

The Effects of Pictorial-Based Homophones in English on Thai Consumer Judgements

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Abstract

Priming has been one of tools utilized for guiding customer thoughts in marketing research. This study aims to explore priming in the aspect of integration between linguistics and marketing. The objectives are to investigate the effects of pictorial-based homophone priming on the purchase decisions of Thai consumers for products advertised in English, and to examine the level of priming effectiveness among Thai speakers of English, with comparison to native English speakers. Through three experiments investigating three pictorial homophones “sail-sale”, “deer-dear”, and “hole-whole”, 30 Thai speakers of English’s rating data indicating purchase decision were collected by an interview after advertisement exposure. The rating data were analyzed by *t*-test and Mann-Whitney U test. The results found that priming effects were portrayed in the experiments of “deer-dear” and “hole-whole” and their willingness to pay was significantly increased. The figure of “deer” could activate perceptions of love and value towards a product, derived from “deer” as a complementary item. Likewise, the appearance of “hole” created a sense of the whole, which was from the complementary item in the pair, and could persuade them to select a group of products rather than a single product. After all, Thai speakers of English manifested lower degree of priming effects in all aspects compared to native English speakers, due to the factors of L1 interference and word frequency.

Keywords: Pictorial-based homophone; homophone priming; priming effects; linguistic marketing; L1 interference

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Introduction

In the generation that people can easily access information through several public media, consumers can make smart decisions to select options considered the best for themselves. With the high level of customer awareness, marketing strategies used for convincing them to buy are necessary for producers to stand out in a competitive marketplace. There are linguistic studies introducing one strategy involving with human cognitive processing influencing consumers' perception towards advertisements, which is called *homophone priming*. Its effect is likely to be an effective marketing tool used for increasing customers' willingness to pay for products (Davis & Herr, 2014; Kulczynski et al., 2017).

Generally, the term *priming* refers to pre-activations or facilitations. In the phonological code, homophones³ create several meaning representations which refers to *blend state* causing insufficiency for accurate meaning selection (Ferrand & Grainger, 1992). Accordingly, the activation of many meanings plays a role in the process of homophone priming which refers to a failure of inappropriate meaning inhibition. In other words, unrelated meanings remain active and the semantic ambiguity may influence thoughts, decisions, and behaviors (Higgins, 1996). The process of disambiguation of multiple representations activated can lead to *homophone suppression* (Lukatela & Turvey, 1994). The mechanism of suppression is associated with *spelling verification* that would suppress multiple representations competing in blend state. Homophone priming will not occur when homophone suppression is successful as the representation of a complementary item considered the target of priming would also be completely suppressed. After all, if there is no such spelling verification or disambiguation, priming effects may occur since multiple representations including the target item still remain.

Priming effects can be considered facilitation that helps producers create a way to manipulate consumers to perceive their hidden messages and to guide their thoughts influencing judgements and behaviors towards the advertisement. When homophone priming is successful and effective enough, it may influence *purchase decision* which refers to consumers' forming of choices before buying particular products, which begins when they have a willingness to fulfil a need (Hanaysha, 2018).

However, the findings in the previous studies revealing the advantages of homophone priming are based on the context that the target consumers are native English speakers. Accordingly, with the narrowed scope of participants explored in the previous works, the discovery of homophone priming as a marketing strategy could not be generalized among other consumers who speak other languages as L1 or speak more than one language. This limitation becomes a gap that lays the groundwork for further study. Since individuals speaking other different languages or more than one language may possess different patterns of language processing, their perception of homophones and priming process may be distinctive and different from native English speakers. Hence, the current study focuses on the priming effects caused by pictorial-based homophones in English among Thai speakers of English.

Related Studies

Homophone Studies in Other Languages

In the field of homophone processing study, interlingual homophone processing among French-English speakers in second language context has been investigated. Carrasco-Ortiz et al. (2012) found that lexical processing for interlingual homophones is facilitated. The study shows specific sensitivity towards the status of interlingual homophones when they

³ Words sharing pronunciation but spelled differently (Davis & Herr, 2014).

read a homophone in their L2. The sensitivity found in interlingual homophone processing among people who speak both French and English provokes the idea that homophone priming processing might also be feasible for people who speak more than one language.

However, it is necessary to underline the fact that English and French are similar in some aspects due to the French influence on English. In terms of linguistic classification, French, a romance language, and English, a West Germanic language, are from different language branches in the same major language family which is Indo-European. The relation between the languages is possibly the reason why there is sensitivity of the interlingual homophones among the people who speak both languages. Moreover, the exploration of interlingual homophone processing cannot be generalized for priming processing. For the current study, the differences between Thai and English are considered greater than French and English in terms of cognates, lexicons, prosody and phonological system. Thereby, Thai speakers of English are taken into consideration since the huge distinction between the languages may lead to different and interesting patterns of homophone priming.

Roles of English in Thai Advertisements

As English homophones used for advertising are stimuli in the study, it is important to discuss the aspect of English in Thai advertisements. In Thailand, although English is considered as a foreign language referring to a language that is not regularly used for daily conversations among most of Thais, it is considered the most significant foreign language (Kannaovakun & Gunther, 2003; Prasithrathsint et al., 2019). Prasithrathsint et al. (2019) investigated the role of English and Thai in Thai media including advertisement and linguistic landscape. It is found that English is used more than Thai for 10% in the linguistic landscape. In most of Thai advertisements, English and Thai play an equal role. Accordingly, the competition between the languages and their roles in the future are found interesting to observe. It is questioned whether English will be prioritized over Thai and be used more than it is revealed in Thai media presently.

Furthermore, English seems to function as a code increasing value of advertisements or products as it is seen as prestigious among Thais, and Thai advertisements normally contain English as slogans promoting their products and services. Due to international information flows caused by globalization, advertisements including English are likely to be obtainable for most of Thai consumers. Therefore, it is reasonable to explore priming of pictorial-based homophones in English among Thai speakers of English.

