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Sound Symbolism: Challenging Saussure's View on the Arbitrary Nature of the Sign

Freya Young

Over 100 years ago Swiss linguist Ferdinand de Saussure proposed that, aside from onomatopoeia, there is no logical relationship between words and their meanings. This article aims to gather and analyse the mounting evidence that has emerged over the last century that overrules this assertion. From the books we escape to, to the inescapable marketing language surrounding us; from the names we call our children, to how children learn language: sound symbolism pervades everyday life in more ways than is probably realised. It becomes apparent that the mind's perception of meaning may be influenced by the sounds of words themselves. By consequence, it seems that some of the roots of language may not be as illogical as Saussure thought; this article considers the possibility of there being a neurological explanation behind 'sound symbolism'.

The relationship between sound and meaning is arbitrary, proposed Ferdinand de Saussure at the turn of the twentieth century. However, in recent decades it has been advantageous to consider from a cognitive linguistic perspective, rather than philosophically, how language mimes the world.[1] Sound symbolism is the term 'widely used and recognized by linguists to represent the non-arbitrary quality of language'.[2] Contrary to what Saussure declared, there are many instances where sound does seem to equate with sense. Accordingly, 'sound symbolism plays a considerably larger role in language than scholarship has hitherto recognised'[3], and there is now considerable cross-cross-linguistic data to prove this. An examination of this evidence will establish the role that sound symbolism plays in language in order to discuss how far Saussure's views on the arbitrariness of the sign are challenged.

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[1] F. Ungerer & H-J. Schmid. *An introduction to cognitive linguistics* (Harlow; New York: Longman, 2006).

[2] I. E. Reay. 'Sound symbolism' in Keith Brown (ed.). *Encyclopaedia of Language and Linguistics, 14 vols.* 11 (Oxford: Elsevier, 2006), 531–9 (531).

[3] L. Hinton, J. Nichols & J.J. Ohala (eds.) *Sound Symbolism.* (Cambridge: Cambridge University Press, 1994), 1.

Saussure proposed that a fundamental feature of human language is the arbitrary connection between referents and their labels, the signifier and the signified. An appropriate argument for this is that if referents were systematically labelled then phonological differences across languages would be rare. Plainly, concepts are labelled with very different phonologies: bird, oiseau, Vogel, pájaro, lintu – there is no inherent 'birdness' in the sound of these words that all refer to the same creature. For this reason Saussure could be justified in saying that speakers of languages agree on labels without creating any systematic relationship between them and their referents. If words stood for pre-existing universal concepts they would have exact equivalents in meaning from one language to the next, yet this is not so. The shared experience of the world is reflected very differently depending on a speaker's language, which creates, or is due to, very different outlooks on the world.

Yet, Ungerer and Schmid state that the arbitrariness between signifier and signified is a 'rigid view' that recent advances in semiotics have attacked with criticism.[4] Allott asks, 'If any word can mean any thing, how are the established phenomena of cross-linguistic sound symbolism to be explained?'[5] So many instances of sound symbolism across languages cannot be attributed to coincidence. Nygaard et al. prove that speakers of one language can systematically judge the meaning of words in another language they are not familiar with during spoken language processing.[6] Non-arbitrary correspondences between sound and meaning had an implicit effect on the accuracy and efficiency that English speakers had in learning the equivalent of Japanese words. It is apparent that underlying cognitive semantic principles affect perceptions of words, so let us look more closely at how the phenomenon of sound symbolism contributes to this.

Speakers may have a preference for some words and not for others, but for what reason? Is the word 'bulbous' unpopular due to its sound or its meaning? It is often hard to separate the two. However, poet Philip Wells demonstrates that sound symbolism plays an important role in the creation of good or bad connotations with his opinion on the word 'pulchritude': 'it violates all the magical impulses of balanced onomatopoeic

[4] Ungerer & Schmid. *An introduction to cognitive linguistics*, 300.

[5] R. Allot. *The Natural Origin Of Language: The Structural Inter-relation of Language, Visual Perception and Action.* 1st ed. (Xlibris. 2012) [electronic resource].

