Caltex, were then subdivided into two groups of 15, Group 1A and Group 1B, with the suffix indicating which set of stimuli that participants were presented with. Similarly the second group, of regular Esso petrol users, and the third group, of neither Caltex nor Esso petrol users, were also subdivided in the same manner, giving rise to Group 2A and 2B and Group 3A and 3B respectively. The research employed a between subjects design in which participants were shown either Stimulus Set A (music that fitted the Caltex advert and which did not fit the Esso advert) or Stimulus Set B (music that fitted the Esso advert and which did not fit the Caltex advert). Half the participants within subgroup watched the Caltex advert followed by the Esso advert, and the other half of them watched the Esso advert followed by the Caltex advert. The music was played through a pair of headphones attached to the laptop that also presented the adverts.

The two adverts were presented via Microsoft Powerpoint, featuring a series of 10 still images involving the company in question (e.g., petrol tankers), each visible for one second, with accompanying music. The pictures were of at least 100KB and were downloaded from the internet. The music used to fit Caltex was *Twinkle, Twinkle Little Star* by Noelle and John and which was a free download from the web at [KidsMusicWeb.com](http://KidsMusicWeb.com). The music used to fit Esso was taken from the album *Eye Of The Tiger* by Survivor and the track used here was *Eye Of The Tiger*. The song *Twinkle, Twinkle Little Star* was considered a fit for the Caltex advert because the company's logo, featured prominently in its marketing and the advert employed here, is a star symbol. The song *Eye Of The Tiger* was chosen to fit the Esso advert, since the company's logo, featured prominently in marketing and the advert employed here, is a tiger.

### **5.1.3 Procedure**

Participants were asked to watch the adverts and then given a five-item questionnaire. Question 1 required them to choose which of the two brands they liked most. Question 2 asked participants whether they drove a vehicle. Question 3 asked those participants who drove a vehicle to rate between 0-10 how often they did so, with 0 representing 'very rarely' and 10 representing 'several times a day'. Question 4 asked participants to state whether or not the music playing in the background to the adverts influenced their choice of petrol brands. Question 5 asked participants to rate between 0-10 the extent to which the music playing in the background influenced their choice of petrol, with 0 representing 'no influence at all' and 10 representing 'very strong influence'

## **5.2 Results and Discussion**

Three chi-square tests were carried out to determine whether the type of petrol chosen was associated with the type of music played among regular users of Caltex, Esso, and neither

respectively. The results were non-significant for participants who were regular users of both Caltex and Esso respectively. Those who were regular users of Esso petrol selected Esso here, irrespective of the music played; and those who were regular users of Caltex petrol selected Caltex here, irrespective of the music played. But participants who were not regular users of either Caltex or Esso petrol did give rise to significant results ( $\chi^2 (2, N = 30) = 16.13, p < .001$ ), and Table 5.1 presents the associated frequencies. Participants in this group had a clear preference for the brand of petrol advertised with music that fitted it, such that the ‘Caltex music’ led to selection of Caltex, and the ‘Esso music’ led to selection of Esso.

<b>Music</b>	<b>Caltex Petrol</b>	<b>Esso Petrol</b>
Fits Caltex	13	2
Fits Esso	2	13

Table 5.1 Music x petrol choice in Groups 3A and 3B

The frequencies, means (and *SD* values) for questions 2 to 5 for all three groups are shown in Table 5.2. Perhaps the most noteworthy aspect of these is that participants did not rate music as being a strong influence on them when deciding which petrol to choose. This is understandable of course on the part of participants who already had a clear preference between the two brands at the start of the research (i.e. Groups 1 and 2): the music did not have an influence on them. However, the data in Table 5.1 indicates that participants without a clear pre-existing preference between the two brands at the start of the experiment (Group 3) clearly were influenced by the music, and their reluctance to note any effect of the music via the data reported in Table 5.2 was surprising: perhaps they were simply not prepared to admit the impact of advertising upon them. It is perhaps also worth mentioning here that participants in this group rated lowest in terms of how often they drive, when compared to Groups 1 and 2, and this might explain why they were not regular users of either Esso or Caltex petrol.

<b>Group</b>	<b>Music</b>	<b>Number of participants driving a vehicle</b>	<b>Mean rating for driving</b>	<b><i>SD</i></b>	<b>Number of participants whose choice was influenced by music</b>	<b>Mean rating of music's influence</b>	<b><i>SD</i></b>
1A	Fits Caltex	14	4.87	2.64	3	2.40	2.61
1B	Fits Esso	12	3.53	3.56	6	3.40	2.53
2A	Fits Caltex	15	4.27	3.24	5	3.93	2.25
2B	Fits Esso	15	6.00	3.44	4	3.73	3.01
3A	Fits Caltex	9	3.07	3.81	2	2.80	2.27
3B	Fits Esso	6	3.33	2.61	5	4.07	2.52

Table 5.2 Mean ratings and *SD* in responses to the questionnaire for all groups

The results of this experiment provide clear indication that musical fit can influence product choice, and do so outside the West. This experiment showed also, however, that the effects of musical fit do not operate when participants were already regular users of one of the competing alternatives. Rather, the effect is apparently limited to those cases where participants have no criteria to otherwise select between the products in question. This is consistent with the recognition heuristic which states that a known alternative will be selected over an unknown one. Likewise the results also support a second aspect of the heuristic, namely that when both alternatives are unknown, participants should search for a cue to aid them in decision making: under these circumstances, in the present research, participants chose the brand associated with the music playing in the background.

