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MORPHOLOGICAL AND SEMANTIC FEATURES OF ANTIDEPRESSANT BRAND NAMES

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ABSTRACT

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This thesis focuses on the naming strategies behind antidepressant brand names. Brand names in general are not allowed to include explicitly descriptive information about the product, and pharmaceutical brand names in particular are not allowed to include elements of the drug's generic name. Still, it has been demonstrated in earlier research that such elements are often embedded in brand names. In order to include these elements but also achieve eligibility as a brand name, the name must achieve a sufficient amount of lexicalisation. Different word-formational processes and orthographic distortion are major strategies in doing this.

I analysed 40 antidepressant brand names which I gathered from the sites https://www.emedexpert.com and https://www.medicinenet.com. I broke them down morphologically and categorised them according to their word-formational processes and origins of their root words and affixes. When categorising the names semantically, I followed Shack's (2008) categorisation based on the semantic opacity of the names. I also examined the individual semantic motivations behind the brand names.

The main finding of this study is that references to generic names and the use of meaningful and positive imagery are common strategies in antidepressant brand naming even though they are legally advised against. These elements are included in the name by violating morphological rules, graphemically distorting the meaningful elements, and by using elements from Latin and Greek. The study also shows that affixation (particularly pseudo-affixation) and clipping are the most popular morphological processes in antidepressant brand naming and that it is also common to employ multiple processes simultaneously. I also discovered that metaphors concerned with elevation were particularly popular as semantic motivations.

Keywords: Lexicology, morphology, semantics, brand names, pharmaceutical brand names, antidepressant brand names

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1. Introduction

Why do names such as eBay, OxyContin, and Krispy Kreme sound so characteristically "trademarkish"? It is apparent to linguists and laypeople alike that these names have something to them that makes them stand out from ordinary lexemes. Each brand name is the result of a set of legislative restrictions and complex dynamics in the marketplace. To achieve eligibility, a brand name must not convey its benefits or positive attributes too explicitly but must still appeal to the consumer in some way. Finding ways around these restrictions while often breaking linguistic conventions in the process is essential for brand naming.

This is also true of pharmaceutical and, in this case, antidepressant brand names, an underinvestigated area in brand name research. Even with such sensitive matters as mental health disorders, brand naming specialists are doing their best to create appealing names. The purpose of this study is to discover the particular strategies used in antidepressant brand naming. Firstly, I will look at the fundamentals of and the theory behind brand naming in general. Then, I will provide an overview of previous research on pharmaceutical brand names. Finally, I will introduce my own findings and inspect them in the light of previous research.

2. Brand names

2.1. Brand name characteristics and the requirement of distinctiveness

Brand names differ from generic names in many ways. According to Schack (2008, 67), brand names differ from ordinary words in that they often violate linguistic convention, are deliberately semantically opaque (ibid., 62), exhibit a high degree of lexicalisation (ibid., 66), and, most prominently, are not products of natural language development but conscious creations (ibid., 60). Panic (2003, 249-250) mentions graphemic variation and playful punning as additional brand name characteristics. These characteristics are all motivated by the goal of distinctiveness, a requirement

in most trademark laws which Schack considers to be "what really separates brand name creation from word-formation and term-formation and what makes brand names stick out from words and terms (ibid., 69)."

According to Schack (ibid., 60-61), "The centrality of [the concept of distinctiveness] is bound up with the very purpose of trademarks." The reason distinctiveness is such an important feature is ultimately to enable the existence of the system of trademarks, i.e. the differentiation between one brand and another (ibid., 61). Another important aspect of distinctiveness is the "principle of availability" (ibid., 61). According to the principle, the monopolisation of "common designations, descriptive terms, laudatory words, etc. that should be freely available for all to use" should be avoided (ibid., 61).

The main repercussion of the requirement of distinctiveness for brand name creation in practice is the demand for semantic opacity and lexicalisation. A semantically opaque name is one which is somehow morphologically, semantically, or syntactically unpredictable. For instance, a toothpaste named *White Teeth* would not pass the test as it could be a natural occurrence of language use and, thus, would break the principle of availability. Instead, a semantically and morphologically opaque name such as *Blancodont* would be much more acceptable as few consumers probably recognise the word as a blend of *blanco,* Spanish for *white*, and the Greek combining form *odonto-*, pertaining to teeth, which has unconventionally been placed at the end of the word and clipped.

The overall main criterion for opaqueness seems to be that the public does not recognise the motivation behind the name. This is apparent in the following excerpt from the "Guidelines concerning proceedings before The Office for Harmonization in The Internal Market (trade marks and designs) (2008)" quoted in Schack (ibid., 69) concerning abbreviations as brand names:

> Abbreviations of descriptive terms are in themselves only descriptive if they have been actually used that way and the relevant (general or specialized) public recognizes them

> as being identical to the full descriptive meaning. The mere fact that an abbreviation is derived from a descriptive term is not enough.

A question that remains unanswered, however, is who knows and determines how aware the public is of the brand name's motivation. As it is impossible to answer the question definitively, it seems that the vagueness of the definition gives way to legal loopholes which enable even highly transparent names to pass. Here, the concept of lexicalisation becomes relevant.