Homophone Priming in Different Homophone Types

There are basically text-based and pictorial-based forms of homophones. This study emphasizes the latter as pictures are considered the element that attracts people's interest the most. Compared to words, pictures are closer to the central representation of semantic categories and they are more sensitive to semantic priming effects (Paivio, 1978; Rosch, 1975). Since pictures provide concepts that contain word sounds shared in the brain, every meaning embedded in the shared sound can be activated during perceiving homophones regardless of spelling. The superiority of pictures is the main reason why pictorial-based homophones are selected to be explored rather than text-based homophones in this study. Besides, previous studies of pictorial-based homophone priming are considered more limited and rarer than research of text-based homophones. Therefore, the contribution to the selected type of homophone priming tends to be needed for the field.

One of the classic studies of homophone priming is Davis and Herr's (2014) research of text-based homophones as a phonological route to priming, which is the investigation of a

homophone pair “bye/buy” causing priming effects that influence individual perceptions towards particular things. In one of their experiments, they aim to explore whether the word “bye” can prime the complementary word “buy” affecting the customer judgement in terms of causing a higher degree of willing to pay (WTP). The results reveal that the subjects under cognitive load⁴ were willing to pay for a certain thing more. To clarify the priming mechanism, the written word “bye” activates subvocalization of the sound /baɪ/ which can activate all possible concepts of the homophone pair including “farewell” (bye) and “purchase” (buy). After the subvocalizing phase, if the process of suppression can be successfully interfered by cognitive capacity, the complementary concept which is “purchase” will remain active because of the failure of inappropriate meaning inhibition. In this way, the concept “purchase” (buy) became an effective prime influencing purchase decisions. The findings provide the view of homophone priming as one of marketing strategies influencing people to be willing to pay for particular products more, and it inspires the researcher to conduct the current study.

The research of pictorial-based homophones as primes affecting consumer judgments conducted by Kulczynski et al. (2017) is considered most relevant to the current study. Priming effects towards product attribute judgement is investigated with the manipulation of high and low cognitive load. One of their stimuli is a print advertisement of a bottle of water including a picture of a boat with a “sail” as a label on the bottle; the homophone pair “sail-sale” is embedded in the picture. The results reveal that the picture of a sail can cause the pre-activation of the word “sale” leading to its concept of discount. With the priming effects, the customer demand is also increased. Thereby, the study gives the evidence that pictorial-based homophone priming effects can influence the subjects’ judgement in the marketing context.

Altogether, even though the two studies of homophone priming above are different in terms of stimulus types used (texts and pictures), they provide the same direction of evidence and explain how the priming effects can influence people’s thoughts and judgements in similar ways. After all, those related works tend to be incomprehensive in terms of effectiveness of other homophone pairs that have never been explored, as well as subjects who are shaped in different social contexts and speak other languages.

L1 Interference Affecting Homophone Perception

Regarding to the aspect of subjects mentioned, since the target group of subjects in the current study is Thai speakers of English, *L1 interference* as a factor that may affect homophone perception will be elaborated. *L1 interference* refers to using of language forms and structures that are transferred from the speakers’ mother tongue in language learning and perceiving. There is a study of *L1 homophone effects* in *L2 spoken-word recognition* conducted by Nakai et al. (2014), and it reveals that members of a phonemic contrast in *L2* can be perceptually mapped to a single phoneme in one’s *L1*. In the study, Dutch speakers of English experience the activation of the word “kettle” when the actual word provided is “cattle”. This is because they map the vowels in the two English words to a single vowel phoneme in their *L1*. Thus, the interference from *L1 phonology* at an abstract level can be one of the causes of the cross-lexical activation. The study suggests that *L1 interference* can be involved with homophone processing and considered as a barrier to homophone perception.

The investigation of the current study is undertaken to justify whether the priming effects can be generalized for the wider groups of consumers. Since Kulczynski et al. (2017) explored pictorial-based homophone priming in the context of advertisements, considered

⁴ Cognitive load refers to the amount of information held in working memory at once. In homophone priming studies, the condition of cognitive load is usually controlled by providing requirement of memorizing numbers in particular tasks (Davis & Herr, 2014).

highly relevant to the current study, their task design will be applied in this study. Also, the pictorial-based homophone pair “sail-sale”, will be examined among the different speakers in this study, as the lack of varied types of participants investigated in the field of pictorial-based homophone priming is the main gap that the researcher aims to fill.

Factors Affecting Ambiguous Word Processing

Regarding word processing, apart from language proficiency, there are essential factors that could affect the processing capability. To begin with, Brysbaert et al. (2018) addressed the effect of *word frequency* and explained that high-frequency words appear to be processed more effectively than low-frequency words. Besides, word frequency effects seem to have an impact on individuals differently due to varied degrees of language exposure. According to processing of ambiguous words, Simpson (1994) revealed that the more frequent meaning is supposed to be activated first, regardless of contexts. Thus, it could be said that frequency information plays an important role in homophone processing which is involved in ambiguity processing.

In addition, Adelman et al. (2006) brought the idea that *contextual diversity*, referring to the number of contexts or situations in which a word appears, also matters in terms of lexical access. In other words, a word appearing in a greater range of settings tends to be accessed or retrieved more efficiently. Word frequency and contextual diversity are independent variables considered inconsistent with each other. After all, both of them have an impact on word recognition (Huang, 2017).

In a view of semantic similarity in ambiguous word processing, it was found that there is a facilitative effect of meaning relatedness on phonological processing (Pexman et al., 2002). To clarify, words that are more related semantically would be recognized faster than words associated with a smaller semantic set (Locker et al., 2003). Correspondingly, in homophone priming, similar meanings between each word in a homophone pair might activate the facilitative effect leading to effective word processing and recognition.

