SOUND SYMBOLISM IN MARKETING: AN INTEGRATIVE REVIEW OF MARKETING STUDIES ON SOUND SYMBOLISM

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Abstract

Despite an increase in marketing research on sound symbolism particularly since the beginning of 2000s, there is a lack of integrative review of the empirical marketing studies regarding sound symbolism. To address this gap, this study offers a comprehensive review of 46 sound symbolism related marketing articles published between 1970 and 2019. The compiled articles were examined through content analysis in terms of the scope of research, methodology, and conceptual themes. The results indicate that despite the significant progress in the extant sound symbolism literature with respect to marketing, marketing research on sound symbolism is still at the stage of development. This study is expected to contribute to the pertinent body of knowledge by introducing an integrative literature review of sound symbolic marketing research and to further marketing studies by indicating the gaps that were not addressed by previous marketing research.

Keywords: *Brand Name, Marketing Studies, Sound Symbolism*
Jel classification: *M31, M39*

PAZARLAMADA SES SEMBOLİZMİ: SES SEMBOLİZMİNİ ARAŞTIRAN PAZARLAMA ÇALIŞMALARININ ÜZERİNE BÜTÜNCÜL BİR İNCELEME

Öz

Özellikle 2000'li yılların başından itibaren, ses sembolizmi üzerine yapılan pazarlama çalışmalarında artış olmasına rağmen, mevcut literaturde bu çalışmaları bütüncül bir şekilde ele alan herhangi bir çalışma bulunmamaktadır. Bu boşluğu doldurmak için bu çalışma 1970-2019 yılları arasında ses sembolizmi olgusunu inceleyen 46 tane pazarlama çalışmasına ilişkin geniş çaplı bir inceleme sunmaktadır. Derlenen makaleler, çalışmaların kapsamı, yöntemi ve incelenen kavramsal alanlar açısından içerik analizi ile incelenmiştir. Analiz sonuçları, ses sembolizmi olgusunun mevcut pazarlama literatüründe hızla gelişme göstermesine rağmen ses sembolizmi üzerine yapılan çalışmaların hala geliştirilebileceğini göstermektedir. Bu çalışmanın, ilgili mevcut bilgi birikimine bütünlükçü bir yaklaşım sunarak ve mevcut literatürdeki eksiklikleri göstererek gelecek çalışmalara katkı sağlaması beklenmektedir.

Anahtar Kelimeler: *Marka İsmi, Pazarlama Çalışmaları, Ses Sembolizmi*
Jel sınıflandırması: *M31, M39*

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1.Introduction

To create distinctive, memorable and inherently meaningful brand names, marketers and marketing researchers have intensively focused on the use of linguistic methods in recent years (e.g., Arora et al., 2015; Lowrey et al., 2003; Pogacar et al., 2015; Robertson, 1989; Nilsen, 1979; Vanden Bergh et al, 1987). In the direction of this interest, they have started to capitalize the findings of several linguistic and psycholinguistic studies to understand the role of linguistics on brand naming (e.g., Klink, 2000; Lowrey and Shrum, 2007; Yorkston and Menon, 2004). In this way, many linguistics and psycholinguistics concepts have been adapted to marketing context (Lowrey et al., 2003). Sound symbolism is also one of these concepts (Klink, 2000).

Sound symbolism is based on the notion that sounds imbedded in a word are used as a cue to derive information about what it refers (Sapir, 1929). Initiated by this notion, several marketing researchers have also questioned whether individual phonemes or sounds in a brand name might communicate inherent meaning about the product that it refers, for a while. Specifically, for last few decades, much attention has been paid by marketing scholars to understand the sound symbolism theory, its principles, and bound. Thus, a considerable amount of marketing studies, which examined the effects of sound symbolism on human psychology with respect to products, brands, and brand names, have accumulated in the relevant literature (e.g., Baxter and Lowrey, 2011; Klink, 2000;2001;2003; Lowrey and Shrum, 2007; Yorkston and Menon, 2004).

Nevertheless, sound symbolism concept has dated back a long time and so it has also been the object of interest of many scholars from different disciplines such as linguistics (e.g., Newman, 1933; Sapir, 1929); psycholinguistics (e.g., Asano et al., 2015; Maurer et el., 2006; Ramachandran and Hubbard, 2001); psychology (e.g., Crisnel and Spence, 2009; 2011; Ngo et al., 2013), anthropology (Nuckolls, 1999); literature (Collins, 1977; Finke, 1995; Ross, 2009); biology (e.g., Morton, 1977; Ohala, 1994); medicine (e.g., Abel and Glinert, 2008; Faure, 2018) and so on. For that reason, it is particularly important to conduct a review study regarding sound symbolism in marketing context towards a better understanding of the effects of sound symbolism in marketing and particularly brand naming context. Initiated by this fact, the purpose of this study is to review marketing studies on sound symbolism to provide comprehensive understanding regarding sound symbolism research in marketing.

This review study is expected to contribute to the extant sound symbolism literature in a several ways: (a) it improves established knowledge on sound symbolism with respect to marketing by exploring all relevant studies through an integrative analysis in an organized way; (b) it provides new insights by exploring trends in related studies in terms of their scope of research and methodology, and the way how they conceptualize the sound symbolism phenomena; and finally (c) it reveals the gaps addressed in the literature. Thus, this study provides new insights for further marketing studies to be conducted on sound symbolism.

2. Background

The root of linking sound with meaning can be traced back to ancient Greek philosophy (Klink, 2000). Nevertheless, a foundational principle of modern linguistics suggests that the relationship between speech sounds and semantic concepts is arbitrary, non-direct and conventional (Fromkin et al., 2014; Haynie et al., 2014). For instance, in order to represent the house figure in English, the letters “h”, “o”, “u”, “s”, and “e” have to be combined in a determined sequence because the sounds of “house” do not mean anything else alone. Thus, many mainstream linguists argue that sounds in words do not have any logical or inevitable link with the thing that it refers in real world (Brinton, 2000). On the other hand, some other linguists support that individual sounds and meanings are systematically linked with each other, and so sounds per se can have meaning (e.g., Jespersen, 1922; Sapir 1929).

