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LIKE A BAD DREAM: NAVIGATING NARRATIVE SPACES OF PANDEMIC-THEMED DREAM REPORTS

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Abstract: This article looks into dream narratives about COVID-19 in terms of cognitive narrative theory. Our research aims at modeling the typical narrative space configuration of a dream report. The article identifies explicit linguistic tags and implicit markers of the epistemic status of narrative spaces as real-world or dream-world. The study further explores the linear vs. parallel relationships between the narrative spaces of the main dream-world and auxiliary real-world narration sequences.

Key words: dream narrative, cognitive narrative theory, navigating over narrative spaces, linear/parallel space configuration.

1. Introduction

Global digitalization in all spheres of modern life has conditioned the unprecedented coverage of the COVID-19 pandemic in a variety of digital sources, which range from news articles and scientific papers to popular media and user-generated content. This broad and heterogenous discourse around COVID-19 is demanding scholars' efforts to analyze the perceptions and frames that emerge in various digital genres discussing COVID-19 (see, e.g., Wicke & Bolognesi 2020). In particular, user-generated content such as memes and social media posts have drawn linguists' attention (Panasenko et al. 2020).

The COVID-19 stigmatization in the mind of an English-speaking Internet user entails the necessity to divulge COVID-19 as a product of a human's conscious and sub-conscious cognition. Among the media of the sub-conscious construing COVID-19, dreams look most evocative, and yet hardly subject to linguistic analysis. However, at the same time, dream *narratives* in terms of oneirology, a state-of-the-art field that looks into the nature of dreams (Blechner 2001), shows promise for linguistic research. The synergy of the narrative and cognitive theories are the prerequisites for dream narrative analysis. On the one hand, these theories provide a better insight into the ontology of dream in terms of narratology. On the other, they account for the ways of framing COVID-19. Following the principles of oneirology, a complex of factors that underpin dream narratives about COVID-19 hypothetically condition the specific structure and content of a dream narrative.

Notably, so far, dream reports have been analyzed mainly in the light of the psychological impacts of COVID-19; the risks associated with the disease and the emotional pressure of isolation as major sources of mental suffering (Mota et al. 2020). Apart from dream reports, a vast array of studies address, among other foci, the ways local online newspapers frame the outbreak of COVID-19 (Onwe et al. 2020), cognitive structures for the current health crisis found in far-right groups' content (McNeil-Willson 2020), media narratives on sexuality during the lockdown (Döring 2020), hospitality corporate narratives during the COVID-19 pandemic (Im et al. 2020), conspiracy narratives around the vaccine (Khan 2020), etc.

In terms of the Threat Simulation Theory, dreaming constitutes an adaptive mechanism one of whose functions is to create simulations of real-life threats and risky situations for the cognitive system to "rehearse" the possible reaction (Valli et al. 2005). In this regard, a study by Wang et al. (2021) expounds the fact that in an epidemic-situation sample, the number of threatening events featured in dreams is higher, while the number of references to illness in general are equal to that in a non-epidemic sample.

Pandemic dream reports highlight a considerable number of evaluatively negative words and frame the concepts of contamination and cleanness (Mota et al. 2020). Some studies (Barrett 2020; Iorio et al. 2020) focus on gender differences in the rates of negative emotions, anxiety, and body, health, and death references in pandemic dreams. The pilot study by MacKay and DeCicco (2020) established a correlation between exposure to a disease and dreaming imagery indicative of high anxiety levels.

Studies on dreams during the pandemic have shown qualitative changes towards emotional and health-related content with a higher proportion of negative references indicative of elevated anxiety levels (Nielsen 2020). However, studies on dreams during the COVID-19 pandemic mainly focus on the general selections of dream reports without restricting the content to COVID-19 themes due to the metaphorical nature of dreams, which allows for one concern to be translated into completely different, seemingly unrelated imagery in the dream. This general approach mainly focuses on the emotional content of dreams; in the case of the current pandemic, daily concerns are reflected in an overall more tense dreaming experience (ibid.).

For this qualitative study, to focus our analysis on COVID-19 dream narratives as such, we have opted for a selection of dreams that directly feature COVID-19.

Location changes in dream imagery, however, can also be viewed as the result of cognitive linguistic processes in the narrative, which is in the focus of our study. The study deals with transforming narrative spaces and navigating over them in terms of linguistic means of narrative construction. The **aim** of this study is to identify the means of navigation over dream narrative spaces. The narrator uses these means to mark narrative spaces as dream and reality. We distinguish these means in terms of modeling the sequences of interrelated dream-marked and reality-marked narrative spaces. Hypothetically, these sequences serve for the simultaneous but independent rendering of a dream and a waking experience.

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2. Material and methods

2.1 Data

For statistical purposes, to create the corpus for our study, we deployed a well-established method of mining online platforms and social media for user-generated references to the topic of focus (Moens et al. 2014: 47). Currently, this method has proved efficient in linguistics to identify, for example, the ways certain issues are verbalized and framed.

In this research, 96 dream reports focused on the current COVID-19 pandemic were manually culled from two websites: *Dream Journal (DJ)* accessible at dreamjournal.net and *Dream Journal Ultimate (DJU)*, an Android/iOS app, that hosts users' dream journals or reports in open access. The relevant narratives were identified by their hashtags as user-generated annotations in dream journal posts. The hashtags are the following: *#covid-19*, *#covid19*, *#covid*, *#coronavirus*, *#corona*, *#pandemic*, and *#lockdown*.