Research Objectives

This study has two objectives: first, to investigate the effects of pictorial-based homophone priming on the purchase decisions of Thai consumers for products advertised in English; and second, to examine the effectiveness of pictorial-based homophones as primes in the presence of interference of L1 among Thai speakers of English, compared to native English speakers.

Research Methodology

Participants

The two groups of participants, aged 18-40, consist of 30 Thai speakers of English (15 males, 15 females) with an intermediate level of English proficiency (B1) or higher, as indicated by a minimum CU-TEP score of 70-120, TOEFL (IBT) score of 79, or IELTS score of 6.0, and 8 native English speakers serving as controls (4 males, 4 females).

Task Design and Stimuli

Pretests A, B and C

Online pretests were performed by a group of Thai people (n = 60), who are not the main participants for the experiments of the study, to survey the quality of stimuli for appropriateness and effectiveness in the priming investigation. The stimuli are three

advertisements advertising different products. In each advertisement in homophone condition, there is a pictorial-based homophone as a prime. The first pair “sail-sale” is from the previous study conducted by Kulczynski et al., (2017). The second and third pairs “deer-dear” and “hole-whole” are the new pairs invented by the researcher for exploring homophone variability in priming contexts. The pretests are forced-choice tasks created on Google Forms for controlling and manipulating stimulus quality in three aspects including word frequency, congruity between a picture (prime) and product, and typicality of advertisement.

Pretest A: Word Frequency

A forced-choice word frequency task was adopted to find the high and low frequency word representation of each homophone pair. The participants were asked which word appears in their head first when they encounter the provided sounds including /seil/ (sail-sale), /di:/ (deer-dear), and /hou:/ (hole-whole); the sounds were presented in Thai as “เซิล”, “เดียร์”, and “โฮล” respectively in the task form, to make them accessible for the Thais. According to the survey, it was found that 96.7% (n = 58), considered the majority, selected the word “sale” as the high frequency word in the first homophone pair. For the second homophone pair, 63.3% (n = 38) chose the word “dear” as the high frequency one. Lastly, it appears that 51.7% (n = 31) felt more familiar with the word “whole” and it became the high frequency word of the pair.

Due to the results of *Pretest A*, each homophone pair as a prime would be treated as different perceptions towards products that could be evoked during the priming process. The perceptions used were the embedded meanings of the high-frequency words “sale”, “dear” and “whole” as they are the complementary items of each homophone pair that are not directly presented in visual forms. Besides, the results of the survey indicating higher frequency and greater possibilities to be activated of each item are also the reason of the prime selection. To elaborate perceptions of the primes, the pair “sail-sale” reflects the perception of “being discounted” (sale) signaling better price of a product, which might affect purchase decision of customers, as indicated in the previous study conducted by Kulczynski et al. (2017).

The pair “deer-dear” demonstrates two perceptions due to its double meaning. According to Oxford University Press (n.d.), the word “dear” possesses the meanings “loved by or important to somebody” and “at a high price”. The definitions were interpreted to be the perceptions “being lovable” and “being expensive” respectively by the researcher. Hence, “dear” as a prime might create the image of preciousness towards the product that could influence purchase decisions. In the last pair “hole-whole”, the high-frequency word “whole” provides a sense of wholeness. According to Oxford University Press (n.d.), “whole” is defined as “full, complete, and not as separate parts”. Thereby, it is interpreted to be a perception of “being gathered together of products” that could affect buyer behaviors regarding to selection of product containing higher quantity that could lead to sales increasing. The mentioned perceptions became the attributes utilized for rating in the main experiments that will be explained later.

Pretest B: Congruity between the Picture and Product

Based on Bigne et al. (2012) congruence measures, the task measuring congruity between pictures and products as the important elements in advertisement was applied. The subjects were asked whether the pictures and products advertised were: incongruent/congruent, incompatible/compatible, meaningless/meaningful, not complementary/complementary, do not go together/go together, and illogical/ logical (yes-no choice). The results of congruity of the advertisements in different conditions (homophone and non-homophone) were compared

by paired sample t-tests, and it was found to be not significantly different (i.e., “water” consisting of a boat ($M = .82, SD = .390$) compared to the advertisement including a sail boat as a prime ($M = .87, SD = .343$), $p = .182$, “car” without a deer ($M = .75, SD = .437$) compared to the advertisement with a deer as a prime ($M = .80, SD = .403$), $p = .536$., and “milk” without a hole ($M = .85, SD = .360$) compared to the advertisement with a hole as a prime ($M = .90, SD = .303$), $p = .321$).

Pretest C: Typicality of the Advertisements.

The task investigating typicality of the advertisements was performed. The Thai individuals were asked to rate how typical or representative the advertisements are, from 1 to 5 (*not typical at all to very typical*). The results of typicality of the advertisements in different conditions were compared by paired sample t-tests, and it was found to be not significantly different (i.e., “water” with only a boat ($M = 4.07, SD = .954$) compared to the advertisement with a sail boat as a prime ($M = 4.05, SD = .946$), $p = .784$, “car” without a deer ($M = 4.28, SD = .993$) compared to the advertisement with a deer as a prime ($M = 4.15, SD = 1.102$), $p = .159$, and “milk” without a hole ($M = 4.28, SD = .993$) compared to the advertisement with a hole as a prime ($M = 4.17, SD = 1.092$), $p = .211$).

Due to all stimuli qualified, it was assumed that customer perceptions towards products might be influenced by the attributes in the process of homophone priming, and it was expected that the influence might also increase purchase decision shown through the rating of willing to pay (WTP) among the participants.

Stimuli in Experiment 1

The first experiment was conducted to investigate the pictorial-based homophone “sail-sale” as a prime influencing customer judgement in terms of perceiving a product as a “discounted” product. Purchase decision was observed through willingness to pay (WTP) as the attribute of discount might be the factor attracting ones to buy a product more. The stimuli are divided into two conditions which are *homophone* condition and *non-homophone* condition. The product is a bottle of water as presented in Figure 1 below.

