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# THE PSYCHOLOGY OF **DESIGN**

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# 13

## THE AESTHETICS OF BRAND NAME DESIGN

### Form, Fit, Fluency, and Phonetics

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The scope of product design is far-reaching. Although product design may most readily bring to mind issues related to functionality and tangible, concrete attributes that meet explicit needs of consumers, research is making it increasingly apparent that intangible, aesthetic product design features can also influence consumer perceptions. These perceptions include basic emotions that may be induced by various sensory perceptions (e.g., visual, aural, olfactory) and operate independently from and interactively with each other.

Several other chapters in this volume focus on the power of physical and visual design attributes to shape perceptions and evaluations of products. In this chapter, we shift focus to the sensory perceptions induced by auditory signals and their implications for consumer perceptions of the product. Specifically, we address the implications of sound for the design of brand and product names. Although brand and product name designs are not generally associated with product design, we argue that this view is short-sighted. We propose that in fact the product and its associated names are inextricably entwined (or at least should be for maximum effectiveness), and that the mere sound of the brand or product name (and its associated symbolism) drives consumer perceptions of the physical, tangible, and functional aspects of the product, which in turn influence expectations, attitudes, and beliefs about the product.

We begin by providing an overview of general phonetic effects. We then review research that links phonetic effects to various aspects of brand and product perceptions, preferences, and attitudes. In doing so, we introduce our own research on phonetic effects in designing stock ticker symbols and how the sound of tickers can affect the initial performance of new IPOs (initial public offerings).

We conclude with a discussion of the implications of this body of research for theories of design and for designers. We focus primarily on the effects of phonetic symbolism, which refers to the notion that sound conveys meaning.

### Phonetic Symbolism: The Meaning of Sounds

Phonetic symbolism refers to the notion that the mere sound of a word, whether verbally pronounced or rehearsed mentally, communicates information to the receiver (French, 1977). These sounds derive from phonemes, which are the smallest units of sound and form the basic building blocks of language, and particular sounds are associated with distinct perceptions related to size, shape, speed, luminosity, and motion, to name just a few aspects (Shrum & Lowrey, 2007). Moreover, when these sounds are present in brand names, the sound connotations (sound symbolism), influence perceptions of the brand names themselves, perceptions of the product and its associated attributes, perceptions of the product performance, brand attitudes, fluency, and construal level (among others).

Both vowel and consonant sounds convey information. For example, one way of classifying vowel sounds is whether they are *front* or *back* vowel sounds. The distinction refers to the position of the tongue during pronunciation: For front vowel sounds, the position of the tongue is toward the front of the mouth (e.g., the vowel sound in *tee*), whereas for back vowel sounds, the position of the tongue is more toward the back of the mouth (e.g., the vowel sound in *too*). The different positions produce sounds that vary in pitch, frequency, and volume of the vocal tract (Shrum & Lowrey, 2007; Spence, 2012). Research has consistently shown that these variations in sounds are associated with a variety of dimensions or meanings (size, speed, power, hardness, sharpness, etc.; for reviews, see Klink, 2000; Nichols, 1971; Shrum & Lowrey, 2007). Relative to front vowel sounds, back vowel sounds connote larger, duller, slower, more powerful, and so forth. Moreover, these effects appear to operate along a continuum, such that as the sounds progress from front to back (e.g., the progression of vowel sounds in *tee*, *tin*, *too*, *ton*), so too do the connotations (e.g., from smaller to larger; Newman, 1933; Thompson & Estes, 2011).

Consonants also have their own classifications. For example, consonants can be classified as stops versus fricatives. Stop consonant sounds are formed through complete closure of the articulators (tongue, lips, or teeth) so that air cannot escape the mouth. The letters *b*, (hard) *c*, *d*, *g*, *k*, *p*, and *t* are considered stops. In contrast, fricatives do not have complete closure of the articulators and sounds are created by forcing air through constrictions in the vocal tract. The letters *f*, *s*, *v*, and *z* are fricatives (Ladefoged, 1975). Like the front and back vowel sounds, the physical aspects of pronunciation (closure vs. openness of the articulators) produce sounds with varying frequencies, and the differences in sounds are perceived to have different connotations. For example, relative to fricatives,

stops imply larger, heavier, harder, and more masculine. These effects are pervasive, consistent, and appear to have similar effects across almost all languages (Ullmann, 1966; Ulta, 1978).