Further research could investigate the proportion of decisions that are made when consumers are undecided between competing alternatives or unfamiliar with the products in question, and therefore the scope for musical fit effects in everyday consumer decision-making. Future research may indicate that the extent to which the recognition heuristic is employed by an individual depends on personality factors such as extraversion and sensation-seeking. People who score highly on either of these might reasonably be suspected to be less likely to select the more familiar of two competing alternative products, or to employ a lower threshold for determining what constitutes 'recognition' of a product. This in turn might have implications for the potential for any musical effects to be observed among such people. Other studies could investigate whether music without lyrics could give rise to similar effects to those identified here: this would suggest the potential for international advertising campaigns that employ musical fit in several countries that do not speak a common language. Similarly, other studies may investigate the extent to which participants should be proficient in the language in question before lyrics can be used to produce musical fit: do participants need to be fluent, or is only some comprehension ability necessary, such that musical fit can be produced via schematic processing of lyrics?

## **CHAPTER 6 - The Effects Of Musical Fit On Consumers' Choice When Opportunity And Ability Is Limited**

Chapters 3, 4 and 5 showed that musical fit effects are limited to consumers who do not already have a prior preference for one product over another. This chapter, however, describes research that investigates another potential limitation of musical fit, namely when the opportunity and ability to consider the relative merits of the products in question is (un)limited. Previous studies have investigated the effect 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 research presented here accordingly investigates the extent to which musical fit can prime product selection both when customers do and do not have the opportunity to consider carefully the information provided before selecting between competing products. In particular, research on heuristics have shown that people who lack expertise in the field in question would be pre-disposed to rely on heuristics and stereotypes when making judgments. Accordingly, consumers selecting between products under time pressure are operating under conditions of imperfect knowledge, and so might well employ the recognition heuristic and be influenced by musical fit. In contrast, consumers who have ample time to select between products will not rely on heuristics and so be much less likely to be influenced by musical fit.

Two experiments were carried out to investigate these issues. In the first, Experiment 6A, 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. Participants were given only 15 seconds to read the descriptions before the screen on the laptop would turn off 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 participants had only 15 seconds, and were unable to carefully read or think about the watches, the second condition for 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, Experiment 6B, was almost identical to the first, but allowed participants as much time as they needed to read about the watches and make their selection. It was predicted that musical fit would not affect participants' choices of watches. Since participants would have the opportunity to read and think about the watches, they would not need to rely on any cue other than their own evaluation of the relative merits of the two alternatives, such that the recognition heuristic and musical fit would have much less scope to influence decision-making.

## **Experiment 6A**

### **6.1 Method**

#### ***6.1.1 Participants***

Ninety participants took part in the study. 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. Participants' mean age was 25.90 years ( $SD = 9.98$ ). Participants were recruited by approaching students at the library in University Putra Malaysia. Testing was conducted individually in a quiet room on campus.

### ***6.1.2 Materials and Design***

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*. 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*.

Participants in both the funk and classical music condition heard this music via headphones attached to a laptop while they simultaneously observed the watches. The pictures used were of at least 100KB and were 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 watches 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").

### **6.1.3 Procedure**

Participants were shown the two competing products while the music (or no music) was played at a constant volume, sufficient to be heard clearly. Pilot testing established that the allocated time frame of 15 seconds was insufficient to read the full description of both watches. This was to ensure that participants would not have the opportunity to consider carefully which watch they would prefer on the basis of the technical information. Once the screen displaying the watches switched off, the music continued playing while a five-item questionnaire was administered. Question 1 required participants to state which watch they would choose. Question 2 asked participants to what extent they preferred 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 participants whether or not the music playing in the background influenced their choice of watches. Question 4 asked participants to what extent the music playing influenced their choice of watches. 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 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'.

## **6.2 Results**

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 is crosstabulated against background music in Table 6.1. This indicates that participants had a strong tendency to choose Watch A when classical music was played and Watch B when funk music was played. When there was no music played, participants did not show a preference for either watch.

<b>Music</b>	<b>Watch A</b>	<b>Watch B</b>
No music	16	14
Funk	10	20
Classical	24	6

Table 6.1 Music x watch choice

A second chi-square test indicated no association between the choice of watch and participants' statement of whether or not the music playing influenced their choice of watch (music conditions only) (Question 3). This indicates that 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 respectively to investigate any difference between the conditions on the extent to which participants 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). The results of both tests were not significant. This indicates that although the music did influence 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 6.2. In all three conditions, most participants rated the watches to be worth between RM500-RM1000, and a corresponding chi-square test showed that responses on this variable was not significantly associated with the type of music played.

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

Table 6.2 Music x watch price

### **Experiment 6B**

A second experiment replicated the methodology of the first, with one exception. In Experiment 6B, the time frame of 15 seconds was prolonged to an unlimited amount of time, with participants making their choice only when they felt that they had had enough time to consider the alternatives carefully.

### **6.3 Method**

A new sample was recruited as per Experiment 6A. Participants' mean age was 22.10 years ( $SD = 2.89$ ). All aspects of the methodology were identical to Experiment 6A, except that participants in Experiment 6B were told that they had as long as they needed, and were asked to make their selection only once they felt ready.

## 6.4 Results

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 not significant, which indicates that any effects of musical fit on watch choice were weaker than in Experiment 6A. Watch choice is crosstabulated against background music in Table 6.3.

<b>Music</b>	<b>Watch A</b>	<b>Watch B</b>
No music	15	15
Funk	12	18
Classical	19	11

Table 6.3 Music x watch choice

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 again that participants did not believe that they had been influenced by the music. A 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 6.4. The t-test results were not significant, again indicating that participants did not believe they had been influenced by the music. The ANOVA results indicate, however, that although Table 6.3 showed no effect of music on the main variable, namely the watch chosen, the music did at least lead to a slight preference for the associated watch: 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.

<b>Music</b>	<b>Mean rating for watch</b>	<b>SD</b>	<b>Mean rating for music's influence</b>	<b>SD</b>
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 6.4 Mean ratings in responses to the questionnaire

The frequency with which people selected each of the three price options is shown in Table 6.5. A chi-square test showed no significant association between that and the type of music played.