Figure 1

Stimuli for the Homophone “Sail-Sale” in Experiment 1 (Kulczynski et al., 2017)



non-homophone presents the product with the label of a boat without a sail, including the text excluding the target homophone “Bottled water. Grab some today”. The condition (2) *homophone* shows the product with the label of a sail boat (prime) presented with the same text in the previous condition.

Stimuli in Experiment 2

The purpose is to examine the customer attitude of love and value towards a product, influenced by the homophone “deer-dear” (a novel pair) as a prime. The product used for this experiment is a car as illustrated in Figure 2.

Figure 2

Stimuli for the Homophone “Deer-Dear” in Experiment 2



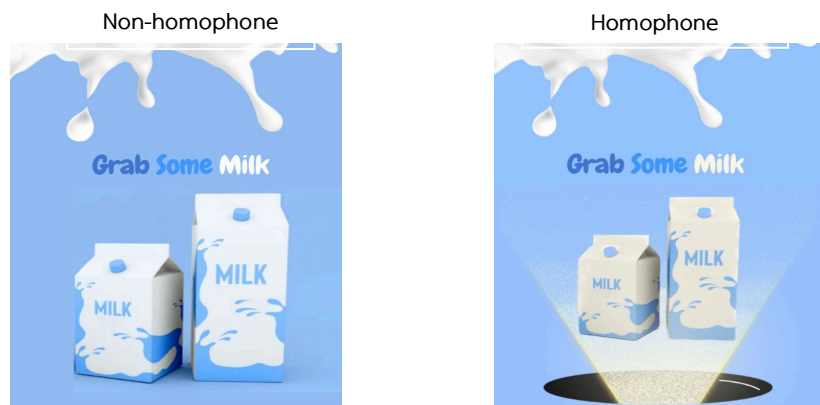
The condition (1) *non-homophone* contains the product presented with the text excluding the target homophone “Drive your life”. The condition (2) *homophone* consists of a product presented with a silhouette figure of a deer (prime) and the same text.

Stimuli in Experiment 3

The influence of the pictorial-based homophone towards buying behavior of customers is explored. The homophone pair “hole-whole” (a novel pair) is used to investigate whether the attribute “being gathered together of products” can influence the subject to choose a group of products rather than a single product. The product in this experiment is buttons of milk as shown in Figure 3.

Figure 2

Stimuli for the Homophone “Hole-Whole” in Experiment 3



In the condition (1) *non-homophone*, the product is presented with the text excluding the target homophone “Grab some milk”. In the condition (2) *homophone*, the product placed above a big black hole (prime) is presented. The light shown from the bottom of the hole is added for the aspect of the hole’s depth dimension. The text added is the same as the non-homophone condition. For an overview, all attributes investigated and measurement used in the three experiments are summarized in Table 1 below.

Table 1

Summary of the Three Experiments

Experiment	Homophone	Attribute	Measurement
1	Sail - Sale	One attribute: (1) being discounted	(1) Likert scale (Agreement): 1 to 5 from <i>Strongly disagree</i> to <i>Strongly agree</i> (2) Rating of WTP: 1 to 5 from <i>Totally not willing to pay</i> to <i>Very willing to pay</i>
2	Deer - Dear	Two attributes: (1) being lovable (2) being expensive	(1) Likert scale (MLP rating): 1 to 5 from <i>Totally hate</i> to <i>Super love</i> (2) Likert scale (Cost rating): 1 to 5 from <i>Very cheap</i> to <i>Very expensive</i>
3	Hole - Whole	One attribute: (1) being gathered together of products	(1) Choice selection: 1 or 2 “ <i>single</i> ” or “ <i>group</i> ” (2) Rating of WTP: 1 to 5 from <i>Totally not willing to pay</i> to <i>Very willing to pay</i>

Procedures for the Three Experiments

Some previous studies that are relevant to the current study provide the evidence that cognitive capacity is part of preventing spelling verification, leading to successful homophone priming. Thus, the factor of cognitive capacity was inserted in every experiment and was manipulated in the same way for all conditions (non-homophone and homophone). The following procedures were consistent across all experiments in the study.

(1) Manipulating cognitive capacity: the participants are required to remember 7-digit number before the stimuli are provided to them.

(2) Providing the stimulus: the advertisement is provided to the participants through a screen. They are required to see and analyze the advertisement.

(3) Assessing the rating of attributes and willing to pay (WTP): the participants are asked to evaluate the degree of the attributes regarding each homophone investigation utilizing “a single seven-point Likert scale” from 1 to 5 (sail-sale and deer-dear) and “choice selection” 1 or 2 (hole-whole). After the attribute rating, they are asked to evaluate their willing to pay (WTP) for the products, 1 to 5 (from *totally not willing to pay* to *very willing to pay*).

(4) Checking the manipulation of cognitive capacity: after the assessment, the participants are asked to repeat the given numbers backwards correctly in order the check whether the cognitive load is successfully manipulated.

(5) Describing the advertisement: participants are exposed to the advertisement again and asked to “describe the advertisements” and “express thoughts towards the

advertisements”. After they depict the image they perceived, they are asked for their English exposure and demographic information.

In terms of the order of stimulus presentation, the advertisements in non-homophone condition is provided before the homophone condition in every experiment, and it is consistent across all participants. The procedures are done condition by condition.

Data Collection

Firstly, the quantitative answers from all measurement and rating requirement in every experiment are gathered. Then, the qualitative answers depicting the advertisements are collected after the evaluation part.

Data Analysis

In the first section of results, paired sample *t*-test is used for comparing results from one group of participants, Thai speakers of English, tested in different conditions (non-homophone and homophone conditions). In the second section of results, Mann-Whitney U test, the non-parametric counterpart to the *t*-test for independent samples, is used for comparing results from different groups of participants, Thai speakers of English and native English speakers, tested in the same condition (*homophone* condition). In addition, open-ended responses depicting advertisements containing pictorial-based homophones are analyzed in a descriptive manner for reference observation and discussion.