The notion that sounds convey meaning may seem unremarkable. However, it is one thing to show that different sounds have different connotations, but it is quite another thing to link the sounds of *words* themselves to meaning. Although perhaps intuitive, the question of whether the link between the sounds of words and their meaning is systematic or arbitrary has been debated since ancient times. For example, Plato contrasts the two positions in *Cratylus* (Plato, 1892), in which Socrates and Hermogenes debate the issue. Hermogenes argues that the relation between the sounds of words and their meaning is arbitrary, whereas Socrates argues the contrary. The debate was also a central issue in contemporary linguistics. Saussure declared that "the sign is arbitrary," (1959; p. 67), and other prominent linguistic theorists held similar views (e.g., Chomsky & Halle, 1968).

That said, the empirical evidence for phonetic symbolism is vast, including both lab studies and analyses of natural language (for a review, see Shrum & Lowrey, 2007). In one of the first experimental studies on phonetic symbolism, Sapir (1929) presented participants with pairs of artificial words that differed only in their middle vowel (e.g., *mil* vs. *mal*), and asked them to indicate which was large and which was small, with respect to an arbitrary referent (e.g., Which is the large table?). Across a large number of words and referents, participants associated the back vowel words with a large referent and front vowel sound words with a small referent, about 80% of the time. This finding has been replicated across numerous age groups and languages. Consistent sound symbolism relations, and particularly the front/back distinction, have been documented in natural languages as well. For example, in an analysis across 136 languages, 83% showed the predicted relation between size and vowel sound (Ulta, 1978). Analyses of natural languages also show relations between consonant sounds and perceptions. For example, approximately half of all English words that begin with *gl* have a visual connotation (e.g., *gleam*, *glitter*, etc.), a disproportionate number of words beginning with *sl* have a negative connotation (*slander*, *slouch*, *slime*, *sloven*), and certain back vowel sounds are often associated with sounds of disgust or dislike, at least in the English language (*yuck*, *bung*, *muck*, *blunder*; Jespersen, 1922).

Although the research on phonetic symbolism is compelling, it is not without its critics. Some suggest that the effects may be simple methodological artifacts. For example, some researchers suggest that the effects do not necessarily occur spontaneously, but only when specific dimensional judgments (size, shape, brightness, etc.) are elicited (Bentley & Varon, 1933). Other researchers question the generalizability of the findings across languages. For example, the effects that have been obtained in determining the meaning of foreign words (e.g., matching pairs of antonyms in a foreign language with comparable English antonyms; Brown, Black, & Horowitz, 1955) are eliminated if both sets of stimulus words are in languages foreign to the participants (Maltzman, Morrisett, & Brooks, 1956). Still

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other critics suggest that the effects may be orthographic (rather than acoustical), in which the shape of the letters may be the driver of perceptions (cf. Atzet & Gerard, 1965; Brackbill & Little, 1957; Brown et al., 1955). Finally, even if the effects are valid, it is still not clear how these sound symbolism effects may translate into perceptions, attitudes, and behaviors associated with the particular word. The latter is particularly crucial in arguing that phonetic symbolism has useful applications to marketing practice.

In the next sections, we review research that addresses these issues. Because of space constraints, this review is far from exhaustive, but rather is intended to highlight specific issues, with attention placed on the most recent research. In particular, we highlight research that shows that phonetic properties of words spontaneously elicit the predicted perceptions, that these perceptions are in fact acoustical, and that the phonetic symbolism of words affects not just perceptions, but also preferences, attitudes, and behavior across a wide variety of contexts. Interestingly, a substantial portion of this research has used marketing and other business contexts to demonstrate these effects. Moreover, this research adds to the growing literature on nonconscious and non-rational influences on economic judgments (Kahneman, 1994, 2003).

