

Investigation into Sentence Subjects on a Drugstore Website

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Abstract

This study investigates the surfacing of sentence subjects in drug descriptions on a drugstore website. Despite the fact that the overt presence of sentence subjects are generally required in Standard English, covert subject sentences, namely the imperatives and the subjectless declaratives are widespread not only in spoken language, but also in instructions, product descriptions, and advertisements. The finding of this study shows that sentence structures in drug descriptions in walgreens.com vary with the large majority as covert subject sentences. The structures are considered register-based variations meaning that they only occur in a specific environment. This study delved into the reason behind the variations. It discovered that the variations are the result of an economical process that facilitates the communicative purpose of the text and satisfies the US government restrictions for medical products.

Keywords: subject, subjectless, imperatives, drug descriptions, website

1. Introduction

The primary focus of this study is the overt and covert existence of sentence subjects in the drug descriptions on a drugstore website. The purpose is to investigate when and why the subjects appear or do not appear in the text. As linguistic studies on product descriptions have not been found, this study based its hypothesis on previous studies of advertisements. It was hypothesized that considering the similar purposes between advertisements and product descriptions, similar sentence structures are expected.

Studies of advertising language range from semantic interpretation (Dubovičienė & Skorupa, 2014; Jančovičová, 2015), to sentential elements (Linghong, 2006; Ren, 2011; Romanenko, 2014). Linghong (2006) found that the most frequent sentences in advertisements are declaratives, followed by imperatives and interrogatives, respectively. His finding is supported by Ren (2011), who discovered the widespread use of imperatives in advertisements. Romanenko's (2014) finding also shows that imperatives are usually seen in online advertisements. Other sentence structures appearing frequently in advertisements are declaratives and interrogatives (Romanenko, 2014). Jančovičová (2015) further discovered that in addition to imperatives, declaratives, and interrogatives, exclamatives also appear often in advertisements. Regarding such covert subject constructions as imperatives, they were found often in advertisements with the purpose of persuasion and attracting attention (Linghong, 2006; Ren, 2011; Romanenko, 2014).

Unlike advertisements, no studies were found to focus on language used in product descriptions. Store webpages are currently an influential channel in today's marketing. Their product descriptions are seen as an amalgamation between product information, instructions, and advertisements. It is thus hypothesized that, like in advertisements, sentences that do not have overt subjects, such as imperatives, will appear often in the data. Additionally, the existence of other types of sentence subjects could arise due to register differences between advertisements and product descriptions.

With the data from Walgreens.com, the largest drugstore chain in the United States, this study investigates different sentences with the focus on their overt and covert existence. The purpose of this study is thus, to study the frequencies and the argument structures of sentences with different types of sentence subjects in drug descriptions on the drugstore's website. It also aims to examine their distribution and the reasons for their existence. It is hoped that the findings can contribute to the understanding of sentence structures in product descriptions on drugstore websites, one of the most popular marketing media today.

2. Previous studies

Regarding the sentence structures used in advertisements, Jančovičová (2015) found that sentential elements in advertisements are in both phrases and sentences, with the frequency of the sentences slightly higher than phrases. The phrases found were noun phrases, verb phrases, adjective phrases, and prepositional phrases, whereas the sentences were the declaratives, the imperatives, and the interrogatives, respectively. Supporting Jančovičová (2015), Linghong (2006) who studied data from the *Reader's Digest* and the *Washington Post* states that, largely, the sentences in advertisements are declaratives, since their characteristic is informative. Moreover, imperatives and

interrogatives were also found to be used in order to direct the attention of the readers (Linghong, 2006, p. 76). Examples of imperatives and interrogatives are as follows:

- (1) a. Hook up with a buddy online, get your own meal plan and easy recipes, or chat with a dietitian. C'mon, if I can be a big loser, there's nothing stopping you. (Linghong, 2006, p. 76)
- b. Is this a vision or a city? (Linghong, 2006, p. 76)

According to Linghong (2006), imperatives are “persuasive” and more “appealing”. Imperatives were also found extensively in Ren’s (2011) study on the cohesion of imperative sentences in online advertisement. He found 121 imperative sentences in the selected 50 advertisements online (Ren, 2011, p. 744). Ren (2011) characterized by advertising language that it is a “unique discourse” (Qi, 2003; Ren, 2011, p. 744), having the attributes of drawing readers’ attention and also being memorable. In addition to advertisements, the imperatives are used in various situations, such as wishing, permitting, inviting, and giving advice, which represent different illocutionary forces depending on context (Schmerling, 1982 as cited in Condoravdi & Lauer, 2012).

Despite the detailed analyses of sentence types appearing in advertisements in the above studies, focusing on the purposes and sentential elements, the scholars failed to specify the voices of the sentences and their argument structures. For example, declarative sentences can be either in the active voice, with agent subjects, or the passive voice, with theme subjects. The use of passive and active voices were found to vary among different areas of expertise. The passives have been widely investigated in academic and technical writing because they were “embraced” in the scientific articles (Sigel, 2009). Sigel (2009), however, suggested that the passive can weaken arguments in social science and humanities because it makes the writing unclear and unconvincing.

The passives in written notes were also studied in Porter (2005) when the written notes from 16 nurses were investigated for passive sentences. 335 transitive verb phrases were extracted in which 48.96% are in the passive voice. 85% of the passive verbs are actions performed by the nurses, 2.74%, by patients, 10.37%, by other hospital personnel, and 0.91%, by patients’ families. Porter analyzed that agency seems to determine the voice. Hobbs (2003 as cited in Porter, 2005) also found that physicians use the passives pervasively and conventionally. Porter (2005) concludes that, in the medical discourse, the passives tend to be a convention.

