

ICONICITY IN HUXLEY'S *BRAVE NEW WORLD*

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Summary: Iconicity in language – the similarity between a linguistic form and its meaning – is considered an important factor for literary quality and is hence examined in Huxley's *Brave New World* in the current article. Many examples of iconic language are eminent in this novel. This might enhance the novel's aesthetic, creative, and artistic appeal as well as the reader's potential identification with the strange and appalling world the novel describes. It is furthermore assumed that such a dystopian novel benefits from linguistic iconicity in that, for instance, rhymes in the form of certain slogans used by the characters in the novel support the stability of the depicted totalitarian system.

1. Introduction

The phenomenon of linguistic iconicity, the analogy between a linguistic sign and its meaning, has attracted much attention, not only in general linguistics and semiotics, but also in, for instance, research on language evolution [Bickerton 2009] and language acquisition [Zaretsky et al. 2011].

Moreover, iconicity plays an important role in analyzing literature [e.g., Johansen 1996, Nänny 1985]. Literature is probably simply better, if it is iconic than if it is not. «[I]conicity is the very essence of literature» [Nöth 2001: 22], as Gotthold Ephraim Lessing already claimed, when taking into account that literature is a mimesis (i.e., imitation) of real life and that iconic signs are more natural and 'real', that is less arbitrary, than non-iconic signs. Iconicity might thus increase the aesthetic and creative appeal of a piece of literature (for an overview, see [Nöth 1990a, 2001]). Aesthetic linguistic features like rhymes and alliterations as examples for the poetic function in Jakobson's communication model [Jakobson 1968: 356-357] are iconic and best suited for verbal innovation and creativity and might have strong effects on the recipients of a piece of literature [Lange 2008, 2012].

For instance, a writer needs to express new and complex ideas or old ideas by new means. Hence, he must be creative, which might, on a linguistic level, be achieved by using iconic language (e.g., by word-coining or the use of metaphors). Moreover, by imitating life, literature thus helps readers relate to the depicted world. This is what the term «mimesis» also suggests, which is therefore a phenomenon of exophoric iconicity [cf. Nöth 1990a: 348-349; Nöth 2001: 22, 24].

Although iconicity is especially salient in poetry, iconic linguistic signs may also be strongly prevalent in literature that has a strong scientific approach (e.g., science-fiction or eutopian/dystopian literature). Aldous Huxley's *Brave New World*, for instance, has some sort of scientific appeal and is indeed still full of rhymes, metaphors, unusual first names, unknown but science-oriented expressions, as well as word-coining. These aspects are very well suited to be

examined in the framework of iconicity. Hence, for the current article, this novel serves as the corpus for an examination of phenomena of iconicity in a work of literature.

Besides this, one might propose the daring thesis that a dystopian science-fiction novel such as *Brave New World* is predestined to contain iconic language due to the fact that the language used by the characters in the novel has to play an important role in order to maintain a totalitarian system. This is done in the form of rhyming indoctrinations and word-coining, which reflect the desired order.

2. Iconicity in Language

Ferdinand de Saussure [1916: 100] postulated the arbitrariness of the linguistic sign. The opposed principle, namely the similarity between the sign vehicle and its referential object, is the scope of iconicity in language and was mainly proposed by Charles Sanders Peirce [cf. Nöth 1990a: 121-124].

Concerning the icon, as opposed to the index and the symbol [Nöth 1990a: 45], three categories can be distinguished, namely images, diagrams, and metaphors [Nöth 1990b: 192]. Examples of verbal icons being such images are onomatopoeic words [Nöth 1990b: 192]. «Diagrams are icons in which there is “no sensuous resemblance” between the sign vehicle and its object “but only an analogy between the relations of the parts of each”» [Nöth 1990b: 192]. The metaphor is a type of analogy, where there is a literal meaning, a metaphorical meaning, and the *tertium comparationis* of the parallelism between both meanings [Nöth 1990b: 193]. Metaphors are «nonliteral interpretations of sentences» [Fromkin & Rodman 1998: 187] and that is why I will treat this phenomenon as an aspect of syntactic iconicity.

Generally, iconicity can be divided into two parts, namely exophoric iconicity in cases where an icon «refers to an object of the nonlinguistic world» and endophoric iconicity in cases where an icon «depicts a segment of language occurring in the preceding linguistic context» [Nöth 1990b: 195].

2.1. Phonetic Iconicity

Phonetic iconicity or sound symbolism, the phonetic motivation between form and meaning, «is based on man's imitative instinct, which leads us to use characteristic speech sounds for name-giving» [Marchand 1960: 397].

The *i* vowel, like other front vowels (e.g., [e] and [ɛ]), is perceived as small (also emotionally), thin, and bright and possibly even as sharp and quick [Fógany 2001: 339, 347, Marchand 1960: 397, 400, Waugh 1992: 9-11], the *o*, like other back vowels (e.g., [u], [ʊ], and [ɔ]), as round, large, and dark. Moreover, /u:/, especially in opposition to /i:/, is also considered sad and hollow [cf. Fógany 2001: 339]. The *m* is associated with sweetness and, in the initial position, refers to certain mouth movements and positions and muttered sounds [Marchand 1960: 415]. In the middle of a word, it might also be expressive of «continuous vibrating sounds» [Marchand 1960: 399]. /s/ is perceived as sharp [cf. Fógany 2001: 339] and as an initial «expressive of frictional noise, chiefly such as are caused by the intake of breath or the sipping, dripping or trickling of liquids» [Marchand 1960: 417]. In final position after a short vowel, it «imitates the voluminous sound of rushing air, gushing water» [Marchand 1960: 400].