## Phonetic Symbolism Effects Across Contexts

### *Surname Effects*

Perhaps one of the more provocative (and potentially disconcerting) examples of phonetic symbolism effects is research linking the phonetic symbolism or meanings associated with surnames with perceptions and behaviors towards individuals. One example pertains to the relation between the names of political candidates and election outcomes. Smith (1998) coded the surnames of all of the U.S. presidential candidates since 1824 (when the popular vote was first recorded) in terms of their "comfort index" across three phonetic dimensions (consonant sound, vowel sound, and rhythm), each of which had several sub-dimensions. The index ranged along a continuum from positive (more comfort) to negative (less comfort). He then correlated these numerical comfort ratings with the actual election outcomes. Consistent with predictions that the positivity of the phonetic ratings of the candidates' names would be associated with more winning outcomes, in 35 of the 42 elections (83%) the candidate with the better-sounding name won the election. Of course, a sample size of 42 is a small one and also is just one isolated example. However, Smith also extended this same analysis to local (county) elections in Spokane County, Washington (U.S.). In this analysis, 73% of the winning candidates had a better sounding name. In yet a third demonstration, Smith showed that the results also held for the 1996 U.S. congressional elections (Senate and House of Representatives) in which 59% of the House winners and 65% of the Senate winners had more favorable sounding names.

Although not directly related to phonetic symbolism, a similar surname effect was observed within the context of want ads. Guéguen and Pascual (2011) placed an ad in local French newspapers offering services as a math tutor and manipulated whether the surname of the tutor was described as a professor of mathematics named Mr. Py, Mr. Rie, or Mr. Le Gal. Because Py is pronounced the same way as Pi (the famous mathematical symbol), it was expected to be more effective than either Rie (rhymes with Py, has the same vowel sound and frequency, but has no association with mathematics) or Le Gal (the most frequently used surname in the geographical area of the study). This was the case: Mr. Py received a substantially larger proportion of telephone inquiries in response to the ad (45%) than Mr. Rie (25%) or Mr. Le Gal (29%).

### **Price Perceptions**

Phonetic symbolism can also affect price perceptions. In a clever set of experiments, Coulter and Coulter (2010) demonstrated that not only does phonetic symbolism affect price perceptions, but that these perceptions in turn can distort perceptions of the magnitude of a sales discount, and ultimately can lead to inaccurate perceptions of value. To test for phonetic symbolism effects, they manipulated (between-subjects) whether the numbers in the cents position contained fricatives or stops and front or back vowels, holding the dollar position constant (e.g., \$7.66 vs. \$7.22). They then asked participants to judge the magnitude of a discount that manipulated the vowel and consonant sounds. Front vowels and fricative consonants within a price were expected to make the price seem smaller, and thus the discount larger, than when the price contained back vowels and stop consonants. This was in fact the case. Participants who saw prices with front vowels and fricative consonants in the cents position judged a price reduction (\$10.00 to \$7.66) to be larger than those who saw prices with back vowels and stop consonants in the cents position (\$10.00 to \$7.22), even though the actual discount is greater in the latter (27.8%) than in the former (23.4%). This difference presumably occurred because the numbers with small-connoting phonemes in the cents position (\$7.66) were perceived as smaller than the large-connoting phonemes in the cents position (\$7.22), thus distorting perceptions of the discounts. Moreover, the effects were observed only under rehearsal conditions, further supporting the sound symbolism explanation. The findings provide a vivid demonstration of how seemingly small phonetic effects can override objective calculations.

The research just reviewed clearly suggests that the meaning of sounds—phonetic symbolism—is evident across many everyday contexts. The next question we address is whether the phonetic symbolism associated with a *brand name* affects perceptions of the brand, and if so, whether and how these perceptions may influence brand attitudes and behavior. This is a critical question that has important implications for marketing strategy. Upwards of 25,000 nonfood and 20,000 food



and beverage consumer packaged goods are released each year (United States Department of Agriculture, 2010), providing at least 45,000 instances in which brand name design may potentially utilize phonetic symbolism to enhance and support new product performance. In the following sections, we discuss recent research on phonetic symbolism and brand names, discuss the processes underlying these effects, and suggest ways in which marketers can leverage this research to design optimal brand names for their products.

### What's in a Brand Name?

It is perhaps tempting to say that brand names do not matter or influence consumers. After all, as Juliet remarks in Shakespeare's *Romeo and Juliet*, "What's in a name? That which we call a rose by any other name would smell as sweet," and consumers are presumably rational decision makers in most situations (Hastie & Dawes, 2010). Yet the research often tells another story, one in which consumers appear to be influenced by subtle, non-obvious factors on a daily basis (Kahneman, 2003).