It was also noticed that in addition to the above sentence structures that appear often in specific contexts, indicative sentences that appear without

subjects which are called subjectless sentences (Ozaki, 2010; Reiman, 1994) were found in product labels, as in (2).

(2) Increase energy (Supplement capsules)

Thrasher (1974) refers to the subjectless phenomenon as *erosion* where elements in addition to subjects, which are pronouns, auxiliaries, articles, possessive pronouns, and conjunctions can be omitted without affecting the sentence meaning (Thrasher, 1974, p. 9). Ozaki (2010) classifies the subjectless sentences into three types (a) sentences with omitted subjects, as in (3a), (b) sentences with omitted subjects and copula, as in (3b), and (c) sentences with omitted subjects and auxiliaries, as in (3c).

(3) Brand: Sensodyne Gentle Whitening toothpaste

- a. [Sensodyne] Contains Sodium Fluoride 0.221% w/w, Potassium Nitrate 5.00% w/w.
- b. [Sensodyne is a] Dentist recommended brand
- c. [Sensodyne is] Clinically proven relief and daily protection for sensitive teeth.

The above subjectless sentences follow Ozaki's (2010) classification. The omission of the article, a functional category, in (3b) is also possible (Hornstein & Weinberg, 1981). Other omitted functional categories above are the copula *be* (3b) and the auxiliary *be* (3c). The copula *be* heads the subjective complement, while the auxiliaries, which includes *be*, *have*, and *do* support main verbs. *Be* appears in passive and progressive sentences, *have*, in perfect sentences, and *do*, in questions and negations.

The lack of a sentence subject makes subjectless sentences, as in (2) and (3) similar to the imperatives, one of the most frequent structures in advertisements. The difference is in the mood. Unlike the imperative, the subjectless sentence, with the tense marker, is indicative. Taking subjectlessness into account, it is likely that some of the non-sentence phrases in Jančovičová (2015), namely, noun phrases, verb phrases, adjective phrases, and prepositional phrases could be counted as covert subject or subjectless sentences.

The above literature review shows that varieties of sentence structures can appear in advertisements and product labels while only some were covered in previous studies. It also shows that in the era when internet marketing is getting more and more pervasive, not many related linguistics studies were found. This study, thus, investigates sentence structures in product descriptions on websites, specifically drug descriptions. It hopes to examine the appearance of different sentence structures with the focus on the overt and covert existence of sentence subjects and the reasons behind the phenomena.

3. Data Collection

The product descriptions on Walgreens.com, the most preferred drugstore website in the United States, were selected. This website was selected because it is a highly frequented website in the US. It is assumed that the language use, which is believed to influence the sales, is well-accepted by the audience. Among the various kinds of products sold in Walgreens, the drugs were chosen because the descriptions tend to target a general audience, regardless of age, gender, or social status. The data was collected from web pages of the top bestselling edible drugs in the Medicines and Treatment category. The webpages of the top products were selected because the language used is believed to contribute to their marketing success.

The data from the ten bestselling products with 4.5-5 stars were selected. The collection was supported by the following data sampling.

Table 1: Data sampling of bestselling product webpages

Number of webpages	Ratio of overt: covert subjects	
	Instances	Percentage
3	27:127	15.53:82.47%
5	49:204	19.37:80.63%
8	56:322	14.81:85.19%
10	92:406	18.47:81.53%

As the percentage changed minimally among different samplings, it was settled that the data from ten bestselling products is sufficient for the analysis. The data of 498 instances were extracted. The full length of descriptions on each brand's webpage was observed. Data classification for the overt subjects are based on their semantic roles, and the covert subject sentences are mainly based on Ozaki's (2010) three types of subjectless sentences, which are (a) sentences with omitted subjects, (b) sentences with omitted subjects + copula, and (c) sentences with omitted subjects + auxiliaries. To focus on sentence subjects, only the main clauses (matrix TP's) were analyzed. The independent DP's (Determiner Phrases, traditionally, NP's) which are not qualified as part of subjectless sentences were excluded from the data, as in (4).

- (4) a. Shipping Weight (in lbs.): 0.28 (Zicam)
- b. Servings Per Container (Zyrtec)

In this study, non-sentences and subjectless sentences are different because the omitted elements in subjectless sentences are predictable, whereas omitted elements in non-sentences are not predictable.

4. Findings

The contents on the webpages of each brand were systematically divided into six sections, as follows:

Table 2: Examples by sections

Sections	Examples
1. Advertisement	(5) a. Compare and Save 16% with Walgreens Brand. (Tylenol) b. Online and store prices may vary. (Sudafed)
2. Purchasing Instruction	(6) a. Add to cart. (Benadryl) b. Add to shopping list. (Walgreen)
3. Shipping Instruction	(7) a. Arrives in 1-2 business days. (Sambucol) b. See shipping FAQ (TheraFlu)
4. Product Detail	(8) a. Temporarily relieves sinus pressure and nasal congestion relief. (Sudafed) b. Relieves minor aches and pains. (Tylenol)
5. Usage Instruction	(9) a. Children under 12 years: Ask a doctor. (Tylenol) b. Store between 20-25°C (68-77°F). (Tylenol)
6. Warning	(10) a. If pregnant or breastfeeding, ask a health professional before use. (Benadryl) b. Keep out of reach of children. (Claritin)

Warning is the largest section of the website, followed by Product Detail, Usage Instruction, Shipping Instruction, and Purchasing Instruction, respectively. Advertisement occupies the smallest space on the webpage.