This contradictive and longstanding debate over sound symbolism has paved the way for fruitful experiments conducted to understand the existence of sound symbolism phenomena in different contexts and across different languages. The results of sophisticated experiments indicate that the relationship between the phonetic structure of real words and their meaning is very weak (Robertson, 1989). However, if the words are unfamiliar or invented, their sounds can be a route to derive meaning about the words (Sapir, 1929).

The concept used to explain this phenomenon in extant literature has several names such as "phonetic symbolism"; "onomatopoeia"; "phonaesthesia"; "phonetic motivation"; "phonetic iconicity", or most frequently "sound symbolism" on the basis of its extent and use (Fischer, 1999, p.123). In the most general sense, sound symbolism refers to *natural association* (Abelin, 1999) and *direct linkage* (Hinton et al., 1994) between sound and meaning. In this way, contrary to principles of linguistics, the link between meaning and sound is considered as *non-arbitrary* (Sapir, 1929), and *systematic* (Jespersen, 1922) in sound symbolism. Nevertheless, to what extent the sound and meaning is related has been still discussed among the linguists. To comprehend the degree of linkage between sound and meaning, it should be better to look at the typology developed by Hinton, Nichols and Ohala (1994).

According to this typology, there are four types of sound symbolism: "*corporeal sound symbolism*", "*imitative sound symbolism*", "*synesthetic sound symbolism*", and "*conventional sound symbolism*". Corporeal sound symbolism refers to the specific sounds or intonation patterns that represent internal state of the speakers emotionally or physically (Arora et al., 2015). Depending upon the definition, involuntary uttered non-vocabulary sounds such as coughing or hiccupping can be given as examples of this type of sound symbolism (Klink, 2000). On the other hand, imitative sound symbolism refers to imitations of sounds in the environment. Hence, it includes onomatopoeic words and phrases such as toc-toc for knocking the door (Hinton et al., 1994).

Different from the first two types of sound symbolism, synesthetic sound symbolism is based on the notion that speech sounds are capable of conveying meaning about the properties of the objects (Klink, 2000). For instance, in English, high front vowel "i" as in "little" and "teeny" conveys meaning about smallness of objects; whereas low vowel "a" as in "large" and "vast" conveys their largeness (Fischer, 1999). This case can also be associated with the positions of speech organs when the sounds are uttered. For instance, in English, when the "a" is uttered, the opening between tongue and palate is becoming large, and so "a" is frequently related to large objects (Ramachandran and Hubbard, 2001). Finally, conventional sound symbolism refers to "grouping of similar meanings about similar sound" (Abelin, 1999, p.15). For instance, in English, "gl-" in "glitter", "glow", and "glimmer" convey a meaning about light (Bolinger, 1950). Nevertheless, conventional sound symbolism is frequently accepted as language specific (Hinton et al., 1994) because "gl-" and the words starting with "gl-" do not mean anything else in another language.

As seen, among the four sound symbolism types, the interplay between sound and meaning is well-illustrated in synesthetic sound symbolism. Accordingly, pertinent sound symbolism literature also suggests that the linkage between the speech sounds and its intrinsic meaning is systematically related (e.g., Klink, 2000; Yorkston and Menon, 2004). This direct and non-arbitrary linkage between sound and meaning has been explored and verified through a great number of experiments conducted in different fields and across many different languages (e.g., Klink, 2000; Köhler, 1947; Sapir, 1929).

Recent years, the findings regarding sound symbolism effects have increasingly started to be implemented in brand naming as the attention of consumers has been drawn by inventive and unusual brand names (Robertson, 1989; Keller, 2008; Baxter and Lowrey 2011). Since use of sound symbolism in brand naming provides more creativity, distinctiveness, and trademark protection to brand names than the other brand naming method do, the number of studies examined the effects

of sound symbolism has increased (Kohli et al., 2005). In this context, to indicate how sound symbolism has been adapted to brand naming context; this study is designed to review marketing research on sound symbolism in a more organized way.

3. Method

This study is designed as a review study which addresses the literature studying sound symbolism with respect to brand naming. Other marketing studies that addressed sound symbolism in terms of cross-modal correspondences are out of the scope of this study because sounds in cross modal correspondences are not limited with speech sounds by which the brand names are created (e.g., Crisinel and Spence, 2009; Simner et al., 2010). The investigation involves the research published in English in marketing literature between 1970 and 2019 because the first marketing study on sound symbolism, which is readily accessible, was published in 1972 by Peterson and Ross. Additionally, the sound symbolism effects in brand naming have been dominantly verified for English (e.g., Klink, 2000; 2001; 2003; Lowrey and Shrum, 2007; Yorkston and Menon, 2004). Since this study attempts to draw a comprehensive map for the effects of sound symbolism in marketing, articles included in the study were limited according to the following criteria: (a) only marketing research on sound symbolism was examined; (b) since there is an extensive literature on sound symbolism, articles only appeared in marketing related publications were included; (c) articles only published in academic journals that readily accessible were used; and (e) only empirical marketing research based on primary and/or secondary data were included into the study and so conceptual and case studies were excluded from the review process.

In order to identify pertinent marketing studies, electronic databases; Ebsco, Elsevier, Emerald, Jstor, Sage Journals, Science Direct, Springer Link, Taylor & Francis Online Journals, and Wiley Online Library were searched with the keywords "*sound symbolism", "phonetic symbolism", "phonetic iconicity*" *phonetic symbolism*"; "*onomatopoeia*"; "*phonaesthesia*"; "*phonetic motivation*"; and "*synesthesia*" in combination with "marketing", "brand", "branding", and "brand name". Additionally, references of relevant articles were also scanned manually to identify other relevant marketing studies. In total, 46 marketing studies on sound symbolism published in 17 different sources fulfilled the criteria for being included into the review (see Appendix A).