The current section is concerned with the question of "What's in a name?" and how brand names influence brand perceptions, expectations, attitudes, and behaviors. We argue that brand name design and product design are inextricably linked, and in particular, the mere sound of the brand name plays an important role in consumer decision-making.

### Sound Symbolism and Brand Name Perceptions

One of the first demonstrations of the link between phonetic symbolism and brand name perceptions was provided by Heath, Chatterjee, and France (1990). Using artificial words as hypothetical brand names to avoid semantic associations with existing brands or words, they systematically varied whether the brand names began with a stop or fricative consonant and whether the vowel sounds contained front or back vowels (e.g., Kuge, Kige, Suge, Sige), and they also varied whether the product category was a kitchen paper towel or kitchen cleaner. They then asked participants to indicate their perceptions of the hardness of the hypothetical brand, their brand attitudes, and their purchase intentions. The results showed a general (although sometimes only marginally significant) effect of both the consonant and vowel sounds on perceptions of hardness: Brand names with stop consonants and with front vowels were rated as harder relative to brand names with fricative consonants and back vowels. However, these perceptions did not appear to translate into brand attitudes or purchase intentions in any meaningful way.

Although the findings of Heath et al. (1990) were suggestive of a phonetic symbolism effect on brand name perceptions, they were far from conclusive. A more systematic demonstration of phonetic symbolism effects was provided by

Klink and his colleagues (Athaide & Klink, 2013; Klink, 2000; Klink & Wu, 2014; Wu, Klink, & Guo, 2013). In one study, 124 artificial words (hypothetical brand names) were constructed so that they differed only on one phonetic dimension (e.g., fricative vs. stop consonant; front vs. back vowel). Participants were then asked to provide their perceptions of the brands across several dimensions within a particular product category (e.g., "Which ketchup seems thicker?"). The findings were clear and consistent with predictions: Brands whose names contained front vowel sounds were judged to be smaller, milder, colder, softer, more feminine, thinner, colder, more bitter, lighter in weight, lighter in color, and prettier than brands whose names contained back vowel sounds. Similar results were observed for stops versus fricatives (Klink, 2000).

Although a substantial body of research attests to phonetic symbolism effects on consumer perceptions, the literature just covered does not establish the relation between brand name phonetic symbolism and consumer preferences. This is a crucial link in arguing that phonetic symbolism can play an important role in brand name design. For phonetic symbolism to be effective, the perceptions generated by the brand name must be managed and maximized in the design of the brand name. The following sections address this proposition, and provides support for the link between phonetic symbolism and, not only consumer perceptions, but preferences as well.

### ***Phonetic Symbolism, Brand Names, and Consumer Preferences***

If sounds do convey certain types of meaning, and the sounds of brand names in turn influence consumer perceptions, the question then is how these perceptions can be managed to generate positive reactions to the brand that translate into actual brand preferences. One strategy, which we term the *fit strategy*, is to maximize the fit between the sound symbolism and the product attributes. Research suggests that the fit between aspects of a brand name and its associated product category positively affects such variables as recall, preference, and inference. These aspects include semantic relations (Keller, Heckler, & Houston, 1998; Lowrey, Shrum, & Dubitsky, 2003; Meyers-Levy, Louie, & Curren, 1994), meaningfulness (Childers & Houston, 1984; Lutz & Lutz, 1977; Saegert & Young, 1983), and perceptions generated by numerical brand names (Pavia & Costa, 1993). Research also shows that consumers indeed have a general, albeit often poorly defined and articulated, perception that certain brand names fit with their product category but that some do not (Zinkhan & Martin, 1987).

Phonetic symbolism effects of brand names may work in the same way. That is, the favorability of consumer judgments in general should be maximized when the fit between the attributes connoted by the sound of the brand name (e.g., small/large, fast/slow, crisp/mellow) and the design and function of the product



itself is maximized. Much like “regulatory fit” and “feeling right” effects (Higgins, 2000), fit influences favorability judgments, and increasing feelings of fit leads to more favorable evaluations. Consumers appreciate the experience of harmony, consistency, and sameness within concepts or products, as opposed to contradictions (lack of fit).