The instances collected are full sentences and elliptical sentences, of which the omitted parts can be systematically recovered from the context. The sentences found are mostly imperatives. The declaratives are mainly subjectless sentences. The interrogatives are very rare, with only eight instances, all of which are subjectless sentences. From a total of 498 sentences the ratio of covert subjects versus overt subjects is 406:92 (81.53:18.47%). The frequencies of each sentence type are detailed as follows:

Table 3: Overt subject sentences

Types of subjects	Instances	%	Examples
<i>Agent-subject</i>	3	0.60	(11) <u>Your doctor</u> should determine if you need a different dose. (Claritin, Zyrtec)
<i>Non-agent subject</i>	89	17.87	
Experiencer	1	0.20	(12) Reye's syndrome: <u>Children and teenagers who have or are recovering from chickenpox or flu-like symptoms</u> should not use this product. (Walgreens)
Instrument	11	2.21	(13) <u>Theraflu Powder for Flu and Sore Throat</u> brings the heat to battle your symptoms with each power-packed dose. (TheraFlu)
Location	20	4.02	(14) a. This product has no shipping restrictions. (Zicam) b. Each packet contains: potassium 10mg, sodium 51mg. (TheraFlu) c. Symptoms may include: ... (Tylenol)
Theme (Unaccusative)	30	6.02	(15) <u>Online and store prices</u> may vary. (Zicam)
Theme (Passive)	17	3.41	(16) a. This product can be shipped to a Walgreens store for FREE. (Walgreens) b. Zyrtec is intended for use by adults and children six years and older; one dose of Zyrtec starts working at hour 1 and keeps on working for a full 24 hours. (Zyrtec) c. Satisfaction guaranteed. (Zicam)
Copula	10	2.01	(17) <u>These</u> could be signs of a serious condition. (TheraFlu)

Only two overt agent-subjects appear in the data, as shown above. The overt non-agent subjects, include experiencers, instruments, locations (*have/contain/include* subjects), unaccusative themes, passive themes, and copula subjects. As this study focuses on the occurrence of the subjects, the omitted auxiliary passive, as in (16c), was counted as one of the overt-subject sentences.

Regarding the overt non-agents in the data, the experiencer refers to the patient who uses the drugs, and the instruments refer to the drugs or their ingredients. The locations are mostly the drugs, which co-occur with the verbs *have* or *contain*. Only one location refers to the symptoms with the verb *include*, as in (14c) above. The theme subjects are in unaccusative and passive sentences. The passive themes are mostly products, as in (16a and b). Only one, in (16c), appearing with the omitted auxiliary *be*, refers to the satisfaction of the consumer. The unaccusative themes, referring to prices, (purchasing) restrictions, and symptoms, appear only with three verbs: *vary*, *apply*, and *occur*, respectively. Copula subjects in the data are modified by subjective complements. Among ten of the overt copula subject instances, seven are from Warning.

Table 4: Covert subjects

Types of subjects	Instances	%	Examples
<i>Imperative</i>	240	48.19	(18) Keep out of reach of children. (Benadryl)
<i>Subjectless</i>	166	33.33	
<i>A. Omitted subject</i>			
Instrument	30	6.02	(19) Shortens the length of a cold. (Zicam)
Location	3	0.60	(20) Contains 10 mg of cetirizine hcl per Tablet. (Zyrtec)
Theme (Unaccusative)	42	8.43	(21) a. Arrives in 1-3 business days (Tylenol) b. Ship one time. (Walgreens)
<i>B. Omitted subject +be</i>			
Copula	67	13.45	(22) a. #1 Cold Shortening Brand (Zicam) b. Easy to swallow (WG aspirin) c. Questions? (Zicam)
Experiencer	1	0.20	(23) Wondering how to relieve sinus pressure? (Sudafed)
Theme (Passive)	14	2.81	(24) a. Frequently bought with... (Benadryl) b. <u>Based on sales</u> data of homeopathic cold shortening brands. (Zicam)
<i>C. Omitted subject + copula + preposition</i>	9	1.81	(25) a. Indoor/outdoor allergy relief (Allegra) b. Sneezing (Benadryl) c. Original Prescription Strength (Zyrtec)

Covert subject sentences expand over the largest part of the data. The two categories of covert subject sentences found are imperatives and subjectless sentences. The subjectless sentences found are divided into three types adjusted from Ozaki (2010): (a) omitted subject, (b) omitted subject + *be*, and (c) omitted subject + copula + preposition, as displayed in Table 4. Type (b) and (c) in this study are slightly different from Ozaki (2010). In type (b), the omitted copula and auxiliary found share the form *be*; thus, Ozaki's (2010) two separate types of elliptical sentences, *omitted copula* and *omitted auxiliary* which are omitted together with the subject, were collapsed into *be*. The ones with the copula *be* omitted are left with DPs or adjectives, as in (22a and b), whereas the ones with the DP left can also have the existential subject, as in (22c). Sentences with the auxiliary *be* omitted can be left with the past participle, as in the passive in (24), or the present participle, as in the progressive sentence in (23). On the other hand, the subjectless type (c) focuses on the omission of the subject + the copula *be*, together with the preposition because the preposition was systematically found to be omitted in copula sentences in the data, as in (25).

The omitted subjects include instruments, locations, themes, copula subjects, and an experiencer. All of the omitted instruments, locations, and unaccusative themes refer to products. Only two unaccusative verbs appear: *arrive* and *ship*. The verb *ship*, like *arrive*, in this case, is analyzed as unaccusative because the sentence is indicative. It is assumed that with the help of machines in the age where mail-ordering is pervasive, the packages can ship themselves without agents.