Thematically, COVID-19 related dreams were found to fall into the following distinct categories: ignoring social distancing (15%, 14 reports out 95), not wearing masks (11%, 12 out of 95), sanitizing hands or surfaces (7%, 7 out of 95), catching the virus (4.75%, 5 out of 95), a loved one having the virus (4.75%, 5 out of 95), and an anxiety of the suspected COVID-19 carrier (3.8%, 4 out of 95). The rest render miscellaneous motives focused on the pandemic or lockdown. Therefore, our thematic analysis reveals the tendency of the dreams to feature surprisingly mundane aspects of the COVID-19 pandemic. They mainly concern poor hygiene during the lockdown rather than immediate illness-related anxiety. The findings related to the thematic distribution of dream scenarios were not the main focus of our study but they provided an insight into the ways the COVID-19-related content is featured in dreams.

2.2 Methods

This qualitative study focuses on the narrative modeling of dream reports. This modeling aims to divulge basic strategies of dream narrative navigation via linguistic markers of transfers between dream and real-world spaces. Shifting between the dream narrative sequences and real-life references, the narrator may alternate viewpoint configuration agency between their real self and their 'dream self'.

As the study aims to pinpoint dream narrative navigation means accounting for construing dream :: reality mental spaces, its theoretical underpinning is the theory of mental spaces and blending (Fauconnier & Turner 2008; Turner 2003). It is employed to expound narrative configurations of dream reports. In our previous research, we focused on the role of perspectives and focalizers in shaping dream reports' narrative spaces (Ніколаєнко 2020) and their organization into a coherent narrative configuration through blending of perspectives. In this study, we elucidate the procedure of modeling narrative spaces. To model a dream narrative, we relied on the theory of narrative spaces and modeling developed by Dancygier (2008; 2011), an advocate of blending in the narrative research.

Following Dancygier (2008), the term 'narrative space' in cognitive narratology is collateral to a 'mental space' (Fauconnier & Turner 2008). Dancygier identifies narrative space as "a mental construct participating in the emergence of the story, having distinctive topology and narrative status, and linked to other narrative spaces in ways which prompt story construction" (2011: 36). Blending as a framework method to study narratives shows promise in modeling the structure of the dream report. It accounts for the fact that, on the one hand, dream reports render the experience of a specific kind, neither real nor made up on purpose, yet, on the other hand, this is firsthand experience. These facts are the prerequisites for identifying dream reports as a specific narrative genre.

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Mental spaces (Dancygier & Sweetser 2005) were propounded as an alternative to possible worlds. Dancygier and Sweetser differentiate them on the following grounds:

"*However, mental spaces represent a more general mechanism than possible worlds, referring not only to very partial cognitive 'world' or 'situation' constructions as well as to more complete ones, but also to a variety of nonworld-like structures which can be connected and mapped onto other cognitive structures*" (ibid., 11).

Moreover, according to Tucan (2013), rich blends emerge in fiction narratives when the characters fantasize, dream, contemplate alternatives, or hypothesize about possible outcomes. This is in full accord with Dancygier's observation that narrative spaces are marked in terms of modality and epistemology (2005: 100). On the other hand, similarly to the mental spaces of news narratives of van Krieken and Sanders (2019), the narrator and reader operate with several major spaces. They are identified as the reality, the news narrative, and the intermediate space. Hypothetically, each may be tagged by the markers of viewpoint transfers.

Apparently, dream narrative modeling also involves two narrative spaces, that of reality and that of the dream, which interpolate and update each other. Like any other type of narration, dream narrative authors depart from their knowledge of the world, that is, their world construal. We refer to the 'world construal' as to "the result of world perception (cognition) conditioned by all sensual and intellectual abilities of the human, a kind of image of the world portrayed and conceptualized by human cognition" (Бондаренко 2017: 68; see also Bondarenko 2019: 295 for more detail). Therefore, when trying to make sense of the dreaming experience and content, the narrators rely on their world construal that conditions both reality-marked information and comments on dream narration. Thus, dream narrative spaces are likely to be tagged as either an alternative waking-world or a dream-world. It is significant, however, that dream narrative mental spaces demonstrate different interaction dynamics. Unlike in fiction and news, it is the emergent *reality-marked* spaces that augment the major *dream* space by referring it to the narrator's experience and hence providing context and allowing to highlight dream-world differences from/or distortion of reality.

In dream reports, two distinct dimensions of narration correspondingly mark dream-world and waking-world narrative spaces. They deploy linguistic means to navigate over/in the narrative dimensions, i.e., differentiate between real life and unreal events, characters, locations, or scenarios featured in the narrator's dream.

Therefore, our study is designed in terms of three consecutive stages: firstly, we aim to model the narrative configuration of the dream report; secondly, we identify the means of tagging parallel narrative spaces as dream-world or waking-world to allow navigation across two dimensions; and finally, we analyze the nature of linear dynamic shifts between dream-world narrative spaces.

3. Results and discussion

Linguistically, dream reports display features conditioned by the nature of the reported experience. The pivotal feature of dream narratives is the need for the narrator to simultaneously operate two dimensions of experience, the dream world and the waking world. In reporting dreams, it is essential to, firstly, mark the borderline between these realms of knowledge and secondly, use the markers of viewpoint transfers from real or dream-world and reverse. This provides others with devices to follow and construe the meaning in dream narrative by way of construing narrative spaces.

3.1 Dream world vs. waking world construction in narrative spaces

In a dream report, narrative spaces may construe dream or waking worlds, hence the narrator has to operate with a complex narrative configuration. Evidently, a dream report appeals to the knowledge of real world, just like any narrative construal. According to Dancygier, "any text relies on our reality-based knowledge of frames: if we read about someone making a phone call, we understand it because we have an easily accessible frame of devices making communication over long distances possible.