Yorkston and Menon (2004) provided evidence that fit interacts with phonetic symbolism to influence brand attitudes. They constructed two artificial brand names for ice cream that differed only on whether the vowel sound was front (Frish) or back (Frosh). They hypothesized that the back vowel sound in Frosh would result in perceptions that the ice cream is smoother, creamier, and richer compared to perceptions generated by the front vowel sound in Frish. Because the attributes of smoother, creamier, and richer are preferred in ice creams, they therefore expected that the ice cream whose brand name was Frosh should also be preferred over the ice cream whose brand name was Frish. Their expectations were confirmed. Frosh was indeed perceived to be smoother, creamier, and richer, and was evaluated more favorably, than Frish. They also showed that these phonetic symbolism effects are relatively automatic (as opposed to controlled).

Research by Lowrey and colleagues provided additional support for the fit hypothesis, and showed that the effects generalize across vowel sounds, languages, and developmental age groups. For example, Lowrey and Shrum (2007) manipulated the product category to show that phonetic symbolism effects are indeed a function of fit. They presented pairs of fictitious brand names that differed only on whether the vowel sound in the brand name was front or back (e.g., gimmel vs. gommel, nillén vs. nallen, etc.), and asked participants to indicate which brand name they preferred. However, they also manipulated the type of product so that in some cases a front vowel sound should be preferred but in other cases a back vowel sound should be preferred. For example, some participants were asked to indicate which brand name they preferred for an SUV and others were asked to indicate which brand name they preferred for a two-seater convertible. Because front vowel sounds connote attributes such as smaller, quicker, faster, and back vowel sounds connote attributes such as bigger, stronger, more powerful, brand names with front vowel sounds were expected to be preferred over brand names with back vowel sounds for the two-seater convertible, but just the opposite was expected when the product was an SUV. These expectations were confirmed, by about a 2–1 margin (see top portion of Table 13.1). A second experiment provided convergent results, but in this case, the product was held constant (beer) and the attributes were manipulated. Participants preferred the brand name with the front vowel sound over the brand name with the back vowel sound when the beer was described as cool, clean, and crisp, again by about a 2–1 margin, but the opposite was true when the beer was described as smooth, mellow, and rich (attributes similar to those used by Yorkston & Menon, 2004).

**TABLE 13.1** Brand Name Preference as a Function of Vowel Sounds and Product Category (adapted from Lowrey & Shrum, 2007)

	<i>Front vs. back vowel sound dimension</i>	
	<i>% front vowel</i>	<i>% back vowel</i>
Product category	words preferred	words preferred
Convertible	63%	37%
SUV	30%	70%
Knife	66%	34%
Hammer	34%	66%

  

	<i>Positive vs. negative vowel sound dimension</i>	
	<i>% positive vowel</i>	<i>% negative vowel</i>
Product category	words preferred	words preferred
Convertible	61%	39%
SUV	71%	29%
Knife	59%	41%
Hammer	71%	29%

*Note:* All contrasts between % front and back vowel words preferred are significant at  $p < .001$  (one-tailed), and all contrasts between % positive and negative words preferred are significant at  $p < .04$  (one-tailed).

In addition to the front/back vowel sound distinction, Lowrey and Shrum (2007) also investigated the conjecture made by Jespersen (1922; see also Smith, 1998) that certain sounds in the English language are associated with sounds of disgust. If so, then brand names with those vowel sounds should be evaluated more negatively than brand names with vowel sounds associated with more positive emotions. Their results showed that indeed brand names with vowel sounds often associated with disgust (e.g., fewtip, which has the same [yoo] vowel sound as *puke*) were [less preferred compared to] brand names with more favorably associated sounds (e.g., fawtip) apart from the front/back distinction (see bottom portion of Table 13.1). Moreover, the general effects associated with the front/back distinction have since been replicated across multiple languages (French, Spanish, Chinese alphabetic, and Chinese logographic; Shrum, Lowrey, Luna, Lerman, & Liu, 2012) and young age groups (Baxter & Lowrey, 2011, 2014), and these fit effects for vowel sound phonetic symbolism have also been replicated for consonant sounds (cf. Kuehnl & Mantau, 2013).

Thus, the research on the effects of phonetic symbolism on brand name preferences and brand attitudes is consistent and convincing. The general pattern of findings is important in at least two respects. First, as we discuss in more detail

presently, the research suggests that consideration of the phonetic symbolism associated with a potential brand name can be a useful strategy, at least under some conditions. Second, this research is also the first to provide clear evidence that phonetic symbolism perceptions are spontaneous, and not a function of the research method. In previous research on phonetic symbolism, effects were generally observed only when people's perceptions were guided toward relevant contrasts (e.g., Which table is larger?; Which ketchup is thicker?). However, in the research just described, the spontaneous nature of the perceptions is implicit. That is, implicit fit effects can only be explained by the application of particular attributes (smooth, fast, powerful, crisp) that spontaneously result from the manipulation of one particular phonetic attribute.