Type (b) of subjectless sentences, omitted subject + *be*, include subjects referring mostly to products. Only one omitted subject in Type (b) refers to an experiencer, which appears with the progressive verb, as in (23). In the case of the passive, only one instance refers to the sales of the product, as in (24b). Additionally, the omitted subject + *be* sentences also include the interrogatives asking for questions and comments. Seven are assumed to have the expletive *there* omitted together with *be*, as in (22b), from *[are there] questions/questions/questions or comments?* Only one question in (23a) is assumed to have the experiencer *you* and the progressive *be* omitted. Like Types (a) and (b) subjectless sentences, Type (c) omits the subject, referring to products, together with the copula *be* and predictable prepositions *for/with*.

The results reveal that covert subjects appear much more often than overt subjects. Only three overt agent subjects were found, while the rest of the overt subjects are products. The majority of the covert subjects refer to the audience, as in the imperatives, and products, as in the subjectless sentences. The imperatives and the subjectless sentences are in close percentages, both scattered in all sections. The imperatives appear in Warning and Advertisement the most, whereas the subjectless sentences appear in Product Detail and Shipping Instruction the most. The majority of the subjectless sentences are omitted

subject sentences, followed by omitted subject + *be* sentences. Omitted subject + copula + preposition sentences appear the least often.

5. Discussion

The finding confirms that drug descriptions on a drugstore website are not as similar to advertisements as previously hypothesized. While advertisements commonly exhibit declaratives, imperatives, interrogatives, and exclamatives, the drug descriptions exhibit imperatives as the most common, followed by declaratives; interrogatives are, however, the minority; and exclamatives were never found. Moreover, while most of the declaratives in the data have covert subjects, the ones in the advertisements have overt subjects. As the overt ones are the minority in the drug descriptions, it is also interesting to investigate the reasons behind their appearances.

5.1 Overt subjects

The overt subjects in the data are classified into agent and non-agent subjects despite the fact that they are in various semantic roles. The agent-subjects are singled out because they are distinctively rare in the data.

Only three instances of agent-subject sentences were found. They are all transitive and in active voice, as reproduced below.

- (26) a. Reye's syndrome: Children and teenagers who have or are recovering from chickenpox or flu-like symptoms should not use this product. (Walgreens)
- b. Your doctor should determine if you need a different dose. (Claritin, Zyrtec)

All of the above sentences are from Warning. Their occurrences conform to Bates' (1985) analysis on the active voice when he views the actives as suitable for "directives, instructions, and regulations" where precision is obligatory (Bates, 1985, p. 21). The actives draw attention to the subjects of the actions and make the texts precise. The overt subjects provide emphasis and draw attention to the information it conveys (Bates, 1985). In (26a and b), the attention is drawn to agents or doers of actions. The subject of (26a) emphasizes a specific condition of the people who should not use the drug, while in (26b), the attention is drawn to the person who is qualified to determine the dosage.

Like the agent-subject sentences, the reason for the occurrences of the overt non-agent subjects in the actives, which include the experiencer in (27), instruments in (28a - c), the locations in (29), the themes in (30), and the copula subjects can be that they are drawing attention to the subjects and precision is required, as in (31).

(27) *Experiencer*

Reye's syndrome: Children and teenagers who have or are recovering from chickenpox or flu-like symptoms should not use this product. (Walgreens)

(28) *Instrument*

- a. Allergy alert: Acetaminophen may cause severe skin reactions. (TheraFlu)
- b. 10 milligrams of phenylephrine reduces nasal swelling. (Sudafed)
- c. Zyrtec Tablets relieve your worst allergy symptoms, indoor and out. (Zyrtec)

(29) *Location*

- a. This product has no shipping restrictions. (Zicam)
- b. Each packet contains: potassium 10mg, sodium 51mg. (TheraFlu)

(30) *Theme*

- a. Online and store prices may vary. (Zicam)
- b. Restrictions apply. (Zicam)
- c. Severe liver damage may occur if you take... (Tylenol)

(31) *Copula*

- a. Prompt medical attention is critical for adults as well as for children even if you do not notice any signs or symptoms. (TheraFlu)
- b. These could be signs of a serious condition. (Walgreens)
- c. Zyrtec is the number-one allergist-recommended brand among OTC oral antihistamines. (Zyrtec)

While the above sentences in (27-30) are in the active voice, which is believed to be suitable for advertisements and directions, the same quality does not apply to the passive. The passive voice in advertisements, generally, is considered by some scholars unusual since the active voice, with the clear doer, is said to be more preferable (Leech, 1966, p. 122). Bates (1985) suggested that passives are not suitable for, again, "directives, instructions, and regulations" where precision is obligatory (Bates, 1985, p. 21). The passive does not tell who is doing the act. When the themes, not the doers, appear in the subject position, the text becomes imprecise (Bates, 1985). However, using the passive voice can be more "detachable" and "impersonal" and is suitable for writing rules or law-related content in business writing (Printwand, 2012). Additionally,

the passive can be used to draw attention to the theme subjects in advertisements, which are mostly the products (Leech, 1966; Maksimainen, 2011; Viskari, 2008). They draw the readers' attention to the information presented in the subject so readers are ready for the following information. The passive is also common when the agents are given information referring to the manufacturers or the sellers, as in the examples (32) in which mentioning the agents is not necessary.

(32) a. This product can be shipped to a Walgreens store for FREE.
(Sudafed)

b. Zyrtec is intended for use by adults and children six years and older; one dose of Zyrtec starts working at hour 1 and keeps on working for a full 24 hours. (Zyrtec)

c. The quick-dissolve tablets are clinically proven to shorten a cold when taken at the first sign. (Zicam)

All of the passives in the data do not have agents; it can be assumed that the purpose of the passives in the data, again, like the actives, is to direct attention to the subjects, in this case, the themes. It is not necessary to mention the agents, which are the manufacturers or the sellers.

