

CHAPTER 2

The Mental Representation of Brand Names: Are Brand Names a Class by Themselves?

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What are brand names? This question has fascinated marketers and researchers for decades and has been addressed from various perspectives. There is the marketing view that brand names are part of the actual product and services (e.g., Javed, 1993); there is the branding view that brand names are linguistic symbols associated with a set of new meanings (Aaker, 1991; Keller, 1998); there is the social psychological view that brand names can be emotion-laden identities (e.g., Mehrabian, 1992), and so on.

This chapter investigates brand names from a new perspective. Attention is focused on brand names' linguistic attributes, such as differences in name types (e.g., existing items vs. newly coined items), and their rich array of inherent perceptual features, such as case, color, size, fonts, and so forth. One unique aspect of our method resides in the use of the laterality framework as our experimental paradigm, which enables us to investigate the hemispheric processing and neuropsychological status of brand names by measuring participants' accuracy and reaction times in lexical decision tasks, as well as participants' memory of the brand names. Interestingly, brand names as a class of words have been relatively unexplored by cognitive neuroscientists, which might be due to the implicit assumption that they are a subset of proper names. We suggest that brand names have a special neuropsychological status, but one that is different from proper names. This chapter is structured in the following way: First, it offers a brief background on the neuropsychological status of proper names and brand names. Next, it reports some research results. Finally, there is a discussion of the implications of the results for marketing and psycholinguistics.

BACKGROUND

The Neuropsychology of Proper Names

Proper names have been found to behave differently than common nouns, not only in patterns of breakdown (see Semenza, 1997, for a review; i.e., on how the brain is affected by injury), but also in how much more difficult they are to recall normally and how particularly vulnerable they are to the effects of aging (Cohen & Burke, 1993; Cohen & Faulkner, 1986; McWeeny, Young, Hay, & Ellis, 1997). An intriguing report by Saffran, Schwartz, and Marin (1976) documents some paralexical errors committed by two dyslexic patients with acquired deep dyslexia. They could read aloud lexical items that were part of a proper name more accurately than they could read the same item presented as a single word. For example, “olive” was read as “black” and “robin” as “bird,” but “Robin Kelly” and “Olive Cooper” were read correctly.

Convergent evidence for the “special status” of proper names can also be found in hemispheric studies, where proper names were found to be less lateralized than other categories of words. Saffran, Bogyo, Schwartz, and Marin (1980), using a lexical decision task (LDT), examined laterality differences across several lexical categories and found that proper names were a class of relatively low frequency words that deep dyslexics were selectively able to identify. They also found that normal subjects’ accuracy of written responses of lateralized first names was equal in the two fields, whereas performance was superior for right visual field (RVF) presentations of all other word categories tested. Using a matching task, Bradshaw, Gates, and Patterson (1976) also found some evidence that proper names are represented in the right hemisphere (RH) lexical system. The clinical literature (Damasio, Grabowski, Tranel, Hichwa, & Damasio, 1996; Fukatsu, Fujii, Tsukiura, Yamadori, & Otsuki, 1999), as well as recent imaging studies (from both event related potentials, Proverbio, Lilli, Semenza, & Zani, 2001; and functional magnetic resonance imaging, Tempini et al., 1998), suggest a selective role of the anterior temporal lobe in production of proper names. However, the perception of proper names may be more bilaterally represented.

More subtle differences between processing proper names and common nouns can be found in studies investigating orthographic representation, such as those on the role of word shape in reading. Baron (1977), for example, detected a familiarity effect related to the capitalization of the initial letter of proper names when he asked subjects to name a list of 30 names of three letters or less, in a familiar form (Al, Abe, Dan) and in an unfamiliar form (al, abe, dan). In English, proper names are printed with their initial letter capitalized almost universally. In two experiments manipulating the capitalization of the initial letter of nonwords, Gontijo (1998) found that subjects produced fewer pronunciations for centrally presented nonwords with an initially capitalized letter than for noncapitalized nonwords. She argued that capitalization of the first letter influences word recognition by working as a clue to which category the word to be recognized belongs.