One question that has not yet been addressed is the extent to which the effects of phonetic symbolism generalize across decision making contexts. For example, the research we have reviewed shows that phonetic symbolism effects hold at least for judgments of consumer products. However, the nature of the designs, such as using fictitious brand names in an effort to maximize internal validity, necessarily suggests that these are low involvement decisions that are made in the absence of any other individuating information about the brand or product. Given this context, it is understandable that phonetic symbolism effects might be observed, given the substantial body of research on nonconscious effects of contextual variables and frequent demonstrations of violations of expected utility theory and principles of rational choice (Kahneman, 1994, 2003).

In the next section, we detail research that explores the possible effects of phonetic symbolism in high-stakes environments. In particular, we look at the possible effects of phonetic symbolism that derives from the mere sound of a stock's ticker symbol on stock trading and financial performance.

### *Phonetic Symbolism Influences on Stock Performance*

Stock investment involves high-stakes decisions that are high involvement and presumably follow rational choice processes. Investors (traders) are presumed to have a wealth of diagnostic information with which to make investment decisions. Consequently, investment decisions are arguably the least likely venue for finding effects of supposed irrational, nonconscious inputs. However, contrary to classical economic theory, a growing body of research suggests that the choice of in which stocks to invest is influenced by decidedly non-economic factors. For example, decreased cloud coverage in New York City predicted higher returns for stocks (Saunders, 1993), and other research has shown similar seasonal patterns, across countries and regions, in which stock performance is positively correlated with the amount of daylight through fall and winter (Kamstra, Kramer, & Levi, 2003). Essentially, the effect of weather on mood leads to lower trading and returns on stocks on gloomy versus sunny days. Even negative feelings induced from the loss of a favorite sports team can negatively impact stock returns. During

the elimination stage of the World Cup series, a loss by one's home team was associated with a next-day market loss of 49 basis points (Edmans, García, & Norli, 2007). Cultural biases for one's domestic stocks also influence trading decisions. They result in expectations of higher returns for these stocks and consequently reduce diversification of portfolios, regardless of more objective data such as historical standard returns that might indicate otherwise (French & Poterba, 1991). As one last remarkable example of the impact of non-economic factors on stock performance, higher ratings of CEO attractiveness are associated with higher company stock returns during a CEO's first days on the job (Halford & Hsu, 2013).

Recent research has even shown that the processing fluency of ticker names, reflected in the degree of pronounceability of a ticker symbol (e.g. POV vs. PFV), is related to short-term stock performance. Stocks with more pronounceable ticker symbols outperformed those that were less pronounceable, one day and one week after initial listing, but these differences disappeared at longer terms (6 mo. and 1 yr.; Alter & Oppenheimer, 2006; see also Durham & Santhanakrishnan [2014] for a review of similar effects). Presumably, more objective economic indicators such as company performance eventually erased fluency effects, but in the short-term, the fluency or ease with which the stock name could be pronounced significantly predicted stock performance. In addition, the memorability of ticker symbols (e.g., ones that relate to company's business in a witty or clever way, such as Southwest's LUV) is positively related to stock performance (Head, Smith, & Wilson, 2009).

If performance is influenced by the name of a stock, the cleverness of its symbol, and its mere pronounceability, it seems plausible that the phonetic symbolism associated with the sound of the ticker symbol might also have effects on perceptions of the stocks themselves, much like the effects noted with consumer products. In the next section, we describe a series of studies we recently conducted to test this proposition.

### ***Stock Ticker Design, Phonetic Symbolism, and Performance of IPOs***

Given the research showing various linguistic effects of stock ticker symbols on stock performance, we were interested in testing whether phonetic symbolism also plays a role in perceptions of stocks and consequent effects of these perceptions on stock trading decisions. To test this proposition, we conducted a series of studies utilizing both historical stock trading data and a lab experiment. Specifically, we tested the proposition that the same types of effects noted earlier regarding the effects of vowel sounds (front/back) and consonant sounds (fricatives/stops) may influence the decisions stock traders make. To reiterate, back (vs. front) vowel sounds are associated with perceptions of bigger, stronger, and more powerful. The same is true for stop (vs. fricative) consonants.