Other s-related sound combinations that are phonetically iconic are: /sw/ (denotes swinging movements), /sp/ (expressing jet movements) [Marchand 1960: 398], /sn/ (expressive of mouth-, nose- or face-related movements), /sl/ (sliding movements) [Marchand 1960: 416].

More phonetic iconicity is evident in the following sound combinations: /pl/ (conveying the idea of dull impact, mainly in relation to water), /br/ (denoting unpleasant noises) [Marchand 1960: 406-407], /gl/ (related to sight and especially expressive of shining and light) [Fromkin & Rodman 1998: 8, Marchand 1960: 411], /tw/ (initial for expressing small sounds or small and twisting movements) [Marchand 1960: 414].

Waugh [1992: 10-11] in her study of image iconicity in diminutives discovered a relation between higher-pitched sounds and smallness and affection (in a affectionate, jocular, condescending or depreciative way). That is why «many if not all English diminutives [...] are based on front vowels and/ or the dental consonants [t], [s], [r], [l] (dentals are also higher-pitched)». Some examples are: *-ette*, *-sie*, or *-kin*.

2.1.1. Onomatopoeia

The relation between form and meaning is even more evident in onomatopoeia [cf. Sadowski 2001: 72], that is in «words whose pronunciations suggest their meaning» [Fromkin & Rodman 1998: 532]. So, imitation is the main feature of onomatopoeia. Examples are: *cockadoodledoo*, *meow*, *buzz* [Fromkin & Rodman 1998: 8, 532], *crack*, *plop*, *whizz*, *goink*, *zonk* [Nöth 1990a: 245, 475], *thump*, *ting*, *clatter*, *sizzle*, *hum*, *howl*, *knock*, *frou-frou*, *gong*, *doodle* [Nöth 1990b: 193-194], *ping-pong* [Nöth 2001: 21], *drip*, *boom* [Danesi 1993: 278], *bang*, *cough*, *cuckoo*, *murmur*, *rat-a-tat* [Sadowski 2001: 71], *moo* [Haimann 1985: 3], *bow-wow*, *kukku-rikku*, *beep*, *swish* [Tanz 1971: 266], and *wheeze* [Waugh 1992: 10]. The principles of phonetic iconicity so far discovered tend to apply to onomatopoeia as well.

2.1.2. Names

Anshen [1989: 86] discovered in a sample of 300 male and female names that men's names end in stops seven times more often than women's names and that women's names end four times more often with a vowel than men's names. Both sex differences were statistically significant ($ps < .001$). Besides this, he discovered that men's names are mostly monosyllabic, whereas women's names are mostly three or four syllables long [Anshen 1989: 87]. So, the prototypical male name is mono- or disyllabic and ends in a stop, whereas the prototypical female name consists of two, three or even more syllables and ends in a vowel.

2.2. Morphological and Lexical Iconicity

Waugh [1992: 8-9] subdivides lexical iconicity into image iconicity and diagrammatic iconicity, while purposely neglecting the metaphor.

Concerning iconicity in the lexicon, the principle of diagrammatic iconicity can be described as the recurrence of form in relation to the recurrence of meaning. So this principle, which is also called isomorphism or isomorphic iconicity, describes a pattern, according to which «sameness of form from one sign to another signals sameness of meaning and difference of form signals difference of

meaning» [Waugh 1992: 13]. In this respect, morphemes such as the already mentioned *-ette* or *-kin* must be considered examples of diagrammatic iconicity.

It is assumed that increasingly complex form corresponds with increasingly complex meaning. In the examination of morphological and lexical iconicity in the novel, the focus will be on this point. This principle applies to the plural morpheme as in *dog* vs. *dogs* (one morpheme vs. two morphemes). The described pattern can also be discovered in gradation (*big*, *bigger*, *biggest*) and even in conjugation (first person singular vs. third person singular). The principle of isomorphism is also valid in the grammatical code, which will be discussed in the following passage.

2.3. Syntactic Iconicity

Givón [1995] describes the following iconic principles in syntax:

- (1) The quantity principle: (a) a larger chunk of information, (b) less predictable information, and (c) more important information are given more code [Givón 1995: 49].
- (2) The main aspect of the proximity principle is the proximity of entities, which «are closer together functionally, conceptually, or cognitively» [Givón 1995: 51].
- (3) According to the semantic principle of linear order, the order of clauses reflects the temporal order of the depicted events [cf. Givón 1995: 54]. Lessing [1766: 144] described the diagrammatic iconicity lying in this principle by using the term «*nacheinander*» to define the main feature of literature in opposition to pictorial art [cf. Rossholm 2004: 158].
- (4) The pragmatic principle of linear order: (a) Information which is more important or more urgent, as well as (b) information which is less accessible or less predictable tend to take first position in the string [cf. Givón 1995: 55].

Principles (3) and (4) are called «sequential order principles» [Givón 1995: 54]. Principle (4a) is also valid for the kind of «precedence [...], when the order of value is manifested in the order of an enumeration» [Rossholm 2004: 177].

2.3.1. Symmetry and Asymmetry

Examples of bilateral symmetry in language are the letters *M*, *T* or *Y* [Nöth 1993: 23]. Translational symmetry «occurs in the syntagmatic chain of speech and writing in the various forms of recurrence such as alliteration [...], rhyme [...], anaphora or epizeuxis» [Nöth 1993: 23]. Especially asymmetry seems of interest here.