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Frames and patterns of frame evocation constitute a reality-based conceptual network which underlies any construal a narrative may come up with" (2011: 201). Yet, given the imaginative nature of dreaming, dream narrative often features either the completely fantastic elements or the altered aspects of a dreamer's real life. This entails the narrator's continuous appealing to the waking world as a vantage point to identify the unusual in the dream. The vantage point allows the reader to integrate the narrator's physical, social, and mental perspectives in the story (Tátrai 2015: 13-14). In terms of the joint attention theory, Tátrai expounds the term 'vantage point' the following way: "The referential interpretation of linguistic symbols employed in a narrative discourse, that is, its epistemic grounding in the intersubjective context of the joint attentional scene, is closely related to orientation in the discourse universe, which in turn depends on the functioning of a narrator's context-dependent vantage point" (ibid., 13). Tátrai also points out that narrators can often make a distinction between their present vantage point, that is the perspective of the communicative situation of narration, and that of their former self acting as an agent in the story (ibid., 27). This consideration is relevant to the conspicuous splits of the narrator's vantage point when they refer to themselves as "my dream self" in dream reports. Thus, following Turner (2003), dream narratives are inherently double-scope stories. In terms of his theory, we view dream narratives as blended stories, i.e., emergent structures of two input stories with cross-mapped elements.

The concept of the vantage point accounts for the coherence of narration that consists of differently marked narrative spaces. This stands out as a specifically relevant observation for a study of dream reports as they normally feature transitions between the dream-self vantage point and waking-self narration perspective. According to Dancygier, narrative models feature (i) viewpoint spaces – the vantage point for further building of the narrative spaces and (ii) focus spaces – local mental spaces (2005: 100). However, the configuration of narrative spaces of dream reports appears to have special features in terms of the correlation between narrative spaces and ways of navigating in

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them.

The vantage point, or the viewpoint space, hypothetically, tends to remain constant. This is conditioned by the same narrator and the unity of time of all events in the narration. Conversely, the vantage point splits as narration fluctuates between reality and dream and is implemented in opposing spaces. It is significant that these co-dependent spaces function concurrently; they support two consistent narrative vantage points: that of the dream recalled and that of the real situation that corresponds to the events in the dream. Hence, the dream narrative implements a specific configuration of narrative spaces. This configuration conditions a divergence of vantage points in terms of dream-marked and reality-marked mental spaces. However, at the same time, these spaces are blended to provide the narrative coherence. Dancygier approaches "such possibilities of simultaneous viewpoint maintenance and shift in the network by postulating a blending mechanism", which she terms as a 'viewpoint compression' (2005: 120). It accounts for a double-facet cognitive nature of the dream narrative as, on the one hand, narrated in terms of real-life experience and, on the other, comprehensible for others. The unique nature of the dream narrative is its specific kind of evidentiality as the narrator consciously highlights certain aspects of dream experience as unreal or impossible. Therefore, the dream narrative is construed as a result of continuously correlating the dream reality with the real world as a vantage point.

We distinguish explicit and implicit linguistic markers of dream evidentiality employed to tag an element of narration as impossible or unreal, hence signaling the oneiric status of the narrated episode.

Cognitively, dream evidentiality may be modeled in terms of two conflicting narrative spaces, that of the dream and waking worlds. Following the logics of dream narratives, the conflicting worlds are construed as either a ***linear succession*** or as a ***parallel configuration***.

To feature a ***linear succession***, in Example 1, the parenthetical inclusion of metanarrative comments (*this is real we found this out yesterday*) is a linear strategy to construe waking-world narrative spaces that are independent of dream spaces and are evoked by their own linguistic prompts:

(1) "*I dreamt that somehow, my two best friends came over during this crazy crisis and hung out in my room. I told them that my mom has coronavirus* **(this is real we found this out yesterday)** *but she got through it*" (DJU).

In the above example, the explicit comment on the real nature of the events recalled leads to the emergence of a counterpart narrative space whose status is marked as real though it doubles the dream space. Its linear nature is accounted for by the separate comment the narrator makes outside the main narrative (provided by the parenthesis) to establish the reality-marked situation specifically tagged as such. The narration hence shifts to reality for a moment, updates the reader on its relation to the dream, and returns to the dream narrative perspective.

Parallel waking-world narrative spaces, on the other hand, emerge from the dream narrative not as specifically tagged ones that follow or precede the counterpart dream situation. They are construed from the context simultaneously with the main dream-marked space and are provided by the same linguistic prompts (2):

(2) "*Corona scenes are still there. I get to know* **my brother at Dubai** *is infected by Corona and he have been recovered without any causes. We can reach back to home (India) by speedy train*" (DJU).

