

SOUND SYMBOLISM OF FRONT VOWELS IN ENGLISH ONOMATOPOEIC WORDS

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Abstract

This is a qualitative research that focuses on the meaning represented in the phoneme contained in English onomatopoeic words. Onomatopoeia is a word that imitates the sounds of human, animal, things, actions, and nature in the world. Onomatopoeia exists in many reading materials such as comics, fables, tales and poetry. This research focuses on the onomatopoeic words which are contained in Oxford English Dictionary for the dictionary is regularly updated. Out of two kinds of phoneme, which are consonants and vowels, this research limits the investigation for only English front vowels. Based on the manner of articulation, English front vowels are divided into front high tense unrounded vowel /i/, front high lax unrounded vowel /ɪ/, front mid tense unrounded vowel /e/, front mid lax unrounded vowel /ɛ/, and front low lax unrounded vowel /æ/. This approach used in this research is called sound symbolism which is a study of relation between sound and meaning. This research applies low-level properties, a mechanism in sound symbolism that is associating the sound to the meaning based on the shared perceptual feature in both phoneme and associated stimuli. The mechanism is used as the method of the research for the researcher explores the characteristics of front vowels contained in English onomatopoeic words that are used to represent the sounds produced by human, animals, nature, machines, and other things. Based on the investigation, the result indicates that the higher vowels the more diminutive meaning it indicates, while the lower vowels the more augmentative meaning it indicates.

Keywords: *meaning, onomatopoeia, sound symbolism, vowels*

INTRODUCTION

The term of onomatopoeia is not widely recognized or noticed by many people, so the importance is quite ignored to be discussed. Furthermore, Saussure as the expert of linguistics (1857-1913), stated that "... onomatopoeic formations are never organic elements of a linguistic system. Besides, their number is much smaller than is generally supposed.", so people do not consider and do not know further about the term of onomatopoeic words and its relation to the linguistic field. In fact, the existence of this term appears in all languages in the world and

used in many reading materials such as comics, fables, tales and poetry. Even it exists in holy book such as Qur'an, as a research conducted by Seyyedi and Akhlaghi (2013). The result is one nine thousandths of the whole words in Qur'an are onomatopoeic.

Onomatopoeia is a sound imitation word that is created based on natural sounds around us. The sounds of these words resemble sounds related to the meanings of these words. It can be animal, human, nature and other sounds. It is originated from Greek word *onomatopoeia* means 'word-making'. It is the combination of *onoma* means 'name'

and *poieó* means ‘make’ (Shipley, 1984: 280:341). Some of English dictionaries define onomatopoeia as “...the formation of a word from a sound associated with what is named” (<http://oxforddictionaries.com>), “...the naming of a thing or action by a vocal imitation of the sound associated with it; it is the use of words whose sound suggests the sense (<http://www.merriam-webster.com>), “... the formation of words whose sound is imitative of the sound of the noise or action designated (<http://www.collinsdictionary.com>), “...the use of words such as ‘buzz’ and ‘thud’ that sound like the sound which they refer to” (Macmillan English Dictionary, 2002: 992).

Some linguists define onomatopoeia as “a restricted sense refers to imitation of natural sounds, e.g. of animals” (Nordberg (1986) in Abelin 1999, p.3). Rungrojuswan (2007, p.254) defines it as “a group of words used to designate sound in nature...the meaning of referent of an onomatopoeic word is usually the sound of a particular thing or the sound of action of a particular thing in reality.” An onomatopoeic word in the opinion of Kirtchuk (2012, p.1) is “the well-known cross-linguistic phenomenon by which a linguistic element is phonetically inspired on the sound of the reality it conveys.”

Studies of relation between a word or a name and the concept had been done by many philosophies and linguists since Plato era. Many of them have a notion that a word or a name is created arbitrary and conventional. One of them is Ferdinand de

Saussure (1857-1913) which proposes “signifier” and “signified”. In his dichotomy, a language consists of both signifier and signified that the aspects cannot be separated. However, he also stated that there is no reason why a word becomes the signifier of the thing signified and it becomes the signifier because it is the result of a convention. For example, there is no particular reason why people call a big animal with trunk as an “elephant”, but people agree to use “elephant” as a name of the concept of a big animal with trunk.