To make a more systematic review to show trends in the studies, the identified articles were first grouped by decade: 1970-1979, 1980-1989, 1990-1999, 2000-2009, and 2010-2019. Nevertheless, since there was a few sound symbolism related marketing studies in the period between 1970 and 1999, relevant studies conducted in this time period were merged with the other periods till 1999. Thus, the analysis was specifically made depending upon two time periods: 1999 and before, and 2000 and after.

The journals in which sound symbolism related marketing research were published are *Marketing Letters (23.91%), Journal of Advertising Research (10.87%), Journal of Brand Management (8.70%), International Journal of Research in Marketing (8.70%), Journal of Marketing (6.52%), European Journal of Marketing (6.52%), Journal of Consumer Research (6.52%), Journal of Marketing Theory and Practice (4.35%), Journal of Product & Brand Management(4.35%), Journal of Consumer Marketing (4.35%), Journal of Global Marketing (2.17%), Psychology & Marketing (2.17%), Journal of Marketing Research (2.17%), Journal of Advertising (2.17%), European Advances in Consumer Research (2.17%), ACR in Latin American Advances (2.17),* and *International Journal of Market Research* (2.17%). Additionally, 7 articles (15.22%) were published in the first time period (1999 and before); whereas 39 articles (84.78%) were published in the second time period (2000 and after).

In order to analyze the compiled sound symbolic marketing studies, content analysis was used. In this context, pre-specified coding framework was initially developed, and then all relevant articles were subjected to the content analysis. The coding framework used in the content analysis was structured along three dimensions: (a) scope (i.e., type of sound symbolism, type of sounds,

and language used in a study) (b) methodology (i.e., sample size, data collection method, key informant, and analysis method); and (c) conceptual themes (conceptualization and outcomes of sound symbolism effects). Hence, it is expected that the content analysis provides an integrative perspective for sound symbolism into marketing.

4. Research Findings

In this section, the findings of the content analysis of the identified marketing studies are presented with respect to scope of research, research methodology, and conceptual themes.

4.1. Scope of Research

Depending upon the characteristics of relevant marketing studies, the trend in vast majority of the studies was to employ synesthetic type sound symbolism (78.26%); to employ vowel sounds for testing the effects of sound symbolism; and to test the sound symbolism effects across Western languages (see Table 1).

As the fieldwork characteristic, vast majority of studies employed only vowel sounds (43.48%). These studies always employed the vowel sounds with respect to front vowels (i.e., /e/, /i/) and back vowels (i.e., /o/, /u/) distinction (e.g, Baxter and Lowrey, 2011; Lowrey and Shrum, 2007). Consonant sounds were frequently employed with the vowels (47.83%) (e.g., Athaide and Klink, 2012; Klink, 2000; Kuehnl and Mantau, 2013). In these studies, consonant sounds were generally classified into stops (/b/, /d/, /g/, /p/, /t/, /k/) and fricatives (/f/, /s/, /h/, /v/, /y/, /z/) (e.g., Athaide and Klink, 2012; Guevremont and Grohmann, 2015; Klink, 2000). Additionally, among these studies, a few studies utilized the voiceless/voiced distinction with respect to fricatives and stops (e.g., Athaide and Klink, 2012; Klink, 2000).

Another general characteristic of fieldwork is about the language used in the studies. A vast majority of the studies were well-documented the non-arbitrary relationship between sound and meaning for English (82.63%) and other Indo European languages such as French, Spanish, (e.g., Shrum et al., 2012); and German (Kuehnl and Mantau, 2013). There were also a few studies with respect to other languages such as Chinese (e.g., Coulter and Coulter, 2010; Shrum et al., 2012), Hindu (Athaide and Klink, 2012; Klink and Athaide, 2014), and Japanese (Park and Osera, 2008). This shows that marketing research on sound symbolism have been mostly dominated by Western context.

Table 1: **Scope of Research**

Scope of Research	Total (n= 46)%	1999 and before (n=7) %	2000 and after (n=39) %
Type of Sound Symbolism			
Corporeal Sound Symbolism	-	-	-
Imitative Sound Symbolism	-	-	-
Synesthetic Sound Symbolism	78.26	28.57	87.18
Conventional Sound Symbolism	-	-	-
Not clear	21.74	71.43	12.82
Types of Sound			
Vowels	43.48	-	51.28
Consonants	8.69	1	7.69
Vowels + Consonants	47.83	6	41.03
Not clear		-	-
Language			
English	82.63	85.71	82.05
Japanese	2.17		2.56
Chinese	2.17	14.29	-
English+French	2.17		2.56
English+Hindu	4.35		5.15
English+Spanish+Chinese	2.17		2.56

English+French+Spanish+Chinese	**2.17**	**2.56**
English+ German+French+Spanish	**2.17**	**2.56**

4.2. Methodological Characteristics of the Studies

In terms of sampling, the size of the sample employed in the studies varied with respect to several experiments conducted in a study. When the studies were reviewed, it is seen that the size of the sample employed in the studies ranges between 79 and 456. Nevertheless, more than half of the studies used a sample size lower than 200 units (e.g., Athaide and Klink, 2012; Baxter and Lowrey, 2011; Klink, 2000; 2003; Klink and Athaide 2012; Lowrey and Shrum, 2007; Yorkston and Menon, 2004). In this context, it can be readily concluded that the sample sizes of studies reviewed are relatively small to reach reliable results.