When put together, these findings have led researchers to suggest that proper names attain a “special status” and they may be processed differently from other word categories. Brand names also have unique features that deserve to be explored in the context of representational issues. We propose that brand names possess a distinct neuropsychological status that is different from that of proper names. The next section reports evidence from existing studies as well as evidence from our own empirical studies.

The Neuropsychology of Brand Names

Understanding how we recognize a printed brand name could significantly contribute to our understanding of how semantic knowledge is organized in the brain. This is because brand names appear to have a special psycholinguistic status, intermediate between common nouns and personal names. A brand name’s references are narrower than those of common nouns but wider than those of personal names. Furthermore, brand names have prominent emotional and graphic representations that are central to their meanings. It has been argued that brand names, as well as personal names, have a finer grained degree of conceptual organization than previously suspected. Further, Crutch and Warrington (2004) propose that the organization of a category of names in psychological space is reflected in its neural organization. However, there are no cognitive models, so far as we are aware, that directly address the recognition of brand names. Such knowledge would also be of great applied interest to marketers who have long recognized the strategic importance and the complex role of brand names in building brand equity. It has been suggested, for example, that brand names are perhaps one of the most valuable of the intangible assets a company possesses (Aaker, 1991, 1996). The reason is very simple: A product’s name is the main interface between a product and the prospect’s mind. Thus, the choice of a brand name requires the utmost care because it is going to be the most common medium through which consumers will relate to the product.

Brand Names’ Shape. Brand names are pervasive. We are continuously reminded of their existence either by the presence of the products themselves or by powerful advertising campaigns. Intuitively, the power of brands partly stems from this relentless presence that engenders familiarity. And familiarity, psychologists found, engenders preference. Brands are therefore carefully nurtured. One of the main vehicles used to enhance brand awareness and loyalty is the printed word.

Two intriguing features of the visual representation of brand names is the dazzling variety of graphical designs used and the zealous consistency with which most brands are represented. We rarely find, for example, advertising material containing powerful brand names (e.g., “SONY®,” “GUCCI®,” or “IBM®”) where these names are not printed in their elected familiar uppercase letters. In an environment that has become so cluttered, it surely makes good sense to use a name that is graph-

ically distinct and also repeatedly represented in the same format in order to facilitate its recognition.

Gontijo (1998) used a self-paced LDT and found a word shape familiarity effect for brand names that are normally represented only in an uppercase format. Participants were faster in recognizing brand names in their familiar uppercase format compared to the unfamiliar lowercase one. No difference was found between the upper- and lowercase common word stimuli. Similar earlier findings had been found for abbreviations. Henderson and Chard (1976) report a same-different matching task experiment where they found that the word superiority effect (WSE) for abbreviations was confined to the visually familiar case [e.g., RT (FBI) < RT (IBF) but RT (fbi) = RT (ibf)].

The capitalization effect has been further demonstrated despite different sets of materials and methodologies used (Gontijo, Rayman, Zhang, & Zaidel, 2002). Undergraduate subjects were found to be faster and more accurate in recognizing brand names when the names were printed in their familiar format (i.e., uppercase letters) than when they were printed in an unfamiliar format (i.e., lowercase letters). Common words, used as control, were also presented in upper case and lower case, but no difference in response time and accuracy were observed between the cases. (See Fig. 2.1.)

Baron (1977) found that participants named names with the initial letter capitalized faster than they did for those without initial capitals. We suggest that proper names and brand names are sensitive to capitalization in a way that common nouns are not. This is likely so because classes of words such as proper names and brands