[6] L.C Nygaard, E.A. Cook & L.L Namy, 'Sound to meaning correspondences facilitate word learning'. (2009) 112 *Cognition*, 181-186.

language - it of course means 'beautiful', but its meaning is nothing of the sort, being stuffed to the brim with a brutally latinate cudgel of barbaric consonants.'[7] Despite meaning 'beauty', he dislikes the word because of the connotations the sounds create mentally. Claiming words have an arbitrary connection to their meaning is therefore problematic. Humans naturally attach feelings to sounds, so the division of signifier and signified is not quite as simple as Saussure suggested; every speaker has a personal relationship with their language.

The argument is reduced to naturalism – sounds and concepts 'linked automatically in the minds of speakers' – versus conventionalism, which is Saussure's assertion of arbitrariness.[8] Saussure determined that all words in a language are agreed by the speech community to represent their signified, but bear no connection to it (example: the concept of a feathered winged creature referred to as 'bird'), aside from the exceptions of onomatopoeia (sound symbolism determined by its nature, such as 'tweet tweet') and interjections. However, this dualistic distinction between 'exceptions' and 'everything else' is too condensed. It is not the case that onomatopoeia and interjections are the only cases of words imitating concepts. Reay states 'sound symbolism is said to be present when a speech sound seems to correlate with an object in the real world.'[9] We shall see that just as sound symbolism can make a word unpopular amongst speakers, so too can the role of sound symbolism within language influence what we call our children, how we interpret branding, and even how we acquire language.

Saussure and Reay's differing definitions highlight that the topic of 'sound symbolism' is broad. So to clarify, it would be useful at this point to consider the four branches of sound symbolism outlined by Hinton et al.[10]
Corporeal is when sound and meaning are completely linked for example a cry of pain expressing the speaker's internal state. A reaction is automatic, but is filtered through language before it is even finished, so we even cry out in our own language: 'Aïe!' (French) 'Āiyā!' (Mandarin) Oi! (Russian) Ouch! (English).[11] Imitative represents sound

[7] D. Crystal, 'The Week in Books' *The Guardian* (2009) [Online] Available at: http://www.theguardian.com/books/2009/jul/18/ugliest-words-michael-jackson-biographies [Accessed: 19-04-15].
[8] Hinton, Nichols, & Ohala (eds.) *Sound Symbolism*, 5.
[9] Reay, 'Sound symbolism', 531–9.
[10] Hinton, Nichols, & Ohala (eds.) *Sound Symbolism,* 5.
[11] J. Harbeck, 'Why pain is expressed differently in different language' *The Week* (2013) [Online] Available at: http://theweek.com/articles/456736/why-pain-expressed-differently-different-languages [Accessed: 19th April 2015].

patterns outside of conventional speech, such as 'bow-wow' for a dog's bark. Despite differing cross-linguistic representations, the signifier attempts to imitate the signified. Saussure's idea of onomatopoeia seems most similar to these two categories of corporeal and imitative sound symbolism.

On the other hand, Saussure fails to broach the subject of 'phonaesthesia', that is when certain phonetic elements seem to bear a semantic meaning. Hinton et al. recognise this as synthetic and conventional sound symbolism, which are 'further along the scale toward arbitrariness than the previous two types' as shown by the number of exceptions.[12] Nevertheless, in 90% of language, high front vowels symbolized the diminutive, conveying small size, unimportance or a term of affection.[13] Jesperson also observed that the high, front vowel /i/ has a diminuitive force as in 'wee, teeny' whereas the low back vowel /ɑ/ has an augmentive force as in 'vast, large'.[14] In synthetic sound symbolism the sound of a word agrees with the concept's size, while conventional sound symbolism defines when certain sound clusters become analogically associated with meaning. Bloomfield proposes that a word can have a union of a sound and its meaning, based on 'hap-hazard favouritism'.[15] Accordingly, this correlation may be prompted 'by a vague feeling of 'aptness' within a given speech community. For example, words with an initial tw- may be felt to express the concept of plucking or tweaking in English as in tweak, twang, twinge, twist, twiddle.'[16] Towards this end of the 'scale' of sound symbolism, away from onomatopoeia, it is evident that phonaesthesia involves an element of the human mind creating links between sound and meaning 'where such links might not be intrinsic or universal.'[17] This alludes again to the idea of speakers having a personal relationship with language. It is therefore not farfetched to claim that speakers create cognitive links between the meaning of words and the phonetic sounds within them.