Human beings have an «egocentric orientation», which causes a so-called «me-first attitude». This principle has been altered though by a rule of politeness, which serves as a sub-code [Nöth 1993: 29, 33]. This code expresses some sort of social order, according to which there is a preference, for instance, concerning the relation between adults vs. children or superior vs. subordinate [Nöth 1993: 30]. The action code refers to the fact that normal or usual behavior cause less attention than uncommon or somewhat unexpected acts. This results in a «fronting of conjuncts depicting acts with a higher attention value» [Nöth 1993: 31].

3. Iconicity in *Brave New World*

3.1. Phonetic Iconicity

When examining the words *clink* [Huxley 1932: 139] and *titter* [Huxley 1932: 186], it can be observed that a «high or thin tone is rendered» [Marchand 1960: 400], which also partially proves the assertion that the *i* vowel stands – among others – for thinness. Sadness as well as darkness is expressed by /u:/, for instance in *boo-hooing* [Huxley 1932: 53] and *gloomy* [Huxley 1932: 79; cf. Waugh & Newfield 1995: 199]. An example from the novel for /s/ expressing sharpness could be *sibilant* [Huxley 1932: 49].

Swinging movements expressed by /sw/ can partially be discovered in *swivel[ling]* [Huxley 1932: 127] and *sweep[ing]* [Huxley 1932: 183]. Examples for initial /sp/ denoting jet movement are *speed* [Huxley 1932: 87], *spurt[s]* [Huxley 1932: 65], *sprouting* [Huxley 1932: 86], and *spray[ing]* [Huxley 1932: 258]. Initial /sn/ is connected with the mouth, the nose or the face in *sniff[ed]* [Huxley 1932: 153], *snoring* [Huxley 1932: 165], *snubs* (meaning snub noses) [Huxley 1932: 196], *snatch* [Huxley 1932: 200], *snapp[ed]* [Huxley 1932: 230], *[-]snout[ed]* [Huxley 1932: 257], and even in *snigger* [Huxley 1932: 47]. /sl/ expresses a sliding or falling movement in *slip* [Huxley 1932: 200] and *slope[s]* [Huxley 1932: 291]. Initial /pl/ expressing a dull impact is found in *plunge[d]* [Huxley 1932: 59]. /br/ expresses an unpleasant noise in *break* [Huxley 1932: 259], *brush[ed]* [Huxley 1932: 57], even in *brat[s]* [Huxley 1932: 245] and from a certain perspective even in *brass* [Huxley 1932: 111]. The relation to sight expressed by /gl/ can for instance be found in *glinted* [Huxley 1932: 81], *gleam[ed]* [Huxley 1932: 87], and *glance[d]* [Huxley 1932: 91]. Examples of a grumbling inimical noise expressed by /gr/ are *groan* [Huxley 1932: 146] and *growl* [Huxley 1932: 251]. Initial /tw/ denoting small sounds can be found in *twitter[ings]* [Huxley 1932: 41]. Initial /tw/ denoting small, chiefly twisting, movements are, for instance, expressed in *twitch[ed]* [Huxley 1932: 42]. The long vowel in *to flow* in the context of the following quotation certainly goes with a *slow or long movement* [Marchand 1960: 401]: «The unchecked stream flows smoothly down its appointed channels into a calm well-being» [Huxley 1932: 68].

These examples show that the principles discovered by several authors can be proven. Especially for initial /sn/, many convincing examples can be found. But there are many counter-examples for many of the examined relations. Taking the initial /br/ expressing unpleasant noises as an example, a few words for which this semantic relation applies can be found. But there are by far more words starting with /br/ which are not at all connected with unpleasant noises, such as *bring* [Huxley 1932: 41], *broaden[ed]* [Huxley 1932: 43], *breathe* [Huxley 1932: 248], *briskly* [Huxley 1932: 242], *breast* [Huxley 1932: 61], *brave* [Huxley 1932: 174], and *brim* [Huxley 1932: 296].

3.1.1. Onomatopoeia

A lot of onomatopoeic words can be found in the novel, such as *whizz*, *click* [Huxley 1932: 29], *hum*, *rattle* [Huxley 1932: 31], *cock-a-doodle-doo* [Huxley 1932: 43], *cuckoo*, *murmur* [Huxley 1932: 52], *boom* [Huxley 1932: 112], *bang* [Huxley 1932: 127], *crack* [Huxley 1932: 141], *cough* [Huxley 1932: 158],

howl [Huxley 1932: 186], *drip[ping]* [Huxley 1932: 190], *thump* [Huxley 1932: 206], but also *purr* [Huxley 1932: 25], *crash* [Huxley 1932: 46], *hiss*, *splash* [Huxley 1932: 59], *pop* [Huxley 1932: 73], *hush* [Huxley 1932: 96], *screech* [Huxley 1932: 98], *clang* [Huxley 1932: 108], *mumble* [Huxley 1932: 116], *clap* [Huxley 1932: 146], *gush* [Huxley 1932: 171], *smash*, *tinkle* [Huxley 1932: 177], *whoop*, *roar* [Huxley 1932: 187], *fizz* [Huxley 1932: 192], *whirr* [Huxley 1932: 240], *growl* [Huxley 1932: 251], *buzz[ing]*, *wheeze*, *cackle*, *hiccough[s]*, and *squeak[s]* [Huxley 1932: 296].