Words whose original meanings have become opaque are instances of lexicalisation. Like any other words, brand names can – and in the face of legal requirements, must – undergo morphological, semantic, or syntactic lexicalisation. The imaginary *Blancodont* can be seen as an instance of both morphological and semantic lexicalisation since the morphemes have been distorted by blending and clipping and the meanings encoded in them have become invisible to the linguistically untrained eye. Instances of pure semantic lexicalisation are names such as *Apple* and *Blackberry* as both belong to technology companies which have nothing to do with fruit, i.e. the relationship between the name and the product is arbitrary (Schack, ibid., 63). Finally, *Baby-Dry,* a brand name for disposable diapers discussed in Schack (ibid., 64-65), is an example of pure syntactic lexicalisation. The name was initially seen as devoid of any distinctive character and only consisting of words conveying the intended purpose of the product. However, it was eventually agreed upon that the name fulfils the requirement of distinctiveness due to its "syntactically unusual juxtaposition" since nouns followed by postmodifying adjectives are rare in English. So, in practice, a brand name can be transparent if it is in some way linguistically idiosyncratic or unpredictable.

2.2 Brand names and word-formation types

Schack (ibid., 67) notes that while all word-formational processes can produce brand names, some are intrinsically distinctive and, thus, more popular than others. In addition to the *ex nihilo* creations mentioned above, Schack (ibid., 68) mentions blends such as *Nespresso* (< Nes(tlé) + (es)presso)

and *Cheekini* (< chee(k) + (bi)kini) as a popular process. According to him, the reason for the distinctiveness of even transparent blends is their unpredictability, i.e. the fact that they are not easily explained by word-formational rules. Schack (ibid., 68) also mentions the "catchiness" of blends as a reason for their popularity in brand naming. He names clipping as another distinctive process as the number of syllables retained in the clipped form is also difficult to predict (ibid., 68). As Schack mentions, and as will be illustrated further in this article, pharmaceutical brand names such as *Dizem* (< di(ltia)zem) are examples of unpredictable clippings.

Panic (ibid., 249) emphasises the processes of compounding and affixation as well as that of blending. As examples of compounding, she lists *Band Aid* and *Walkman*. As instances of affixation, she mentions *Timex* and *Shinola*. A further point about affixes (which is particularly relevant for antidepressant brand names in this study) is that of what she calls "brand-naming suffixes" or "suffixoids":

> Another noteworthy phenomenon is that brand naming itself has given rise to new units of morphological and semantic analysis. The most frequent brand-naming suffixes or suffixoids *-ex*, *-(d)ex*, *-(t)ex*, *-(r)ex*, *-ak*, *-on*, *-o*, *-ola* (in brand names such as *Durex*, *Copydex*, *Coldrex*, *Recordak*, *Klaxon*, *Zippo*, *Shinola*) are either typically found in brand names or they have become productive and acquired affix status exactly as a result of their being exploited in brand names. Their semantic load (their firmly established meanings) exerts a crucial influence on the descriptive and, especially, associative force of the brand name as a whole. (ibid., 250)

Panic (ibid., 249-250) also mentions the possibility of utilising multiple word-formational processes simultaneously. This has been done in *Ralgex* (< (neu)ralg(ia) + ex) which employs the processes of front- and back-clipping as well as suffixation. As will be illustrated below, this is a much-utilised technique in the formation of pharmaceutical brand names.

Finally, Panic (ibid., 249) notes that brand names achieve "additional stick-in-the-mind effect" by employing graphemic variation and playful spelling. She states that these tactics contribute to the name's "unique orthographic identity" and lists *Hi-Liter, Jell-O*, *Kleenex*, and *X-*

acto as examples. In addition to the gain of distinctiveness discussed earlier, unorthodox spellings also contribute to recallability.

2.3 The semantics of brand names

As was mentioned above, brand names often attempt to communicate information or benefits of the product. However, as the end result must exhibit at least a minimal degree of lexicalisation, additional tactics must be employed to retain the intended meaning. Firstly, Schack (ibid., 62) introduces "the spectrum of distinctiveness" generally used in trademark literature. The brand name types range from least to most acceptable in legal terms. The names exhibit two correlations; one between low distinctiveness and transparency as well as high distinctiveness and opacity (ibid., 63) and the other between low distinctiveness and low legal protection as well as high distinctiveness and high legal protection (Blackett 1998, 15).

The spectrum begins with generic names such as *car rental* and *lawn mower* which completely fail to meet the requirement of distinctiveness. The next category is that of descriptive names., i.e. names that "merely reflect one or more basic characteristics (kind, purpose, quality, etc.) of the goods or services" (ibid., 63). Schack elaborates the category with imaginary names such as *Anti-Dandruff* and *Clear Vision*. These are not usually acceptable either, but there is an exception. Brands which have developed a "secondary meaning" (aka. "acquired distinctiveness"), i.e. exist in a state where "those to whom it is addressed have come to recognize it as indicating that the goods for which it is used are from a particular trade source" (WIPO 2004, 140-141 quoted in Schack ibid., 66), are eligible for registration. Schack (ibid., 66) writes that secondary meaning is usually acquired via extensive advertising and use.