The vast majority of the studies employed 2 x 2 between subjects factorial design to test the effects of sounds on meaning (e.g., Baxter and Lowrey, 2011; 2014; Ilicic et al., 2015; Lowrey and Shrum, 2007). Hence, to test the effects of sounds on consumer psychology, they utilized experiments to collect data (see Table 2). In these experiments, they collected data through surveys, as well. Hence, the trend among the studies was to employ experimental research and use survey to test the different conditions (50.0%). This shows that a vast majority of the studies used primary data to display the sound symbolism effects.

With respect to key informants, the vast majority of the studies used adults (69.57%). In this context, a large part of studies collected data from university students who were frequently undergraduates (e.g., Klink, 2000; 2001). On the other hand, there were also a few studies that collected data from general publics (e.g., Baxter, Ilicic, and Kulczynski, 2015; Ilicic et al., 2015). Additionally, some studies used children as key informants to collect data (6.52%) (i.e., Baxter and Lowrey, 2011). Different from these studies, a couple of studies (e.g., Arora et al., 2015; Doorn et al., 2015; Lowrey et al., 2003; Pogacar et al., 2015) examined the existing brand names by using second hand data (19.56%). This indicates that more than half of the studies reviewed used homogenous sample groups like university students to discover the sound symbolism effects. However, to reach more generalizable results about sound symbolism effects, sound symbolism effects should be analyzed by using informants coming from different parts of the society like housewives, blue or white collar employees, uneducated or disadvantageous groups.

Finally, in terms of analytical approach, a large number studies employed analysis of variance (ANOVA) (52.17%). Particularly for the studies in which there were matching tasks between two alternatives, binomial z-approximation was utilized (4.35%) (i.e., Klink, 2000). The other analytical approaches used in the studies were content analysis (10.87%), regression (6.52%) and other approaches (26.09%) such as paired sample t-tests and descriptive statistics. This shows that analytical approach of a vast majority of the marketing research on sound symbolism is based on quantitative research. However, in order to understand underlying reasons and motivations behind the sound symbolism effects, qualitative research should also be used in sound symbolism research.

Table 2: **Research Methodology**

Research Methodology	**Total (n= 46)%**	**1999 and before (n=7) %**	**2000 and after (n=39) %**
Data Collection Method			
Survey	**28.26**	**42.86**	**25.64**
Second-hand data	**19.56**	**57.14**	**12.83**
Interview	**-**	**-**	**-**
Experiment	**2.18**	**-**	**2.56**
Experiment+Survey	**50.0**	**-**	**58.97**
Key informant			
Adults	**69.57**	**42.86**	**74.36**
Children	**6.52**	**-**	**7.69**
Adults and Children	**13.04**	**57.14**	**5.13**

Others	**10.87**	**-**	**12.82**
Analytical Approach			
Analysis of Variance	**52.17**	**-**	**61.54**
Binomial Z-Approximation	**4.35**	**-**	**5.13**
Regression	**6.52**	**-**	**7.69**
Content Analysis	**10.87**	**57.14**	**2.56**
Other	**26.09**	**42.86**	**23.08**

4.3. Conceptual Themes

This section introduces the findings of the review organized by conceptualization and outcomes of sound symbolism phenomena in brand naming context.

4.3.1. Linguistic Approach and Sound Qualities

Initial marketing studies on sound symbolism were the ones which examined the use of linguistic approach with respect to number of syllable, singular or plural forms and hard or soft sounding words in English (Peterson and Ross, 1972); with respect to phonetic, orthographic, morphologic and semantic characteristics of top 200 US brand names for the years 1971 to 1985 (Vanden Bergh et al., 1987) and sound qualities with respect to initial sounds of US brand names for the years 1972 to 1979 (Schloss 1981; Vanden Bergh et al., 1990). On the basis of these initial sound-related marketing studies, it is very difficult to state that sound symbolism has been conceptualized properly. Nevertheless, these studies have furthered the sound symbolic marketing studies. The interest towards linguistic characteristics (Arora et al., 2015; Lowrey et al., 2003) and sound qualities (Doorn et al., 2016; Pogacar et al., 2015) of US brand names originating from English have continued in 2000s. However, all of these studies do not directly emphasize sound symbolism, except the study of Arora et al. (2015) and Pogacar et al. (2015).

4.3.2. Alpha Numeric Brand Names

Since alpha numeric brand names are made up combination of letters, words and numbers, they provide a good context for sound symbolic research. With respect to sound symbolism, alpha numeric brand names were examined in terms of creating desired brand image (Boyd, 1985); attribute perception (Ang, 1997; Pavia and Costa, 1993); and consumer preferences (Gunasti and Ross, 2010). These studies suggested that the number and letters used in alpha numeric brand names convey meaning about the products within the context of English (Boyd, 1985; Gunasti and Ross, 2010; Pavia and Costa, 1993) and Chinese (Ang, 1997). For instance, the letters “X” and “Z” in brand names are frequently perceived as the indicators of speed and technology in English (Pavia and Costa, 1993).

4.3.2. Brand Name-Product Attribute Perception

A great deal of sound symbolic marketing studies was conducted to understand the interplay between speech sounds in brand names and product attribute perception. These studies were particularly organized in creating meaningful brand names (Klink, 2000; 2001; Klink and Wu, 2014); creating meaningful brand names for international markets (Athaide and Klink, 2012), and creating ethical brand names (Klink and Wu, 2017). However, several sound symbolic marketing studies particularly concentrated on sound symbolism effects have also indicated the interplay between brand name and product attribute perception (e.g., Baxter, Ilicic, Kuclynzski et al., 2015; Lowrey and Shrum, 2007; Yorkston and Menon, 2004).