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

Table 6.5 Music x watch price

## 6.5 General Discussion

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 6A, in which participants had a short amount of time to make their choice, showed that when classical music was played, the stereotypically 'classical' watch was selected, and when funky music was played, the modish watch was selected. When there was no music played, participants were not primed to choose one over the other. Experiment 6B, in which 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 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' selections when they were simply asked to choose one watch over the other. However, it should also be noted that they were not too far from meeting this statistical criterion. Specifically, 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 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 participants to rely on musical cues when making their judgements.

In both experiments, 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 6B, in which the music had little influence on judgements, it is more surprising that participants in Experiment 6A should not have noticed, or at least been unwilling to admit, that music had influenced their choice of watches. Further research might investigate whether, under such circumstances, participants are simply unwilling to admit the effect of

musical fit or are instead unaware of it, and if so then why. In the meantime, more difficult to understand is that, although the actual selections of participants in Experiment 6A were influenced by music, participants did not produce data indicating a difference between the conditions on a likert rating of which watch they preferred.

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 experiments, participants were unwilling to pay large amounts for the watches, and this likely explains the non-significant results in respect of this variable. While this may be attributable to a simple ceiling/floor effect, in which 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 further.

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 Zhu and Myers-Levy, 2005; Kellaris and Cox, 1989; North, Hargreaves, MacKenzie, and Law, 2004; MacInnis and Park, 1991). However, there are possible limitations to these effects also. 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.

Similar limitations on the generality of the present findings are suggested by the Elaboration Likelihood Model (see Petty and Cacioppo, 1981; Petty, Cacioppo, and Schumann, 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 musical fit may influence choice for commercial products, but primarily when consumers do not have the opportunity and/or ability to consider the products carefully.

## **CHAPTER 7 - The Effects Of Music On Memory For Associated Products**

The research reported in the present chapter concerns another possible manifestation of musical fit, namely that music with the same connotations as the product in question should prime recall of that product. To date, research cited earlier on musical fit has shown that consumers have the propensity to spend more when background music implies notions of affluence or wealth. Specifically, the researchers in question have argued that music has these effects because it activates certain aspects of consumers' knowledge of the world. The present research tests the notion that, if music primes certain aspects of participants' knowledge, this increased level of activation should enhance the ability to recall the advert and the messages it contains.

To date, there have been only two attempts to investigate the ability of musical fit to facilitate specifically recall. Kellaris, Cox, and Cox (1993) note that 'musical-message fit' enhanced brand name and message recall when attention-gaining music was used. A similar study by North, Hargreaves, MacKenzie, and Law (2004) found that musical fit was able prime recall of the specific brands and also the classes of products named in several radio adverts. However, neither study provided data in support of the notion of specifically musical fit as the basis for the findings produced. Furthermore, the conclusions of these two studies may themselves be limited by another factor addressed in the present study. North et al's participants, for example, were asked to respond to adverts for five fictional products with which they had obviously had no prior experience. The possibility remains that high levels of familiarity with the products in question operates as a ceiling effect that limits the ability of music to further activate knowledge of them and thus facilitate recall.

Support for the possible role of musical fit in promoting recall comes from research in the psychology of the arts. A number of studies conducted in the 1980s and 1990s indicated that people prefer artistic objects which are prototypical of the class in question (see e.g. Hekkert & van Wieringen, 1990; Martindale & Moore, 1988; Martindale, Moore, & Borkum, 1990; Martindale, Moore, & West, 1988; Whitfield, 1983; Whitfield & Slatter, 1979; and also North & Hargreaves, 2000b). For example, Georgian chair designs are perceived as more typical of the category 'furniture' and are therefore preferred to more modern designs

(Whitfield & Slatter, 1979; see e.g. Martindale & Moore, 1988; and North & Hargreaves, 1996a for similar evidence concerning specifically musical stimuli). Effects such as these were explained in terms of a neural network approach to human cognition. For example, Martindale and Moore (1988) argue that the mind is composed of inter-connected cognitive units that differ in the strength with which they can become activated (see e.g. Martindale, 1981). Units coding more prototypical stimuli are activated more frequently, and are therefore stronger than those coding atypical stimuli. Martindale and Moore claim that “aesthetic preference is hypothetically a positive function of the degree to which the mental representation of a stimulus is activated. Because more typical stimuli are coded by mental representations capable of greater activation, preference should be positively related to prototypicality” (p. 661). Whilst the aim of this model is to explain preferences between aesthetic objects, it is relevant to consumer research because it suggests that music in commercial contexts should prime certain aspects of participants’ knowledge of the world. This increased level of activation should increase the ability to recall associated products (see North, Hargreaves, MacKenzie, & Law, 2004).

Furthermore, although only two previous studies have addressed the ability of musical fit to promote recall, a few others have addressed music and memory from different perspectives. These studies provide only mixed results on the efficacy of music as a memory cue. Haley, Richardson, and Baldwin (1984) note that the most frequent method for eliciting recall of advertising from consumers is the use of verbal cues, and suggest that it may be impossible to retrieve the effects of nonverbal advert elements such as music, voice quality and visual imagery except by focusing respondents on the stimulus of interest. However, some support for the positive effects of music may be found in copy testing research that showed a tendency for television advertising containing music to be remembered better than ads without music (see Stewart & Furse, 1986; Stewart, Farmer, & Stannard, 1990; Edell & Keller, 1989; Yalch, 1991; Tom, 1990; and also Oakes, 2007). However, this was not found by McEwen and Leavitt (1976), and similar research using radio advertising reported no positive effects (Radio Recall Research, 1981; Seawall & Sarel, 1986). To further complicate matters, laboratory experiments have frequently revealed negative recall effects of incorporating music in advertising (e.g. Anand & Sternthal, 1990; Park & Young, 1986; Wheatle & Brooker, 1988; MacInnis & Park, 1991).