While the two previous categories are classified as non-distinctive, the next one, suggestive names, fulfils the requirement of distinctiveness. Schack (ibid., 63) defines them as "marks that

suggest some characteristic or benefit of the goods or services without being directly descriptive" and states that "the difference is 'a difference in degree, not one in kind'" (Holmqvist 1971, 19 quoted in Schack, ibid., 63). Schack mentions *Blu-Ray* optical disks, *Coppertone* suntan lotion, and the fabric softener *Downy* as examples. The next two categories, arbitrary and fanciful names, are considered highly distinctive. Arbitrary names are generic names which show no relationship to the product in question, e.g. *Apple* computers and *Camel* cigarettes. Finally, fanciful names are *ex nihilo* creations which have no meaning other than as brand names. *Kodak*, *Exxon*, and *Pepsi* classify as such.

Out of these categories, that of suggestive names seems to be where distinctiveness (i.e. opacity) and transparency reach an equilibrium. Another upside of suggestive names is that they require less effort and resources to establish themselves as recognisable brands than arbitrary or fanciful names. Schack (ibid., 69) states that while companies and marketing people initially opt for descriptive names, trademark specialists, i.e. lawyers, typically suggest suggestive/associative names which draw on the consumer's imagination. Marketing research has demonstrated such cognitive impacts of suggestive names. Keller et al. (1998: 49) state the following:

> A memorable and meaningful brand name offers many advantages. Because consumers often do not examine much information in making product decisions, brand names must be recognized and recalled easily and be inherently descriptive and persuasive. Moreover, memorable or meaningful brand names can reduce the burden on marketing communications to build awareness and link brand associations.

Blackett (ibid., 18), writing about the psychology of brand names, also emphasises the importance of association. He notes that successful brand names draw from the sets of sounds and images pre-existent within the consumer's language and culture which help to build expectations and beliefs. He elaborates that the expectations and beliefs "are shaped by experience which in itself is the product of knowledge and receptiveness" and, consequently, pleasant imagery matched with the product will at best create "a symbiotic relationship" to the lasting benefit of the brand owner.

3. Pharmaceutical brand names

3.1 Chemical, generic, and brand names

A single drug always has three names; a chemical, a generic, and a brand name. For instance, the chemical name of the antibiotic known by its generic name as rifampicin, *(12Z,14E,24E)-(2S,16S,17S,18R,19R,20R,21S,22R,23S)-1, 2-dihydro-5,6,9,17,19-pentahydroxy-23-methoxy-2,4,12,16,18,20,22-heptamethyl-8-(4-methylpiperazin-1-yliminomethyl)-1, 11, 13-trienimino) naptho (2,1-b)- furan-21-yl acetate*, is a detailed description of the drug's chemical composition and is given to the drug by researchers upon its discovery.

The generic name (or the USAN (United States Adopted Names Council) name), *rifampicin*, is adapted from the chemical name and often consists of morphemes with standardised meanings such as *-pril* (is an ACE-inhibitor), *-statin* (lowers cholesterol), or *-cillin* (is an antibiotic) (Shmerling (2012) quoted in Williamson, 6). This is usually given to the drug by the WHO but can also be decided by organisations such as the FDA in the United States. A drug can have multiple generic names in different market languages.

Finally, the brand or proprietary name (*Rifadin*, *Rifampin*, *Rimactane*), is chosen by the drug's manufacturer. A drug usually has only one chemical and generic name, but it can be sold under several different brand names. According to Williamson (2013, 6), a basic formula for a drug brand name consists of a meaningful stem which often derives from the generic name and meaningless morphemes which help to distinguish the drug from other similar ones. Antia et al. (2006, 62) describe a similar strategy:

> . . . distinctiveness seems to be achieved through the creative use of clipping and through blending of generic name parts with a variety of other formants (full, clipped or abbreviated names of manufacturer or of other proper names, form of drug, user population, etc.).

3.2 The naming criteria and process

Pharmaceutical brand names are the results of a careful, costly, and time-consuming process. According to Ellerin and Breen (2007), the price of a brand name can be up to 2.25 million dollars and it can take years to formulate one. The pharmaceutical company contacts a branding company such as Interbrand or Branding Institute Inc. which then takes over the naming process. Williamson (ibid., 4) writes that The Patent Trademark Office (PTO) is ultimately responsible for the federal registration of the final trademark.

The primary gatekeepers of drug brand naming are the Food and Drug Administration (FDA) in the United States and the European Medicines Agency (EMEA) in Europe. According to Ellerin and Breen (ibid.), the names in general should not:

- be phonetically (sound like) or visually (look like) similar to existing drug names or names pending approval
- encode or be similar to generic / INN nomenclature
- convey promotional, misleading, unsubstantiated, or inappropriate claims.