Marchand [1960: 402] uses the word *bang* as an example of an onomatopoeic word as «a compound of several symbolic elements [...]: the /æ/ renders the sound the slamming of the door causes, the /ŋ/ is imitative of the vibration of the air following it. The /b/ is expressive of the bluntness of the explosive sound».

«We need icons to evoke mental images», as Nöth [2001: 26] states. Otherwise, «we cannot say anything about the world». In a science-fiction novel such as *Brave New World*, we are confronted with a world unknown to us and completely unknown to readers in 1932. Therefore, it is not surprising that iconic language, for instance by means of onomatopoeic words, is used to describe this world so that the reader is able to relate to it. In order to examine this point, I will take a look at the onomatopoeic words mentioned above and relate them to their context in the novel: In chapter one, the apparatus in the Bottling Room, which is unknown to us, is described using an onomatopoeia: «Whizz and then, *click!* [my italics] the lift-hatches flew open» [Huxley 1932: 29]. Also in chapter one, the Embryo Store is described, where human beings are created artificially. The machinery which is used to do so is again totally unknown to us. We find onomatopoeic words in the following description: «The *hum* and *rattle* [my italics] of the machinery faintly stirred the air» [Huxley 1932: 31].

In chapter eighteen, a reporter arrives at John's lighthouse. We find many onomatopoeic words in the following quotation, which serves as a description of his transmission device: «[He] pressed a switch on the left side of the hat – and from within came a faint waspy *buzzing*; turned a knob on the right – and the *buzzing* was interrupted by a stethoscopic *wheeze* and *cackle*, by hiccoughs and sudden *squeaks* [my italics]» [Huxley 1932: 296].

These quotations seem to prove that onomatopoeic words are very well suited to make unknown machinery – or generally speaking, unknown elements – imaginable. From this perspective, a science-fiction novel depends on phonetic iconicity in order to deliver a comprehensible depiction of an unknown world. Apart from the realistic depiction of unknown elements, they generally promote the literary quality of a novel as they increase realism, as in the following quotation, where playing children are described: «*Buzz, buzz!* the hive was *humming*, busily, joyfully [my italics]» [Huxley 1932: 182].

3.1.2. Sex differences in First Names

The first names ($N = 33$) mentioned in the novel are:

Female: Linda, Lenina, Fanny, Polly, Morgana, Fifi, Joanna, Clara, Sarojini.

Male: Bernard, John, Popé, Waihusiwa, Henry, Mustapha, Benito, Helmholtz, Calvin, Jim, Herbert, Tom, Jean-Jacques, Bokanovsky, George, Thomas/ To-

makin (considered as two names), Primo, Reuben, Palowhtiwa, Mitsima, Kothlu, Kiakimé, Darwin.

Following Anshen's way of examination, tables 1 to 4 show the sex differences with respect to the first names in the novel. Anshen's results are marked with an asterisk.

Table 1: Final stops in women's and men's first names (Anshen's results are marked with asterisk.)

	Total	Final Stop (% / %*)	Final Other (% / %*)
Women	9	0 (0 / 4)	9 (100 / 96)
Men	24	11 (45.83 / 30)	13 (54.17 / 70)

Table 2: Final Vowels (Anshen's results are marked with asterisk.)

	Total	Final Vowel (% / %*)	Final Other (% / %*)
Women	9	9 (100 / 54.67)	0 (0 / 45.33)
Men	24	11 (45.83 / 14)	13 (54.17 / 86)

Table 3: Non-Stop, Consonantal Finals (Anshen's results are marked with asterisk.)

	Total	+Cons -Stop (% / %*)	Other (% / %*)
Women	9	0 (0 / 41.33)	9 (100 / 58.67)
Men	24	3 (12.5 / 56)	21 (87.5 / 44)

Table 4: Number of syllables in women's and men's first names (Anshen's results are marked with asterisk.)

	Total	1 syllable (% / %*)	2 syllables (% / %*)	3+ syllables (% / %*)
Women	9	0 (0 / 12)	5 (55.56 / 66.67)	4 (44.44 / 21.33)
Men	24	4 (16.66 / 30)	13 (54.17 / 65.33)	7 (29.17 / 4.67)

The numbers, especially for tables 2 and 3, differ considerably from Anshen's results. Table 2 shows – and table 3 seems to prove it – that in the novel, there seems to be a higher probability for the names of both sexes to end in a vowel than for the names which Anshen [1989] examined. Additionally, table 4 shows that the names in the novel tend to consist of much more syllables than the names examined by Anshen [1989]. It is questionable to argue that it was Huxley's intention to feminize the characters of his novel. So an explanation of this phenomenon seems difficult.

It must be further emphasized that for the examination only a total number of 33 names were available, compared to Anshen's examination, for which 300 were used. Also, for each category, one cell had a *n* of 0 (cf. tables 1 to 4) in the current study. Hence, chi squared tests were not performed to test for the statistical significance of sex differences, as the requirements for these analyses were

thus not fulfilled. Using the Mann-Whitney U test, however, it was possible to compare male to female first names with respect to number of syllables. Numerically, male forenames in the novel are even longer than female forenames (measured by number of characters; $M_s = 6.63$ vs. 5.67), but this difference failed to reach statistical difference ($p = .21$). Despite these differences between both studies, there is some correspondence between Anshen's results and the results presented here.