Other previous research has dealt in depth with how memories affect our preferences and choices (Arkes, 2001; Reyna, Lloyd & Brainerd 2003; Weber, Goldstein & Barlas, 1995). For instance, the preferences-as-memory (PAM) model suggests that decisions and judgements are made by retrieving relevant knowledge from memory in order to determine the best action (Weber, Goldstein, & Barlas, 1995). Preferences are generated when people consult their memory with a series of questions about the attributes of their choice alternatives, in particular their merits and liabilities. For example, a homeowner when asked to provide a selling price for his/her house will first consult his/her memory about positive features of the house before considering the negative features, whereas the potential buyer may do the opposite (Birnbaum & Stegner, 1979).

The present study employed two different musical styles, rock music and classical music. While one of these played in the background, participants were shown 20 products via a Powerpoint presentation, some of which were associated with either the rebellious stereotype of rock (e.g., marijuana, an electric guitar) or the affluent stereotype of classical music (e.g., a cigar, champagne). Participants were then asked to recall the products they had seen. It was predicted that participants who had heard rock music would be better able to recall rock-related items and to recall these earlier than other items. Similarly, participants who heard classical music were expected to be better able to recall classical music-related items, and recall these earlier than other items.

## **7.1 Method**

### ***7.1.1 Participants***

One hundred and twenty participants took part in the study. Sixty participated in the rock music condition and 60 in the classical music condition. Each group comprised 20 ethnic Chinese (10 females, 10 males), 20 ethnic Malays (10 females, 10 males), and 20 ethnic Indians (10 females, 10 males). Participants' mean age was 24.3 years ( $SD = 6.55$ ).

Participants were recruited by approaching students and young academics at the library in University Putra Malaysia. Testing was conducted individually in a quiet room on campus.

### ***7.1.2 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 rock music or classical music by a sample of 20 participants drawn from the same population as the sample used in the main experiment. The pilot study also identified items that the participants related to rock music and classical music. The participants were asked to write down as many items as they could think of that were related to the classical or rock music that was playing. The four most frequently nominated products were employed in the present research as the ‘classical products’ and ‘rock products’ respectively. Finally, the pilot was used to determine the amount of time for which each slide was presented in the main study, leading to a four second period being employed.

### ***7.1.3 Materials and Design***

The research employed a between subjects design in which participants were played either rock music or classical music. These music conditions employed a CD representing one of two musical styles. 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 rock music was taken from the album *Chaos A.D.* by Sepultura and the track used was *Refuse Resist*.

Participants heard this music via headphones attached to a laptop on which they simultaneously watched Powerpoint slides. The slide show lasted one minute 20 seconds. The slides featured pictures of a total of 20 products. The pictures used were of at least

100KB and were downloaded from the internet. A caption beneath each picture stated the product being shown (e.g., “A watch”). The ordering of the pictures was constant between the two conditions.

Of the 20 products, four were ‘rock products’ that represented the rebellious stereotype of rock music, and four were ‘classical products’ that represented the affluent stereotype of classical music. The four rock products were marijuana, a tattoo, long haired man and an electric guitar: the four classical products were a cigar, a watch, a fountain pen, and champagne. The other 12 ‘neutral products’ presented to participants were a bicycle, an umbrella, a coffee table, a photo frame, a sofa set, pans, cups, a broom, a travel bag, pillows, clothes pegs, and a chair. The order in which the items appeared on the slides were grouped into chunks of five products: each chunk contained three neutral products, one rock product, and one classical product.

#### ***7.1.4 Procedure***

Participants were shown 20 pictures of products on a laptop and heard music via headphones attached to this. The music was played at a constant volume which was considered to be sufficient to be heard clearly. After watching all 20 slides, participants were then asked to write down as many items as they could recall, not necessarily in the order that appeared on the slides, while still wearing the headphones with either rock music or classical music looped for a further 10 minutes. Participants had the choice to give up once they felt that they could not recall any more items. As soon as the participants gave up, the music was stopped, the headphones were removed, and a four-item questionnaire was administered. Questions 1 and 2 asked participants how many hours they listened to rock/classical music respectively per week, and they were given three choices of either less than one hour per week, between one and five hours per week, or more than five hours a week. Questions 3 and 4 asked participants how many rock/classical CDs respectively they owned and they were given three choices of either less than 10 CDs, between 11-30 CDs, and more than 30 CDs.

## 7.2 Results and Discussion

A mixed ANCOVA was carried out to determine whether the number of rock products and classical products recalled varied as a function of the type of music playing in the background (controlling for variations in the frequency with which participants listened to rock and classical music and variations in the number of rock and classical music CDs owned). The results indicated a significant interaction between the type of music and type of product (rock versus classical) being recalled ( $F(1, 113) = 63.64, p < .001$ , partial eta-squared = .36). When rock music was played, participants recalled a mean of 3.12 ( $SD = 1.16$ ) of the four rock music products, but a mean of only 1.47 ( $SD = .95$ ) of the four classical music products. When classical music was played, participants recalled a mean of 2.15 ( $SD = .99$ ) of the four classical music products, and a mean of 2.20 ( $SD = 1.16$ ) of the four rock music products. More simply, rock music led to more rock products being recalled than classical products, but classical music gave rise to similar numbers of rock products and classical products being recalled.