Departing from the explanation of experts about the theories of how language begin, such as the bow-wow theory, the ding-dong theory, the la-la theory, the pooh-pooh theory, the yo-he-ho theory, and so on (Northquist, 2019, retrieved from <https://www.thoughtco.com/where-does-language-come-from-1691015>), the researcher assumes that the beginning of the emergence of human language as a means to represent objects or concepts begins with human intuition. Based on human witnessing of the shape and the movement of an object and human hearing of the sound generated from the reaction of the object, the word they created to represent it must contain similar sound as the sound produced by the object intuitively, and must not as ‘arbitrary’ as Saussure proposed. This notion is similar with a theory proposed by some expert about the relation between sound and the object. It is called sound symbolism.

Sound symbolism is a study of relation

between sound and meaning. An example of sound symbolism is onomatopoeia, a word representing the sound produced by human, animal or other things. Not many people realize the importance of learning onomatopoeia. In fact, this 'sound word' exists in all languages in the world and used in many reading materials such as comics, fables, tales and so on but people do not consider and do not know further about the term of onomatopoeic words and its relation to the linguistic field as stated by Saussure (1857-1913), "... onomatopoeic formations are never organic elements of a linguistic system. Besides, their number is much smaller than is generally supposed." Whereas learning onomatopoeia to find out how a word related with the concept it contains is very interesting because onomatopoeias are words invented by echoing sound to which it refers. On that ground, this research use onomatopoeia as the object of the research.

Sound symbolism is a theory supporting the opinion of non-arbitrary relation between sound and concept. Linguists have different names to call this term. Abelin (1999: 16) stated in her dissertation that sound symbolism is a general term for an iconic or indexical relationship between sound and meaning, while Nordberg (1986) (in Abelin, 1999: 3), uses a name of phonestheme and defines it as "the combination of synesthetic a certain sound or sound sequences with a particular notion or a particular connotative

content." Jacobson and Waugh (1979) explains sound symbolism as

The intimacy of the connection between the sounds and the meaning of a word gives rise to a desire by speakers to add an internal relation to the external relation, resemblance to contiguity, to complement the signified by a rudimentary image.

Malkiel in Abelin (1999:3) uses the term of phonosymbolism for sound symbolism. It is about 'real-life sounds or noises' phonosymbolism analyze the ability of the sound to convey meaning. It is the pronunciation of the word reflects the sound it refers. Disregarding the difference of term used, it can be concluded that sound symbolism a theory indicating a distinct relation between sound and meaning. Since onomatopoeia is a kind of word which the sounds form related to the sounds that the word referents, the onomatopoeia is included into sound symbolism.

Some researches about the relation between sound and the concept of an object in the form of words have been conducted numerous times. The result of the research conducted by Nobile (2015) in French indicated that there is correlation of phonemes to the graphic features of acuity, continuity, curvature, regularity, and density.

Mulyadi (2008) in his research of Simbolisme Bunyi dalam Bahasa Indonesia found out that there are some relations of phoneme with emotive interjection in Bahasa such as phoneme /ε/ to represent emotive interjection of surprise or phoneme /o/ to represent emotive interjection of astonishment. Another research is conducted in 2008 by Carolis, et.al which is a further experiment of two pseudowords, *bouba* and *kiki* in Gama. The previous studies used as references in this research indicated that *bouba* is associated with round object, while *kiki* is associated with spiky object. The research resulted further indication that the phenomenon is in respect to the visual saliency of angular shapes, priming, brain activation, synaesthesia and ideasthesia. Those researches showed significantly that indeed there is a phoneme preference based on the features obsessed by the object referred. This justification gives the basic assumption to conduct this research.