The overt non-agent subjects in the data include instruments, locations, themes, and copula subjects. The instruments are the drugs themselves. The locations are the products with only verbs *have*, *contain*, and *include*. The themes in the unaccusatives are the symptoms, prices, and shipping rules with the verbs *occur*, *vary*, and *apply*, while the themes in the passives, mostly are the products. The subjects of the copula mostly refer to side effects and medical attention. Only three instances of copula subjects refer to products. The data confirms the purpose of the overt non-agent subjects, which is to draw attention to the subjects. The subjects, in the case of drug descriptions, are side effects, medical attention, products, and rules for shipping and purchasing.

5.2 Covert Subjects

Occurrences of covert subjects in the data are believed to reflect the purpose of the drug descriptions which is partly different from advertisements. The advertisement is only one section of the drug description on a drugstore website. Other sections include Product Detail, Warning, and Instruction, which are the majority. Each part reflects various purposes of the drug descriptions, which are to advertise, to instruct, to warn, and to provide information to potential buyers. The imperatives and subjectless sentences, which are covert subject sentences, were found in every section.

5.2.1 Imperatives

The main reasons for the imperatives in advertisements are not only to persuade customers to buy or try products (Linghong, 2006), but, in the case of the drug descriptions on a drugstore webpage, also to provide instructions. The especially high frequency of imperatives in the data is due to the fact that the drug descriptions comprise various sections contributed to advertisement, information, and instructions. The latter does not only include the marketing related Shipping and Purchasing Instructions, but also Usage Instruction and Warning required by law.

As found in previous studies, imperatives are very common in advertisements. Although they usually appear in mild commands, imperatives in advertisements can persuade customers (Linghong, 2006; Ren, 2011; Romanenko, 2014). Imperatives can also be memorable for the readers (Ren, 2011), as in (33).

- (33) a. Shop more Medicines & Treatments. (Zicam)
- b. Compare and Save 38% with Walgreens Brand. (Walgreens)
- c. Buy 1, Get 1 50% OFF. (Walgreens)
- d. Save \$10.00. (Claritin)
- e. Call toll-free 1-800-633-1610. (Walgreens)

The sentences above are both persuasive and memorable as the purpose is to persuade customers to buy more products. (33 a - d) are product promotions, urging customers to buy products at lower prices, and receive giveaways. (33e) invites customers to connect with the brand via an alternative channel. Nevertheless, the imperatives in the Advertisement section do not reflect its prominent role in the data. The majority of the imperatives appear in instruction sections, which include Purchasing Instruction, Usage Instruction, Shipping Instruction, and Warning, the major parts of the webpage.

Generally, imperatives can be found in Purchasing and Shipping Instructions of all products, as in (34).

- (34) a. Add to cart. (Zicam)
- b. Clip coupon. (Claritin)
- c. See shipping FAQ. (TheraFlu)

The above instructions provide advice on purchasing and shipping processes, which is common for most products. The above imperatives follow widely suggested instructive writing instructions (Bates, 1985; Nordquist, 2018). Instructive texts must be made as if sellers are talking directly to buyers, the second person (Bates, 1985; Nordquist, 2018). Instructions are also expected to be precise, informative, easy to understand and follow, and should not be misunderstood (Bates, 1985; Nordquist, 2018). Imperatives serve the purpose

not only because they address the second person, but they are also short and simple.

The major reason behind the widespread occurrence of imperatives is that the texts have to adhere to the labelling requirements for over-the-counter drugs set by the American Food and Drug Administration (FDA). The pattern must be as the FDA directed (HHS, FDA, & CDER, 2008),

The use of imperatives is found in Usage Instruction which has to strictly follow the FDA regulations. The instructions in drug descriptions should include the information of how to take a certain medicine precisely, as in (35a), dosage and administration, as in (35b), and specification of people who are able or unable to use the medication, as in (35c) (FDA & CHPA, 2017).

- (35) a. Do not take more than 5 packets in 24 hours unless directed by a doctor. (Theraflu)
- b. For best results, use at the first sign of symptoms of a cold or flu and continue to use for an additional 48 hours after symptoms subside. (Sambucol)
- c. Children under 12 years of age: Consult a doctor before use. (Zicam)

Nordquist (2018) stated that instructions and warnings should be in the imperative form to direct or instruct customers to follow or tell them to do or not to do something. Incomplete or ambiguous information should be avoided.

In addition to Usage instruction, the FDA indicates that Warning should include a) side effects, b) symptoms that may affect the use of the products, c) effects that may occur which could be an indication for the patients to stop taking the drugs and go to see the doctor, and d) the warning that customers keep the drugs away from children (FDA & CHPA, 2017). As warnings instruct the readers to do or not to do something, they are also in the imperative, as follows:

- (36) a. Stop use and ask a doctor if symptoms persist or are accompanied by fever. (Zicam)
- b. If pregnant or breast-feeding, ask a health professional before use. (Claritin)
- c. Ask a doctor before use if you have kidney disease. (Zyrtec)

The FDA suggested that the warnings provided start with the topic of concern, followed by supporting information, as in (37). When there is further supporting information, the sentence should begin with the topic of concern, with the brief supporting information being put down in bullet points (HHS et al., 2008) as in (37).

(37) a. Stop use and ask a doctor if: (Tylenol)

- Pain gets worse or lasts for more than 10 days
- Fever gets worse or lasts for more than 3 days
- New symptoms occur
- Redness or swelling is present

b. Ask a doctor before use if you have (TheraFlu)

- liver disease
- heart disease
- high blood pressure
- thyroid disease

Legal requirements on the language use in drug descriptions are observable in formulaic phrases throughout the data. Identical phrases among brands were found not only in the advertisement and shipping instruction sections, but also in other sections. Identical phrases in the advertising sections reflect the website format, as in (38).