Results

The results are divided into two main sections according to the two different research objectives. The first section presents Thai speakers of English’s rating results from the three experiments investigating different homophone pairs in English. The second section shows differences in terms of degrees of priming effects between the two groups of participants, native English speakers and Thai speakers of English.

Section 1: Effects of Pictorial-Based Homophones on Thai Speakers of English

Thai speakers of English’s rating results from the three experiments investigating different homophone pairs in English, “sail-sale”, “deer-dear”, and “hole-whole”, will be provided in this section. The factor of cognitive capacity was successfully manipulated in all experiments as Thai speakers of English ($n = 30$) were able to remember 7-digit number before the stimuli are provided to them, and were able to repeat the numbers backwards after the exposure and assessment of the advertisement.

Experiment 1: Investigation of “Sail-Sale” Homophone Priming

In the first part of Experiment 1, the results of the attribute “being discounted” was observed whether the subjects could be primed by the picture “a sail” from a sailboat and could be influenced by the perception of discount from the prime “sale”. Latterly, WTP’s rating results were examined. The statistical results of the attribute and WTP as well as the descriptive answers depicting the advertisement are presented below.

The Attribute “Being Discounted”

Due to paired *t* test results of the attribute “being discounted”, there was no significant increase in the rating results in the homophone condition ($M = 2.47$, $SD = .946$) compared to the results in the non-homophone condition ($M = 2.23$, $SD = .626$), $p = .199$. It indicates that the participants could not be primed by the pictorial-based homophone “sailboat” and the

complimentary item “sale” could not be activated. Therefore, there were no priming effects for the attribute “being discounted”.

WTP for the Product “Bottle of Water”

As related to the attribute’s results above, there was no significant increase in the WTP’s rating results in the homophone condition ($M = 2.73, SD = .583$) compared to the numbers in the non-homophone condition ($M = 2.57, SD = .774$), $p = .258$. Accordingly, the unsuccessful priming in the attribute part might lead to the lack of willingness to pay in purchase decision, since the concept of discount, as the purchase motivation, could not be activated.

The Descriptive Answers Depicting the Advertisement “Bottle of Water”

Due to the descriptive answers, it appeared that 56.67% of subjects didn’t mention the target word “sail” when they described the logo. Also, it was found that 43.33% of participants who mentioned the word “sail” or “sailing boat” possess higher English proficiency and exposure than the others. Other words used for depicting the logo are “boat”, “ship”, and “yacht”.

Experiment 2: Investigation of “Deer-Dear” Homophone Priming

Primarily, the rating results of the attributes “being lovable” and “being expensive” are reported respectively, in order to illustrate whether the subjects can be primed by the picture “a deer” or not. After the attributes, the rating results of WTP for the product “car” and the descriptive answers depicting the pictorial homophone are revealed.

The Attribute “Being Lovable”

In contrast to the first experiment, for the homophone pair “deer-dear”, there was a significant increase of the rating results in the homophone condition ($M = 3.93, SD = .691$) compared to the results in the non-homophone condition ($M = 2.80, SD = .664$), $p < .001$. The significance implies that the participants might be primed by the pictorial-based homophone and the complimentary item “dear” (a loved one) was activated. Therefore, there were priming effects influencing their attitudinal judgment for the attribute “being lovable” towards the product.

The Attribute “Being Expensive”

Correspondingly, for the low-frequency meaning of the word prime, there was also a significant rise in rating results in the homophone condition ($M = 3.87, SD = .776$) compared to the results in the non-homophone condition ($M = 2.57, SD = .679$), $p < .001$. The significant difference might suggest that the priming effects were influential enough for other subsequent meaning of the complimentary item “dear” (expensive) to be activated.

WTP for the Product “Car”

In relation to the attributes’ results above, there was a significant increase in the WTP’s rating results in the homophone condition ($M = 3.33, SD = .844$) compared to the rating outcome in the non-homophone condition ($M = 2.13, SD = .819$), $p < .001$. Due to the outcome, the attributes seem to be the potential factors affecting tendency of WTP’s rating, since the success of priming could cause the increase of WTP.

The Descriptive Answers Depicting the Advertisement “Car”

According to the responses, it was shown that 86.67% of participants described the logo by using the target word “deer”. Only 13.33% did not mention the target word. Other words used for describing the logo are “hart”, “buck”, and “creature”.

Experiment 3: Investigation of “Hole-Whole” Homophone Priming

To observe influences of the picture “hole” as a prime, the rating results of the attribute “being gathered together of products” and WTP for the product “milk” as well as the answers describing the advertisement will be presented.

The Attribute “Being Gathered Together of Products”

Comparable to the second experiment’s results, there was a significant increase in the rating (rating range: 1-2) for the homophone condition ($M = 1.73, SD = .450$) compared to the results in the non-homophone condition ($M = 1.07, SD = .254$), $p < .001$. It reveals that there might also be priming effects for the pictorial-based homophone “hole”, and the complimentary item “whole” could cause a preference for a group of products (package) rather than a single product among the participants.

WTP for the Product “Milk”

In relation to the attribute above, there was a significant increase in the WTP’s rating results in the homophone condition ($M = 3.77, SD = .774$) compared to the rating outcome in the non-homophone condition ($M = 3.30, SD = .651$), $p = .024$. As mentioned, with regard to the tendency of WTP’s rating results depending on the success of priming, the participants were willing to pay for the product more significantly.

The Descriptive Answers Depicting the Advertisement “Milk”

Due to the answers, 83.33% of the subjects used the target word “hole” to describe the pictorial-based homophone. Only 16.67% of them didn’t mention the target word. Other words used for describing the advertisement are “light”, “stage”, “game show” and “hologram”.