In the research, the onomatopoeic words are classified into 3 (three) classifications namely onomatopoeic words based on human sounds (1), onomatopoeic words based on animal sounds (2), and onomatopoeic words based on natural sounds (3).

Onomatopoeic words based on human sounds

The onomatopoeic words in this category are based on human activity that

produce sound such as coughing, sneezing, snoring, farting, burping, chewing, laughing, etc. for example “hahaha”, “burp”, “slurp”, etc.

Onomatopoeic words based on animal sounds

The onomatopoeic words in this category are based on sound produced by various animals such as bee buzzing, bird singing, cat meowing, chicken clucking, cow mooing, dog barking, etc. for example, “meow”, “moo”, “cluck-cluck”, etc.

Onomatopoeic words based on natural sounds

The onomatopoeic words in this category are based on sound produced by collisions, bursts, strikes, machinery, and physical and natural phenomena such as bomb exploding, gunshot, knocking, etc. for example, “bang”, “boom”, “knock”, etc.

Phonetics

In linguistics, a study of speech sound is phonetics. Phonetics analyzes the sound waves released and how human’s hearing organ can accept the sound to be analyzed further by human brain. (Ladefoged, 1982: 1), and Gorys Keraf (1978) stated that phonetics is the science of language that discusses the speech sounds used in utterance and how the sound is produced by human speech organs. Clark and Yallop (1990) defined that

phonetics is a field related to how human speaks and hears and processes the utterance they accept. Further, phonetics is important to some purposes such as teaching of diction, mastering speech sound in foreign language or betterment the quality of speaks for the ones who lack in hearing.

Articulatory Phonetics

Articulatory phonetics is a study of how the vocal tract produces the sounds of language. It is the study of the way speech sounds are articulated by the vocal organs; Limberman (1977:3) used the term of physiology phonetics, a science analyzing about the physiological function of human. On the other hand, if someone wants to analyze speech sound of a language, he/she must know and understand the various and the function of mechanism of human speech

organ and the role in producing sound (Singh dan Singh, 1876: 2).

Fromkin (2003: 240) explains that production of phoneme involves the movement of air through vocal tract consisting of glottis, the opening between the vocal cords which is located in larynx, pharynx, the tubular part of throat above the larynx, oral cavity or mouth, and nasal cavity, the nose and the plumbing that connects it to the throat and sinuses.

Phonemes

Phonemes are produced by the movement of articulators to the air stream from lungs when someone articulating it. If the air stream from lungs is not intervened, then the phoneme is vowels. In converse, if there is intervention in streaming of air from lungs, then the phoneme is consonants.

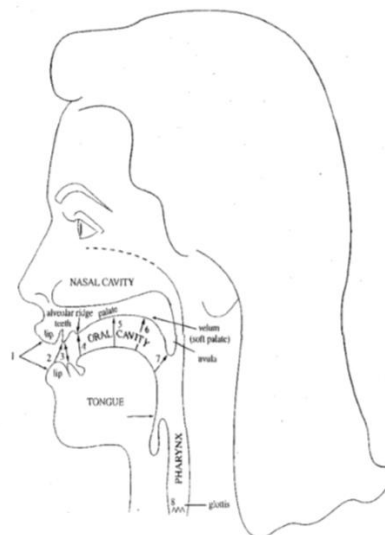


Figure 1: the vocal tracked by Fromkin (2003)

English Vowels

Vowels are phonemes produced by non-intervened air stream from human lungs. Vowels are sounds articulated without complete closure of mouth or a degree of touching of any articulators which would produce audible friction. English has 12 phonemes of vowel. Fromkin (2003: 252) pointed out that English vowels are distinguished by three ways.