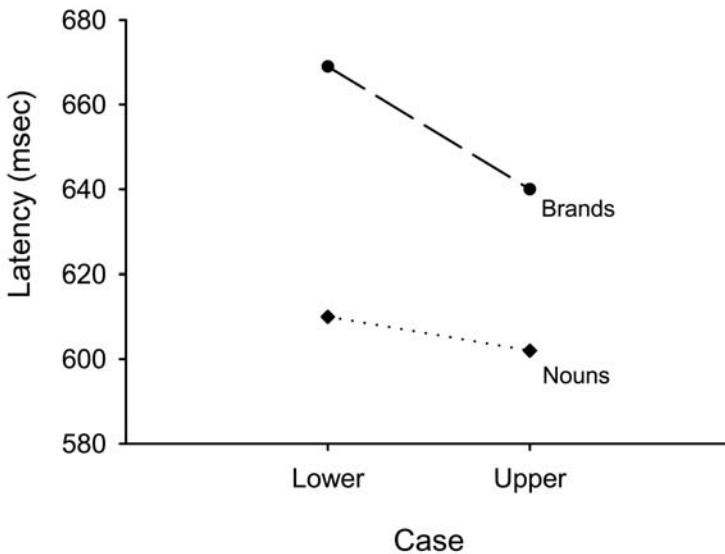


Figure 2.1. Interaction between word-type and case for latencies.

have a consistent visual representation. For example, proper names are conventionally and invariably seen as initially capitalized; brand names have a consistent orthographic representation because of marketing communications strategies. Thus, unlike common nouns, brands do not switch between upper and lower case depending on contexts. For example, in English, words must have an initial capital letter at the beginning of a sentence; when seen in isolation, presumably both capitalization of the initial letter and lower case are acceptable. The visual features are clues to the lexical categories to which a word belongs. Thus, we claim that people's cognition about linguistic representations of brands, proper names, abbreviations, and those words that are deeply entrenched in the surrounding environments may have been incorporated into people's processing strategies that aid the retrieval of these items. It is very likely that further experiments, now in progress, will find similar results for other types of visual features, such as color, style, shape, and so on. We suggest that in the case of brand names, visual features become an intrinsic part of their identity and have been incorporated into people's processing strategies that aid their retrieval.

Brand Names and the Cerebral Hemispheres. The human brain presents a fundamental duality, that is, it is comprised by two structures: the left and the right cerebral hemispheres, which are entirely separate except for the cerebral commissures connecting them. The corpus callosum, the major commissure, is estimated to be composed of 200 million axons and is responsible for transferring information between the two hemispheres. The left hemisphere (LH) and the right hemisphere (RH) are similar in appearance; however, there are major functional and anatomical asymmetries between them. Functionally, control of the body's basic movements and sensations is evenly divided between the two cerebral hemispheres. This control occurs in a crossed fashion: The LH controls the right side of the body and the RH controls the left side of the body. These functional differences are commonly referred to as lateralization of function.

When fixating on a point, each eye sees both visual fields but sends information about the RVF only to the LH and the information about the left visual field (LVF) only to the RH. The crossover and the split is a result of the manner in which the nerve fibers leading from the retina divide at the back of each eye. The visual areas of the left and right hemisphere normally communicate through the corpus callosum. Visual information is also transmitted in a cross fashion through the optic chiasm. Myers and Sperry (1953) took advantage of how the visual system is organized and completely severed the corpus callosum and the optic chiasm of cats. In doing so, they completely blocked the transferring of information from one eye to the contralateral hemisphere and after a series of experiments they concluded that a major function of the corpus callosum is to transfer learned information from one hemisphere to the other. Further, they concluded that, when the corpus callosum is cut, each hemisphere is able to function independently.

Their series of experiments opened the door to one of the most fascinating chapters in medical history, namely, the split-brain phenomenon. Inspired by the

work of Myers and Sperry, two neurosurgeons, Vogel and Bogen, initiated the procedure of severing the corpus callosum of patients with intractable epilepsy. These became known as the split-brain patients. Among the different techniques developed for neuropsychologically testing split-brain patients is the so-called hemi-field tachistoscopic paradigm. This technique consists of asking the subject to fixate on the center of a screen while visual stimuli are shown either on the left or the right side of the screen for the duration of approximately 0.15 seconds. This brief exposure is normally long enough for subjects to perceive the stimuli, but also sufficiently short to preclude confounding effects of eye movements. As a consequence, all stimuli presented to the LVF goes to the right visual cortex and the stimuli presented to the RVF goes to the left visual cortex. The results are frequently measured in terms of the accuracy with which the subjects perceive the stimuli and the time they take to react to the stimuli, which is known as reaction time, or latency.