Summary of Rating Results in Section 1

According to the results in the three experiments demonstrating effects of pictorial-based homophones on Thai speakers of English, it appeared that two of the three pairs of pictorial-based homophones tested were the effective primes that could influence the Thai speakers of English’s judgement, as shown below.

Table 2

Summary of Thai Speakers of English’s Rating Results

Experiment	Homophone	Rating	Significance
1	Sail - Sale	1. Attribute “being discounted”	Not found
		2. WTP for the product “water”	Not found
2	Deer - Dear	1. Attribute “being lovable”	Found
		2. Attribute “being expensive”	Found
		3. WTP for the product “car”	Found

3	Hole - Whole	1. Attribute “being gathered together”	Found
		2. WTP for the product “milk”	Found

As illustrated in Table 2, the two effective pairs were “deer-dear” in Experiment 2 and “hole-whole” in Experiment 3, based on the significant differences found in the rating results compared between the different conditions, non-homophone and homophone. The referred significance indicated that there were homophone priming effects among the Thai speakers of English although the primes were created in English context. However, it could be seen that the first homophone pair appeared to be ineffective. The pattern of significance in the table suggested that there might be other factors to be considered for the selection of pictorial-based homophones used as primes, such as word frequency of the homophones selected, and English proficiency or English exposure of target audiences.

Section 2: Differences Regarding Degrees of Priming Effects between Native English Speakers and Thai Speakers of English

In this section, primarily, the overall rating results from native English speakers as controls participating in the three experiments (identical to Section 1) will be provided. Subsequently, the comparison of the results in homophone condition between native English speakers and Thai speakers of English will be elaborated to investigate the degree variation of priming effects depending on the different groups of speakers.

Overall Results of Native English Speakers

Cognitive Capacity

In all experiments, Native English speakers ($n = 8$) were able to remember 7-digit number before the advertisement are provided to them. Also, they were able to repeat the numbers backwards after the exposure and assessment of the advertisement (rate of accuracy: 99.33% in average).

The attributes

In the attribute “being discounted” in Experiment 1, there was a significant increase in the rating results in the homophone condition ($M = 4.75, SD = .463$) compared to the results in the non-homophone condition ($M = 1.50, SD = .756$), $p < .001$. The controls were primed by the pictorial-based homophone “sailboat” and the complimentary item “sale” can be activated.

For the attribute “being lovable” in Experiment 2, there was a significant increase in the rating results in the homophone condition ($M = 4.38, SD = .518$) compared to the results in the non-homophone condition ($M = 2.50, SD = .535$), $p < .001$. The outcome reveals that the controls can also be primed by the pictorial-based homophone “deer” and it activates the complimentary item “dear” (a loved one). Likewise, for the attribute “being expensive” or the low-frequency meaning of the word prime “dear” revealed itself as another effective prime since there was also a significant increase in the homophone condition ($M = 4.13, SD = .641$) compared to the results in the non-homophone condition ($M = 2.25, SD = .463$), $p < .001$.

Akin to the results above, for the attribute “being gathered together”, the controls delivered a significant increase in their rating (rating range: 1-2) for the homophone condition ($M = 1.88, SD = .354$) compared to the results in the non-homophone condition ($M = 1.25, SD = .463$), $p = .049$. The results prove that priming effects caused by the pictorial-based homophone “hole” can activate the complimentary item “whole”.

WTP for the products

For the first product “water”, the outcome of WTP rating corresponded to the attribute’s results, there was a significant rise in the homophone condition ($M = 3.88, SD = .835$) compared to the non-homophone condition ($M = 2.00, SD = .926$), $p = .001$. For the second product “car”, there was also a significant soar in the WTP’s rating results in the homophone condition ($M = 4.25, SD = .707$) compared to the rating outcome in the non-homophone condition ($M = 1.63, SD = .518$), $p < .001$.

Allied with the results above, there was a significant increase in the rating results of WTP for the last product “milk” in the homophone condition ($M = 4.13, SD = .835$) compared to the rating results in the non-homophone condition ($M = 2.75, SD = .886$), $p = .008$. As referred, the tendency of WTP’s rating results appeared to be related to how priming effects in the attribute part works. The assumption seems to be feasible for the group of controls as well. Along with the success of priming, the controls were willing to pay for the products more significantly.

Summary of rating results from native English speakers

Based on the results, all pairs of pictorial-based homophones tested were the effective primes influencing the native English speakers’ judgement, as presented below.

Table 3

Summary of native English speakers’ rating results

Experiment	Homophone	Rating	Significance
1	Sail - Sale	1. Attribute “being discounted”	Found
		2. WTP for the product “water”	Found
2	Deer - Dear	1. Attribute “being lovable”	Found
		2. Attribute “being expensive”	Found
		3. WTP for the product “car”	Found
3	Hole - Whole	1. Attribute “being gathered together”	Found
		2. WTP for the product “milk”	Found