(38) a. Ship one time. (Zicam, TheraFlu, Sudafed)

b. Add to cart. (Zicam, TheraFlu, Sudafed)

c. Find at a store. (Zicam, TheraFlu, Sudafed)

d. Add to shopping list. (Zicam, TheraFlu, Sudafed)

However, in Usage Instruction and Warning, the fact that many sentences appear in a uniform fashion confirms the restrictions for medical products mentioned above. Many phrases were found to be identical despite the differences in brands, as displayed in (39).

(39) a. Children under 12 years of age: Consult a doctor before use. (Zicam, Theraflu, Sudafed, Tylenol, Allegra)

b. Keep out of reach of children (Zicam, Theraflu, Sudafed, Claritin, Benadryl)

c. Ask a doctor before use if you have kidney disease. (Allegra, Claritin, Zyrtec)

d. When using this product... (Zyrtec, Theraflu, Sudafed, Claritin)

e. Ask doctor before use (if)... (Zyrtec, Theraflu, Sudafed, Tylenol, Allegra, Benadryl, Claritin)

f. Ask doctor and pharmacist before use (if)... (Zyrtec, Theraflu, Tylenol, Benadryl)

The sentences above are warnings, which can be written differently, but they show that there are formulaic phrases for medical products that all brands have to follow.

5.2.2 Subjectless sentences

While it is common for the imperatives not to have subjects, the same cannot be said for the declaratives as they are mostly found in written language with overt subjects. The covert subject declaratives were found in casual messages and advertisements, as in (40).

- (40) a. [I] Hope you had a nice weekend. (personal email)(Ozaki, 2010, p. 36)
- b. [Are you] Interested in Egypt? (bulletin board)(Ozaki, 2010, p. 36)
- c. [Do you] Want to make some extra money, AND gain research experience? (Bulletin board)(Ozaki, 2010, p. 36)

Ozaki's (2010) classification of subjectless sentences applies to this study's subjectless sentences as follows:

- (41) Omitted subject
 - a. [Zyrtec] contains 10 mg of cetirizine HCl per tablet.
(Zyrtec)
 - b. [Zicam] Shortens the length of a cold. (Zicam)
 - c. [Allegra (packages] Ship to Store FREE! (Allegra)
 - d. [Theraflu] Arrives in 1-3 business days. (Theraflu)
- (42) Omitted subject + copula
 - a. [TheraFlu is] Easy to swallow. (TheraFlu)
 - b. [Zicam is] Non-drowsy, non-habit forming. (Zicam)
 - c. [Are there] Questions or comments? (Sudafed)
- (43) Omitted subject + auxiliary
 - a. [Sambucol is] Made in USA. (Sambucol)
 - b. [Zicam is] Frequently bought with... (Zicam)
 - c. [Are you] Wondering how to relieve sinus pressure?
(Sudafed)

The omitted elements above are subjects and functional categories, also supported in previous studies. Chen's (2016) study supported the claims in both Ozaki (2010) and Thrasher (1974). Chen studied ellipsis in radiotelephony communication and found that sentential elements, including

prepositions, are omitted in short instructions given in limited time. The omitted elements are said to convey redundant messages (Chen, 2016). Chen's data is presented in (44).

- (44) a. C: CCA102, clear to destination, flight planned route, follow D05, initial climb to 900m ... (Chen, 2016, p. 395)
- b. Full sentences: [the weather is] clear to destination, [I am on the] flight planned rout, [I] follow D05, [with an] initial climb to 900m ...

In (44a), various sentential elements were omitted including subjects, auxiliaries, articles, and prepositions. The full version of the above examples is displayed in (44b). Like Chen's (2016) data, examples from Walgreens in (45) demonstrate the omission of the preposition together with the subject and the copula.

- (45) a. [Allegra is for] Sneezing. (Allegra)
- b. [Allegra is for] Indoor/outdoor allergy relief. (Allegra)
- c. [Zyrtec is with] Original Prescription Strength. (Zyrtec)

The subjects above are omitted because they are the names of the products provided in the context earlier, while the omission of the copula *be* and the preposition does not affect the meaning of the sentence. Chen's (2016) finding on preposition omission is supported in Hornstein and Weinberg (1981) who regard prepositions as the functional category which can be null in some contexts, as in (46).

- (46) a. I'll see him Ø tomorrow/today/next week.
- b. I'll give it to you on Thursday. (a British colleague)
- c. Tom climbed up the tree.
- d. This is what I'm doing in January. (Jimmy Fallon, on the Golden Globe 2017)

The omission of functional categories also applies to the following.

- (47) a. 100% satisfaction [is] guaranteed. (Walgreens)
- b. [Tylenol is the] Pain reliever recommended by doctors. (Tylenol)

In (47a), the auxiliary *be* is omitted, whereas in (47b), the article is omitted, in addition to the subject and the copula.

Reiman (1994) said that the omitted or “zeroed” subject can be considered a “topic” (Reiman, 1994, p. 143). She found that a subject can be omitted when its absence does not lead to ambiguity and it is a “continuous topic” (Reiman, 1994, p. 143). Sentence initial elements that are not topics may also be omitted if they can be recovered pragmatically. Reiman’s analysis applies to the string of data from Tylenol in (48).