The mean serial position in which each participant recalled classical music products was then calculated (with smaller numbers indicating that the products were recalled earlier in the list). The same was then done for rock music products. A second mixed ANCOVA was then carried out to determine whether the recall position of rock products and classical products varied as a function of the type of music playing in the background (controlling for variations in the frequency with which participants listened to rock and classical music and variations in the number of rock and classical music CDs owned). The results indicated a significant interaction between the music and type of product (rock versus classical) being recalled ( $F(1, 113) = 13.58, p < .001$ , partial eta-squared = .11). When rock music was played, the mean position in which participants recalled rock products was 5.50 ( $SD = 2.01$ ), but the mean position in which participants recalled classical music products was only 8.31 ( $SD = 5.95$ ). When classical music was played, the mean position in which participants recalled classical music products was 5.28 ( $SD = 2.51$ ), but the mean position in which participants recalled rock products was only 6.41 ( $SD = 4.01$ ). More simply, if rock music

was played then participants recalled rock products earlier than classical products: if classical music was played then participants recalled classical products earlier than rock products.

In conclusion, whereas previous chapters have indicated that music can influence choices between products, the research reported here demonstrates that musical fit is able to prime consumers' memory for particular related items. When rock music was played, more rock products than classical products were recalled. Although a corresponding effect of classical music was not found, this music was at least able to eliminate participants' greater ability to recall rock products over classical products. One reason why classical music did not lead to specifically a greater number of classical than rock products being recalled could be that the rock related items projected a more offensive impression, whereas the remaining products were comparatively bland. There was also evidence that these effects occurred specifically because the music was raising the salience of related products in participants' minds. When rock music was played, participants recalled rock products earlier than they recalled classical products; whereas when classical music was played, participants recalled classical products earlier than they recalled rock products.

These findings may have implications for retailing and advertising alike. Since music is able to prime consumers' memory for items related to the music, retailers and advertising agencies would do well to ensure that their retail outlets and adverts contain some degree of musical fit. Retailers like departmental stores may use music to cue shoppers to visit specific departments, or even to consider certain product categories. For example, classical music might be an excellent cue for a store-wide sale on all jewellery items. With regards to advertising, there is of course typically a delay between exposure to advertising and actual purchasing, and musical fit might be one means by which advertisers can ensure that their product is recalled during the intervening period. Similarly, it might be possible for an advertiser to use musical fit to draw consumers' attention to one particular aspect of a product that gives it an advantage over an otherwise similar competing brand. For instance, music from a particular country might highlight the 'authenticity' of a product that has particular national associations, highlight the luxurious nature of a particular hotel chain over competitors, or use the emotional impact of the music to highlight any of an almost infinite number of other ways in which one product may differ from another. On a slightly more pessimistic note, we should note that there are also several possible limitations to these

effects. 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 retailers and advertisers should employ either very well-known pieces of unambiguous music or rely on the stereotypes associated with entire musical styles. Furthermore, it remains to be determined whether too great a degree of musical fit could instead lead to the advert or retail environment in question seeming somewhat hackneyed. For instance, the use of very literal lyrics (e.g., Aretha Franklin's *You make me feel like a natural woman* in an advert for shampoo) might not appeal to a market segment that perceives itself as sophisticated.

Note also that the age group of the sample used in this study is rather young, with a mean of 24 years. It is possible that this age group do not possess a schema or knowledge structure for the 'affluent lifestyle', and that this might go some way to explaining why the present results arguably showed more effect of musical fit on the rock than the classical items. Future research can further investigate if the extent of musical fit effects to some extent depends on the age of the participants or other factors that mediate their ability to deduce the intended communicative intent from the music in question. For instance, linguistic abilities would presumably play a role when the content of lyrics is used to produce musical fit.

One other possible limitation of the present findings concerns the nature of the stimuli employed. Specifically, since a single piece of music represented each of the musical styles it is impossible to say whether the present results are attributable to musical fit effects associated with solely the specific pieces of music employed or instead to musical fit effects associated with the musical styles that the pieces of music represented (or both). Future research might address this by employing several pieces to represent each style and then determining whether the effects of all the pieces within the style are similar (indicating an effect at the level of the style per se) or dissimilar (indicating that the effect operates at the level of specific pieces of music). Such issues of course go beyond the hypothesis of the present research, namely that musical fit should prime memory, but do suggest clear opportunities for future work. In the meantime, the present data do indicate that, under the right conditions, musical fit may improve memory for commercial products.

## CHAPTER 8 - The Effects Of Ethnic Music On Ability To Recall Ethnic Products

The final study reported in this thesis also investigates the effects of musical fit on consumers' ability to recall. The issue is addressed this time, however, from the perspective of those ethnic factors investigated earlier. Specifically, ethnically Chinese, Malay, and Indian participants were asked to recall Indian and Malay food products while Indian or Malay music played in the background. According to previous research on musical fit, these two types of music ought to lead to *all* participants being better able to recall the associated types of food. However, ethnically Indian participants would arrive at the lab already far more familiar with Indian than Malay food, with the reverse applying to Malay participants. Would this high degree of familiarity eliminate any possibility for musical fit to further activate recall, which might be subsequently identified only in the ability of the ethnically Chinese participants to recall Indian and Malay foods?

The present study investigated whether musical fit could facilitate free recall of culturally-associated food products among participants from three ethnic groups. While Malay and Indian music played in the background, ethnically Malay, Indian, and Chinese participants were asked to nominate as many Malay (e.g., *nasi lemak*, *kuih lapis*) and Indian (e.g., *muruku*, *putu mayam*) food items as they could. It was predicted that participants who heard Malay music would be able to recall more Malay food items while participants who heard Indian music would be able to recall more Indian food items. However, it was also predicted that this effect would be much stronger among ethnically Chinese than among ethnically Malay and Indian participants, as the latter two groups would be particularly disposed to recall food from their own cultures, irrespective of the music playing in the background.