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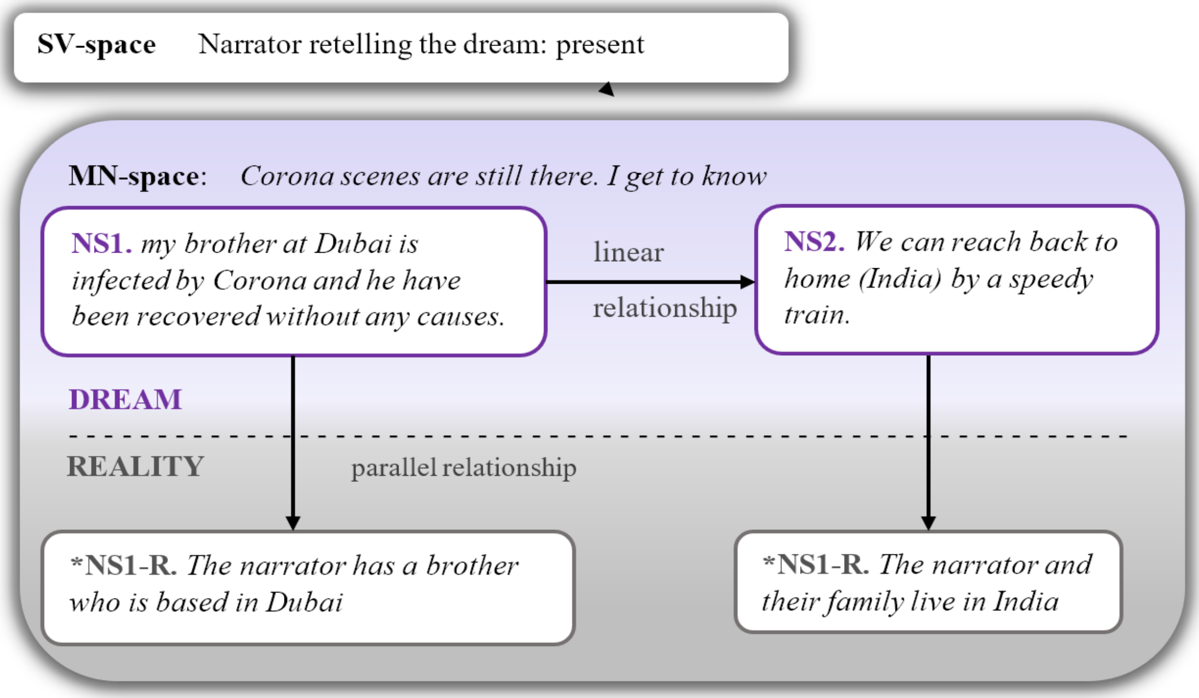
From the passage above, the reader may assume that the narrator in the real world has a brother who abides in Dubai, while there is little linguistic evidence of this fact. The described scarce, highly contextual linguistic cues boost a narrative configuration modeled in Figure 1.

To model dream narratives (see Fig. 1), we follow Dancygier's method (2011). Here, we identify three spaces: (i) the story viewpoint (SV), which conditions the overall situation, (ii) the main narrative space (MN), where the story of focus generally unfolds, and (iii) local narrative spaces (NS), whose sequence is the moving engine of the narrative:



SV – story viewpoint; MN – main narrative; NS – narrative space

Figure 1. The model of parallel narrative spaces in dream vs. reality navigation (Source: Own processing)

The narrator first sets up the general dream-marked space (*Corona scenes are still there. I get to know*) and then tells the news concerning their brother in the dream (*my brother at Dubai is infected by Corona and he have been recovered without any causes*), which, in its turn, is followed by another possible scenario and narrative space for the future in the dream (*We can reach back to home (India) by a speedy train.*). The configuration of these spaces is **linear**, since they are construed as the narrative's linguistic representation unfolds. However, we argue that this main dream narrative line also has collaterals that are necessary for navigating in the dream narrative. These collaterals are two **parallel** reality-marked narrative spaces not commented on explicitly in the report. The first is a compact one that introduces a brother based in Dubai in the real world, and the second is a wider one elaborated further where this brother has COVID-19 and recovers from it.

Linear and parallel configurations of narrative spaces entail typological differences in **navigation** across dream and waking narrative spaces. Parallel narrative spaces make the narration more informative as they provide more details. Still, the reader has to clearly distinguish (that is, navigate across) simultaneously construed dream and waking narrative spaces to provide appropriate perception of the narrative. Conversely, linear successions of narrative spaces seem easier to follow as they unfold gradually, and, consequently, navigation between the spaces is not so problematic.

For instance, in Example 3, the narrator makes a parenthetical inclusion to shift to a reality-tagged (*in real life*) narrative space and leaves appropriate comments on the difference:

(3) "*Getting ready to say bye to everyone when my old Neighbour from cedar commons Sweet Cherie was there with Alec (who I saw on fb had Just graduated university* ***in real life) but on the dream****, he was an infant and she said he had a 'lil cough and had covid because he was deathly ill so I said well, ok – I'll be heading out now!*" (DJU).

The model for a linear succession in navigating narrative spaces is in Figure 2:

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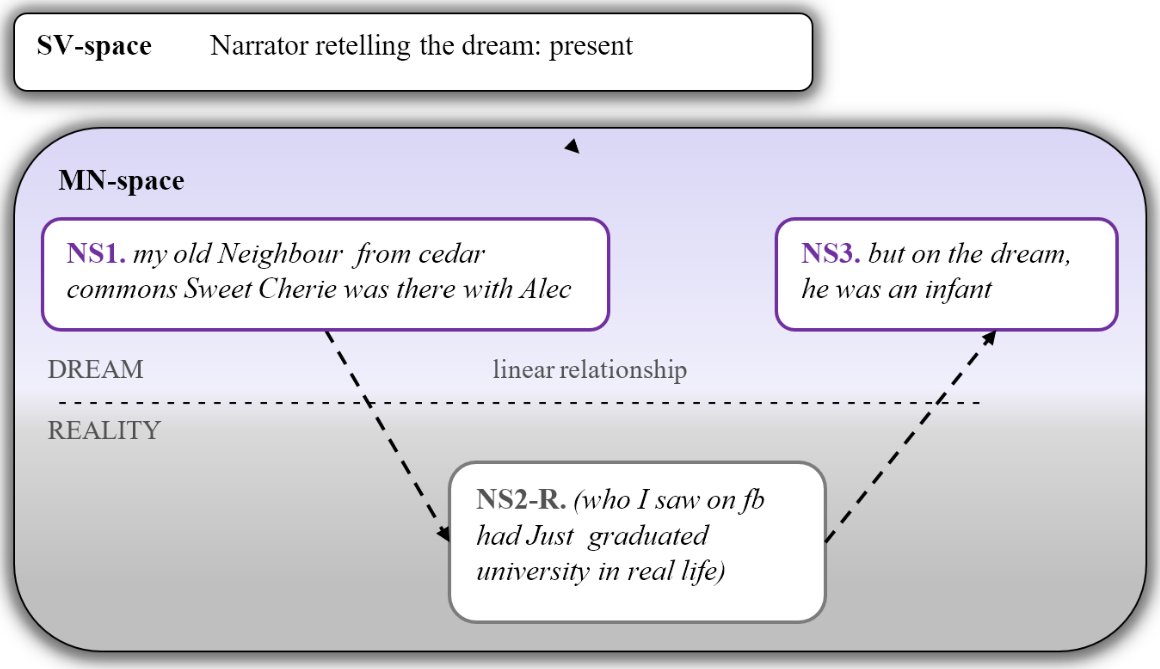