The main reason behind the strict guidelines for drug brand naming is the need for names clearly distinct from each other as names too similar could lead to medical errors. According to Kohn et al. (2000), errors of prescription, dispensing and use account for 7000 annual deaths in the US, and according to The Department of Health (2000) for 25% of litigation claims in general medicine practice in the UK (quoted in Antia et al. (2006, 52)).[1]

Examples of drugs that have even been discontinued or rebranded due to their similarity to other brands can be found in the near past. In 2005, the opioid analgaesic *Avinza* was discontinued due to its similariy to *Evista* which was used in the treatment and prevention of osteoporosis in

[1] https://www.pharmacytimes.com/publications/issue/2005/2005-06/2005-06-9603

postmenopausal women.[1] Another example is the antidepressant *Brintellix* which was rebranded as *Trintellix* in 2016 as it was often confused with the blood thinner *Brilinta*.[2]

3.3 Earlier research on pharmaceutical brand names

3.3.1 Morphology of pharmaceutical brand names

In her article "A Morphological Study of Drug Brand Names", Williamson looks at the categories of cholesterol medication, oral contraceptives, and asthma and allergy medication. She states that the most popular morphological processes in drug brand naming are affixation, clipping, blending, and compounding. Many names are the products of multiple simultaneous processes (7). What Williamson sees as the key point of the study is "the importance of a generic name and the significance of the generic stem" (24). She sums up the findings as follows:

> Often times there are direct relationships between the drug's generic name and its brand name. Typically there will be a transfer of a generic stem or otherwise another component of the name in order to offer a correlation to the active ingredient of the drug, and thus its function. It is true however that the majority of brands that I analyzed did not in fact show this direct relationship if I really add up the numbers, as it is advised against by the LNC. However I do see it as a general pattern that I believe is more widespread amongst other types of medication; it is simply a strong tactic in drug name nomenclature (24).

The drug brand names in Williamson's study often consist of clippings of the drug's generic name and the addition of classical elements. She gives some examples from the field of cholesterol medicines. *Lipitor*, atorvastatin calcium by its generic name, consists of the clipped form of *lipid* and *tor* from *atorvastatin*. *Simcor* (simvastatin) employs *sim* from the generic name and the Latin combining form *cor*, pertaining to the heart. *Niacor* (niacin) has been formed analogously (10).

[2] https://www.pharmacytimes.com/product-news/brintellix-changed-to-trintellix-to-curb-brand-name-confusion-with-brilinta

Williamson (10) also observes the broadening of the meaning of the clipped generic stem from relating to a specific generic name to denoting cholesterol medication in general. *Crestor* (rosuvastatin calcium) and *Vytorin* (ezetimibe and simvastatin) do not contain atorvastatin, but still share the *tor* fragment to show similarity to other products of the same category. Williamson also sees that *cor* has come to denote cholesterol medication as it appears in several names.

Williamson also comments on the ambiguity of brand name affixes. *Asmanex*, *Nasonex*, and *Clarinex* all display the same pseudo-suffix *-nex* which means *death* in Latin. Williamson (18) argues that *Asmanex* and *Nasonex* might communicate something along the lines of "death to asthma, or death to blocked nasal passages". However, the same logic does not to apply to *Clarinex* because the name seems to suggest "a sense of 'clarity' from allergy symptoms". Alternatively, the suffix could be interpreted to be *-ex*, a common and even more ambiguous suffix in brand name formation. Williamson (ibid., 19) quotes Stvan ("The contingent meaning of -ex brand names", 2005) who makes a distinction between "killer" *-ex* and "enhanced" *-ex*. The former communicates a sense of "getting rid of" while the latter is more positive and generally implies a sense of newness. Thus, *Asmanex* and *Nasonex* could be analysed as including the "killer" *-ex* and *Clarinex* would be an example of an "enhanced" *-ex* product.

The morphology of pharmaceutical brand names has also been studied by Antia et al. (2006). In their study "Drug Trade Names: A Morpho-Semantic Study in Resourcefulness and Perfidy", Antia et al. look at drug trade names on the Nigerian market where counterfeit and substandard medicines are an issue. They examine the morphological processes employed in encoding sometimes perfidious messages in drug brand names. Antia et al. reviewed the names of 209 drugs and discovered 16 compounds, 4 abbreviations, 68 clippings, 95 blends, and 26 neologisms. They list no affixations even though Williamson (23) argues it to be the most popular strategy.

Like Williamson, Antia et al. also discuss the genericisation of morphemes. They discovered the names of the unregistered medicines such as *Chemadol*, *Phardol*, and *Remidol* formed after

Panadol as well as *Feloxin*, *Felvin*, *Felxicam* created after *Feldene*. Like some of the names in Williamson's study, these names indicate similarity between drugs belonging to the same category, but, additionally, they have been formulated to deceive the consumer into buying counterfeit medicine. The deceit is based on *dol* or *fel* originally appearing in *Panadol* and *Feldene* and later having been genericised in counterfeit drug names, the function of this genericisation being to deceive the consumer into thinking that they are buying a medicine as effective as Panadol or Feldene. (67-69)

3.3.2 Semantics of pharmaceutical brand names

Williamson does not define any clear semantic categories, but some can be delineated from her study. In addition to references to generic names, she mentions play on words and the use of associative meanings or mental images as tactics in drug brand naming. As examples of play on words, Williamson (11) mentions the cholesterol medicines *Lescol* and *Welchol* in which *less* and *well* have been blended into the name but are still phonetically distinguishable. Names that would fall into the category of associative meanings or mental images are the oral contraceptives ending in a feminine-sounding suffix such as *Cyclessa*, *Lessina*, *Camrese*, and *TriNessa* as well as those resembling female names, *Zarah*, *Heather*, and *Portia* (12-13). Williamson states that "[u]sing names provides a more relatable connection to the product, almost like it's your friend" and that this relatableness can make the consumer feel more comfortable taking the medication (13). Similarly, *Flovent*, an asthma inhaler, evokes mental images of flow and ventilation, a desirable state for an asthma patient.