## 8.1 Method

### 8.1.1 Participants

Participants were students from University Putra Malaysia. One hundred and forty four participants took part in the study, having been divided into two groups of 72 participants each. Each group comprised 24 Malays (12 males, 12 females), 24 Chinese (12 males, 12 females), and 24 Indians (12 males, 12 females). All participants were aged 16-35 years (mean = 21.67,  $SD = 2.77$ ). Testing was conducted via one-on-one sessions in a quiet room on campus.

### 8.1.2 Materials and Design

The two groups, each comprising Malay, Indian and Chinese participants, were played either Malay music or Indian music. The Malay and Indian musical pieces employed were examples of instrumental ‘classical’ music, distinct enough to be readily-identified as Malay or Indian respectively by all 20 participants in a short pilot study. The Malay music was taken from the CD *Muzik Tarian Malaysia*. The specific track used was *Serampang Pantai*. The track was looped for 30 minutes. The Indian music was taken from the CD *Master Pieces* by Dr N. Rajam. The track used here was *Raga Deshi* and this track itself lasts for 29 minutes 55 seconds. The music was played through a pair of headphones AVF HM560 attached to the laptop.

### **8.1.3 Procedure**

Participants were tested individually between 12.00pm and 4.00pm over three weeks. Participants were told they could take as long as they liked to nominate the food items, and should stop only when they were certain that they could not recall any more Malay or Indian food items.

## **8.2 Results and Discussion**

A mixed ANOVA was carried out to determine whether the number of Indian and Malay foods recalled differed depending on the type of music played and participants' ethnicity. The type of food x music x ethnicity interaction was significant ( $F(2, 138) = 3.41, p = .036$ ). The mean number of food items recalled is crosstabulated by music and participant ethnicity in Tables 8.1 and 8.2 respectively. This indicates that the Chinese participants had a strong tendency to recall more Malay than Indian food items when Malay music was played; and more Indian than Malay food items when Indian music was played. However, there were no apparent effects of musical fit on recall among the ethnically Malay and Indian participants: the ethnic Malays recalled more Malay food items whatever music was played, and the ethnic Indians recalled more Indian food items whatever music was played.

<b>Ethnicity</b>	<b>Malay food items</b>	<b>SD</b>	<b>Indian food items</b>	<b>SD</b>
Chinese	5.12	2.49	3.96	2.03
Malay	7.87	2.95	4.12	1.68
Indian	7.00	3.16	7.96	2.91

Table 8.1 Participant ethnicity x mean number of Malay and Indian items recalled when Malay music played.

<b>Ethnicity</b>	<b>Malay food items</b>	<b>SD</b>	<b>Indian food items</b>	<b>SD</b>
Chinese	4.67	2.08	5.54	2.43
Malay	9.50	4.17	4.92	2.45
Indian	10.29	5.01	12.38	6.18

Table 8.2 Participant ethnicity x mean number of Malay and Indian items recalled when Indian music played.

This study supports the largely untested claim of previous studies that musical fit operates by activating knowledge of the world and raising the salience of associated products. Perhaps more importantly, the results here also indicate a clear limitation to the scope of this effect, namely that it may occur only when participants are not already very familiar with the products in question: musical fit effects were observed only in the ethnically Chinese participants, who otherwise had no a priori reason to be particularly familiar with one type of food over the other. Ethnically Malay and Indian participants did not produce data consistent with the notion of music making certain products more salient than others, suggesting that enculturation may impose a form of ceiling effect on the ability of musical fit to increase the salience of cultural products.

As with previous studies reported in this thesis, these findings may have implications for television and radio advertising, indicating that music can prime awareness of certain classes of products. Since music is able to prime consumers' memory for products with which it shares certain attributes, advertisers would do well to ensure that adverts contain music that raises the salience of the product or its key attributes, which are subsequently more likely to be recalled by viewers / listeners. However, there are possible limitations to these effects also that are similar to those that relate to previous studies. Specifically, to avoid misunderstanding of the music, advertisers should employ either very well-known pieces of unambiguous music or rely on the stereotypes associated with entire musical styles. Nonetheless, the findings here indicate that musical fit can promote the ability to recollect related products, but not when consumers are already very familiar with the product or brand in question.

## CHAPTER 9 - Conclusions

The seven studies described here indicate several caveats to the musical fit hypothesis. The first study investigated the impact of musical fit on consumers' purchase intentions for utilitarian products. In contrast with previous studies that have investigated musical fit using luxury goods, the results of the first study indicated that consumers were not influenced to pay more for utilitarian products when exposed to different musical styles (and no music), and nor could music predispose them to select the more upmarket of two competing products.

As a follow up to the first study, the second study investigated the impact of musical 'fit' on consumers' choice. This study contained two experiments. The first experiment asked Malaysian participants to choose between Malay and Western food while either Malay or Western music was played in the background. Results showed that participants tended to choose Malay food, irrespective of the type of music played. The second experiment repeated the same basic methodology but presented a more ambiguous choice scenario of Malay versus Indian food while either Malay or Indian music played in the background. Results indicated that musical 'fit' influenced product choice under these circumstances, consistent with previous research, but only among ethnically Chinese participants who did not have a clear existing preference for one product over another.

Since results of the second study suggested that musical fit might only be effective when consumers do not have a clear existing preference for one product over another, the third study further investigated this effect. Ethnically Chinese Malaysian participants were presented with six pairs of products, each containing a Malay or an Indian version of the product in question, and were asked to state a preference for one from that pair. Participants were played either Malay or Indian music in the background. The results show that product choices corresponded with the ethnicity of the background music played. This again demonstrates that music 'fit' can influence product choice when consumers do not have a clear existing preference for one product over another.