A vast majority of the studies which examined sound and product attribute perception were performed in USA (Doyle and Bottomley, 2011; Klink, 2000; 2001; Klink and Wu, 2014; 2017; Lowrey and Shrum, 2007; Yorkston and Menon, 2004). A few of them were performed in other countries such Australia (Baxter et al., 2014; Baxter, Ilicic, Kulcynzski et al., 2015; Baxter, Ilicic, Kulcynzski et al., 2017; Ilicic et al, 2015) and Mumbai, India (Athaide and Klink, 2012). However, regardless of

where these studies were carried out, their findings present the similar interactions between sound and meaning by supporting universal sound symbolism arguments.

In this context, the findings regarding these studies indicate that invented brand names including **front vowels** ("/i/", "/e/") are more related to *smallness* (Baxter, Ilicic, Kulcynzski et al., 2015; Klink, 2000, Klink and Wu, 2014; Lowrey and Shrum, 2007); *mildness*, *weakness*, *friendliness, femininity* (Klink, 2000), *sharpness* (Lowrey and Shrum, 2007); and *clean* and *crisp tasting* (Baxter, Ilicic, Kulcynzski et al., 2015) than **back vowels** ("/o/", "/u/") by informants whose first language is English. Additionally, **front vowels** are more associated with *lightness* (opposite to darkness), *thinness*, *softness*, *coldness*, *bitterness*, *prettiness* (Klink, 2000); *lightness* (opposite to heaviness) (Klink, 2000; 2001; Lowrey and Shrum, 2007); and *fastness* (Klink, 2000; 2001; Klink and Wu, 2014; Lowrey and Shrum, 2007) *by* English-Speaking informants and by Hindu speaking informants (Athaide and Klink, 2012). On the other hand, particularly in terms of taste, brand names including **back vowels** are associated with *smoothness, creaminess, richness* (Baxter et al., 2014; Baxter, Ilicic, Kulcynzski et al., 2015; Doyle and Bottomley, 2011; Ilicic et al., 2015; Yorkston and Menon, 2004), *thickness, heaviness*, and c*hewiness* (Baxter, Ilicic, Kulcynzski, et al., 2017) than **front vowels** by English speaking individuals.

The marketing studies on sound symbolism also provide evidence that **fricatives** ("/f/", "/v/", "/s/", "/z/") are associated with *smallness* (Klink, 2000; Klink and Wu, 2014); *softness* (Klink, 2001); *fastness, femininity* (Klink, 2000; Klink and Wu, 2014); *lightness* (opposite to heaviness) (Klink, 2000; 2001); and *ethicality* (Klink and Wu, 2017) than **stops** by English speaking subjects. Additionally, fricatives ("/f/", "/v/", "/s/", "/z/") are matched with *softness, fastness, femininity*, and *lightness* (opposite to heaviness) by Hindu speaking subjects (Athaide and Klink, 2012). Moreover, sound symbolic marketing studies examined voiced/voiceless fricative sound distinction and voiced/voiceless stop sound distinction indicate that **voiceless stops** ("/p/", "/t/", "/k/") are more related to *smallness, femininity*, *lightness* (opposite to heaviness), and *sharpness* than **voiced stops** ("/b/", "/d/", "/g/") *by* Hindu speaking subjects (Athaide and Klink, 2012) and by English speaking subjects (Klink, 2000). Moreover, while brand names including **voiceless stops** are matched with *fastness* (Klink, 2000) and *ethicality* (Klink and Wu, 2017) by English speaking subjects, they are more matched with *softness* by Hindu-speaking subjects (Athaide and Klink, 2012). Additionally, these studies show that **voiceless fricatives** ("/f/", "/s/") are more associated with *fastness, softness*, *femininity* and *lightness* (opposite to heaviness) than **voiced fricatives** ("/v/", "/y/") by Hindu speaking subjects (Athaide and Klink, 2012) and by English speaking subjects except *lightness* attribute (opposite to heaviness) (Klink, 2000).

4.3.3. Product's Attribute-Brand Name Preference

The symbolic relationship between sound and meaning has been well-documented with respect to brand name preference in terms of bilinguals (Lowrey et al., 2008; Shrum et al., 2012; Kuehnl and Mantau, 2013), adults (Lowrey and Shrum, 2007), and children (Baxter and Lowrey, 2011; 2014). The marketing studies that examined sound symbolism phenomena within the context of interplay between product attribute and brand name preference were performed in France by using French speaking participants who were fluent in English (Lowrey et al., 2008, Shrum et al., 2012); performed in China by using Chinese speaking participants who were fluent in English (Shrum et al., 2012); performed in USA where there was a substantial portion of Hispanics by using Spanish speaking participants who were bilingual in English (Shrum et al., 2012); performed in USA by using native speakers of English, Spanish, German and French (Kuehnl and Mantau, 2013); and performed in Australia by using English speaking participants (Baxter and Lowrey, 2011; 2014).

The findings regarding sound symbolic brand name preference studies revealed that when the products are *small, fast* and *light* like two-seater convertible, brand names including **front vowels** are more preferred by individuals whose first language is English (Baxter and Lowrey, 2014; Kuehnl and Mantau, 2014; Lowrey and Shrum, 2007; Shrum et al., 2012); by native speakers of French, German, Spanish except *fastness* attribute (Kuehnl and Mantau, 2013) and by native speakers of

Spanish, French, and Chinese (Shrum et al., 2012). Additionally, **fricatives** are more preferred for *small* and *light* products across English, French, Spanish and German (Kuehnl and Mantau, 2013). On the other hand, when the products are *slow, large* and *heavy* like SUV, brand names including **back vowels** (Baxter and Lowrey, 2014; Lowrey and Shrum, 2007; Shrum et al., 2012) and **stops** (Kuehnl and Mantau, 2013) are more preferred by native speakers of English (Baxter and Lowrey, 2014; Lowrey and Shrum, 2007; Shrum et al., 2012), Spanish (Kuehnl and Mantau, 2013; Shrum et al., 2012), French (Kuehnl and Mantau, 2013; Shrum et al., 2012), Chinese (Shrum et al., 2012), and German (Kuehnl and Mantau, 2013).