Antia et al. approached the subject by categorising the names according to their semantic motivation. They discovered 134 names motivated by the drug's generic name, 34 motivated by the condition/cause, 39 motivated by the drug's manufacturer, 5 motivated by an attribute, 14 motivated

by elements stolen from other drug brand names, 4 motivated by miscellaneous elements, and 109 names of unknown motivation.

Martin (ibid.) and Dutchen (2009) also introduce some categories in their articles. Martin writes that "[m]ost drug names crafted by naming professionals are rooted in orthographic techniques, aimed at expressing fundamental drug traits like chemical origin, therapeutic outcome, or some catchy mnemonic imagery." According to Dutchen, the motivation for the name can come from the drug's composition or generic name, what the drug does, how it does it, or how it is made. She also mentions that Greek and Latin elements are used to add a sense of authority to the names.

4. Method and data

40 antidepressant names were analysed. Due to the lack of an official and definitive list of drug brands, the data has been extracted from the sites https://www.emedexpert.com and https://www.medicinenet.com. Both categorise drugs by their primary use (antidepressants) and subcategorise them by their chemical composition (e.g. serotonin reuptake inhibitors (SNRIs)).

The list of antidepressants was very long, and in order to keep the amount of data manageable, I omitted the lesser subcategories of noradrenergic and specific serotonergic antidepressants (NaSSAs), norepinephrine and dopamine reuptake inhibitors (NDRIs), monoamine oxidase inhibitors (MAOIs), mood stabilisers, atypical antipsychotics, and miscellaneous antidepressants. Instead, I focused on the major categories of selective serotonin reuptake inhibitors (SSRIs), tricyclic and tetracyclic antidepressants (TCAs), and serotonin and noradrenaline reuptake inhibitors (SNRIs).

I typed the names into Microsoft Excel and categorised them according to their active ingredients (e.g. fluvoxamine) and function of mechanism (e.g. selective serotonin reuptake inhibitor (SSRI)). I broke the names down into their constituent the root words and affixes. I also

analysed the word-formational processes employed in each name, and in the case of clippings and affixations, the type of clipping (back-, mid-, and fore-clipping) and the type of affixation (prefixation or suffixation). Finally, I categorised the root words and affixes etymologically.

Additionally, it must be stated that the names cannot be analysed with complete certainty as the naming process is obscured. Access to this process would provide information on the morphological constituency of the names as well as their semantic motivations, but as it is not available, these aspects of the names must be deduced. Luckily, as is usually the case with brand names (since they aim for including meaningful elements despite the restrictions to do so, as was discussed earlier) most of the names are transparent enough for analysis.

5. Analysis of the data

5.1. Morphological analysis

The most popular word-formational process employed is pseudo-affixation, accounting for 25 out of 40 names altogether. There are 21 pseudo-suffixations, four pseudo-prefixations, and one pseudo-infixation. The second most popular processes are clipping with 22 instances (eight fore-clippings, four mid-clippings, ten back-clippings) and proper affixation with 13 instances (eight prefixations, five suffixations). For the sake of clarity and simplicity, I include combining forms in the category of affixes. There are also two blends. 15 of the names employ multiple processes simultaneously.

Williamson (ibid., p. 23) mentions affixation and clipping as the most popular word-formational processes. Clipping also forms the second largest category in the study by Antia et al., comprising 68 names out of 209. This holds true for the names analysed in this article as 38 of them employ affixation (including pseudo-affixation) and 14 feature clipping (often multiple clippings in the same word). However, although blends form the largest category in Antia et al.'s study with 95

blends comprising almost half of all the names studied, they are the smallest category in my study. Additionally, Williamson mentions compounding as one of the most popular processes and Antia et al. have discovered 16 instances of it, but there are no compounds in my data.

Studying the names, I encountered many lexemes which seem like affixations but do not fill the criteria completely. They are *-ada*, *-aden* (two occurrences), *-fem*, *-fem-*, *-frane*, *-franil*, *-il* (five occurrences), *-iq*, *khe-*, *lo* (a clipping from the generic name *Lofepramine*)*-, -mil*, *-on* (three occurrences), *-pramin*, *-ta*, and *to-*. Panic (ibid., 247) calls these "brand-naming suffixes" or "suffixoids", but as the data also includes prefixations and infixations, I discuss these names as pseudo-affixations and the morphemes added to the root as affixoids. My main criterion for this classification is that the affixoid does not carry any analysable meaning or occur in natural language use. I classified such non-meaning-carrying elements as affixoids based on the same element either occurring in two or more names in the position of an affix or, if only occurring in one name, preceding or following a clear root. I also classified prefixes in the position of suffixes and suffixes in the position of prefixes as pseudo-affixes. Instances of pseudo-affixations are *Paxil* and *Tolvon* (*-il* and *-on* are not established affixes in natural language use but appear in several other antidepressant names); *Cymbalta* and *Khedezla* (*-ta* and *khe-* only appear in one name but follow and precede the clear roots *cymbal* and *dezla* (a clipping and distortion from *desvenlafaxine*, the drug's generic name)); and *Lexapro* and *Deprilept* (*pro-* and *lept-* are prefixes used as suffixes).