SV – story viewpoint; MN – main narrative; NS – narrative space

Figure 2. The model of linear narrative spaces in dream vs. reality navigation
(Source: Own processing)

In Example 3, the narrator linearly shifts between dream- and real-world descriptions, but this time the dream space and the reality space diverge. In the real world, Alec, the narrator's acquaintance, is a grown man who has just graduated from university, and in the dream, he is an infant (though he still preserves his identity from the narrator's dream perspective). The narrator explicitly refers to the waking world and employs parenthesis as meta-narrative comments.

It is significant that even on condition that the waking-world narrative space is not construed, the narrators usually update the status of the narration and tag the narrative space as that of the dream:

(4) "*I can't quite remember, but think it had to do with the fact that* ***(in the dream)*** *the whole pandemic had been fabricated by the United States government in an attempt to nudge us closer to war with China, who the government wanted to go to war with* ***for some reason in the dream***" (DJU).

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As a dream narrative aims to render a string of events in a dream, it inherently conditions marking exclusively waking-world narrative spaces as such. At the same time, dream world narrative spaces may stay unmarked by default. Therefore, reality narrative spaces tend to play auxiliary roles only to navigate in dream narrative spaces and tag them as unreal. This allows the reader to identify the epistemological (dream/reality) status of the narrated events.

Linguistic markers of narrative spaces split into explicit and implicit ones. Explicit markers primarily feature the following phrases: *in the dream*, *I had a dream that*, *I dreamt*, *my dream self*, *in the waking life*, *in real life*, *in reality*, and *dream/waking*. Implicit, or context-dependent, markers include some contrast and concession **conjunctions** and **adverbs** (*but*, *though*, *however*) as well as **grammatical tenses** and **adjectives** that render the difference of the object, character, or scenario from a real one.

(5) "*I recall the virus is in America, but* ***my dream self*** *has no recall it exists in Australia, despite seeing daily news about Victoria's problems (****in waking life****) for the last few weeks. (****However****, we live in a region in Queensland where there have been hardly any cases.)*" (DJ).

In Example 5, the narrator uses an explicit vantage point marker, *my dream self*, to identify the knowledge they have in the dream as different from that in the waking world. The narrator also uses an explicit tag, *in waking life*, to mark the narrative space where they follow news. The marker *however* in the parenthesis also indicates that the waking world is juxtaposed with the dream.

Dream reports also demonstrate a profuse number of details that are not normally mentioned and hence are naturally identified as markers of incongruence between the dream and waking worlds. As an example, the phrase *I was a male* allows assuming

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that the narrator is actually a woman. Such comments, irrelevant in everyday discourses, also simultaneously evoke double mental spaces – one of the narrator's being a man in the dream and the implied waking counterpart of theirs as a woman.

Another linguistic marker of a dream narrative is a bulk of ***expressive adjectives*** that render some exceptional quality of an object or an action, for example, *disproportionate*, *giant*, *enormous*, *huge*, *untypical*, *strange*, *weird*, etc. and corresponding adverbs. They pinpoint the difference of these phenomena or scenarios from their analogues in the waking world. We consider these means as navigation tools that draw a borderline between the dream world and the waking world. However, pointing to the dream status of the narration, these concise lexical means, however, do not entail the emergence of parallel narrative spaces. These means remain regular attributes in reality-oriented discourses as people do refer to things as giant, unexpected, etc. outside the descriptions of their dream experience. As an example, unusual features of the dream items that tag the space as dream in Example 6 yet do not condition the emergence of new reality-marked narrative spaces:

(6) "*So I was at this grocery store or something in the parking lot/just outside the store with my family and there were all these* ***giant*** *delivery trucks were there,* ***like much larger than normal*** *and there were lots of people walking across the roads and around the trucks stuff*" (DJU).

As some linguistic markers, like in Example 6, do not provide sufficient grounds for construing a parallel reality-marked narrative space, a relevant criterion is to be developed. In other words, we have to pinpoint the factor that conditions the potential of the markers of the reality world to construe a separate reality space. In these terms, as a criterion, we relied on the explicit or implied proposition in references to reality. In Example 7, there is the following preamble to the main part of the dream:
(7) "*I had this dream few night back, didn't know when*. ***I was a male***. *Enjoy*" (DJU).

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In Example 7, a parallel counterfactual narrative space emerges from the comment *I was a male* that may be developed in the following proposition: *The narrator is a woman in real life*, which accounts for construing a reality narrative space.

Therefore, not all unusual elements in dream reports condition construing double narrative spaces of the same degree of elaboration. In Example 8, there is an indication of a certain discrepancy between reality (*Jeremy's regular backyard porch*) and the narrator's dream:

(8) "*I was on Jeremy's backyard porch* ***and the porch was very long and wooden*** *and we had to walk down to get there*" (DJ).

Here, the conventional way of an object description does not account for construing an additional parallel real space, where the porch is shorter.