The unusual first names in the novel which are either derived from last names or invented are especially interesting. The two unusual female names in the novel are transparent concerning their origin: Lenina «seems to be formed from Lenin, the adopted name of the Russian revolutionary Vladimir Ilyich Ulyanov (1870-1924)» [Rau 1991: 12]. Morgana seems to allude to John Morgan (1837-1913), a member the American banker family, or to Thomas Hunt Morgan, a biologist [cf. Rau 1991: 35].

Helmholtz is, like Lenina, no usual first name. It is an allusion to Hermann Ludwig von Helmholtz (1821-1894), a German physicist and mathematician [cf. Rau 1991: 30]. Darwin alludes to Charles Darwin [cf. Rau 1991: 86]. Bokanovsky is the last name of a fictitious scientist in the novel. Waihusiwa is an invented name, too [cf. Rau 1991: 51]. This is very likely the case for the other names from the Indian Reservation, namely Palowhtiwa, Mitsima, Kothlu, and Kiakimé.

The only two female names in this examination about unusual names – Lenina and Morgana – perfectly match the principles, which we have already discovered: They consist of three syllables and end in a vowel. As being derived from last names, there was almost no other choice, as an additional syllable – in this case represented by the vowel *a* – was needed to identify them clearly not only as first names, but mainly as female first names.

For the male names, which allude to other people's last names, no iconicity needs to be assumed, as they were mainly chosen to allude to famous scientists in order to support certain ideas in the novel. Furthermore, last names were not part of the current study. Examining the (male) first names from the Indian Reservation, which are surely not English names, it gets obvious that they do not match the discovered principles at all, because all of them end in vowels and are likely to consist of more than two syllables. To be precise, three names (out of a total of five) consist of four syllables and one consists of three.

Referring back to the first name Tomakin, which is the diminutive form of Thomas, the question could be whether Huxley used this iconic word to support a certain idea or a certain action in the plot. The front vowel in *-kin* first of all suggests smallness. Besides this, it seems especially of interest that diminutives might express an affectionate but also a jocular, condescending or depreciative attitude towards the designated object or person, as already mentioned. A semantic relation between these four adjectives and the aspect of smallness seem obvious. But I want to go further: Thomas is the Director of Hatchery and Conditioning (called D.H.C.) and only one rank below the ten world controllers [cf. Hermes 2002: 7]. In chapter ten, he behaves according to his position when announcing Bernard's transfer to Iceland. But shortly after that, Linda, whom he had made pregnant accidentally, which was against the rules of the brave new

world, appears and calls him Tomakin. Laughter breaks out [cf. Huxley 1932: 184-186]. At the end of this chapter, the following description about him can be found: «Pale, wild-eyed, the Director glared about him in an agony of bewildered humiliation» [Huxley 1932: 187]. It is possible to link the mentioned aspects of a diminutive to the content of this chapter: Affection is linked with the diminutive insofar as Linda uses it to refer to their intimate relationship. The use of the diminutive is also linked with a jocular atmosphere, as everyone starts laughing in this scene, whose climax is introduced by the mentioning of the name Tomakin. At the end of the scene, as the quotation above makes clear, we find the D.H.C. condescended and depreciated. Mentioning the name Tomakin is the beginning of the end: Very shortly after this incident, Thomas is fired. In this chapter, Huxley seems to use – whether consciously or unconsciously – the iconic potential lying in the diminutive *-kin* to describe the decline of one of the most powerful people in the brave new world.

3.2. Morphological and Lexical Iconicity

The more complex an idea gets, the more code is required to express it. «The Quantity principle», as described by Givón [1995] for iconicity in syntax, is an appropriate term to express this idea in morphological as well as in lexical iconicity.

3.2.1. Sports

The following sports which are unknown to us can be found in the novel: «Centrifugal Bumble-puppy» [Huxley 1932: 52], «Obstacle Golf» [Huxley 1932: 69], «Escalator-squash» [Huxley 1932: 93], «Electro-magnetic Golf» [Huxley 1932: 116], «Electro-magnetic Tennis», «Riemann-surface tennis» [Huxley 1932: 292], and «hunt-the-zipper» [Huxley 1932: 245], which refers to the game «hunt-the-slipper» [cf. Rau 1991: 74]. It is striking that these names are longer than the sports names we are used to, which is in most cases the result of compounding in which familiar sports names, such as golf or tennis, are used as free lexical morphemes. Names of present sports, such as golf, tennis, squash, (ice) hockey, soccer, football, baseball, basketball, cycling, and handball, are mostly disyllabic and very few are monosyllabic, which might correspond with the simplicity of the rules of the games and the equipment needed to play them. As a matter of fact, in order to play soccer one needs nothing more than a soccer ball and a goal to shoot the ball into, which might even suffice as an exemplification of the game's rules. This simplicity can be discovered in most of today's games, which does not surprise as this simplicity is a particular appeal for the sportsmen who play them as well as for the viewers who watch them. Concerning the equipment needed to play today's sports, a statement by the D.H.C., looking back at the 20th century, seems to prove this: «[...] strange to think that even in Our Ford's day most games were played without more apparatus than a ball or two and a few sticks and perhaps a bit of netting» [Huxley 1932: 53].