Thus, we predicted that companies whose (pronounceable) ticker symbols were composed of back vowel sounds would be perceived to be stronger and more powerful relative to companies whose ticker symbols were composed of front vowel sounds, and that ticker symbols beginning with stops would show the same effects relative to those beginning with fricatives. Consequently, we expected that tickers with back vowel sounds would command higher prices than those with front vowel sounds, and that tickers beginning with stop consonants would likewise command higher prices than those beginning with fricative consonants.

In the first study, we tested these propositions using the data from Alter and Oppenheimer (2006; thanks to those authors for promptly sharing their data). We first reduced the set of ticker symbols to include only those that were pronounceable. Phonetic symbolism effects are predicated on the notion that the sounds of the words (tickers) convey meaning, and these phonetic effects can occur directly through auditory channels (hearing the word spoken aloud) or indirectly through subarticulation (saying the word to oneself; Baddeley, 1986). Two coders blind to the hypothesis coded each pronounceable ticker symbol as a fricative or stop consonant sound and as a front or back vowel sound, with a high level of agreement. We then correlated the phonetic properties with stock performance (calculated as % change in price relative to the original offer price at the initial public offering (IPO)) at various points in time (1 day, 1 wk., 6 mo., 1 yr.) after the IPO.

The results of this analysis showed that tickers with stop consonants consistently outperformed tickers with fricative consonants at each time period. However, no effects of vowel sounds (front vs. back) were observed. Although the results just described are suggestive of phonetic symbolism effects of stock ticker symbols on stock performance, the sample size was small (only 208 pronounceable ticker symbols). To test the robustness of this effect, we developed a larger data set consisting of a randomly drawn subset of IPOs from the New York and American stock exchanges from 1980 to 2004. Again, tickers were coded by an individual blind to the hypotheses, first for pronounceability and then based on consonant sounds (fricatives vs. stops). Stock performance was calculated as the percent change in stock price compared to the price at IPO at 1 day, 2 days, 1 week, 1 month, 1 quarter, 2 quarters, 3 quarters, and 1 year after the IPO. We then correlated the presence of fricative vs. stop consonants with stock performance. Again, the results indicated that stops generally outperformed fricatives on the first day, second day, first quarter, two quarters, three quarters, and 1-year after the IPO (no effects were noted for stock performance after 1 wk. or 1 mo. after trading).

Although the first two studies attempted to control or co-vary out other-variable effects such as the size of the initial capitalization, available data were limited. Consequently, it is possible that some other unmeasured variable(s) may be driving the effects. To address this issue, we conducted a laboratory study to

enhance internal validity. Business school undergraduates were recruited to participate in a study ostensibly about financial analyses. Participants read a description of an IPO and were then asked to make predictions about the potential of the company. Real IPO offering descriptions were used, but the phonetic properties of the ticker symbols were systematically manipulated within the IPO descriptions. Some participants read about a stock whose ticker symbols began with a stop consonant (BIF), whereas other participants read about a stock whose ticker symbol began with a fricative consonant (VIF), and all other information (e.g., vowel sound, valuation data) was held constant. After reading the IPO announcement, participants indicated how well they thought the stock would be doing 1 month and 1 year later. The results were consistent with predictions. Performance expectations for the stop sound ticker were significantly greater than those for the fricative ticker at 1 month after trading, and marginally greater after 1 year of trading.

This composite set of findings suggests that even in high-stakes, high-involvement contexts such as financial decision making, relatively subtle, non-conscious factors can influence judgments. These findings not only provide additional evidence of phonetic symbolism effects, but also add to the growing body of work attesting to the limits of expected utility theory and the assumptions of rational choice.

### Implications for a Theory of Design

In this chapter, we have presented evidence that the sounds of words convey meaning apart from their actual definitions. We have also discussed research that shows that such phonetic symbolism can shape perceptions, preferences, and attitudes. More importantly, we have demonstrated how these effects apply specifically to brand naming in multiple contexts, from simple brand associations to high-involvement financial decision-making.