Because some sounds can be directly linked to meaning, sound symbolism is very common in poetry, for sound effects in comic strips and in literature for the names of

[12] Hinton, Nichols & Ohala. (eds.) *Sound Symbolism*, 4.
[13] R. Ultan, 'Size-Sound Symbolism' in Joseph Greenberg, (ed.) *Universals of Human Languag*e, Volume 2: Phonology, (Stanford: University Press, 1978).
[14] Reay, 'Sound symbolism', 534.
[15] L. Bloomfield 'On assimilation and adaptation in congeneric classes of words', (1895) 16 *American Journal of Philology*, 409.
[16] Reay. 'Sound symbolism', 531.
[17] Hinton, Nichols & Ohala. (eds) *Sound Symbolism*, 6.

invented characters or items. For example, the 'balls' in J.K. Rowling's Quidditch (snitch, quaffle, bludger) each sound like their role: the small 'snitch' features the diminutive phoneme /i/, the 'quaffle' sounds big and round with its open mid-back rounded vowel and, lastly, the clash of voiced consonants in 'bludger' sounds violent. Lupyan and Casasanto state that 'Meaningless words promote meaningful categorization'.[18] In their experiment, 'fooves' and 'crelches' were systematically matched to sound-appropriate descriptions: 'fooves' as large and fat and 'crelches' as pointy and narrow, which seemingly reflects sound-to-shape correspondences. With this in mind, for poetry to be effective, the sound must echo the sense. Lewis Carroll manipulates sound symbolism in 'Jabberwocky' by exploiting the arbitrary nature of the signifier-signified relationship. His signifiers, such as 'brillig', 'slithy', and 'whiffling', are empty but naturally the reader tries to assign signifiers to them based on the sound of the word. 'Slithy' is supposed to be a blend of phonological neighbours, 'lithe and slimy', and becomes associated with the negative connotations that many sl- prefixed words possess. Also, it is framed as an adjective, in other words, where the reader would expect a real adjective to be. Consequently the word's meaning becomes restricted to being descriptive, rather than having the naming purpose of a noun for instance. Thus the syntax also aids reader interpretation. Words and their meaning do not require a conventional pairing, but rather the 'meaning' can be how a word form affects a user's cognitive processes.

'Of course it must,' Humpty Dumpty said with a short laugh: 'My name means the shape I am - and a good handsome shape it is, too. With a name like yours, you might be any shape, almost.'[19]

Lewis Carroll further demonstrates his awareness of sound symbolism, implying that the sound of Humpty Dumpty's name matches him as a referent. The *ump* sound is commonly associated with roundedness (lump, hump, stump) whereas Alice, the egg says, could almost be any shape. With 'almost', is he referring to the fact that, despite not knowing exactly what she looks like, we know Alice must be a girl? Sound symbolism seems to be a factor in determining whether a name is masculine or feminine.

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[18] G. Lupyan & D. Casasanto 'Meaningless words promote meaningful categorization', (2014) *Language and Cognition*, 2.

[19] L. Carroll, Transcribed from: Carroll, Lewis, 1832-1898, 'Through the Looking-Glass, and What Alice Found There' in *Alice's Adventures in Wonderland and Through the Looking-Glass and What Alice Found There: The Centenary Edition*: Edited with an Introduction and Notes by Hugh Haughton] (London: Penguin, 1998) [electronic resource].