Additionally, brand names including **front vowels** are preferred over brand names including **back vowels** for products which are *sharp* like knife (Baxter and Lowrey, 2014; Lowrey and Shrum, 2007; Shrum et al., 2012); which are *small, soft*, and *light* like squishy ball or teddy bear (Baxter and Lowrey, 2011); and which have *clean, crisp, cold* (Lowrey and Shrum, 2007), and *icy* and *sweet* taste (Baxter and Lowrey, 2011) across English (Baxter and Lowrey, 2011; 2014; Lowrey and Shrum, 2007; Shrum et al., 2012), Spanish, French, and Chinese (Shrum et al., 2012). Thus, the findings of the studies in review present that a universal sound symbolism effect is considerably observed on the relationship between product attribute and brand name preference. Nevertheless, the study of Baxter and Lowrey (2014) which compared the sound symbolism effects between children from Southern Midland America and Eastern Australia indicated that sound symbolism effect strengthens when the children are native speakers of Australian English because of the differences in position of the tongue when producing sounds. Therefore, although sound symbolism effect is considered as universal across several languages, some factors such as accent or culture may influence extent of the effect of the phenomena.

4.3.4. Brand Name's Luxury Appeal

Phonetic structures of brand names have also been examined within the context of their luxury appeal in terms of US citizens who spoke only English (Pathak, Calvert, and Lim, 2017; Pathak, Calvert, and Velasco, 2017); Indian participants who spoke only Hindu; and Spanish accented participants who did not speak Spanish but spoke English (Pathak, Calvert, and Lim, 2017). The results indicated that brand names including **back** and **high vowels** (i.e., /o/, /u/), **nasals** (i.e, /n/) and **affricates** (i.e., /sh/); formed up more multi-syllabic names; and including stressed vowels are frequently perceived as luxury brand names by English and Hindu speaking subjects (Pathak, Calvert, and Lim, 2017). Additionally, the findings revealed that brand names including early-acquired sounds (i.e.,/m/, /b/ and /d/) are more related to basic brands used every day; whereas brand names including late-acquired phonemes (i.e., sh /ʃ/' as in posh, th /θ/ as in think and th /ð/ as in then) are more related to luxury brands by English speaking subjects (Pathak, Calvert, and Velasco (2017).

4.3.5. Brand Name-Brand Marks

The interplay between sounds and meaning has also been explored within the context of interplay between brand name and brand marks among English speaking subjects with respect to adults (Doyle and Bottomley, 2010; Klink, 2003), Hindu speaking bilinguals who also speak English (Klink and Athaide, 2014) and Australian English speaking children (Baxter, Ilicic, Kulczynski et al., 2015). Hence, the sound symbolic relationship between brand name and brand mark has been well-documented across several countries such as USA (Doyle and Bottomley, 2011; Klink, 2003), India (Klink and Athaide, 2014) and Australia (Baxter, Ilicic, Kulczynski et al., 2015).

These sound symbolic marketing studies on brand name/brand mark interaction suggest that **front vowels** ("/i/", and "/e/") and **fricatives** ("/f/" and "/v/") are associated with *lighter color*, *angular shapes*, and *smaller display of brand logos* but the opposite is true for **back vowels** ("/o/" and "/u/") and **stops** ("/k/" and "/g/") in English (Klink, 2003). Nevertheless, there is a limited support for *color* in emerging markets depending upon differences in the meanings of color in different cultures like Hindu (Klink and Athaide, 2014). Additionally, with respect to children, the relevant

literature suggests that English speaking children perceive the product as *smaller*, if its brand name includes **front vowels** and its brand logo includes *angular shapes*. On the other hand, they perceive the product as *larger*, if its brand names include **back vowels** and brand logo includes *curved shapes* (Baxter, Ilicic, Kulczynski et al., 2015). Thus, the findings of the sound symbolic marketing studies in review present that there is a similar relationship between sound, size and shape symbolism across countries and languages. However, in order to mention about a universal sound symbolism effect on shape, size, and color perception, more sound symbolic marketing studies should be performed in different cultural contexts.

4.3.6. Brand Name- Gender Targeting

Sound symbolism phenomena have also been examined for English speaking subjects within the context of gender-based differences in response to sound symbolism effects (Klink, 2009); gender brand personality (Klink and Athaide, 2012; Wu et al., 2013); and brand gender perception (Guévremont and Grohmann, 2015; Lieven et al., 2015). The findings indicate that brand names including **front vowels** are more favorably welcomed by English speaking *females* than English speaking *males*; whereas brand names including **back vowels** are more favorably welcomed by the *males* than the *females* (Klink, 2009). Additionally, sound symbolic marketing studies regarding brand gender perception present that brand names with front vowels (Lieven et al., 2015) and **fricatives** (Guévremont and Grohmann, 2015) are perceived as more feminine within the context of English. Thus, brand names with **front vowels** are rated as better to create a *feminine brand personality*; whereas brand names with **back vowels** are rated as better to create a *masculine brand personality* in English (Klink and Athaide, 2012; Wu et al., 2013).

4.3.7. Brand Name- Spokesperson-Product Fit

Some studies in relevant literature examined the sound symbolism phenomena in Australia by using participants whose first language is English within the context of consumers' perception on spokesperson-product fit with respect to need for recognition (Ilicic et al., 2015) and perceived source credibility (Baxter, Ilicic, and Kulczynski, 2015). In this context, according to relevant literature, when the name of spokesperson includes **front vowels** (**back vowels**) and the product attributes are *clean* and *crisp* (*smooth and rich*), perceived *spokesperson-product fit* is the highest among English speaking subjects (Baxter, Ilicic and Kulczynski, 2015; Ilicic et al., 2015). In such a context, spokesperson's credibility also increases (Baxter, Ilicic, and Kulczynski, 2015) but this effect could be observed for English speaking consumers with high need for recognition (Ilicic et al., 2015).