As a strong relation between the simplicity of today's sports and the relative shortness of their names can be discovered, it seems logical that sports with relatively long names – as the sports in the brave new world – tend to be more complex, whether concerning rules or the equipment needed. For equipment, a

good description of the brave new world's sports by the D.H.C. proves this assumption and identifies the need for consumption as the reason for playing these sorts of games: «Nowadays the Controllers won't approve of any new game unless it can be shown that it requires at least as much apparatus as the most complicated of existing games» [Huxley 1932: 53]. So concerning equipment, the quantity principle seems to be valid for the sports in the brave new world compared to actual today's sports. What can be said about the rules of the brave new world's games? In «Obstacle Golf» we find the addition of the word «obstacle». Hence, this sport is some sort of Golf in our sense, but has to be played with additional obstacles. In «Electro-magnetic Golf» an electromagnetic device must play a decisive role. In «Escalator-squash» an escalator is needed, which necessarily makes the game more complex than normal squash, concerning rules as well as equipment, and so on. All these additions, which go with a larger chunk of code, must therefore find expression in the composition of the games.

I want to examine one game in detail, namely «Centrifugal Bumblepuppy», which is described in chapter three as follows: «Twenty children were grouped in a circle round a chrome-steel tower. A ball thrown up so as to land on the platform at the top of the tower rolled down into the interior, fell on a rapidly revolving disk, was hurled through one or other of the numerous apertures pierced in the cylindrical casing, and had to be caught» [Huxley 1932: 52]. The rules of this game, whose name seems to be the longest among all the games, appear to be easy, which can easily be explained by the fact that it is a game for children. Concerning equipment we discover a complexity which seems unnecessary though: From our perspective, no such complex apparatus is needed for a game, whose simple goal is to catch a ball. Hence, considering equipment, there is a motivated relation between form and meaning. The name of this game can be examined further by referring back to phonetic iconicity: The /i:/ sound as found in puppy might express smallness, sharpness, and quickness, as already discovered. We find the idea of quickness, but also the idea of sharpness in the above description of the game in the form of *thrown up*, *rapidly*, *hurled*, and *pierced*.

Marchand [1960: 399] mentions *ME bumble* as an example of a word expressing «continuous vibrating sounds». Indeed, the described apparatus can easily be imagined as a continuously vibrating device. But another perspective is valid too: The voiced /b/ in *bumble* can be linked with softness [cf. Fógany 2001: 354]. The same applies for /m/ which stands for sweetness, additionally [cf. Fógany 2001: 339], and the /i:/ in *puppy* expresses smallness, and therefore in some respect harmlessness, which corresponds with it. If we link this other perspective to the novel's content, we might discover the significance of phonetic iconicity in the games' names: In chapter three, we are at the Conditioning Centre, where children are conditioned to like games, whose purpose is to fill people's free time, to promote consumption and therefore to contribute to stability. According to the principle of classical conditioning discovered by Ivan Pavlov, on which the work in the Conditioning Centre is based, the more or less neutral stimulus of the game must be linked to an unconditioned, but more or less pleasant stimulus in order to make the game

desirable. And this goal can be achieved by linking the game with ideas of softness, sweetness, and smallness. Although, this is an interesting perspective, such an approach seems questionable: First, different ways of phonetic explanation concerning Bumble-puppy might be possible. Second, most of the principles should be considered as mere tendencies.

3.2.2. Devices, vehicles, applications, and instruments

Many coinages for technical devices, vehicles, applications, or instruments are found in the novel which allude or refer to the 20th century. The names for these devices appear to be longer than the names they allude to. This certainly refers to the fact that the brave new world is considered to be a further developed form of the 20th century. So, increased complexity concerning meaning is accompanied by increased complexity concerning form. The devices, vehicles, applications, and instruments are the following: *super-cornet* (alludes to the cornet) [Huxley 1932: 60], *vibro-vac massage*, *electrolytic shave* [Huxley 1932: 176], the *taxicopter* (a helicopter used as a taxi) [Huxley 1932: 208], *Super-Vox-Wurlitzeriana rendering* (alludes to an organ called *Wurlitzer*) [Huxley 1932: 242].

Besides names for devices, vehicles, applications, and instruments, there are other words whose large code corresponds with the highly developed society in which they are used. Examples are clothes like *zippi-camicknicks* [Huxley 1932: 177] and buildings such as *Aphroditaeum* [Huxley 1932: 105] and *Charing-T Tower* [Huxley 1932: 83].

Concerning *Charing-T Tower*, another interesting iconic aspect can be examined. *Charing-T* alludes to Charing Cross, a district in London, at whose railway station a cross can be found [cf. Rau 1991: 27]. In the brave new world, Christianity, whose symbol the cross is, was replaced by a kind of religion that worships Henry Ford. The symbol of this cult is the T, which is a reference to the T-Model, Ford's extremely successful and influential mass-produced automobile [Rau 1991: 16]. In the T, there is image iconicity, because the T looks like a cross whose top is cut off. Besides this, the T is an example of bilateral symmetry [cf. Nöth 1993: 23].

3.2.3. Chemical formulas

Several chemical (molecular) formulas or names for chemicals [cf. Huxley 1932: 72, 99, 163] can be found in the novel: water (chemical name: hydrogen oxide, molecular formula: H₂O), rassic acid (chemical name: hydrocyanic acid, molecular formula: HCN), phosphorus pentoxide (molecular formula: P₂O₅), phosgene (chemical name: carbonyl chloride, molecular formula: COCl₂), calcium carbonate (molecular formula: CaCO₃), ethyl iodoacetate (molecular formula: C₄H₇IO₂), PS (chemical name: chloropicrin, molecular formula: CCl₃NO₂), mustard gas (chemical name: dichlorethyl sulphide, molecular formula: C₄H₈Cl₂S), mercury fulminate (molecular formula: Hg(CNO)₂), diphosgene (chemical name: trichlormethyl chloroformate, molecular formula: ClCO₂CCl₃), TNT (chemical name: trinitrotoluene, molecular formula: CH₃C₆H₂(NO₂)₃).