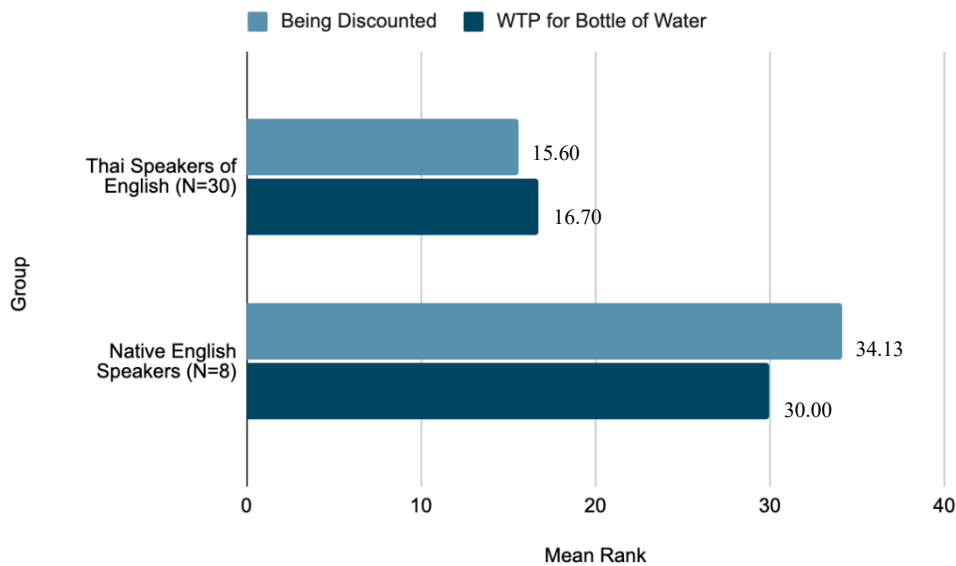
Result comparison between Thai speakers of English and native English speakers

To examine the difference of degrees of the priming effects among the two groups, a non-parametric test for two independent groups, Mann-Whitney U test, was adopted to compare the rating results in *homophone* condition between Thai speakers of English and native English speakers.

It reveals that significant differences between Thai speakers of English and native English speakers’ rating outcomes were found in the first and second experiment (i.e., “sail-sale” and “deer-dear”).

Figure 4

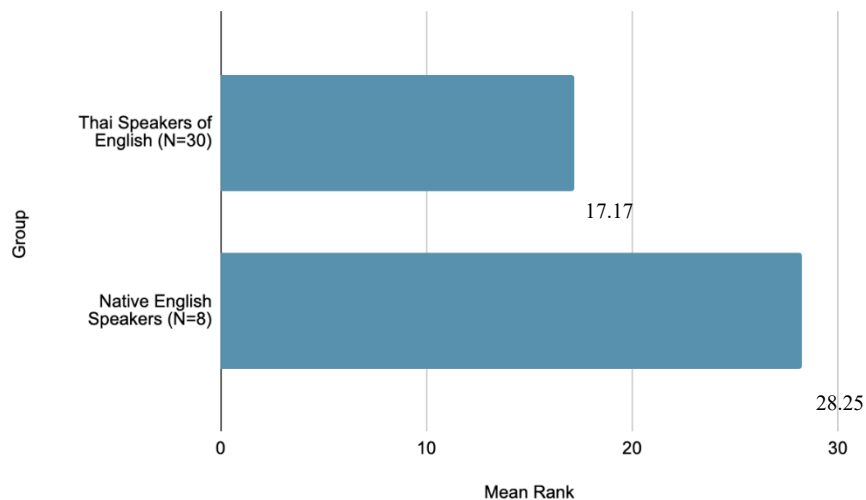
Group Comparison of Mean Ranks in Experiment 1 (sail-sale)



According to the left graph, it was found that rating on the attribute “being discounted” in Thai speakers of English (mean rank of 15.60) is significantly lower than in native speakers of English (mean rank of 34.13), $U = 3.00, p < .001$. Correspondingly, based on the graph on the right side, the controls (mean rank of 30.00) reveal significantly higher rating on WTP for the product “bottle of water” compared to the Thai subjects (mean rank of 16.70), $U = 36.00, p < .001$. The graphs demonstrate that the native English speakers provided higher rating results in all aspects compared to the Thais. It implies that there were greater priming effects among the controls.

Figure 5

Group Comparison of Mean Ranks in Experiment 2 (deer-dear)



As shown above, the rating of WTP for the product “car” provided by the Thai speakers of English (mean rank of 17.17) was significantly lower than the outcome from the native speakers of English (mean rank of 28.25), $U = 50.00$, $p = .007$. Although the rating results in the two attributes, “being lovable” and “being expensive”, in Experiment 2, that were compared between the two groups, appeared to be not significantly different ($U = 79.00$, $p = .103$, $U = 98.50$, $p = .399$), the rating results in the WTP compared between them turned out to be significantly distinctive.

To explain, while the native English speakers tended to provide high points in the rating rank for both the attributes and WTP consistently, the influence for attributes and WTP among the Thais did not coincide as much as it was illustrated among the controls. Thereby, it sounds feasible to state that priming effects are strong enough to provoke particular perceptions towards products resulting in high rating of attributes. However, for willingness to pay, there are other factors or motivations, apart from the power of priming effects, to be considered among the subjects as consumers. The other factors or motivations mentioned can be current financial status of individuals or attitudes towards particular products that may affect their purchase decision.

Based on the classification of goods depending on consumers purchasing intentions (Kim & Lennon, 2013), the products advertised in Experiment 1 and Experiment 3, “water” and “milk” were categorized as *convenience goods*⁵. On the other hand, the product advertised in the second experiment “car” considered *specialty goods*⁶ possesses special characteristics including requirement of special purchasing effort among consumers for its high price. The unique characteristics might be part of the participants’ purchase decisions related to WTP. Besides, it is undeniable that the Thai consumers (Thai speakers of English) tend to be inferior than the foreign consumers (controls) in term of purchasing power since the cost of living in Thailand is lower than in Native English Speaking Countries. According to Living Cost Organization (2024), Thailand ranked 114th whilst the United States and the United Kingdom ranked 7th and 12th respectively, in the list of the most expensive countries in the world. It can be said that the lower rating outcome of WTP for this product among Thai subjects might be the cause of the type of product that requires special purchasing effort and lower cost of living in Thailand, leading to lower willingness to pay.

Discussion and Conclusion

The research conducted provided evidence of the effects of pictorial-based homophone priming on the purchase decisions of Thai consumers for products advertised in English. Through the three experiments investigating different homophone pairs reflecting different attributes, it revealed that purchase decision of Thai speakers of English could be influenced by some pictorial-based homophones in the study (i.e., “deer-dear” and “hole-whole”). The priming effects found were strong enough to impact their perceptions towards the products in the advertisements, based on the meanings of the complementary items of each homophone pair used. Regarding to the degree of the priming effects, Thai speakers of English manifested lower priming effects in all aspects compared to native English speakers.