Language has proven to be a highly lateralized function and one that is predominantly located in the LH. However, evidence suggests that proper names are represented in the lexical system of both hemispheres (Safran et al., 1980). There is also evidence that the RH is selectively involved in processing proper names (Semenza, 1997; Van Lancker & Klein, 1990; but see Damasio et al., 1996, and Fukatsu et al., 1999).

It turns out that brand names may also be processed by distinct brain regions. By employing the hemi-field tachistoscopic paradigm, Gontijo et al. (2002) were able to demonstrate a larger RH involvement in the processing of brand names than of common words. (See Fig. 2.2.)

The repository of all the information readers or listeners have attained about words of their language is known as “the mental lexicon” (Coltheart, Davelaar, Jonasson, & Besner, 1977; Treisman, 1960, 1961). To read a word is to extract information from a set of printed marks and then to use that information as a means of reaching the word’s lexical entries in the mental lexicon. This process is known as *lexical access*. Texts are normally composed by familiar and unfamiliar words, and even the most skilled readers find from time to time a word that they have never seen before. Psycholinguists use the technical name “nonword” to refer to them. A great deal can be learned about how our brain processes reading by experimentally testing letter strings that present different degrees of familiarity and/or different degrees in the frequency with which they appear in the language. One example is the measurement of the speed and accuracy with which we are able to process words and nonwords. Two of the most reliable effects in word recognition studies are: the *frequency effect*, that is, the speed and the accuracy with which a word is processed is dependent on its frequency. The higher the frequency, the faster and more accurately a word is processed (all else being equal); and the so-called *lexicality effect*, that is, the finding that words are processed faster and more accurately than nonwords (Coltheart, 1978; Foster & Chambers, 1973; Rubenstein, Lewis, & Rubenstein,

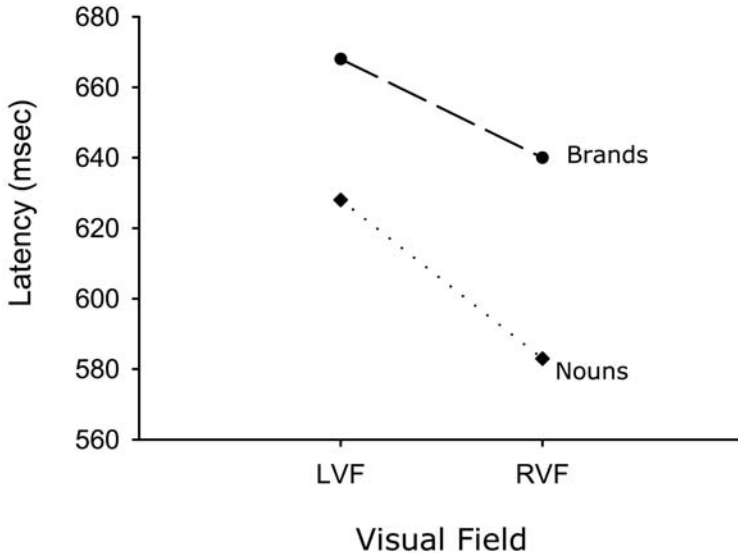


Figure 2.2. Interaction between wordness and visual field for latencies.

1971). Subjects, for example, take longer on average to respond to the string “lece” compared to “lace.”