Completely apart from their context in the novel, the chemical formulas or the names of the chemicals can simply be used as a cue to examine whether the quantity principle is valid in the language of chemistry. Thus, I want to make a

comparison between the (ordinary) name of a chemical (the sign vehicle), its molecular formula, and its structural formula, that is, its composition so to speak (the object).

Indeed, there is a strong quantitative relation between the molecular formula of a chemical and its structural formula. This is not surprising, as each chemical element, that is each atom, which can be found in the structural formula, must exist in the molecular formula as well. More than that, the molecular formula depicts relations between atoms, which can correspondingly be found in the structural formula and therefore in the chemical molecule as well. The formulas for TNT, especially the three NO_2 molecules and their arrangement within the molecule, should suffice as an example. Hence, taking a look at the structural formula as it reflects the composition of the actual chemical molecule, we can find an example of diagrammatic iconicity. P_2O_5 seems to be the only exception, which makes clear that the validity of the quantity principle concerning chemicals depends on the question of how many different types of atoms (in this case two) appear in comparison to the total number of atoms in the molecule (in this case seven).

But what I want to examine is whether the quantity principle is valid concerning the relation between the composition of a molecule, as represented by its structural as well as its molecular formula, and the name which is used to signify it. Considering the chemical name as the linguistic form, only a partial relation can be found, for the length of the names does not correspond with the complexity of the structural formula. But there is a relation, though, namely with respect to morphology. For instance, if a molecule contains two chlorine atoms instead of one – which makes it necessarily more complex –, an additional morpheme (in this case *Di-*) is needed to express it. Conservatively expressed, this can be considered a general tendency: The more complex a molecule is, that is the more atoms or other molecules it consists of, the more morphemes might be needed to create the linguistic form which is used to signify it.

The reason why the quantity principle does not apply satisfactorily to the relation between the chemical name and its structural formula is that many abbreviations are used in chemical names, which is surely due to economic reasons. A certain composition of atoms, for instance, is given a certain name which does not reflect the given molecular structure, such as ethyl ($-\text{CH}_2\text{CH}_3$). If a certain composition of atoms, such as $-\text{CH}_2\text{CH}_3$, is part of a whole molecule, the respective name – in this case ethyl – is used as a free lexical morpheme in order to compound the name of the whole chemical molecule. This is, for instance, very obviously the case for ethyl iodoacetate ($\text{C}_4\text{H}_7\text{IO}_2$).

Many chemicals actually do have ordinary names. Their ordinary names, taken as the linguistic form, are the main interest of the current examination. And there is almost no quantitative relation between this linguistic form and the chemical molecule. Examples are commonly known chemical molecules, such as water, the chemical weapon mustard gas, or the explosive TNT.

3.3. Syntactic Iconicity

In this section, I will concentrate on the two sequential order principles described by Givón [1995], as I expect them to be especially linkable to the novel's

content. Besides this, I will discover examples of metaphors, rhymes, alliteration, and repetition.

3.3.1. The semantic principle of linear order

In *Brave New World*, the order of clauses mostly reflects the order of events. As long as this is the case, the semantic principle of linear order is valid. There is only one major exception, namely the flashback in chapter eight in which John's childhood is told [cf. Huxley 1932: 157-172]. Taking the flashback separately, namely as a single story, and therefore apart from the rest of the novel, in which it is embedded, the mentioned principle is valid here too because within the flashback the order of clauses reflects the order of events as well, namely by telling point by point how John has reached adulthood. The semantic principle of linear order, which can be found in the natural order of clauses, is a phenomenon of diagrammatic iconicity [cf. Nöth 2001: 21].

3.3.2. The pragmatic principle of linear order

The World State's motto is «COMMUNITY, IDENTITY, STABILITY» [Huxley 1932: 21]. Assuming the above described principle (4) (a) (i.e., information which is more important or more urgent takes first position in the string) to be valid here, community is more important and has therefore a higher value than identity and that identity is of higher importance than stability. By examining the novel, this assumption needs to be tested.

Community refers to the citizens of the brave new world, who were created artificially in order to match society's needs. So what is meant by community can be considered the foundation of the brave new world. In this respect and referring to principle (4a), it is not surprising that community is mentioned first. Identity has the meaning of sameness as well as of individuality. Individuality cannot be taken as the meaning of identity, as in a totalitarian system individuality is undesired. Sameness, on the other hand, is very likely implied as there is sameness within each caste. And it is sameness which is one of the main aspects of community. To be precise, it is sameness which made the community possible in the first place. But as community consists of more elements than sameness, we find principle (4a) valid for the relation between community and identity. Stability is mentioned the most in the novel and it was the most urgent goal when designing the new society after the war. Assuming principle (4a) to be valid, the World State's motto should therefore be Stability, Community, Identity. Nonetheless, the motto as mentioned in the novel «COMMUNITY, IDENTITY, STABILITY» is not coincidental concerning its enumeration: The order as found in the novel is moving in some way logically towards the most urgent aspect of the motto, so to speak its climax, namely stability. The principle (4a), though valid for the first two aspects, is reversed for the third aspect, but for a reasonable purpose [cf. Nöth 1993: 31].