1. High level of tongue. In this category, vowel is distinguished by the degree of highness of tongue. The highest raise level of tongue produces phonemes /i/, /ɪ/, /u/ and /ʊ/, thus they are called as high vowels. Lower raise level of tongue produces phonemes /ɜ/, /e/, /ə/, /ɛ/, /ɒ/, and /ʌ/, thus they are called as middle vowels. The lowest raise level of tongue produces phonemes /æ/, /a/, and /ɔ/, thus they are called as low vowels.
2. Part of tongue involved. In this category, vowel is distinguished by the difference part of tongue involved. The front part of tongue involved produces phonemes /i/,

/ɪ/, /ɜ/ and /æ/, thus they are called as front vowels. The central part of tongue involved produces phonemes /ʌ/, /e/ and /ə/, thus they are called as central vowels. The back part of tongue involved produces phonemes /ɑ/, /ɒ/, /ɔ/, /u/, /ʊ/, thus they are called as back vowels.

3. Form of lips. In this category, vowel is distinguished by the form of lips. The rounded lips produces phonemes /ɔ/, /u/, and /ʊ/, thus they are called as rounded vowels. The unrounded: /ɑ/, /ɒ/, /ʌ/, /e/, /ə/, /i/, /ɪ/, /ɜ/ and /æ/, thus they are called as unrounded vowels.

Other than those ways, English vowels are also differentiated by the duration. The duration is influenced by muscular effort of the tongue used in producing sound. The greater the great tension of the tongue muscles than its counterpart, the longer sound in duration. Long sound of the vowels is called tense which consists of phonemes /i/, /æ/, /u/, /ɔ/, /ɜ:/ and /ɑ/, while short sound of the vowel is called lax which consists of phonemes /ɪ/, /e/, /ɒ/, /ʌ/, /ə/, and /ʊ/

	Front	Central	Back	
High	[+tense] /i/ (s <i>ea</i> t) ----- [-tense] /ɪ/ (s <i>i</i> t)		/u/ (s <i>ui</i> t) ----- /ʊ/ (p <i>u</i> t)	Rounded vowels
Mid	[+tense] /e/ (s <i>ay</i>) ----- [-tense] /ɛ/ (s <i>e</i> t)	/ɜ/ (b <i>ir</i> d) ----- /ə/ (s <i>ofa</i>)* /ʌ/ (s <i>ud</i> s)*	/o/ (b <i>oa</i> t) ----- /ɔ/ (c <i>au</i> ght)**	
Low	[+tense] ----- [-tense] /æ/ (s <i>a</i> t)	-----	----- ----- /a/ (s <i>oc</i> k)**	

* don't confuse /ə/ and /ʌ/ — /ə/ is used in unstressed syllables, while /ʌ/ is in stressed syllables
 ** some speakers (including most Californians) don't have /ɔ/ in their dialect; they use /a/ instead

Figure 2: English vowels

METHODS

This is a qualitative study because this study is aimed at describing onomatopoeic words being constructed this research. This method will be flexible to answer the statement of the problems suggested in the first chapter. Besides, the data are interpreted and displayed descriptively and systematically based on the supporting theory. The strategy used in this research is case studies. In the strategy of case studies, the researcher deeply explores a program, event, activity, a process, or one or more individuals. The case(s) is bounded by time and activity, and researchers collect detailed information by using a variety of data collection procedures over a sustained period of time (Stake, 1995 as quoted by Creswell 2003: 17). The onomatopoeic words in this research takes several steps: 1). to collect Marking the onomatopoeic words

listed in the Oxford English Dictionary; 2). Selecting the onomatopoeic words containing front vowels; 3). Noting the meaning. As for the analysis, some steps are taken as follows: 1). Analyzing the manner and place of articulation the research; 2). Analyzing the visual, the movement, and the reaction produced by the object referred by the words

This study collects the English onomatopoeic word from Oxford English Dictionary (OED), because the OED is a reliable source as it is not only edited by a large group of native speakers, but it has also been continuously updated. The following is the data collection which is analyzed in the research. The researcher found 80 onomatopoeic words constructed in the Oxford English Dictionary, which distinctively indicate the significance difference in meaning as attached below:

No	Onomatopoeic words	Phonetic Transcription	Things/Activities indicated
1	Baa	/ba:/	the cry of a sheep or lamb
2	Bang	/bæŋ/	strike or put down forcefully and noisily
3	Bark	/ba:k/	the sharp explosive cry of a dog, fox, or seal
4	Beep	/bi:p/	a high-pitched sound emitted by electronic equipment or a vehicle horn
5	Bleep	/bli:p/	a high-pitched sound made by an electronic device as a signal or to attract attention
6	Boohoo	/bu:hu:/	representing the sound of someone crying noisily
7	Boom	/bu:m/	loud, deep, resonant sound e.g thunder or explosion
8	Burp	/bɜ:p/	belch after feeding.
9	Buzz	/bʌz/	a low, continuous humming or

			murmuring sound, made by or similar to that made by an insect
10	Caw	/kɔ:/	the harsh cry of a rook, crow, or similar bird
11	Chink	/tʃɪŋk/	a light, high-pitched ringing sound, as of glasses or coins striking together.
12	Chirp	/tʃɜ:p/	utter a short, sharp, high-pitched sound. of a small bird or a grasshopper
13	Clack	/klæk/	a sharp sound as of a hard object striking another
14	Clang	/klæŋ/	a loud, resonant metallic sound
15	Clap	/klæp/	strike the palms of (one's hands) together
16	Clash	/klæʃ/	strike (cymbals) together, producing a loud discordant sound
17	Click	/klɪk/	a short, sharp sound as of two hard objects coming smartly into contact.
18	Clip-clop	/klɪp-klop/	the sound of a horse's hoofs beating on a hard surface
19	Cluck	/klʌk/	a short, low sound of hen
20	Clunk	/klʌŋk/	a dull sound such as that made by heavy objects striking together
21	Cock-a-doodle-doo	/kɒkə du:dl du:/	sound made by a cock when it crows.
22	Coo	/ku:/	a soft murmuring sound of a pigeon or dove.
23	Crack	/kræk/	a sudden sharp or explosive noise.
24	Crackle	/krækl/	a rapid succession of slight cracking noises.
25	Crash	/kræʃ/	collide violently with an obstacle or another vehicle.
26	Creak	/kri:k/	a harsh sound when being moved or when pressure is applied.
27	Crisp	/krɪsp/	a wafer-thin slice of potato fried until crisp and eaten as a snack.
28	Croak	/krɒk/	a characteristic deep hoarse sound made by a frog or a crow.
29	Crow	/krəʊ/	the cry of a cock.
30	Crunch	/krʌntʃ/	crush (a hard or brittle foodstuff) with the teeth, making a loud grinding sound. .
31	Ding	/dɪŋ/	a ringing sound e.g. a bell
32	Dong	/dɒŋ/	a deep resonant sound e.g. a bell
33	Fart	/fɑ:t/	wind from the anus
34	Honk	/hɒŋk/	Sound made by a goose or ship's horn
35	Jangle	/dʒæŋgl/	a ringing metallic sound
36	Jingle	/dʒɪŋgl/	a light ringing sound such as that made by metal objects being shaken together
37	Knock	/nɒk/	strike or thump together or against something