We have constructed two different types of nonwords according to an algorithm developed by Gontijo (1998). Half of the nonwords are orthographically close to the English language, that is, normal nonwords (e.g., seid) and the other half differ orthographically from the English language, that is, the weird nonwords (e.g., nioth). In our studies, we have always found a lexicality effect, with faster reaction times and more accurate performance for common nouns and brand names compared to nonwords (Gontijo, 1998; Gontijo et al., 2002). This result suggests that brand names share with common nouns their *word status*. Nevertheless, when compared to each other directly, common nouns and brand names exhibit distinct patterns of behavior with regard to their hemispheric status. Gontijo et al. (2002) have found that the lateralization pattern of brand names is closer to that of the normal nonwords as compared to the common words. It is common in hemispheric studies to find that nonwords are less lateralized than common words (Iacoboni & Zaidel, 1996; Measso & Zaidel, 1990). This difference, we suggest, can be used as a criterion for testing how brand names differ from words.

Why should we care about where and how brands are processed in the brain? Answers to this question may help us to explain brand name effects on consumers and to leverage our ability to increase a brand name’s power of persuasion.

Brand Names’ Different Linguistic Make-Ups. Brand names come in a variety of linguistic forms, which essentially can be reduced to two types: names that

are also common words or composed of common words (CBs), and names that are the so-called coined brand names. Coined or invented brand names (IBs), which, for the most part, do not resemble directly any word from the lexicon, have been built with the sole function to be a brand name. Due to the explosion of new products and services over the past decade, all in need of a name, it has become increasingly difficult to find appropriate words to be trademarked. Thus, out of necessity, the use of IBs has increased considerably. However, there is a considerable debate over the advantages and disadvantages of using both types of names when naming products. CBs have the advantage of being descriptive of the product and its benefits, thus allowing for immediate recognition from consumers. Also, the strong semantic links of common words are useful in making the brand name memorable and facilitating the prospect's identification with the product. However, the use of suggestive brand names can be detrimental to product extensions or when there is a need for changing the way the product has been positioned.

IBs do not have the advantages of being descriptive or suggestive, but everything can be built in and in the process allow room for future positioning change. Also, they do not have to compete with a large number of words for recognition and memory.

We used the laterality framework to investigate these two types of brand names. The experiment consisted of a lateralized LDT. Participants were asked to sit in front of a computer screen and fixate their gaze at a small cross located at the center of the screen and indicate by pressing buttons on a bottom box whether or not a string of letters randomly displayed to the right or to the left side of the cross was a word. Presentation was done bilaterally in black on a gray background for 165 msec. Different letter strings appeared in each visual field, one as a target and the other one as a distractor. The distractor was composed of a string of "Xs" matching in length the target's number of letters. The target was underlined. The reason for using distractors is that they are known to enhance visual field effects (Iacoboni & Zaidel, 1996). The innermost edge of the letter string appeared 1.5 degrees of visual angle from fixation. The brief visual presentation combined with the visual angle of display are crucial to the hemi-field paradigm. Together they make possible for information presented on a particular visual field to be initially sent exclusively to one hemisphere. Central fixation is normally monitored before each trial by the experimenter, who watches the participant's eyes, in order to ascertain that they do not move their eyes from the fixation cross.

Participants, at the start of the experiment, were given instructions to decide as quickly and as accurately as possible whether or not each of the strings appearing on the screen was a real word by pressing the appropriate button on the response box. It was emphasized to participants that brand names were to be counted as real words.

The brand names were chosen from a list of 282 brand names, compiled from a wide variety of sources (magazines, billboards, product packages, Internet, news-

papers, etc.) and 22 UCLA undergraduates were asked to perform the following three tasks in this order: (a) rate the brand names in terms of familiarity by using a 1–7 point scale (1—not familiar at all, 7—very familiar), (b) choose from 15 different product categories those that better fit each of the brand names (e.g., HONDA[®] = automobile, HEINZ[®] = food, SONY[®] = electronics, etc.), and (c) categorize the brand names according to their linguistic type (i.e., as a real word, an invented letter string, a proper name, or a foreign name). Afterward, only those brand names considered to be highly familiar were selected (i.e., only those that achieved an overall rating over 5 points). Each brand name was assigned to the linguistic type in which agreement among participants was the highest in terms of percentages (e.g., 91% of participants agreed on ADIDAS[®] being an invented brand name, 5% perceived it as a foreign name, and only 4% perceived it as being derived from a proper name). In reality, ADIDAS is a personal name, but for the purpose of our experiments what mattered was how participants perceive the brand names. Only the brand names that participants correctly matched to their product category were chosen. This method helped us to discard generic brand names, that is, those names that have become so familiar to us that they can be considered to be common words in our lexicon. Also, preference was given to familiar brand names composed of common words of lower frequencies in the CELEX¹ database (e.g., PUMA familiarity = 5.9 and frequency = 37).