(48) a. TYLENOL Extra Strength Pain Reliever & Fever Reducer
 500 mg Caplets100ea (Heading)

- b. [There are] ★★★★ 4.7 out of 5 stars. Read reviews (486)
- c. [TYLENOL... was] \$10.49
- d. [TYLENOL... is] \$9.99
- e. [TYLENOL...is] \$0.10/ea.
- f. [There is] Savings: \$0.50 (5%)
- g. [TYLENOL...] Online and store prices may vary
- h. [TYLENOL...(packages)] Ship to home FREE at \$35 | Ship to Store FREE!
- i. [TYLENOL...] Arrives in 1-2 business days* Restrictions apply. See shipping FAQ
- j. Details (Sub-heading)
- k. [TYLENOL...] Temporarily reduces fever and relieves minor aches and pains
- l. [There is] 500 mg of acetaminophen per caplet
- m. [TYLENOL...is the] Pain reliever recommended by doctors
- n. [TYLENOL...] Relieves minor pain of arthritis, menstrual cramps, backache, and headache
- o. Tylenol Extra Strength temporarily reduces fevers and relieves minor pain, due to headache, backache, toothache, minor pain of arthritis, the common cold, and premenstrual and menstrual cramps.
- p. When used as directed, it has an exceptional safety profile.
 (Tylenol)

In (48) above, the heading in (48a) is considered the topic. The topic and some of the omitted subjects share the reference. The subjects are omitted in (48b - f, h, i, and k - n); the existential and the copula are omitted in (48b and l); and the subjects, the copula, and the articles are omitted in (48m). (48g) is not considered subjectless because only part of the subject, which shares the reference with the topic, is omitted. The omitted subjects in (48c-e, g-i, k, m, and n) are continuous topics. Their absence is understood to refer to the topic in the heading. Their omission does not lead to ambiguity. The omission of the existential *there*, the copula, and the article is also possible even though they are

not topics because they are functional categories that are semantically empty and can be recovered pragmatically (Reiman, 1994, p. 148). The repetition of the topic/subject in (48o), and the pronoun referring to the topic in (48h), however, is assumed to provide emphasis to the topic¹ (Bates, 1985).

The omitted elements make a message more economical because redundant words are deleted (Chen, 2016; Cruse, 1986). Although omission results in the change in the syntactic structure, as in (48f) where all TPs become DPs or (48h and i) where TPs become VPs, it does not affect the semantics because pragmatically, the deleted lexical elements are known information of topics existing in the context (Chen, 2016; Cote, 1996; Croft & Cruse, 2004; Reiman, 1994).

5.2.3 Syntax of register

Haegeman (2013, p. 2) considers the deletion of subjects in subjectless sentences in English a *register-based variation*. Traditionally, it is considered ill-formed in English but could be acceptable in a certain register (Barton, 1998; Biber, 1995; Ferguson, 1982; Zwicky & Zwicky, 1982). In English, subject deletion happens in spoken language, diary writing, note style writing, newspaper headlines, and abbreviated styles (Haegeman, 2013). The subject omission is, thus, considered a register-based variation.

Syntactically, Haegeman (2013) analyzes that the subject position is split into two positions: head and specifier. When the overt subject moves to the *Specifier Subject* position in a specific register, it becomes covert. The semantic interpretation of the omitted subject is recovered from the “fronted adjunct” (Haegeman, 2013, p. 88). The subjectless sentences in the drug descriptions can be considered an abbreviation due to the fact that the omitted subject is compatible with the fronted adjunct, as demonstrated in (49).

(49) a. Mark Webber
 b. ___Breaks a leg when hit by a car mountain-biking in Tasmania before the 2009 season.
 c. ___Drives with steel rods in his leg.
 d. In 2010 ___ goes over the handlebars on a training ride and fractures shoulder one week before the Japanese Grand Prix. (Guardian, 2011) (Haegeman, 2013, p. 25)

In Haegeman’s example above, *Mark Webber* is the fronted adjunct, while the omitted subject is *he*, which moves from the Head Subject position in the Subject Phrase to the Specifier Subject position as follows:

(50) Mark Webber, [Spec *he*[TP *he* [VP breaks a leg when....
 (Haegeman, 2013, p. 23)

The above analysis applies to the drug description data as in (51).

(51) a. Theraflu (heading)
 b. __Provides powerful relief from severe cold symptoms.
 c. __Temporarily reduces fever.
 d. __Temporarily relieves these symptoms due to a cold: ...

Like in Haegeman's (2013) example, *Theraflu*, the webpage heading, can be considered the fronted adjunct while the subject *it*, referring to *Theraflu*, moves to the Spec Subject position in the Subject Phrase and becomes covert. Its semantic and syntactic interpretations are revealed not only in the fronted adjunct, but also the agreement with the verb, as demonstrated in (52).

(52) Theraflu, [Spec *it*-[TP *it* [VP provides powerful relief from severe cold symptoms]]].

5.2.4 Economy of information

The subjectless sentences in the data are assumed to result from the *economic process*, the act of avoiding redundancy (Chen, 2016; Merchant, 2001, p. 1). Such act is the outcome of the *Principle of Language Economy* or the *Principle of Least Effort* (Vicentini, 2003, p. 38; Zhou, 2012, p. 100; Kobayashi, 2015, p. 50) which is when the speaker or writer delivers the message with the least effort, but expects the maximum results of communication (Vicentini, 2003, p. 38; Zhou, 2012, p. 100; Kobayashi, 2015, p. 50). It is the shortening of sentences by reducing the parts which are considered less important and contain light meaning. The more conspicuous parts are maintained to provide simplicity (Vicentini, 2003, p. 51). The use of the Principle of Language Economy was found in different types of texts including discourses in politics, statistics, business and economics, literature, computer-mediated communication, and advertisements (Lamartino & Evangelisti, 2002, p. 14).