38	Moo	/mu:/	Sound of cows
39	Miaow	/mjao/	Sound of cats
40	Pat	/pæt/	touch quickly and gently with the flat of the hand
41	Phew	/fju:/	Exhaling for relief
42	Ping	/pɪŋ/	an abrupt high-pitched ringing sound e.g. sound of a small bell
43	Plop	/plɒp/	a short sound as of a small solid object dropping into water without a splash.
44	Poof	/pɒf/	describing a sudden disappearance or expressing contemptuous dismissal.
45	Ring	/rɪŋ/	Sound of telephone
46	Roar	/rɔ:/	Lion growling
47	Screech	/skri:tʃ/	a loud, harsh, piercing cry or sound.
48	Slap	/slæp/	hit or strike with the palm of one's hand or a flat object
49	Slurp	/slɜ:p/	eat or drink with a loud sucking sound
50	Smack	/smæk/	a loud, sharp sound made by or as by such a blow
51	Snap	/snæp/	break with a sharp cracking sound
52	Sniff	/snɪf/	draw air audibly through the nose
53	Snore	/snɔ:/	a snorting or grunting sound in a person's breathing while they are asleep
54	Snort	/snɔ:t/	an explosive sound made by the sudden forcing of breath through the nose
55	Splash	/splæʃ/	strike or move around in water, causing it to fly about
56	Splosh	/splɒʃ/	strike or move around in water, causing it to fly about
57	Squeak	/skwi:k/	A short, high-pitched sound or cry
58	Swirl	/swɜ:l/	move or cause to move in a twisting or spiralling pattern.
59	Swoop	/swu:p/	seize with a sweeping motion
60	Swoosh	/swu:ʃ/	a sudden rush of air or liquid
61	Tee hee	/ti:hi:/	a titter or giggle
62	Thud	/θʌd/	a dull, heavy sound, such as that made by a large object falling to the ground
63	Thwack	/θwæk/	strike forcefully with a sharp blow
64	Thump	/θʌmp/	a dull, heavy blow or noise of heavily hit, especially with the fist or a blunt implement
65	Tick	/tɪk/	a regular short, sharp sound, especially that made every second by a clock or watch
66	Ting	/tɪŋ/	a sharp, clear ringing sound e.g. a small metal object hitting something made of metal, glass, etc.
67	Tweet	/twi:t/	the chirp of a small or young bird
68	Twinkle	/twɪŋkl/	shine with a gleam that changes

69	Vroom	/vrʊ:m/	constantly from bright to faint the roaring sound of an engine or motor vehicle
70	Whack	/wæk/	Strike forcefully with a sharp blow
71	Wheeze	/wi:z/	Rattling sound as a result of obstruction in the air passages.
72	Whirr	/wɜ:z/	Something rapidly rotating or moving to and fro
73	Whistle	/wɪsl/	A clear, high-pitched sound made by forcing breath through a small hole between partly closed lips, or between one's teeth.
74	Whoomph	/wɒmf/	A loud muffled sound
75	Whoosh	/wʊ:ʃ/	Move quickly or suddenly and with a rushing sound.
76	Woof	/wɒf/	The barking sound made by a dog.
77	Zap	/zæp/	a sudden burst of energy or sound, or other sudden dramatic event.
78	Zing	/zɪŋ/	Move fast with a quiet high sound
79	Zip	/zɪp/	move or propel at high speed
80	Zoom	/zu:m/	move or travel very quickly.
81	Zzz	/zzz/	sleeping sound

RESULTS AND DISCUSSION

In the research, it is found that there are contributions of front vowels and back vowels in some particular meaning components that describe characteristics of the object referred by the onomatopoeic words constructed in OED. It is also found that some vowels are not productive in contributing particular non-acoustical meaning components. Therefore, the next discussion only discusses about vowels that contribute significant difference in meaning.

Front vowels

Based on the process of articulation, front vowels are articulated by the raising or

lowering front part of the tongue. In the research, front vowels are divided into high front tense unrounded vowel, high front lax unrounded vowel, and low front tense unrounded vowel.

High front tense unrounded vowel

This sound is represented by /i/ and articulated by rising the front part of tongue (but not the tip) until it almost touches the front part of palatal. The space of mouth becomes narrow and small because the space of lips is almost close. This sound produced by the great tension of the tongue muscles than its counterpart. The consequence is the sound is longer in duration.

Table 1: Onomatopoeic words involving high front tense unrounded vowel

Data number	Onomatopoeic words	Phonetic Transcription	Sound or Activity Referred	Meaning Component
4	Beep	/bi:p/	a high-pitched sound emitted by electronic equipment or a car horn	Small equipment or car
66	Tweet	/twi:t/	the chirp of a small or young bird	Small bird
70	Wheeze	/wi:z/	Rattling sound as a result of obstruction in the air passages.	Narrow passage

From the source of data, it was found that onomatopoeic words which employ this phoneme contain some particular non-acoustical meaning components describing the size of the object producing the sound, namely “small” and “narrow”. The evidence was found in the cases as shown.