The common words were selected from the CELEX database and they had frequencies between 100 and 160 occurrences per million according to the CELEX database (Baayen, Pipenbrock, & Gulikers, 1995). Each list was rated for familiarity by two different groups of 16 UCLA students (volunteers). A 1–7 point scale (1—not familiar at all, 7—very familiar) was used. The lists were randomized. Only familiar common words that matched the brand names in familiarity were selected (i.e., only those that achieved an overall rating over 5 points were chosen as experimental material). Further, an effort was made to use only concrete and imageable items (i.e., items that can be pictured in our minds), according to the Paivio, Yuille, and Madigan (1968) norms.

The nonwords were constructed according to an algorithm developed by Gontijo (1998). Orthographically, they have a monosyllabic structure: onset, nucleus, and coda. Only onsets and codas, which have a high frequency of appearance in the CELEX database, were used here to compose the nonwords.

Interestingly, brand names that are actual words in the lexicon (CBs) were the only type of brand names that did not exhibit a laterality effect—that is, they were equally processed by both brain hemispheres. A possible explanation for this finding is that CBs' orthographical familiarity, which results in them functioning in the lexicon also as a common word, facilitates the use of a visual processing strategy by the RH. It has been previously demonstrated that the RH does not use a phonological strategy due to

¹CELEX Lexical Database of English (Version 2.5). Dutch Centre for Lexical Information, Nijmegen.

lacking this type of information. This explanation is consistent with our findings regarding IBs, which are often composed of orthographically and phonologically challenging novel letter strings. IBs showed the longest reaction times and the poorest accuracy results. We argue that the superior performance of CBs over IBs is due to CBs' dual lexical status (i.e., they are both a familiar word in the lexicon, as well as a familiar brand name). (See Figs. 2.3 and 2.4.)

Memory for Brand Names. Memory is one of the most fundamental and also complex cognitive capacities with which we are endowed. The consumer's ability to recognize and recall a brand name is perhaps one of the best predictors of how successful a brand name performs in the marketplace. This belief has been the motivation behind our next set of studies where we tried to answer the question of how the hemispheric differences found in our other studies would translate into memory performance. Is it the case that CBs, which were faster recognized than coined brand names and were also equally processed by both hemispheres, would also be better retrieved from memory?

We carried out two studies using two different experimental paradigms, namely, a recognition memory task and a recall task. The recognition memory experiment was self-paced and followed a lateralized LDT, where different types of brand names, common words, and nonwords were briefly and randomly presented into each hemi-field. CBs and IBs were among the presented stimuli and participants had to decide, by pressing *yes* or *no* in a button box, if they had seen them or not dur-

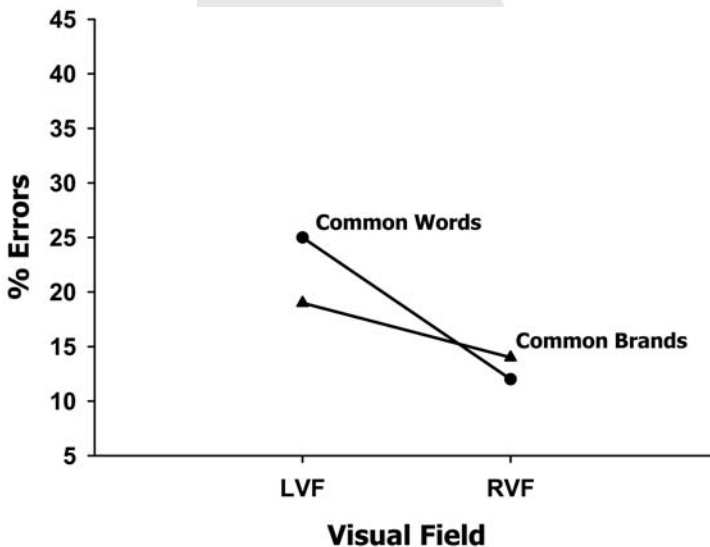


Figure 2.3. Interaction between brandness (common brands \times common words) and visual field for accuracy.