This observation supports our supposition that dream spaces and locations are ambiguous as they are often distorted and, therefore, manifest rather a blend of some conventional structures or locations. Enescu et al. (2015: 224) hold that such distortions mainly reside in the [concepts of] places being mixed (i.e., combining distinct features of different places), condensed (i.e., similar to mixed places but also embedding different personal experiences and thoughts), distorted (i.e., demonstrating unusual spatial proportions), uncertain, or totally invented. As a consequence, these false representations of real phenomena or locations that are typical of dreams may not account for construing parallel mental spaces. Finally, as the analysis of our corpus confirms, in dream reports, grammatical means such as ***verb tense forms*** serve as linguistic means for tagging narrative spaces as dream vs. reality:

(9) "*My sister* ***has*** *covid* ***in the waking world****. My roommate and I* ***were*** *at her place*

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*(not her **actual** place) and she **was doing** much better. All these people coming over. I **was** not okay with it (she'**s** very anxious about all the covid stuff)*" (DJU).

In this example, the Present Simple verb form *has* along with the explicit tag *in the waking world* are markers of the waking-world narrative space. The shift to the past tenses (*My roommate and I **were** at her place*) indicates that this new narrative space is set in the dream as well as the following ones (*she **was doing** much better… I **was***). At the end of this fragment, the narration snaps back to the Present Simple in the parentheses (*she'**s** very anxious about all the covid stuff*), which by the logic of tense opposition, suggests the waking-world situation. Therefore, in this example, the verb forms are navigation marks between dream and real narrative spaces (past tenses vs. present tenses).

However, tenses alone do not appear to be a reliable narrative space tag when they are regarded separately from other tags. In Example 9, the present tense indicates reality spaces, that is the narrator's vantage point when the narrative is produced. The past tense is conditioned by the deictic properties of narrating the past experience inherent in the dream. This contrast of tenses is mainly intuitive and appears quite logical. Nonetheless, the narrator augments it both by explicit tags, like in Example 9: *in the waking world*, *her actual place*, and by parenthesis to signal a shift of the narration towards reality.

Similarly, in Example 10, the context seems to provide complete information for the reader to distinguish between dream and reality:

(10) "*They **gave** us these little pamphlets to talk about our surgeries and **told** us that we **would have to be quarantined** for month because of the virus ... After that my grandpa **came** in to take me into surgery. He **doesn't work in hospital in real life** so I **thought** it **was** weird, and while they **were prepping** me for surgery ...*" (DJU).

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Here, the narration is mainly in the past as it renders a recollection of dream events. Reality-related information *he doesn't work in hospital in real life* is an inclusion featuring Present Simple verb form. However, to signal the switch of the narrative dimension towards reality, the narrator does not rely exclusively on the tense shift and opts for an explicit tag *in real life.*

(11) "*I dreamt that somehow, my two best friends* ***came over*** *during this crazy crisis and hung out in my room. I* ***told them*** *that my mom* ***has coronavirus*** *(****this is real we found this out yesterday****) but* ***she got*** *through it. Her* ***fever went down*** *and everything* ***she's just quarantined*** *because* ***her doc doesn't know*** *how long she, and by proxy I (as a carrier.* ***I haven't been tested but I've been in this house with her for the last weeks while she was sick)*** *will be contagious for. Obviously them coming over* ***is weird****, and idk why the hell I'd tell them that. They both* ***looked at me*** *with this weird disappointment but didn't say anything. then woke up*" (DJU).

Example 11 illustrates a not infrequent though characteristic confusion of tenses that stems from the nature of dream accounts. Here, first, the narrator logically uses the past to tag dream narration (*came over*, *told*), then the present for reality narration (*this is real*). Yet, in the following passage that is apparently related to the dream, the narrator continues in the present only to snap back to the past (*looked at me*) at the end. Thus, as such mixture of narrative tenses is rather untypical of the narrative (Fludernik 2003), we hypothesize that in dream accounts, the confusion of tenses is rooted in the very nature of the dream, when the real and the seeming are hard to differentiate for the narrator.

Similar confusion arises in dream accounts when the Past Perfect is used, as the vantage point that it tags does not allow to determine sufficient external context. In other words, it is not clear if, using the Past Perfect, the narrator renders a succession of dream events

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or if there is a reference to real events that preceded this dream. For example:

(12) "*I get the idea to go to a park, seemingly associated with a holiday such as the fourth of July (that they do not celebrate in Australia). I look in a drawer* ***with a vague recall that Dennis*** *(half-brother on my mother's side)* ***had left items with me***" (DJ).

In Example 12, alternating reality and dream spaces provides the context to identify the status of the last rendered event. The passage itself ***with a vague recall that Dennis*** *(half-brother on my mother's side)* ***had left items with me*** does not provide enough context to explicate if the narrator has a vague recall of real events or deals with their dream memory. Yet, the narrator interrupts the report with a parenthetic inclusion that apparently renders reality. This is a cue to interpret the event that follows the reality-marked inclusion as a part of the dream due to the position of its description beyond the parenthesis.

(13) "***The trip my housemate and I had planned to India*** *was, surprisingly, still going ahead. once on the plane I realised [I]'d not told anyone I was still going my annual leave from work had been cancelled and I didn't restart it, didn't hand over clients to colleagues or anything*" (DJU).

To illustrate the confusing nature of using the perfect verb forms as tags of reality vs. dream, as in Example 13, the narrator uses the Past Perfect twice (*I had planned, [I]'d not told*). As the context is insufficient, it still stays indefinite whether the narrator and her friend really planned a trip to India or this is just a dream fragment.