There are also some names which consist of mere affixes with no roots at all. Such names are *Lexapro*, consisting of the prefixes *lex-* and *pro-* united by the binding formative *-a-*. There are also *Anafranil*, *Tofranil*, *Norpramin*, and *Petrofrane* whose generic names are *Clomipramine*, *Imipramine*, and *Desipramine* (for both *Norpramin* and *Petrofrane*), respectively. For reasons I could not make clear, the suffix *-pramine*, denoting a tricyclic antidepressant, has been systematically replaced with either *-franil, -frane*, or *-pramin*, all of which I classify as suffixoids. These suffixoids are preceded by *ana-*, a Greek prefix meaning "up", "back", or "again", *to-,* a

meaningless prefixoid, *nor-*, a chemical prefix, and *petro-*, a combining form of Greek origin meaning “stone”.

Out of the 16 proper affixes, five are Latin, four are Greek, two are English, one is Italian, and four are chemical. *Prozac* and *Prothiaden* contain the Latin prefix *pro-*, and *Lexapro* begins with *lex-*. The Greek prefixes are *zo-* in *Zoloft*, *ana-* in *Anafranil*, and *petro* in *Petrofrane*. The English agentive suffix *-or* appears in *Pamelor* and *Effexor*. *Savella* contains the Italian diminutive suffix *-ella.* The chemical prefix *nor-* appears in *Norpramin* and *Norval*, *-in* in *Asendin*, and *-yl* in *Aventyl.*

Altogether, there are eight instances of fore-clipping, four instances of mid-clipping, and ten instances of back-clipping. Eight names employ multiple types of clipping. English Language and Linguistics Online names back-clipping as the most popular type of clipping, but, in my study, they do not constitute an overwhelming majority. The relatively high number of mid-clippings is particularly striking as they are rare in naturally occurring language. Many of the clippings are also morphologically unconventional. Adams (1973, 135) states that “[m]ost often the first syllable [of the clipped element] is retained, and sometimes the first two”, but this is not the case in most of the clippings analysed. In fact, the first one or two syllables have only been retained in *Paxil* from *paroxetine*, *Lomont* from *pofepramine*, and *Khedezla* from *desvenlafaxine*. Additionally, ***Cipra****lex* from (es)ci(talo)pra(m), ***Pexe****va* from p(aro)xe(tine), ***Pax****il* from pa(ro)x(etine), ***Luvox*** from (f)luvox(amine), *Nor****pramin*** from (desi)pramine(e), and ***Th****aden* from (do)th(iepin) have been clipped without regard for syllabic boundaries.

The most clipped element of the clippings is the drug’s generic name, 12 brand names containing elements of it. This is often done to form the root of the name to which affixes are added. For instance, *Cipralex* is a clipping from *escitalopram* to which the pseudo-suffix (which is in reality a prefix) *-lex* is added. Most of these roots are meaningless, but some, such as *Paxil* from *paroxetine*, have been clipped to resemble a real lexeme. There are also clippings where part or

parts of the generic name have been clipped but no affixes have been added to the clipping. *Luvox* from *fluvoxamine* is an example of this.

Another type of clipping is one in which it is not the generic name but some other lexeme that has been clipped but is still recognisable. For instance, *Levate* is most likely a fore-clipping from *elevate* and *Surmontil* a mid-clipping from *surmount.* There is also a clipping from a phrase: *Sinequan* from the Latin *sine qua non*. Phrase clippings are not mentioned in any of my source materials, so I would consider them a rare occurrence.

The two blends are *Endep*, probably from *end* and *depression*, and *Savella*, most likely containing the parts *save* and the Italian diminutive suffix *-ella*. Blends are usually composed of elements of the same word class, but *Endep* contains both a verbal and a nominal element and *Savella* is a blend of a verb and an Italian diminutive suffix. Additionally, *Endep* breaks the basic rule of blending. Plag (2003, 123) states that it is always the first part of the first element that is combined with the second part of the second element, but in *Endep*, both *end* and *dep* are first parts.

5.2. Semantic analysis

Following Shack's categorisation, 30 of the names are suggestive, meaning in this case that they contain in some form information about the drug's generic name, purpose or desired goal, and one is descriptive as it merely reflects a basic quality (in this case, the purpose) of the product. What separates the suggestive names from purely descriptive names are the strategies of distortion, clipping, blending, and the use of classical elements in order to achieve enough semantic opacity to meet the requirement of distinctiveness while keeping the name intelligible. The rest nine are fanciful names, i.e. they are semantically opaque.

One way to violate the restriction of conveying promotional claims is to deform, clip or blend the meaningful root but to keep it distinguishable enough to evoke a positive mental image. The

names ***Elav****il*, *Zo****loft,*** ***Levate***, ***Asend****in*, and *Lo****mont*** deal with the imagery of elevation, *Viv****act****il* suggests activity, and ***Pristi****q* sounds like a promise of pristinity. The femininity-denoting affixoid *fem* occurs in *Saraf****em*** and *Sel****fem****ra*, both of which are also prescribed for premenstrual dysphoric disorder. In ***Levate*** and ***Save****lla*, indicative of elevation and rescue respectively, the meaningful elements embedded in the names are further obscured in addition to clipping and blending by their spellings which change the word stress from how it would normally be with 'elevate' and 'save'. Finally, ***Endep*** promises an end to the condition straightforwardly enough to be classified as a descriptive name. Although seemingly transparent, the processes of blending and clipping probably make the name lexicalised enough to fulfil the legal requirements of semantic opacity.