Pitcher and McElligott, using a ten year dataset of the most popular British, American, and Australian names, suggest that naming preferences are based on synthetic sound symbolism, whereby male names ('John') sound larger and female names smaller ('Emily') because phonemes are related to size.[20] Even cross-linguistically in a prosodic language such as French, it is noticeable that four of the top ten girls names of 2015 (Louise, Lilou, Camille, and Juliette) popularise small phonemes like /i/ too. Feminine names are also noticeably longer; Jade is the only of the ten to have less than two syllables. Further, all ten names end in a vowel, /a/ being the popular ending (Emma, Léa, Chloé, Lola).[21] Similarly, in English /a/ is also the sound at the end of the top 6 female baby names of 2015. [22] There is no denying that fronted vowel sounds /i/ and /a/ have strong connotations with femininity. Contrarily, six of the top ten UK boys names of 2015 end in the nasal sound /n/ or /m/. Noah and Elijah are exceptions, ending in feminine vowel sounds. However, arguably, with Noah this is counter-balanced by the nasal sound featuring at the beginning. Cutler, McQueen & Robinson suggest the differences are systematic.[23] Female names contain /i/ more than male names possibly because, just as in 'snitch', this vowel is associated with concepts 'small, sharp and bright', which are 'desirable attributes of females'. [24] This can be linked to Ohala's proposal of the Frequency Code, which deems that pitch influences perception.[25] Having a small vocal tract gives a higher pitched sound, which is characteristic of smaller, less threatening and more feminine beings. The fact that Cutler et al.'s study is 25 years old but the findings still remain accurate seemingly stands to prove that, despite the trends of names that change every year, their general sound symbolism is sustained because of the gender representations.

If common first names can be sound symbolic, then this of course radiates to the universal language of branding. In modern times of globalisation, brands must not only

[20] B. Pitcher, A. Mesoudi & A. McElligott, 'Sex-Biased Sound Symbolism in English-Language First Names'. (2013) 8:6 *PLoS ONE*.
[21] Signification Prénom, Prénoms bébé [Online] Available at: http://www.signification-prenom.com/prenom-bebe.html [Accessed 19-04015].
[22] Baby Center, Popular Baby Names for 2015. [Online] Available at: http://www.babycenter.com/popularBabyNames.htm?year=2015 (2015) [Accessed 19-04-15].
[23] A. Cutler, J. McQueen & K. Robinson, 'Elizabeth and John: sound patterns of men's and women's names' (1990) 26 *Journal of Linguistics*, 471-82.
[24] Ibid, 480.
[25] J.J.Ohala 'An ethological perspective on common cross-language utilization of F0 of voice' (1984) 4 *Phonetica*, 1-16.

ensure their brand name is not wrongfully a meaningful word in another language but also ensure the product or brand name *sounds* true to its attributes. Klink proved that sound symbolism can cause a brand name to sound masculine or feminine, which he proves to be of extreme importance.[26] In accordance with the Frequency Code, preferences for pitch in brand names are gender dependent. Toiletry brands with high pitched vowels such as 'L'Oreal Elvive' are therefore favoured by women, while men preferred low pitched vowels and voiced consonants such as in 'Rightguard'. Thus, perceptions of phonetic segments are influencing people's judgments of preference towards the brand. The match between the brand's sound and the product's attributes (such as Dettol or Clorox for a hard working products) therefore is very much influenced by sound symbolism and this is 'remarkably stable across languages' (English, French, Spanish, and Chinese) demonstrated Shrum et al.[27] This adds to the growing evidence that sound symbolism affects marketing. When the concepts that come to mind with the sound of the brand name match the attributes of that product, it is proven that the preference for the product is increased. Because this is possible, this denies Saussure's theory that the signified bears no natural connection to the signifier.

Furthermore, Jurafsky investigated 'why ice-cream sounds fat and crackers sound skinny', noting that ice cream names such as 'Rocky Road', 'Jamoca Almond Fudge', 'Chocolate', 'Caramel', 'Cookie Dough' or 'Coconut' contain back vowels, while cracker names favour fronted vowels: 'Cheese Nips', 'Cheez-It', 'Wheat Thins', 'Pretzel thins', 'Ritz', 'Krispy', 'Triscuit' and 'Ritz bits'.[28] Just as in feminine names, the /i/ vowel sound continues to be a consistent feature of lighter items. Correspondingly, Yorkston & Menon judged that 'Frosh' would be a more popular ice-cream name than 'Frish', which proved true amongst participants.[29] It has been shown that back vowel sounds are associated with concepts that are heavier, thicker and richer in comparison to brand names with front vowel sounds. Ohala's Frequency Code is not conclusive – 'vanilla' is without a back vowel and yet is the most popular ice cream – nevertheless it successfully

[26] R.R. Klink 'Creating brand names with meaning: The use of sound symbolism' (2000) 11:1 *Marketing Lett,* 5–20.