The fourth study investigated the effect of musical fit when customers either did or did not have existing preferences. However, whereas the previous studies had operationalised this on ethnic grounds, the fourth study operationalised this in terms of whether the participants were (not) already regular users of the products in question. Participants were presented with two adverts for two competing petrol brands, which featured music that did or did not fit with those brands. Results show that brand preferences were not affected by the adverts among participants who were regular users of one of the brands. However, participants who were not regular users of either brand demonstrated a preference for the brand advertised with music that ‘fitted’ the brand attributes. This demonstrates that musical ‘fit’ can influence product choice but only when consumers do not have a clear existing preference for one product over another.

The fifth study investigated whether musical fit effects are limited by whether participants have the opportunity and ability to consider the products in question. Participants were asked to select between two products when the opportunity and ability to consider their relative advantages were either limited (Experiment 5A) or ample (Experiment 5B). In Experiment 5A, participants were asked to read complex descriptions of two watches (which were luxurious and modish respectively) within a short time while listening to either classical music (which has a luxurious stereotype), funk (which has a modish stereotype) or no music. When classical music was played, more participants chose the ‘luxurious’ watch and when funk was played, more participants chose the ‘modish’ watch. Experiment 5B repeated the methodology except that the alternative choice scenario gave participants much more time to choose between the watches. Results in Experiment 5B showed that participants’ choices were not influenced as much by the music. This suggests that musical ‘fit’ has a higher possibility in influencing preferences between products when the opportunity and ability to consider them is limited.

The sixth study investigated the impact of musical ‘fit’ on product recall. Participants were asked to recall 20 products they had seen while listening to either rock music or classical music. Some of the 20 products were associated with either the rebellious stereotype of rock music or the affluent stereotype of classical music. Results showed that more ‘rock products’ than ‘classical products’ were recalled when rock music was played, although a similar number of ‘classical products’ and ‘rock products’ were recalled when

classical music was played. Results also showed that when rock music was played, participants recalled 'rock products' earlier than they recalled 'classical products', and the reverse was found when classical music was played. This suggests that musical 'fit' operates by raising the salience of products.

The final study investigated the same issue, but in the context of those ethnic factors addressed in earlier studies. Participants were asked to list as many Malay and Indian food items as they could while listening to either Malay or Indian music. Among ethnically Chinese participants, more Malay food items were recalled when Malay music was played and more Indian food items were recalled when Indian music was played. Ethnically Malay and Indian participants were more likely to recall food from their own cultures, irrespective of the music played. This demonstrates that the effect of musical fit on recall is limited to consumers who do not have a clear existing preference for one product over the other.

## **9.1 Limitations**

The research reported in this thesis has limitations and omissions, and it is hoped that noting these here will stimulate other researchers to carry out further investigations of musical fit. The most obvious limitation is that the samples employed in these seven studies consisted mainly of students from a particular cultural group(s), and as such cannot be considered truly representative of populations elsewhere in the world. The introductory chapter of this thesis noted that it was not clear that research from the West could be generalised to consumers elsewhere, and a similar criticism could be made of the research reported here that was carried out exclusively in Malaysia. Music that primes certain knowledge and beliefs among Malaysian students may not have similar effects among other groups. Further studies should be conducted with different groups living in different areas, and it seems at least a possibility that different music might be needed to produce the same effects among them as identified here.

A second limitation is that the music used in all the studies was easily accessible and understood by the participants. As such, the research reported here indicates effects of

musical fit only when consumers are familiar with the type of music employed. Further research is needed to determine whether unfamiliar music (or music featuring lyrics in a different language) is able to prime consumers' responses to products. Similarly, it remains to be determined whether too great a degree of musical fit could instead lead to consumers' not choosing the product in question as a consequence of the technique appearing crass.

Third, although music clearly did affect participants' behaviour in the research reported here, when given the opportunity to do so, most of the participants refused to state, or perhaps even failed to recognise, that music had influenced them. It also remains to be determined whether participants were really unaware of the effects of music on their decision-making. One strong possibility is that participants did realise that the music influencing their decision, but did not like admit such as it might not have seemed to them a rational explanation for their behaviour. More quantitative work is needed to specify the nature and effect of these factors, and to map out the underlying psychological processes. Questions could be geared, for example, to asking participants if the music conveyed certain notions, or to instead asking participants to simply describe the general characteristics of the music, as both approaches would indicate the type of thought processes being activated by the music. Note also that different music may bring about different thoughts or recollections, and more research could be conducted concerning the specific associations primed among certain groups of people by certain types of music.

Fourth, these studies were conducted under strict laboratory conditions and on an individual basis. The results of these studies may 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 effects obtained be strong enough to last until those people were actually in a commercial setting that required them to select between two competing products or to recall one particular type of product? Similarly, 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 participants are given more than two options to choose from? Also, would participants' choices be different if they were told that they would be actually given the product at the end of the experiment?

## 9.2 Implications

The results of these studies have clear implications for advertising. Study 1 implies that musical fit might not have any effect on utilitarian products. Retailers in hypermarkets, supermarkets or the local shops perhaps need not concern themselves with ensuring that the music they play fits with most of the products that they sell, and should instead focus on only the more luxurious products that they also stock. Studies 2, 3 and 4 illustrate that musical fit does not operate when participants were already regular users of or had other pre-existing preferences for one product over the other. Rather, the effect is apparently limited to those cases where participants have no criteria to otherwise select between the products in question. This is consistent with the recognition heuristic which states that a known alternative will be selected over an unknown one. Likewise the results also support a second aspect of the heuristic, namely that when both alternatives are unknown, participants should search for a cue to aid them in decision making: under these circumstances, participants would tend to choose the brand associated with the music playing in the background. This has several implications for advertisers. Firstly, advertisers would do well to ensure that adverts contain some degree of musical fit. Practitioners should employ either very well-known pieces of unambiguous music or rely on the stereotypes associated with entire musical styles. 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. Specifically in a Malaysian context, retail outlets should be sensitive to the diverse, multi-cultural society, using the right music to enhance sales. For example, a local supermarket which generally sells Malay food or products would be prudent to play Malay music, so as to fit with the products sold. However, playing Malay music in a supermarket situated in an ethnically Chinese area may not have a similar effect, as customers may not derive the same communicative intent from that music (although we might also expect that the music would have a stronger effect on sales of Malay food than when the same music was played in a supermarket situated in an ethnically Malay area).