Another strategy employed to include positively charged elements in the name is to have them in a classical language. This has been done in ***Cipra****lex*, as *ciprus* means 'good' in Latin; ***Pax****il*, *pax* meaning 'peace' in Latin; *Depri****lept***, *lept* denoting lightness in Greek; ***Ludi****omil*, *ludi-* being a Latin combining form denoting playfulness; ***Petro****frane* with *petro-* possibly promising groundedness and stability; ***Viv****actil*, *Bol****vi****don*, and ***Zo****loft*, the Latin *viv-* and *vi-* and the Greek *zo-* referring to life; *Lexa****pro*** and ***Pro****zac* with *pro* being a common positivity-denoting affix in brand names; and ***Sinequan***, a clipping from the Latin phrase s*ine qua non*, according to Merriam-Webster 'something absolutely indispensable or essential'.

As was shown in the morphology section, the way to retain the generic name in the brand name is to clip or distort parts of it. In some names, the generic name is more distinguishable than in others. Sometimes a continuous part of the generic name has been retained (*Luvox* from f**luvox**amine, *norpramin* from desi**pramin**e, *Adapin* from doxe**pin**), but most of the generic name elements in brand names have either been clipped multiple times (*Cipralex* from es**ci**talo**pra**m, *Pexeva* from **p**aro**xe**tine, *Khedezla* from **de**sven**la**faxine) or are as short as two letters (*Thaden* from do**th**iepin, *Lomont* from **lo**fepramine) and are not as distinguishable as the first group.

Finally, there are nine fanciful names. *Gamanil*, *Norval*, *Aventyl*, *Tolvon*, and *Fetzima* clearly fall into the category as their meanings are completely semantically unanalysable. ***Ana****franil*, containing the Greek prefix *ana-*, ***Pamel****or*, possibly drawing from the proper name *Pamela,* and ***Cymbal****ta* contain meaningful elements, but they do not seem to relate to the drug, its function or desired effects. Thus, they fall closer to the category of fanciful names than suggestive names. Finally, even though *Anafranil* and *Tofranil* have both been derived from drugs ending in *-pramine* which has been systematically replaced by *-franil*, the consumer is most likely not aware of this correspondence as there is no direct reference to the generic name. Thus, I classify them as fanciful names.

Semantically, the affixoids seem to vary in their functions. Most of the affixoids are meaningless, but the suffixoids *-in* and *-on* occur only with tricyclic and tetracyclic antidepressants, respectively. While these affixes have no meaning to themselves either, their purpose is to categorise some of the drugs. While the other affixoids do not bring any actual semantic content to the names, they seem to have a stylistic function. Dutchen (ibid.) mentions that Greek and Latin elements are added to the names for a sense of authority, and it is likely that this holds for the "sciency"-sounding affixoids such as *-il* too. As for the chemical affixes *-nor*, *-in*, and *-yl*, it is unclear whether they are descriptive of the consistency of the drugs themselves or are used for the same stylistic function as most of the affixoids.

5.3. Conclusion and further research

This study corroborates many of the findings made in earlier research. Firstly, it is evident that the goal of lexicalisation directs the naming process. In these names, lexicalisation is achieved by employing different word-formational processes, adding foreign elements, and distorting meaningful elements and word stress but keeping them distinguishable. With 30 semantically suggestive names and one descriptive name out of 40 (13 referring to the generic name and 22

conveying positive imagery, some overlapping in these qualities), it can be said that lexicalisation is a major strategy in antidepressant brand naming.

Morphologically, the findings are somewhat incongruous. The role of affixation (38 instances) and clipping (22 instances) as the main word-formational processes in drug brand naming is corroborated in this study, but the significance of blending and compounding is much lesser than what the previous studies have discovered. Also, pseudo-affixation in pharmaceutical brand naming has not been discussed as thoroughly in earlier research. With no previous research on antidepressant brand names, it is difficult to say whether these are features characteristic of antidepressants, statistical aberrations, or a question of analysis.

The semantic motivations for the brand names mentioned in previous research also apply to the names in my study. As has been demonstrated in previous research, the brand name is often inspired by the generic name even though it is against brand naming legislation. However, in some names, the reference can be as short as two letters, raising questions about the actual recognisability of the generic name.

The use of positive imagery and references to desired therapeutic outcomes mentioned by Williamson and Martin is strong in the names I analysed. Specifically, many of the names make use of metaphors of elevation. The addition of Classical elements for a sense of authority mentioned by Williamson and Dutchen also holds true for the names in my study. Also, the genericisation of affixes mentioned by Williamson and Antia et al. occurs in antidepressant names with *-in* to denote tricyclic antidepressants and *-on* to denote tetracyclic antidepressants.