4.3.8. Brand Name-Pricing

Sound symbolic relationship between meaning and sound has also examined within the context of pricing with respect to overestimation and underestimation of price discounts (Coulter and Coulter, 2010) and name-letter/price effect on price evaluations (Coulter and Grewal, 2014). The sound symbolic marketing studies on pricing were performed in USA by employing English speaking participants who were Spanish and Chinese bilinguals (Coulter and Coulter, 2010); and native English speaking participants (Coulter and Grewal, 2014). The findings of sound symbolic marketing studies regarding pricing suggest that prices with small sounds like **front vowels** and **fricatives** lead to *overestimation* of price discounts; whereas prices with large sounds like **back vowels** and **stops** lead to **underestimation** of price discounts across English, Spanish, and Chinese (Coulter and Coulter, 2010). Additionally, if the price of product and the initial of the name of consumer share the same letters, this implicit egotism leads to positive product price evaluations for English speaking consumers (Coulter and Grewal, 2014). In this way, extant literature suggests that sound symbolism could manipulate perceived discounts, perception of sales price value, and purchase intention of consumers.

4.3.9 Sound Symbolism Effects

Marketing studies on sound symbolism have also pointed out how meanings derived from sounds can systematically affect consumers with respect to automaticity of sound symbolism effects in adults (Yorkston and Menon, 2004) and children (Baxter et al., 2014); consumers' brand evaluations (Argo et al., 2010; Klink, 2001; Park and Osera, 2008; Wu et al., 2013); sub-lexical priming (Baxter, Ilicic, Kulcynzski, et al., 2017); implicit and explicit behaviors (Pogacar et al., 2018); persuasion, appetitive increases in hunger and actual behavior (Spears et al., 2016); and helping behavior (Kniffin and Shimizu, 2016). A vast majority of the sound symbolic marketing studies on sound symbolism effects was conducted in USA (e.g., Argo et al., 2010; Klink, 2001; Kniffin and Shimizu, 2016; Spears et al., 2016; Pogacar et al., 2018; Wu et al., 2013; Yorkston and Menon, 2004) and a few of them were performed in different countries such as Australia (e.g., Baxter et al., 2014; Baxter, Ilicic, Kulcynzski, et al., 2017) and Japan (Park and Osera, 2008).

The results indicated that if some specific sounds are imbedded in a brand name, product liking and positioning (Klink, 2001); implicit preference and explicit willingness to pay for the brand (Pogacacar et al., 2018); helping behavior (Pogacar et al., 2018); brand liking and perceived quality (Park and Osera, 2008); and persuasion, appetitive increases in hunger and actual behavior (Spears et al., 2016) will increase. Moreover, brand liking and purchase intention towards a brand increase, if its sounds are associated with the gender that the brand targets (Wu et al., 2013). These effects could be strengthened for children via sub-lexical priming (Baxter, Ilicic, Kulcynzski, et al., 2017). Additionally, brand names including specific sounds might lead to more positive feelings towards products, when consumers are audibly exposed to brand names including specific sounds (Argo et al., 2010). To understand the conceptualization of sound symbolism phenomena in marketing, all of these studies are summarized in Table 3 with respect to their themes.

Table 3: **Conceptualization and Themes of Sound Symbolic Marketing Studies**

Conceptualization	Theme(s)	Author(s)
Linguistic approach	brand name remindfulness	Peterson and Ross (1972)
	brand name memory	Lowrey et al. (2003)
	brand name classification	Vanden Bergh et al. (1987), Arora et al. (2015)
Sound qualities	initial letters of successful brand names	Schloss (1981), Vanden Bergh (1990), Pogacar et al. (2015), Doorn et al. (2016)
Alpha-numeric brand names	alpha-numeric brand name categorization	Boyd (1985)
	attribute perception	Pavia and Costa (1993), Ang (1997)
	brand name preference	Gunasti and Ross (2010)
Brand Name-Attribute Perception	creating meaningful brand names	Klink (2000; 2001); Klink and Wu (2014)
	creating meaningful brand names for international markets	Athaide and Klink (2012)
	creating ethical brand names	Klink and Wu (2017)
Product's Attribute-Brand Name Preference	brand name preference	Lowrey and Shrum (2007)
	brand name preference of bilinguals	Lowrey et al. (2008), Shrum et al. (2012), Kuehnl

	brand name preference of childiren	and Mantau (2013) Baxter and Lowrey (2011; 2014),
Brand name's luxury appeal	effects of phonetic structures used in brand names	Pathak, Calvert, and Lim (2017)
	effects of early- and late-acquired phonemes	Pathak, Calvert, and Velasco (2017)
Brand Name-Brand Marks	sound and visual brand name properties	Doyle and Bottomley (2011)
	the effects of interplay between brand name-brand mark on adults	Klink (2003)
	the effects of interplay between brand name-brand mark on a children	Baxter, Ilicic, et al. (2015)
	the interplay between brand name-brand mark in emerging markets	Klink and Athaide 2014)
Brand Name-Gender Targeting	individual-level differences with respect to sound symbolism	Klink (2009)
	gender brand personality	Klink and Athaide (2012), Wu et al. (2013)
	brand gender perception	Guévremont and Grohmann (2015), Lieven et al. (2015)
Spokesperson Name - Product Fit	effects of fit between spokesperson name and product attributes on perceived source credibility	Baxter, Ilicic, and Kulczynski (2015)
	spokesperson's names, appearance, and product fit	Ilicic et al. (2015)
Sound Symbolism-Pricing	sounds' effects on overestimation and underestimation of price discounts	Coulter and Coulter (2010)
	name-letter/price effect, birthday-number/price effect on price evaluations	Coulter and Grewal (2014)
Sound Symbolism Effects	automaticity of sound symbolism effects in adults	Yorkston and Menon (2004)
	automaticity of sound symbolism effects in children	Baxter et al. (2014)
	consumers' brand evaluations	Park and Osera (2008), Argo et al. (2010)
	persuasion,appetitive increases in hunger and actual behavior	Spears et al. (2016)
	helping behavior	Kniffin and Shimizu (2016)
	sub-lexical priming	Baxter, Ilicic, Kulczynski et al. (2017)
	implicit and explicit behavior	Pogacar et al. (2018)