[27] L.J. Shrum, T.M. Lowrey, D. Luna, D.B Lerman, L. Min 'Sound symbolism effects across languages: Implications for global brand names '(2012) 29:3 *International Journal of Research in Marketing*, 275, 278.

[28] D. Jurafsky, 'Why Ice Cream Sounds Fat and Crackers Sound Skinny' (20130 [Online]. Available at: http:// http://alumni.stanford.edu/get/page/magazine/article/?article_id=63151 [Accessed 19-04-15].

[29] E. Yorkston & G. Menon 'A sound idea: phonetic effects of brand names on consumer judgments', *Journal of Consumer Research* (2004) 31, 43–51.

displays the trend of synthetic sound symbolism habitually appearing in everyday life, being used to identify product information or make gender judgements. Letter combinations are being consistently associated with concepts such as size, weight, speed and rigidity more frequently than chance could allow, states French.[30]

Köhler's classic experiment from 1929 could contribute towards an explanation. Conducted in Spanish, but proven to be appropriate to many languages, it was shown that there is a non-arbitrary inclination to associate certain sounds with certain shapes. The consonants in a non-meaningful word like 'takete' are obstruents obstructing airflow, so the tendency is to perceive this word as harder and sharper. Contrarily, the consonants in 'baluba' (later 'maluma' in his 1947 experiment) are sonarants, so are visalised as softer and smoother. Hence when asked to give these two labels to a spiky shape and a curved edged shape, the overwhelming majority named the spiky shape 'takete' and the curved shaped 'baluba'.[31]

Then again, could it be that the shapes of the letters in the words are just as influential as the sound? Ks and Ts are spiky, while Bs and Us are round. In fact, those who are not yet able to read have been shown to be sensitive to Köhler-type shape-sound symbolism too, so is language acquisition also influenced by sound symbolism? Infants aged 14 months learning Japanese were taught two word labels then tested whether they 'encoded these labels in a preferential looking procedure'. [32] Half of the infants learnt sound symbolic labels (as rated by adults), while the other half learnt labels that were mismatching in sound and form. The latter was predicted to be harder to learn. As a result, when the word and object symbolically matched the child would look at the correct signified more often, suggesting that sound symbolism improves attainment of mappings between signifier and signified. Peña, Mehler, & Nespor how further evidence of sound symbolism: 4-month-olds assigned the lower pitch of /o/ or /a/ to the large shapes and high-pitched sounds of /i/ or /e/ to the smaller shapes.[33] Thus, systematic mapping of sound to shape and size can be observed even during early childhood.

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[30] P.L French 'Toward an Explanation of Phonetic Symbolism' (1977) 28 *Word*, 305-22.
[31] W. Köhler, *Gestalt psychology: An introduction to new concepts in modern psychology* (New York: Liveright Publishing Corporation, 1929/1947).
[32] M. Imai, M. Miyazaki, H.H. Yeung, S. Hidaka, K. Kantartzis, H. Okada, 'Sound Symbolism Facilitates Word Learning in 14-Month Olds' (2015) 10:2 *PLoS ONE*, 3.
[33] M. *Peña*, J. *Mehler*, & M. *Nespor* 'The Role of Audiovisual Processing in Early Conceptual Development' (2011) 22:11 *Psychological Science,* 1419-1421.

Additionally, the words that children often learn very early are onomatopoeic sounds animals make such as 'moo'.[34] Sometimes they mistakenly attribute these onomatopoeic noises to the animal's name, for example referring to a sheep as 'baba'. How language is learnt is often discussed in terms of linking referents to forms based on external events. Associating words and referents at this age takes effort because they have little experience, so it is proposed that they rely on sound symbolism between speech and visual input when word mapping.