The economic process requires information to be presented in a short and precise manner (Chen, 2016). During the process, some linguistic items, such as subjects, are omitted from the sentences. The reason behind this phenomenon is the fact that the information, as in drug descriptions, is constrained by the space of the webpage and the reader's reading time (Mead, 2018). Mead (2018) stated that the quality of product descriptions must be short yet effective. In other words, texts should be made to be readable enough for readers to quickly scan (Mead, 2018). If the products are technical and clinical, as much information as possible must be provided so that customers do not have to ask for it (Mead, 2018).

The omission of subjects in subjectless sentences is syntactically accommodated through Haegeman's (2013) Split Subject analysis, and pragmatically interpreted as topics by Reiman (1994). Further omission of the copula, auxiliary *be*, articles, existential *there*, and prepositions are due to the fact that the omitted elements are functional categories (Hornstein & Weinberg, 1981; Thrasher, 1974), which are semantically empty and can be recovered pragmatically (Reiman, 1994, p. 148). All types of subjectless sentences are, thus, assumed to be due to the process of economy to make the texts readable for online scanners.

6. Conclusion

This study investigates the overt and covert existence of sentence subjects in drug descriptions on a drugstore website. The hypothesis was that the sentence structures found could be similar to those in advertisements as the product description and the ads are considered similar genres intended to convince readers to buy products. The selected data source was Walgreens.com, the most preferred drugstore webpage in the United States. The data was collected from the web page's top ten selling brands of edible drugs, namely, Tylenol, Sudafed, Claritin, Zicam, Zyrtec, Allegra, Sambucol, TheraFlu, Benadryl and Walgreens, the house brand.

Each webpage was systematically structured into six sections: Advertisement, Purchasing Instruction, Shipping Instruction, Product Detail, Usage Instruction, and Warning. Each is not only for specific purposes, but also contain different sentence patterns. The majority of covert subject sentences tend to appear more in Instruction, Product Detail, and Warning, while the minority overt ones tend to appear in Warning, Product Detail, and Shipping Instruction. The covert subject sentences comprise the imperatives and the subjectless sentences, which are indicatives. The subjectless sentences include (a) the omitted subject, (b) the omitted subject + *be* (copula and auxiliary), and (c) the omitted subject + copula + preposition. The imperatives occur more often in the Advertisement, Usage Instruction, and Warning, while the subjectless sentences occur more often in Product Information, and Shipping Instruction. The covert subjects in the subjectless sentences mainly refer to the products, while the imperatives refer to the drug users and the purchasers. As for the overt subject sentences, most of them are non-agent subjects referring to the products. The minority agent-subjects which were found in Warning refer to the patients and the doctor.

It is believed that the existence of the imperatives is due to the fact that they are suitable for persuasive sentences as in advertisements. They are also effective for commands and instructions, so they are the best candidates for instructions and warnings, the bulk of the drug descriptions in Walgreens.com. A large number of the imperatives are also the result of government restrictions

which require detailed and clear usage instructions and warnings for medical products.

The subjectless sentences, in their indicative mood, conform to the economical process which applies to the context when time and space are limited. In the economical process, the given and redundant information is omitted, together with the functional categories. The subjectless sentences can also be considered abbreviated sentences where the reference of the subjects is syntactically in the fronted adjuncts, in the case of drug descriptions, the heading of the webpage. Pragmatically, the omitted subjects, usually referring to the headings, are analyzed as topics. The omitted existential subject *there*, copula *be*, auxiliary *be*, and prepositions are functional categories which are semantically empty. In spite of the extensive occurrences of the covert subject sentences, the overt subject sentences exist for a reason. Their purpose is to call for attention and to give emphasis to the overt subjects which mostly refer to the products and the side effects. They also appear when there is a constituent, such as an adverbial phrase, preceding the subject.

It is interesting to note that in drug descriptions, the majority of the subjects, both overt and covert, refer to products. Only a few overt human subjects that exist to draw attention were found. Such minimum overt existence of human subjects partly leads to the conclusion that when it comes to drug descriptions, the information is about the products because the topics in subjectless sentences are mostly products and the majority of the overt subjects are also products. Human subjects are mainly implied in the imperatives as it is given that they are the audience of the description.

In conclusion, this study of sentence subjects in the drug descriptions on a drugstore website discovered that the sentence structures in drug descriptions are different from those in advertisements. While declaratives, imperatives, interrogatives, and exclamatives are frequent in the ads, only the imperatives and the subjectless declaratives are frequent in the drug descriptions. Interrogatives which are also with the omitted subjects are extremely rare, whereas exclamatives were never found. While no studies on the ads mention the covert subjects, most of the subjects in the drug descriptions in Walgreens are covert subjects referring to the reader and the products. The reason for the omission is mainly due to the requirements for medical products and the economical process. The omitted information is given. The subject of the imperatives is understood to be the audience, while the subjects of the subjectless sentences are given previously in the context such as the labels and the headings. The minority overt subjects refer to the products, with a few referring to the doctor, the side effects, and the patients. Their overt appearance is to draw attention to the subjects of the sentences whether they be agents, experiencers, instruments, themes, locations, or copula subjects.

The widespread use of covert subject sentences, nevertheless, does not suggest the generalization that English sentences allow covert subjects. The covert subject sentences in the data are considered register-based variations that appear in a specific register. Further study on other store webpages and descriptions of other products will lead to stronger generalizations on not only the structure of the store web pages but also the sentence structures that generally appear in the descriptions. The findings are hoped to contribute to a better understanding of the online discourse structure and the sentence structures appearing in the online commercial discourse.

Notes

1. With regards to the sentence's initial adverbial phrase in (48h), Reiman (1994), states that the reason for the following overt subject is due to the fact that the adverbial phrase interrupts the continuation of the topic. Such analysis conflicts with Haegeman's (2013) prepositional phrase in (49d) which also precedes the topic and the topic still continues to be covert.

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