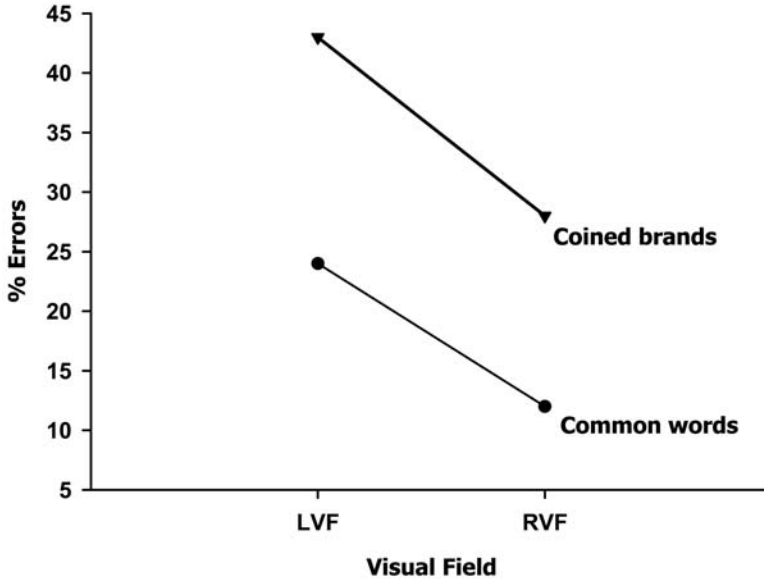


Figure 2.4. Interaction between brandness (coined brands \times common words) and visual field for accuracy.

ing the LDT. In the memory recognition task, brand names were recognized faster and more accurately than common words independently from the initial visual field of presentation. However, the common words originally presented into the RVF were processed more accurately compared to those presented into the LVF. These results give further support to our hypothesis that brand names are a lexical category on their own and entail special processing strategies.

Particularly telling was our finding that CBs were distinctly processed from common words. We interpret this finding as a result of brand names possessing more restricted and well-defined sets of positive semantic associations compared to common words, which is probably achieved through the well-orchestrated advertising campaigns purposefully conducted by marketers in their sustained and consistent communication efforts.

An insistent feature of these campaigns is their appeal to the emotional components of human cognition. In striving for creating brands with strong positive semantic associations, these campaigns aim at arousing in the consumer positive feelings that are believed to strengthen the bonds between consumers and the advertised brand. For example, it has been shown that brand preference is higher for names that generate appropriate feelings. Emotional arousal at the time of an experience may play a critical role in influencing memory strength (Bower, 1992). Findings of many experimental studies of human as well as animal memory suggest that the emotional arousal induced by an experience is an important determinant of the

strength of memory for the event (Heuer & Reisberg, 1990; Revelle & Loftus, 1992). Moreover, recent findings have identified neurobiological systems that appear to play critical roles in mediating the influence of emotional arousal on memory storage. Also, brand names tend to be more interesting when graphically represented (e.g., being more colorful) than common words. It has been shown that recognition memory is better for visually interesting objects (Humphreys & Riddoch, 1987).

The recall experiment was comprised of two different tasks, namely, a perception decision task (PDT) and the recall task (RT). In the PDT, stimuli were presented into either visual field and participants were asked to decide as quickly and as accurately as possible whether or not they had perceived the stimulus by pressing the appropriate button on the response box. Participants were given paper and pencil and immediately after the presentation of each block, composed of 12 items, they had 2 minutes to write down the names of the items they had just seen. Differently from the results we have obtained when using the online recognition task (LDT), IBs were better recalled than both CBs and common words. (See Fig. 2.5.)