Study 5 addresses an important aspect of consumers' responses to advertising. Since television and radio advertising tend to employ short exposure times that limit consumers' ability to enter into a detailed evaluation of the products in question, the fifth study highlights the positive consequences of employing musical fit under such circumstances (see Zhu & Myers-Levy, 2005; Kellaris & Cox, 1989; North, MacKenzie, Law, 2004; MacInnis, & Park, 1991). When consumers do not have the motivation, ability and opportunity to evaluate a product carefully, such as in the case of television and radio advertising, musical fit appears to be a significant influence on product choice.

Similarly, Studies 6 and 7 showed that music was able to prime consumers' *memory* and *recall* for products which share attributes with that music, and this effect on memory has obvious commercial implications that might endure until the time when the consumer is actually purchasing. For example, a consumer who is listening to a Malay music radio station while driving out for lunch may be more primed to think of Malay food and hence choose to eat similarly. Similar effects may also apply in the west of course.

Moreover, since these studies focus on ethnic / cultural issues, there are implications of this also for commercial practice. The research reported here provides ample illustration of how music associated with one particular ethnic group can be used to promote products associated with that group. The present findings also have direct implications for Malaysia. In Malaysia, eating out is cheap and hence the country has numerous al-fresco dining outlets where food stalls selling Chinese, Malay, Indian and Western foods congregate together. Here, perhaps it would be inadvisable to just play one type of music for a stretch. However, each food stall can still promote and publicise their food type by playing the 'right' music at their own stall, in the hope that, as people walk past the stall, they may have one 'extra' reason to dine there. The same principle may apply in the food courts that are found in many Western shopping malls.

In the international retail scene, it would only be sensible for international advertisers to employ musical fit if they can ensure that the musical language involved is understood by the people who are being advertised to. It may not always be advisable to advertise an international brand in the same way in different countries. For example, advertising German

wine using German music would not have the same impact on a Malaysian audience as it would on Germans.

In theoretical terms, the research here suggests that 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, which works in situations where knowledge is rather limited. For example, 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 may be the only reason why consumers would choose one product over another. Future research might investigate whether the factors that experimental work has shown to increase the likelihood of heuristic processing being employed are also relevant to 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?

Related to heuristics is the work on social cognition carried out in the latter portion of the 20<sup>th</sup> century reporting that people made sense of complex social information by simplifying and organizing this information into meaningful cognitive structures called schemas. Schemas may take the form of general expectations learned through experience or socialization, and thus give us some sense of prediction or control of our world. Barlett's (1932) classic research, for example, suggested that people are better able to remember information when it is organized around a schema compared to when it is not. Central to this schematic theory is the process of categorization. Pioneering work on this by Eleanor Rosch (1975) states that the process of categorization refers to how we, with little conscious effort, identify stimuli and group them as members of one category. To classify an object as belonging to a particular category the object does not necessarily need to have all the attributes of that category. However, the object must share some common features related to the said category.

A significant proportion of our information processing relies on our prior expectations, preconceptions and knowledge about the social world in order to make sense of situations and encounters. Hence, categories can also provide short-cuts when processing information heuristically. Since work on schemas found that categories facilitate the recall of information, therefore a good stimulus that matches a category facilitates recall, and category-consistent material is better remembered than category-inconsistent material (see Cohen, 1981; Devine and Ostrom, 1988, and Hastie & Park, 1986). It is possible to draw two implications from this for future work on musical fit. First, when people are given a categorically-appropriate stimulus, namely music that fits a product, they would be able to relate that to a product or item which fits the category of that stimulus. Secondly, when a product (category) is matched with the right music (stimulus) for an advertisement, there should be a greater tendency for people to remember this product for a longer period of time. As such, in addition to the work on heuristics described in this thesis, future research on musical fit might be usefully couched in terms of theories relating to schema. For instance, research has also indicated that well-developed schemas generally resist change and continue to exist even in the face of inconsistent and contradictory evidence (Fiske & Dyer, 1985; Hewstone, Hopkins, & Routh, 1992). This means that people who have been using a certain type of product for a long time would be expected to not be influenced to change their choice despite the music not being a good match or stimulus for the said product.

Moreover, if musical fit effects really do occur as a result of processes analogous to cognitive priming via music, then research on the latter points to other potential limitations on the generality of the former. Future research may investigate these. Specifically it is possible to adapt arguments made by Hansen and Hansen (1991) concerning cognitive priming by rock and rap music lyrics in proposing the following hypotheses for subsequent research on musical fit effects on consumer behaviour. First, 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. Second, if greater cognitive load predisposes people towards using heuristics and schematic processing then this suggests that musical fit effects should be

exacerbated under conditions in which customers experience cognitive overload, such as when the decision-making process is complex or when customers lack the time to consider the relative advantages of competing products in detail. Third, 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 e.g. North and Hargreaves, 1998).

There is clearly a great deal of work to be done in this field before we can claim to fully understand the nature of these effects and the means by which they might be applied optimally. The present findings suggest that some of the core elements of mainstream social cognition such as heuristics and priming may well provide a useful framework for considering these issues. In the meantime, the results of the studies reported here provide evidence that musical fit can affect product choice and recall, and do so outside Western culture, but the present data and arguments provide grounds to suspect that there are also limitations to the generality of the effects.

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