From the examples above, the phoneme of high front vowel /i:/ plays a part in describing the size of the object. The /i:/ sound in “beep” indicate the smallness of the equipment producing the sound. The similar case is also found in “tweet”, which describes sound of small bird. The sound can be compared with onomatopoeic word involving back vowel such as “honk” /hɒŋk/ which is used to describe sound produced by a ship’s horn or by a goose. Empirically, ship is bigger in size than a car, while a bird producing “tweet” such as a canary is bigger in size than a goose. Another description of size indicated by /i/ is “narrow”. The evidence can be proved by “wheeze” /wi:z/, a sound of air flows through an air passage. The “narrow-ness” in the sound describes the size of the passage

hole which causes high pitch sound of air as it flows out of the passage.

The sense of “small” and “narrow” sense of the sound is expectedly influenced by the high pitch-ness of the sound which is caused by the raising tongue and narrowness space of mouth when articulating the sound. High-pitch sound is conventionally and intuitively associated with such characteristics of an object.

High front lax unrounded vowel

The articulating process of front close lax unrounded vowel is similar with high front tense unrounded vowel, those are articulated by slightly lowered the front part of tongue. This sound is shorter than high front tense unrounded vowel, which is why it called lax. This sound is represented by /ɪ/. From the source of data, it was found that onomatopoeic words which employ this phoneme contain non-acoustical meaning components describing the size of the object producing the sound, namely “thin”, “small”, and “fast.” The evidence was found in the cases as shown.

Table 2: Onomatopoeic words involving high front lax unrounded vowel

Data number	Onomatopoeic words	Phonetic Transcription	Sound or Activity Referred	Meaning Component
27	Crisp	/krɪsp/	a wafer-thin slice of potato fried until crisp and eaten as a snack.	Thin snack
31	Ding	/dɪŋ/	a ringing sound e.g. a bell	Small bell
36	Jingle	/dʒɪŋɡl/	a light ringing sound such as that made by metal objects being shaken together	Small objects
68	Twinkle	/twɪŋkl/	shine with a gleam	Fast gleam

From the examples above, the phoneme of high front vowel /ɪ/ plays a part in describing the size of the object producing the sound. The “smallness” sense in the phoneme is proved by “ding” /dɪŋ/, a ringing sound e.g. a bell, and “jingle” /dʒɪŋɡl/, a light ringing sound such as that made by metallic objects being shaken together. /dɪŋ/ indicates the sound produced by a small bell. It can be compared by /dɒŋ/ which indicates the sound produced by a bigger ball. The similar case is also found in /dʒɪŋɡl/ which the phoneme of /ɪ/ plays a role describing the small size of the metallic objects producing “jingle” sound. It can be compared with /dʒæŋɡl/ which is an onomatopoeic word describing sound of “bigger” metallic objects.

The phoneme /ɪ/ also plays a part in describing the sense of “thinness” as shown in “crisp” /krɪsp/ and “ping” /pɪŋ/. /krɪsp/ indicates the sound produced when biting a dry snack such as potato chips. Empirically, potato chip is thin than, for example, Indonesian chip, *kerupuk* which sounds /krʌʊk/ when it is bitten.

Another sense described by the phoneme is “fast” as in “twinkle”/twɪŋkl/ which describes the sound of gleaming. The “fastness” refers to the process of gleaming: fast and constantly changes from bright to faint.

The sense of “thin” and “fast” sense of the sound is expectedly influenced by the high pitch-ness of the sound which is caused by the raising tongue and narrowness space of mouth when articulating the sound. High-pitch sound is conventionally and intuitively associated with such characteristics of an object.