This principle applies also to the order of names when two characters are mentioned together. John the Savage, for instance, is mostly mentioned secondly, which corresponds with the fact that he – as being someone from the Savage Reservation – is of lower social rank in the brave new world. The following quotations seem to prove this claim: «Bernard and John» [Huxley 1932: 155], «Arch-Community-Songster of Canterbury and Mr. Savage» [Huxley 1932: 214], «Helmholtz and the Savage» [Huxley 1932: 259], «Helmholtz and the

Savage» [Huxley 1932: 270]. There is only one counter-example: «John and Bernard» [Huxley 1932: 154]. But this can easily be explained by considering that even Bernard is of lower rank in the brave new world. So here, we are mainly concerned with what Nöth [1993: 30] describes as the «[h]ierarchy of social roles as elements of the social code», as it exists in the brave new world.

3.3.3. Metaphor, rhyme, alliteration, and repetition

I want to examine one metaphor in *Brave New World* in detail. In chapter eighteen, a group of curious onlookers arrive at John's lighthouse in order to see him. A metaphor can be found in the description of their arrival: «And from out of the bellies of these giant grasshoppers stepped men in white viscose-flannels» [Huxley 1932: 303]. The literal meaning of «bellies of these giant grasshoppers» is organ of an insect. The metaphorical meaning is cabin of a helicopter. The *tertium comparationis* lies in the fact that the shape of a grasshopper roughly corresponds to the shape of a helicopter and that the belly of a grasshopper is located in the centre, where the cabin of a helicopter is located as well. Besides this, the chirping of a grasshopper can be considered relatively similar to the sound of a helicopter. This metaphor serves as a sort of interpretation of this scene [cf. Johansen 1996: 41] and might promote the reader's relation to the scene and is capable of intensifying its atmosphere. As Ricoeur [2003: 224] expresses it, «[the metaphor] adds to the ways in which we perceive [the world]».

Many rhymes can be found in the novel, mainly in the form of moral indoctrinations, whose purpose it is to maintain the order of the World State. So, it is quite obvious that this dystopian novel could not work without iconicity in the form of rhymes. Here are two examples: «Ending is better than mending» [Huxley 1932: 74]. «Orgy-porgy, Ford and fun, Kiss the girls and make them One» [Huxley 1932: 112]. In the sentence «We – want – the whip» [Huxley 1932: 305], we are concerned with alliteration, the repetition of initial sounds. The result is, as for the rhymes as well, a slogan, which is effective and easy to handle. Another repetition can be found in John's quotation from Shakespeare's *Troilus and Cressida*: «Fry, lechery, fry!» [Huxley 1932: 307]. The repetition of the word *fry* creates mirror symmetry, whose effect is intensification.

Concerning repetition, the following quotation seems to be of interest, too: «Help! *Help!* HELP!» [Huxley 1932: 257]. This is an example of translative symmetry, that is, «symmetry of mere repetition» [Nöth 2001: 23]. Again, the effect is intensification, but this time furthermore intensified by the choice of letters. The first «Help!» appears to be normal. The second one – in italics – stands for an increase. The third one – in capital letters – finally describes the climax of Bernard's words. This is an example of imaginal iconicity in writing [cf. Nöth 1990b: 196]. Alliteration, rhyme, and repetition in general are examples of endophoric iconicity [cf. Nöth 2001: 23].

4. Discussion and Conclusion

Many different examples of iconicity in language can be found in *Brave New World*. What must be said is that the three main aspects of iconicity in this paper overlap several times, for instance, in the examination of «Centrifugal Bumble-puppy». Taking a look at phonetic iconicity, it can be assumed that

many relations discovered by Marchand [1960] are questionable, for instance, because /br/ is not necessarily connected with unpleasant noises. Further evidence for this assertion might be the relation of /b/ to different meanings. On the one hand, an initial /b/, according to Marchand [1960: 397], might express scorn, contempt, disapproval and disgust; on the other hand, it is supposed to stand for softness and it could be claimed that it is difficult to reconcile both aspects with each other.

In the part on morphological and lexical morphology, the examination of chemical formulas is daring. Nonetheless, iconicity could be found in the relation between the molecular and structural formulas as well as between the chemical name and the structural formula, even though the relation between the ordinary name and the composition of a molecule seems to be totally arbitrary. The investigation of sports names is much more convincing. Concerning syntactic iconicity, many examples could be presented, whether in the form of rhymes, alliterations, metaphors, or the sequential order principles.

Is a dystopian science-fiction novel predestined for iconic language? In the case of phonetic iconicity, onomatopoeic words are often used to describe science-fiction aspects in the novel, which would otherwise be much less distinct. Coinages – mainly in the form of the quantity principle – reflect a (technically) more developed society. Rhymes are a key aspect of the totalitarian system depicted in the novel, which could therefore not exist without iconic language. Other aspects, examined in the section on syntactic iconicity, reflect the depicted world as well. It is, for instance, not coincidental that John is mentioned second in 80% of all cases in which he is mentioned with someone else.

In conclusion, it is striking how many examples of iconic language are eminent in the novel. Iconic language might enhance the novel's aesthetic, creative, and artistic appeal as well as the reader's potential identification with a still somewhat odd world. Finally, the content of the novel might simply require or at least benefit from linguistic iconicity.

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