IBs, by their very nature, are distinct from common words and CBs in orthographical and phonological terms. Our results suggest that distinctiveness played a positive role in the recall of coined brand names. The distinctiveness of a word—its novelty and uniqueness as a construct—has been demonstrated to influence both encoding and retrieval (Eysenck, 1979; Gregg, 1976). Similar to semantics, distinctiveness has been claimed to promote more in-depth processing

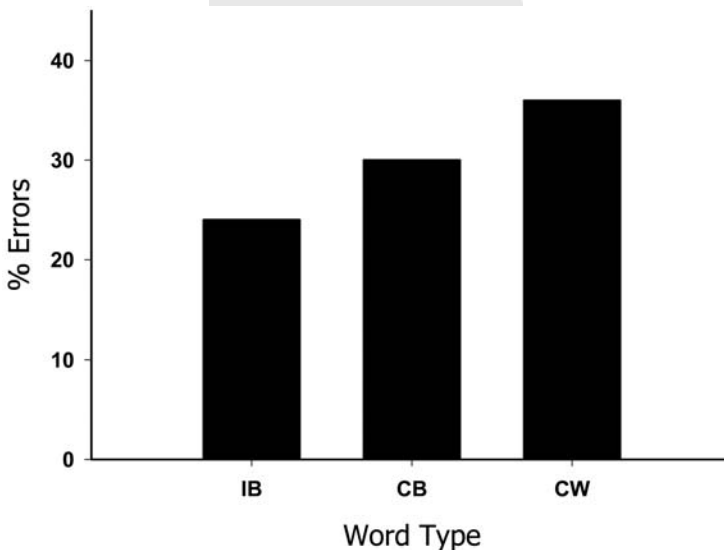


Figure 2.5. Main effect of recognition memory for accuracy.

(Berlyne, 1971; Craik & Lockhart, 1972) and in this manner enhance recall (Lowrey, Shrum, & Dubitsky, 2003).

Further, we hypothesize that although both semantic processing and distinctiveness prompt deeper levels of processing, less complex computations are involved in registering distinctiveness than in processing semantic associations. Our results reflect the processing demands of the laterality paradigm caused by participants' very brief exposure to the stimulus. Moreover, an inherent feature of the laterality paradigm is that stimuli are initially sent to only one of the hemispheres and have to be transferred to the other one. This takes processing resources and thus it is natural under such conditions that the brain chooses the more economical processing strategy, if that is available.

CONCLUSIONS

This research took a different approach to brand names and investigated how they are represented and processed in the mind and brain. It studied the hemispheric representation of brands as a clue to their special neuropsychological status. We looked into how coined brand names and common word brand names are recognized in terms of latency and accuracy relative to each other, and relative to the control categories (i.e., common nouns and invented words). We did so using three different experimental paradigms: an LDT and two different types of memory tasks. Further, in all our experiments, we have used the lateralized framework. Our results suggest that brand names are not only distinct entities from other categories, but also that these two types of brand names are treated differently. This is possibly a consequence of people's frequent exposures to brands and marketing communications. The significance of testing stimuli using the brief presentations required by laterality techniques and measuring reaction time becomes evident in the presence of the big shifts that are happening in the marketplace due to the fast expansion of Internet trade.

One recent significant development in marketing communications is the concerted effort to figure out how to make brand advertising work online. For example, Google, the most highly prized media company, is reinventing online advertising with targeted, classified-like text links that we now begin to see everywhere. In this regard, increasingly close attention is being paid to the importance of the relationships built between consumers and brands. The approach we are suggesting here studies brand name cognition and its possible behavior consequences. Thus, it is important to explore and understand the automatic processes governing our reactions to brands, brand displays, and brand associations, all of which are often represented and symbolized in an encompassing linguistic entity—the brand name.

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