There are also some aspects which stand out in my own study. One is the heavy violation of morphological rules in the names. Such violations are the use of prefixes as suffixes and vice versa, the lack of first syllables in clippings and clipping outside syllabic boundaries, the blending of elements of different word classes and first parts, and the creation of lexemes consisting only of

affixes with no roots. The role of word stress in some names is also a new discovery. Additionally, the role of pseudo-affixation and the different functions of different affixes ranging from categorising to authority-conveying have not been discussed as thoroughly in previous research. I also discovered that the names can carry multiple simultaneous meanings. These meanings consist of a clipped generic name which in its clipped form resembles a meaningful lexeme, for example *Paxil* from *paroxetine*. This way, two forbidden elements, the generic name and a meaningful element, are both included in the name.

Still, there remain many things that could be studied further. Firstly, an important area of study would be the actual consumer responses to brand names. For instance, many of the suggestive names rely on Classical elements even though few people these days are trained in the Classical languages. Do laypeople draw from their unconscious resources in order to absorb these messages? Such questions could be studied further in the field of psycholinguistics. Also, a significant part of brand naming is the use sound symbolism. Studying this aspect in pharmaceutical brand names would also surely yield results. Finally, drug brand names could also be studied more broadly and comparatively. One approach would be to see if there are some category-specific strategies in drug brand naming according to drugs prescribed for different types of ailments.

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7. Appendices

7.1 List of analysed antidepressant brand names, their morphological processes, and origins of roots and affixes

Name	Process(es)	Origin of Root Word(s)	Origin of Affix(es)
Celexa (Citalopram, SSRI)	Pseudo-suffixation	Unidentifiable	Latin
Lexapro (Escitalopram, SSRI)	Prefixation, pseudo-suffixation	-	Latin
Cipralex (Escitalopram, SSRI)	Clipping, pseudo-suffixation	Generic name	Latin
Prozac (Fluoxetine, SSRI)	Prefixation	Unidentifiable	Latin
Sarafem (Fluoxetine, SSRI)	Pseudo-suffixation	Proper name	Pseudo
Pexeva (Paroxetine, SSRI)	Clipping, unidentifiable	Generic name	
Selfemra (Fluoxetine, SSRI)	Pseudo-infixation	-	Pseudo
Luvox (Fluvoxamine, SSRI)	Clipping	Generic name	
Paxil (Paroxetine, SSRI)	Clipping, pseudo-suffixation	Latin, generic name	Pseudo
Deprilept (Escitalopram, SSRI)	Pseudo-suffixation	English	Greek
Zoloft (Sertraline, SSRI)	Prefixation	English (distorted)	Greek
Elavil (Amitriptyline, TCA)	Pseudo-suffixation	English (distorted)	Pseudo
Endep (Amitriptyline, TCA)	Blend, clipping	English	
Levate (Amitriptyline, TCA)	Clipping	English	
Asendin (Amocapine, TCA)	Suffixation	English (distorted)	Chemical
Anafranil (Clomipramine, TCA)	Prefixation, clipping, pseudo-suffixation	Generic name	Greek, pseudo
Norpramin (Desipramine, TCA)	Prefixation, clipping	Generic name	Chemical, pseudo
Tofranil (Imipramine, TCA)	Pseudo-prefixation, pseudo-suffixation	Generic name	Pseudo
Petrofrane (Desipramine, TCA)	Prefixation, clipping, pseudo-suffixation	Generic name	Greek, pseudo
Prothiaden (Dothiepin, TCA)	Prefixation, clipping, pseudo-suffixation	Generic name	Latin, pseudo
Thaden (Dothiepin, TCA)	Clipping, pseudo-suffixation	Generic name	Pseudo
Adapin (Doxepin, TCA)	Pseudo-prefixation	Generic name	Pseudo
Sinequan (Doxepin, TCA)	Clipping	Latin	
Gamanil (Lofepramine, TCA)	Pseudo-suffixation	Unidentifiable	Pseudo
Lomont (Lofepramine, TCA)	Clipping, pseudo-prefixation	English (distorted)	Generic name
Pamelor (Nortriptyline, TCA)	Suffixation	Proper name	English

Aventyl (Nortriptyline, TCA)	Suffixation	Unidentifiable	Chemical
Vivactil (Protriptyline, TCA)	Pseudo-suffixation	Latin, English	Pseudo
Surmontil (Trimipramine, TCA)	Pseudo-suffixation	English (distorted)	Pseudo
Ludiomil (Maprotiline, TeCA)	Pseudo-suffixation	Latin	Pseudo
Psymion (Maprotiline, TeCA)	Pseudo-suffixation	Greek	Pseudo
Bolvidon (Mianserin, TeCA)	Pseudo-suffixation	Unidentifiable	Pseudo
Norval (Mianserin, TeCA)	Prefixation	Unidentifiable	Chemical
Tolvon (Mianserin, TeCA)	Pseudo-suffixation	Unidentifiable	Pseudo
Pristiq (Desvenlafaxine, SNRI)	Pseudo-suffixation	English	Pseudo
Khedezla (Desvenlafaxine, SNRI)	Clipping, pseudo-prefixation	Generic name	Pseudo
Cymbalta (Duloxetine, SNRI)	Pseudo-suffixation	English	Pseudo
Fetzima (Levomilnacipran, SNRI)	Unidentifiable	Unidentifiable	
Savella (Milnacipran, SNRI)	Suffixation, blend	English	Italian
Effexor (Venlafaxine, SNRI)	Suffixation	English (distorted)	English