5. Discussion and Future Research Directions

Despite the significant progress in the pertinent marketing literature on sound symbolism, marketing research on sound symbolism is still at the stage of development with respect to scope of research, methodology, and conceptual themes. For instance, in terms of scope of research, extant sound symbolism marketing research seems to be limited with synesthetic type sound symbolism. Nevertheless, specifically imitative and conventional sound symbolism could provide a good research area to test the sound symbolism effects on consumer psychology, particularly when the brand names formed up imitative (i.e., Meow mix cat food) and conventional sound symbolism

(i.e., Sprite) are taken into consideration. Additionally, the findings revealed that vast majority of sound symbolic marketing research have been dominated by major European languages and so Western context. In order to provide new evidences for universal sound symbolism effect, expressiveness of sounds should be examined in different languages coming from different language families such as Bandu, Sino-Tibetian, and Altaic.

With respect to scope of research, another field characteristic is the use of vowel sounds to test the effects of sounds symbolism on the basis of front/back vowel distinction. Nevertheless, there are different categorizations with respect to vowels such as rounded/unrounded vowels and narrow/broad vowels that have not been addressed by any marketing study before. Additionally, the interplay between speech sounds and meaning have not been well-documented for consonant sounds, as compared to the vowels. In this context, by using different consonant sounds (i.e., nasals, laterals, and approximants) and vowel sounds (i.e., narrow, broad, rounded, unrounded), extant sound symbolic marketing studies could be extended into new dimensions.

In terms of methodological approach, sound symbolic marketing studies could be criticized because of the key informants that they collected data. A large number of sound symbolic marketing studies employed undergraduates because they provide more homogenous sample to test the sound symbolism effects on consumer psychology (e.g., Klink, 2000; Yorkston and Menon, 2004). However, to strengthen the sound symbolism effects, different group of people (i.e., uneducated people) should be used, as well. Additionally, in a vast majority of sound symbolic marketing studies, data were collected from respondents who are either native English speakers or bilinguals that also speak English. However, people who speak same language may have different cultures which may shape their perception towards sound symbolism. Nevertheless, none of the sound symbolic marketing studies except Baxter and Lowrey (2014) concentrated on the effects of cultural differences on perception and brand name preference of people within the context of sound symbolism. Thus, although language is also one of the determinants of culture, a vast majority of the sound symbolic marketing studies have lack of cultural perspective.

With respect to conceptual themes, it can be readily said that sound symbolic marketing studies covered many marketing related themes (See Table 3). The findings of the large part of the studies are quite robust in displaying the effects of particular sounds on meaning such as size, speed, gender, shape, width, weight, color and other several dimensions such as taste. Nevertheless, when the extensive sound symbolism research is reviewed, it can be readily seen that there are also different contrasts such as new vs. old, good vs. bad (e.g., Jenkins et al., 1958) and so on to test the effects of sounds on meaning with respect to brand naming.

The other gap detected in the relevant literature is about nature of attributes. In almost all of the sound symbolic marketing studies, the effects of sounds in non-sense brand names have been explored in terms of utilitarian attributes of the products (e.g., Baxter and Lowrey, 2011; Klink, 2000). However, it could be assumed that sounds might convey hedonic product attributes, if they are capable of communicating attributes with regard to a product. In this context, to extend the previous work on sound symbolism, the hedonic visual attributes such as enjoyable vs. boring, exciting vs. dull might also be tested.

Finally, the relevant marketing studies employed sound symbolism phenomena with respect to brand names for consumer markets (e.g., Lowrey and Shrum, 2007; Yorkston and Menon, 2004). However, sound symbolism might also be used to create inherently meaningful corporate brand names. Nevertheless, there is no study which tests the effects of sound symbolism in corporate branding, except the study of Gunasti and Ross (2010) on alpha numeric brand names.

In a nutshell, sound symbolism can be regarded as one of the effective methods to create distinctive, meaningful, and memorable brand names (Robertson, 1989). If it is verified that sounds of brand names influence the perception of individuals through the meaning they communicate about product or brand, marketers will be more powerful to better distinguish their brands from

the others in the marketplace. Hence, by using appropriate speech sounds in a brand name, they could convey intended meaning or image about the product or brand. In this respect, the findings of review study are expected to contribute to brand naming practice and further marketing studies to be conducted on creating brand names via sound symbolism.

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Appendix A: **Marketing Research on Sound Symbolism: Number of Journal Articles**

Journal Name	**Subtotal**	**1999 and before**	**2000 and after**
Marketing Letters	11	-	11
Journal of Advertising Research	5	5	
Journal of Brand Management	4		4
International Journal of Research in Marketing	4		4

Journal of Marketing	3	1	2
European Journal of Marketing	3		3
Journal of Consumer Research	3		3
Journal of Marketing Theory and Practice	2		2
Journal of Product & Brand Management	2		2
Journal of Consumer Marketing	2	1	1
Journal of Global Marketing	1		1
Psychology & Marketing	1		1
Journal of Marketing Research	1		1
Journal of Advertising	1		1
European Advances in Consumer Research	1		1
ACR in Latin American Advances	1		1
International Journal of Market Research	1		1
Total	**46**	**7**	**39**