The implications for product design are clear. Given the pervasive effects of phonetic symbolism, the effectiveness of brand name design can be enhanced by consideration of how a brand name sounds. We have also detailed the conditions and processes that enhance brand name effectiveness. Specifically, the favorability of consumer judgments in general is maximized when the fit between the attributes connoted by the sound of the brand name (e.g., size, speed, texture, etc.) and the design and function of the product itself are congruent.

That said, we do not want to overstate this proposition. Clearly, there are factors other than phonetic symbolism that impact brand name perceptions. Prominent examples include semantic connotations that refer to specific product attributes (Mr. Clean disinfectant; Mop & Glo floor wax), metaphorical references (Midas automobile mufflers; Amazon internet retailer), and puffery claims (Burger King fast food chain; Best Buy consumer products retailer), just to name a few. Moreover, we are not suggesting that successful brand names should be changed simply

to leverage phonetic symbolism effects. However, just as most of the research we have detailed uses artificial, fictitious words as stimuli, so too do companies. There are numerous examples of brand names that are non-words (Kodak, Exxon, Lexus, etc.). It is in these instances that we argue that attention to phonetic symbolism and other linguistic properties may be particularly useful.

We also discussed research showing that (artificial) brand names whose sounds are associated with sounds of disgust (such as the vowel sounds in words such as *yuck*, *phew*, *ugh*) are perceived negatively. From a marketing perspective, one might argue that this proposition is obvious and marketers would always avoid such words. Yet many supportive examples come to mind (*Smuckers* jelly, *Edsel* and *Yugo* automobiles). Of course, only the last two failed, and perhaps not only because of the brand name (although the pervasive dislike for the *Edsel* brand name has been suggested as a contributing reason for its failure; Hartley, 1992; Klink, 2000). But apparently *Smuckers*, which is named after the founder of the company, understood the symbolism imbedded in the name: Their slogan at least at one time was "With a name like Smucker's, it's got to be good."

We also acknowledge that there are always exceptions or counter-examples to the predictions of almost any behavioral theory. Phonetic symbolism is no exception (e.g., the words *big* and *small* are counter-examples to predictions of phonetic symbolism in natural languages). To this point, it may be instructive to recall Socrates's argument for phonetic symbolism. He acknowledged in some cases the relation between the sound of a word and its meaning may be arbitrary, and that not all words reflect phonetic symbolism. However, he argued that *good* words show congruency between their sound and their meaning. We are simply suggesting that when possible, brand names should be good words.

Our contention that the proper use of phonetic symbolism in brand name design enhances consumer evaluations is consistent with general principles of product design. One principle of product design (or any design) is harmony, or the extent to which individual elements complement the whole. To date, the focus has been on elements such as color, smell, shape, and texture. We argue that the sound of a brand name should also harmonize with other aspects of the product to achieve maximal effectiveness.

### Implications for Designers

In sum, the research we have outlined in this chapter provides a resounding message that should not be ignored by product, stock, and brand managers. Names matter. The name of a brand or product communicates information to consumers. The good news is that the name is generally in the company's control. This presents the opportunity to design brand names that communicate the best message, and it is particularly pertinent for new products. In addition, the design of stock names and ticker symbols offers the opportunity for managers to enhance the initial appeal of their stock without any additional costs.



Stock names that are designed to be more pronounceable and can be translated into ticker symbols that start with stop sounds are an easy way for managers to enhance the chances of positive stock performance in the first year of trading.

Consumers lack experience with such products, services, and stocks, so they must make initial judgments about whether to trial the offering or buy the stock, without getting to experience or learn more objective information about it first. Therefore, a brand name and its matchup to the desired product attributes, packaging, and logos can serve as a positive cue to potential consumers. In the same way, stock tickers with stop sounds can be used to connote larger gains and stronger performance at the subliminal level, and this information can be used in the early days of trading when less objective records of performance are available. In sum, if product designers understand the basic rules of phonetic symbolism, they can easily apply such concepts to their new product names and stock IPOs. No extra money is needed to design a better or worse name, but knowledge of such effects is essential to recognizing how to capitalize on such associations and how a lack of sound symbolism—product, attribute match—might negatively affect initial evaluations and experience evaluations (because expectations are not met during actual consumption). Therefore, we propose that name choice, whether in the form of brand name, product line name, offering name, stock name, or ticker symbol, should not be an afterthought but instead another important factor to be incorporated into the product design process.

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