There were patterns of how priming worked among Thai speakers of English and they were shown through correspondence between rating results of the attributes and willingness to

⁵ The type of goods that customers purchase frequently and immediately, with minimum effort required (Kim & Lennon, 2013).

⁶ The type of goods that have particularly unique characteristics and made for a significant group of purchaser who would be willing to make a special purchasing effort. Examples are fancy products such as luxury cars and professional equipment (Kim & Lennon, 2013).

pay (WTP) in each experiment. To elaborate, when the attributes' rating results appeared to be significantly high, WTP's rating outcome would be significantly increased; this pattern could be seen in Experiment 2 and 3. In Experiment 2, Thai speakers of English were able to perceive the product "car" as the lovable and expensive car when they were exposed to an advertisement depicting "deer". Thus, the complementary item "dear" reflecting the attitudes of love and expensiveness was successfully activated under cognitive capacity. Likewise, in Experiment 3, the majority of the same group of subjects expressed their buying preference, "a group of products", after the advertisement including a picture "hole" was provided. According to the results, the complementary item "whole" might activate a concept of *holism* which is a belief that the whole is greater than the sum of the parts (Christakis, 2012). Interestingly, the WTP's rating results of the two experiments were significantly high, which corresponded with the attributes' rating outcomes.

The illustrated pattern suggested that the purchase behavior influenced by the attributes as primes could be considered as *impulse purchase*⁷. It involved an emotional reaction to the stimuli and the reaction could impact their purchase decision reflected through their WTP. Besides, if the attributes' rating results became significantly low, WTP's rating outcome would also be significantly low. This pattern was found in the first experiment. As it can be seen, the pictorial homophone "sail" could not be an effective prime activating the perception of discount for Thai speakers of English in this study, and they could not perceive a product as the discounted one. Without priming effects, there was no impact from impulse purchase and the subjects encountered lack of interest and buying motivation. As a results, there was no impulse for WTP to be increased as well. Apparently, there was a connection between the attributes and WTP in each experiment.

As mentioned, out of the three pictorial-based homophones used in this study, the pair "sail-sale" was the only one priming stimulus considered ineffective for Thai speakers of English whilst the controls, native English speakers, manifested its effectiveness and success in priming process. Furthermore, since it was referred in Section 3.2.2, the pictorial homophone "sail" was duplicated from the previous study conducted by Kulczynski et al. (2017). According to the results of the previous study, the members of Australian general public revealed that they were able to perceive the price of the product to be more discounted when primed with the pictorial homophone "sail", which appeared to be the same as the controls in this study. The contradictory of results found among Thai speakers of English and Native English speakers suggested that there were factors regarding to different language speaking and capability of word access in picture exposure.

One of the most obvious factors of the unsuccessful priming tends to be L1 interference in Thai speakers of English. Although the Thai participants in the study were English learners who have achieved B1 Intermediate level and was able to understand the English advertisements in the study, the fact that there is a big difference of how the native speakers and L2 users access a word as a prime is needed to be considered. Cook (1994) asserted that L1 and L2 share the same mental lexicon, and the processing cannot be cut off from each other. Since there is hemispheric lateralization, the languages are stored roughly in the same areas of the brain. Therefore, in this case, Thai language could take part in the English homophone processing, regardless of the English-only context in the advertisements. Thus, L1 might be the barrier of perceiving the English homophone and the obstacle of priming process since the phonological code of the homophone might not be completely perceived in the first place. To make it vivid, in Experiment 1, the phonological code of the low-frequency word "sail" might not be fully activated by some Thai speakers of English as they might inevitably

⁷ A purchase behavior that is made without prior planning or thought (Beatty & Ferrell, 1998).

analyze the pictorial homophone in their L1 simultaneously. Consequently, it could possibly interfere or restrict the access of the word's phonology in English and ultimately lead to unsuccessful priming. However, as the success of English homophone priming in Thai speakers of English was also illustrated in the other two experiments in the study, there ought to be other factors causing the failure of the priming of "sail", apart from L1 interference.

After the rating section in the experiments, Thai participants were opened to discuss and depict the pictorial homophones. Interestingly, the majority of them knew the word "sail" but they could not think of the target word when they were exposed to the pictorial homophone "sailboat" in the first place. The words that were mostly activated consist of "boat", "ship", and "yacht". In this way, it can be said that the word "sail" has been stored in their brain but it could not be retrieved. Therefore, the word's low frequency is likely to be the cause of word retrieval difficulty. To elaborate, according to the survey of word frequency in a group of Thai people ($n = 60$) that was reported in the section of *pretest a*, it revealed that only 3.3% selected the word "sail" as the word they felt the most familiar, compared to "sale" (63.3%). The survey indicated how rare the word "sail" is for Thai people. Its lack of frequency was found to be one of the reasons why the word could not be activated when they were exposed to the advertisement including the pictorial homophone "sail". Furthermore, the word's contextual diversity could also be the factor leading to the less efficiency of word retrieval and access, since "sail" is considered the word appearing in a very limited range of settings such as sports and navigation. Ultimately, the rare usage of the word became one of the causes of priming failure in the first experiment.

In the aspect of priming as a marketing tool, the success and failure of priming among Thai speakers of English in the study suggested that it is feasible to use pictorial homophone priming as a tool under the control of homophone word frequency. For consumers who do not possess English as L1, there would be more possibilities of priming success for homophones considered high frequency and easily accessed. Furthermore, as L1 interference is one of the factors causing difficulty of word activation in this study, future research should examine pictorial homophones in L1 as primes and observe whether they are more influential than English homophones as primes for L2 users.

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