Low front tense unrounded vowel

When articulating this sound, both sides of lip are little bit pulled aside. This sound is represented by /æ/. From the source of data, it was found that onomatopoeic words which employ this phoneme contain some particular non-acoustic meaning components describing characteristics which are “bigger”, “wider” and “thicker” than the ones described by high front vowels. The evidence was found in the cases as shown.

Table 3: Onomatopoeic words involving low front tense unrounded vowel

Data number	Onomatopoeic words	Phonetic Transcription	Sound or Activity Referred	Meaning Component
23	Crack	/kræk/	a sudden broke of object such as wood.	Thick object
55	Splash	/splæʃ/	strike or move around in water, causing it to fly about	Wide or big object
77	Zap	/zæp/	a sudden burst of energy or sound, or other sudden dramatic event.	Big object

From the examples above, the phoneme of high front vowel /æ/ plays a part in describing the size of the object producing the sound. The “big” sense in the phoneme is proved by “zap” /zæp/, a sound describing something moving in high speed. The phoneme /æ/ intuitively impresses the bigger size of the moving object if it compared with “zip” /zɪp/.

“Splash” /splæʃ/, the sound describing an object falling into water, also proves the superior meaning of the sound. The phoneme /æ/ of the onomatopoeic word impresses the bigger size of the object or the wider area of the water where the object falls into than the ones described by “splish” /splɪʃ/.

Another sense indicated by this sound is “thick” which is proved by “crack” /kræk/ which is an onomatopoeic word describing sound of a sudden broke of object such as wood. It can be compared with “crisp” /krɪsp/, sound of a sudden broke of a potato chip when it is bitten. Empirically, a wood is thicker than a potato chip.

The sense of “big”, “thick” and “wide” sense of the sound is expectedly influenced by the low pitch-ness of the sound which is caused by the lowering tongue when articulating the sound. Low-pitch sound is conventionally and intuitively associated with such characteristics of an object.

Central vowels

Based on the process of articulation, central vowels are articulated by the raising or lowering central part of the tongue. In the research, middle vowels are divided into middle central tense unrounded vowel, middle central lax unrounded vowel, and middle central lax unrounded vowel. From the source of data, it was found that the phonemes included this class do not show any distinctive meaning in the onomatopoeic words which employ the phonemes.

Back vowels

Based on the process of articulation, back vowels are articulated by the raising or lowering back part of the tongue. In the

research, back vowels are divided into back high tense unrounded vowel, back high lax rounded vowel, back middle tense rounded vowel, back low lax rounded vowel, and back low tense rounded vowel

These vowels are articulated by lowering the tongue. The space of mouth opens widely because the upper jaw moves up, away from the lower jaw. The air stream also flows freely because no articulators intervene it. Most of the back vowels are rounded which are articulated by forming a rounded mouth. Back vowel consists of. From the data analyzed, the senses of the diminutive are found in the onomatopoeic employing front vowels. They include: big, heavy, hard, dull.

CONCLUSION

Language is formed by many aspects. One of the aspects is phonological one. This aspect plays a role to determine the meaning of words used in a language based on the sound. Phonological aspect can be used to investigate the meaning from the sound it employs. The sounds investigated in this research are vowels and consonants. One of kinds of words is onomatopoeic word; the sound of word represents the sound it refers to. This kind of word is considered by the researcher as suitable words to be investigated based on the sounds. From this study, it was found that a particular sound in nature can be composed of more than one sound component. Each sound component has

different degree of significance or saliency in perception.

A certain vowel influence a certain meaning of onomatopoeic words. There are two kinds of vowel observed in this research: front vowels and back vowels. The results of investigation show that mostly front vowels dimmed the sense of the words which employ the sounds. The diminutive sense of the words is influenced by the front vowel's manner of articulation. The senses included into diminutive which are found from the investigation are *small, thin, light, sharp* and *high resonance*. In converse, back vowels' manner of articulation effect the augmentative meaning of the onomatopoeic words. The senses included into augmentative which are showed by the results are *big, and low resonance*.

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