But this mapping can be applied in adulthood when sound symbolism can provide adult learners with 'a clue to understand the meaning of an unknown word', state Parault & Schwanenflugel.[35] As evidence has shown, because sound symbolism carries meaning, it it is more than just phonology. Yet, nor can it be said to be morphology because the relationship between sound and meaning 'is not as strong or as stable.'[36] The meaning of of sound-symbolic words is accurately judged faster than for arbitrary words.[37] Just as humans benefit from this close relationship of phonetics to meaning, so too do nonhuman primates such as chimpanzees, state Ludwig, Adachi, & Matsuzawa, remarking a consistent mapping of high pitched sounds to light, small and spiky features.[38] So rather than a linguistic or cultural phenomenon, sound symbolism seems an innate primate sensory feature. Accordingly, Westbury posits that the relation between obstruents and sonarants being visualised differently has a 'psychological reality' so should be discussed from a brain-based point of view.[39] And since sound-shape shape mappings are problematic for those with brain injuries or cognitive disorders, the reasons behind sound symbolism do seem to be neurological. Thus, the extensive amount of scientific evidence now available supports that sound symbolism is more than likely a process going on in the brains of all primates, explaining why it is apparent in cross-linguistic studies.

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[34] L. Jeffries, *Meaning in English: An Introduction to Language Study* (Basingstoke: Palgrave, 1988).
[35] S. Parault & P. Schwanenflugel 'Sound-symbolism: a piece in the puzzle of word learning', *Journal of* (2006) 35 *Psycholinguistic Research,* 329–51.
[36] Ibid.
[37] Hinton, Nichols & Ohala. (eds.) *Sound Symbolism*, 11.
[38] VU. Ludwig, I. Adachi, T. Matsuzawa, 'Visuoauditory mappings between high luminance and high pitch are shared by chimpanzees (*Pan troglodytes*) and humans' (December 2011) *Proc Natl Acad Sci USA.*
[39] C. Westbury 'Implicit sound symbolism in lexical access: evidence from an interference task' (2005) 93 *Brain and Language*, 10–19.

With names and brands a routine feature of our life, sound symbolism is more pervasive than we may realise. The mass of proof demonstrates scientifically the cognitive reasons behind what was before just a feeling for speakers, or dismissed altogether. But, if sound symbolism is so helpful for language acquisition as is suggested, then why is it that more symbolic instances are not present within language? Monaghan et al. propose that sound symbolism gives an advantage for learning categories of sound-shape mappings but does not assist in learning *individual* word meanings.[40] These results are consistent with the limited presence of sound symbolism in natural language. While clusters can be identified, sound symbolic words do not make up a large proportion of our authentic day-to-day vocabulary.

It has been shown, however, that sound symbolism does play more of a role in language than 'exceptions' of onomatopoeia and interjections as Saussure believed. Monaghan et al. agree with the point made earlier that initially learnt language is more sound symbolic, but on the other hand point out that later language incorporates arbitrariness 'to facilitate communicative expressivity and efficiency.' [41] They claim that the forced-choice based sound symbolism tests are restrictive as the shapes and phonology may be unnaturally emphasised. This relates to how Saussure would most likely defend his position. He would disagree that it is due to an innate neurological basis that we attribute two differing shapes with sound symbolic names, arguing that 'kiki' and 'bouba' are signs limited in value. A sign, according to Saussure, is determined not by itself, but by what surrounds it. Signification is independent, but value is interdependent. Thus 'takete' and 'baluba' only have value because they are in direct opposition, and their forms conflict. If 'baluba' was taken out of the experiment and participants were asked to name the spiky shape, it is very unlikely they would name it 'takete' or even another name packed with obstruents. Similarly, if the experiment included more shapes and more names to choose from, it is unlikely that these two shapes would still be labelled 'takete' and 'baluba'. The mind can only grasp an idea by distinguishing it from something it is not: 'in language there are only differences', stated Saussure.[42]

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[40] P. Monaghan, K. Mattock, P. Walker 'The role of sound symbolism in language learning' (2005) 38:5 *Journal of Experimental Psychology: Learning Memory, and Cognition*, 1152-1164.

[41] P. Monaghan, R.C. Shillcock. M.H. Christiansen, S. Kirby, 'How arbitrary is language?' (2014) 369 (1651) *Philosophical Transactions B: Biological Sciences*, 1.

[42] F. De Saussure, (translated and annotated by Wade Baskin from 1916 edition), Course in general linguistics (edited by Charles Bally and Albert Sechehaye; with the collaboration of Albert Riedlinger), (London: Fontana, 1974).

The problem is that 'value' cannot ever be disregarded entirely. Together signs limit each other; the intertwining of our language and our culture causes us to make associations that we cannot ever truly abandon. Saussure's notion of value is not just meaning, it is the sign as a whole. His theory that the whole sign is like a sheet of paper with thought and sound as the front and back, distinguishable but not separable, is seriously challenged by sound symbolism because, at least in some cases, meaning lies *within* the sound itself: 'Of course the drive to make sound match sense or sense match sound may only be an illusion, but it is an illusion that is real enough for the users of language and a dynamic force.'[43]

This essay has aimed to demonstrate the recent cognitive evidence showing that sound symbolism does act as a force present in language with a neurological explanation that challenges Saussure's arbitrariness of the sign but does not entirely threaten it. Sound symbolism is apparent in some but definitely not all signifier/signified relationships. Many sound symbolism experiments are not entirely conclusive because of the forced-choice factors. Saussure's argument of 'value' also provides explanation for some of the experimental processes. Yet the mass of evidence in favour of sound symbolism does cast doubt on Saussure' notion of arbitrariness, making onomatopoeia and interjections dated terms for a much broader topic.

Ultimately, sound symbolism pervades everyday life, so is more significant than exception to language. It is possible to break it down into a typology with four branches each with a differing degree of arbitrariness. To acquire language our brains apparently notice sound symbolism innately and as adults it can subconsciously influence us. But also it remains true, as Saussure stated, that in language there are only differences; a parallelism is needed between signifier and signified. Perhaps both sides of the argument are necessary. In our early years we notice sound symbolism to acquire language, allowing us later to pick up advanced, more arbitrary language. That inherent awareness from childhood must still remain, which could be applied to some words and used to our advantage when adults, as discussed, for literary effect, gender distinctions and causing influential marketing.

[43] K. Wales. 'Phonotactics and phonæsthesia: the power of folk lexicology' in Susan Ramsaran (ed.) *Studies in the Pronunciation of English: A Commemorative Volume in Honour of A. C. Gimson* (London: Routledge, 1990), 339, 349.

If innate then 'sound symbolic words may thus be 'fossils' from earlier stages of language evolution, when sound symbolic links facilitated the rapid development of a common lexicon in human protolanguages'.[44] With language ever evolving, sound symbolism thus provides a vital link to the past. Moreover, its importance cross-linguistically in language acquisition might also make sound symbolism applicable to neologisms, due to the ease of learning sound-meaning mappings. Future scientific experiments and understandings of the brain shall thus improve knowledge of how neologisms form, and continue to gain insights on the connections signifiers can bear with their signified, which proves today a lot less arbitrary and unmotivated than Saussure expressed one hundred years ago.

[44] M. Imai, M. Miyazaki, HH. Yeung, S. Hidaka, K. Kantartzis, H. Okada. 'Sound Symbolism Facilitates Word Learning in 14-Month Olds', 2.

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L. Bloomfield, 'On assimilation and adaptation in congeneric classes of words', (1895) 16 *American Journal of Philology*), 409–34.

L. Carroll, 'Transcribed from: Carroll, Lewis, 1832-1898. Through the Looking-Glass, and What Alice Found There' in, *Alice's Adventures in Wonderland and Through the Looking-Glass and What Alice Found There*: The Centenary Edition: Edited with an Introduction and Notes by Hugh Haughton (London: Penguin, 1998) [electronic resource].

D. Crystal, 'The Week in Books' *The Guardian* (2009) [Online] Available at: http://www.theguardian.com/books/2009/jul/18/ugliest-words-michael-jackson-biographies [Last accessed 19-04-15].

A. Cutler and J. McQueen and K. Robinson, 'Elizabeth and John: sound patterns of men's and women's names', (1990) 26 *Journal of Linguistics*, 471-82.

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