There is another example of the usage of the Past Perfect Continuous verb form that causes confusion in dream vs. reality navigation:

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(14) "*My hip **had been hurting for years**, so my husband and some other guy decided to do an Xray*" (DJ).

From Example 14, it is not clear if this opening statement of the dream account relates to the narrator's dream (their dream memory) or their real condition. Hypothetically, the distinction here is not pivotal, as the narrator's dream self and their perspective at the moment of producing the narrative blend together. In other words, the deictic properties and verbalized dream self of the narrator coincide at this moment.

However, at the same time, narrators often mark the "false memory" they have in dreams to tag the space as a dream-related one, like in Example 15:

(15) "*Once inside I was directed to the Slytherin dorms so I could set up my own room with my stuff. I **'remembered' getting a private test at home in the form of a letter that predicted the house of anyone touching it***" (DJ).

Here, the narrator directly indicates their false memory via the appropriate phrase in inverted commas: *I **"remembered"***.

In the following Example 16, the narrator talks of the *assumption* they had in the dream (*the fact that (in the dream) the whole pandemic had been fabricated by the United States government*).

(16) "*I remember there was some secret, something huge, something bordering on horrific or creepy, that we somehow had caught onto. It was something to do with the pandemic. I can't quite remember, but think it had to do with the fact that **(in the dream) the whole pandemic had been fabricated** by the United States government in an attempt to nudge us closer to war with China, who the government wanted to go to war with for some reason **in the dream***" (DJU).

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This assumption results in the construction of a dream-tagged narrative space that renders events preceding other events within a dream, thus building 'a dream in a dream'. This is in full accord with Fludernik's surmise that narrative temporality is grounded in experientiality and not in the rigid story as a sequence or rendering events precisely (2003: 120). Thus, a dream report departs from the narrator's experiential reality that does not make simple sequences of events.

To illustrate the statement above, in Example 17, the verb tense is used with neither an explicit indication of dream vs. reality nor a "false" dream memory. Thus, the reader can make assumptions about the status of this information exclusively from the context:

(17) "*I got to a point where a long queue was waiting to exit the building and nobody was socially distancing. I got to the front door and looked back to see a familiar face. It looked like my old boss who we called Mr T, but in fact it was Edna. I got all emotional* ***because I remembered she had died 5 or so years ago*"** **(**DJ).

Therefore, in dream narrative, tense markers are not effective as epistemic status indicators of the narrative spaces. This may be expounded by the fact that the vantage point of the narrator fluctuates as, hypothetically, the act of narration and the perception of their dream self-coincide in the narrator's mind.

3.2 Transitions between dream-world narrative spaces

Navigation across narrative spaces of a dream report may also be problematic due to shifts between the narrative spaces that amount to the same dream world. In the story, they provide for the linear narrative construction of the sequence of events. We differentiate the shifts between dream spaces as natural or extended transitions vs. concise and dynamic ones.

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(18) "*I* ***walked closer to see*** *that they weren't just holes.* ***They were graves***. ***There a funeral was taking place*** *for those who lost their lives during the Coronavirus. Two of those people being myself and my husband. I shouted to the vicar to tell him he had made a mistake, but he couldn't hear me. No mistake had been made. We were dead*" (DJU).

In Example 18, the rendered narrator's dream content allows for a gradual, natural shift of narrative spaces. The narrator traces her physical movement in her dream space (*I walked closer to see*) that generates another narrative space when she sees the graves and realizes what is happening (*They were graves. There a funeral was taking place*), gradually assuming that she and her husband have died of COVID-19.

As a rule, irrespective of the content, narratives tend to feature natural shifts between narrative spaces that extrapolate to each other.

Conversely, dream narratives may feature abrupt, illogical transitions between the scenes of the dream:

(19) "*Apparently* ***I realized*** *she also has the virus and is able* ***to transform into*** *an animal so she did out of panic. Problem? She has claws and scratched my back and it bled but I continue to swim, wondering what animal she is. After we arrive in America,* ***I looked and saw that*** *she was a tiger.* ***Then I was suddenly*** *in New York where one of my friend who did not have powers and did not go to North Korea*" (DJU).

Such markers as *to transform into*, *I looked and saw that*, *then I was suddenly* point to abrupt shifts between the dream scenes that we scheme in Figure 3:

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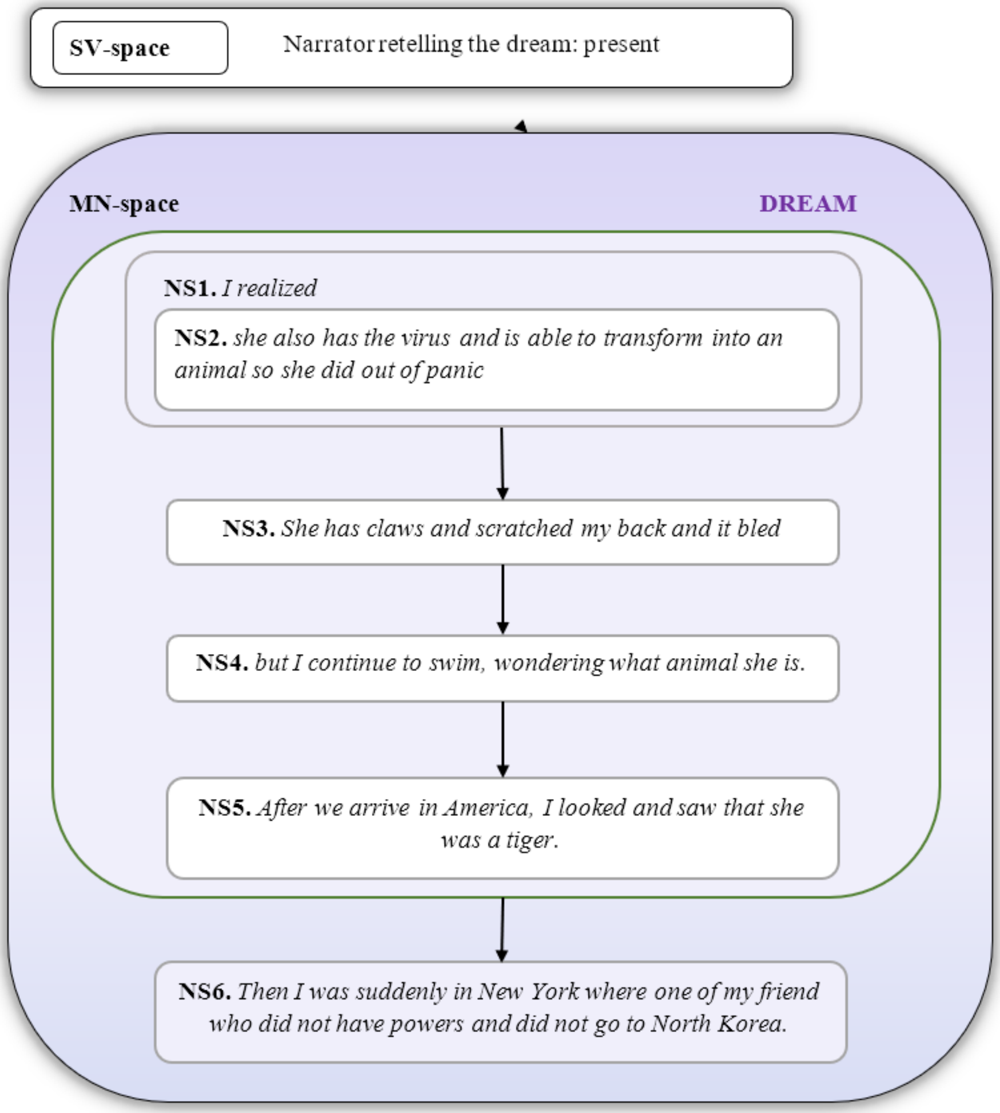

SV – story viewpoint; MN – main narrative; NS – narrative space

Figure 3. The model of linear dream narrative spaces navigation (Source: Own processing)

In the model, there are no real spaces construed since the reader just follows the homogenous, dream-related events with no references to reality as the SV-space indicates. However, the dynamic scene shifts in the dream narrative result in tense, irregular and sporadic construing narrative spaces (NS1-6) in terms of the main narrative (MN-space). Such scene shifts are quite typical of dream reports. They break space and time continuity between construed narrative spaces, the narrator remaining a stable element. Hence here the narrative unfolds following a rather untypical scheme. Narrative spaces demonstrate broken continuity, which is also inherent in dream reports as a specific narrative genre.

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Dream reports feature various levels of continuity. As its extreme representation, in Example 20, the scenes do not have anything in common but the narrator. The abrupt shifts build a new narrative space without updating the previous one. As a navigation marker, the narrator monotonously uses the phrase *next scene*:

(20) "*I was hanging out with this group of people in this small front garden ...* ***Next scene;*** *I had to sit an exam in this big hall ... I got up from my desk and left feeling bad that had just failed my maths exam.* ***Next scene;*** *I had picked my mum up from this old people's home (she doesn't live in one in real life) but before had reached her room, she was walking out with her neighbour friends ...* ***Next scene;*** *I was now a 14-year old bey who had a lisp and lived in very poor country ...* ***Next scene;*** *I was on this family holiday. staying in this wooden cabin ...* ***Next scene;*** *I was at the supermarket. Covid 19 rules were in full swing and we all had to stand metres apart ...*" (DJU).

Some narrations, however, feature more elaborate transitions between scenes, making the reports easier to follow:

(21) "*... but* ***then I suddenly switched to a random girl's pov***. ***this looks like an imagination*** *when I was telling story to Taka. [T]he girl seems to be a professor, and she was quite the genius. but then an accident occurred in her lab and most of the professors got in touch with the virus (mind you, covid was happening) so she ran away. the virus was so nasty that it chased her and ate everything on the way be it any kind of living beings. she chased her to the subway, she ran for her life. ran and ran and ran*" (DJU).

In Example 21, the narrator introduces the shift of the narrative space with an explicit indication of what it was like (*but then I suddenly switched to a random girl's pov*) and highlights what the scene shift felt like (*this looks like an imagination*).

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To sum up, rendering one's dream experience with the use of verbal tools is significant in terms of narrative building. Dancygier states that "fragmented and ostensibly incoherent stories are indeed ultimate exercises in language use, because they stretch the cognitive abilities of 'making sense' to their limits" (2011: 11). In a dream experience, natural causal relations are distorted, which entails identifying the epistemic status of the narrative space as that of reality or dream. Besides this, scene shifting in dreams is a common practice. These factors account for abrupt scene shifts as a genre-specific feature of dream narratives that entails dynamic construction of narrative spaces as cognitive construal.

4. Conclusions

Modeling narrative configurations of dream reports as sequences of narrative spaces allows us to distinguish the patterns of navigation in dream- and reality-marked narrative spaces. We have established that narrative spaces in the dream report are distinguished as either dream or reality-related, since the narrator has to deploy linguistic means to tag the epistemic status of the information.

We have also pinpointed the means underlying the shifts between these narrative dimensions, that is dream and reality. The navigation means of tagging of the narrative space as either that of the dream-world or waking-world include explicit and implicit ones. Explicit means include the direct dream or reality tags that introduce the narrative space. Implicit means are contextual indications, such as contrast and concession conjunctions and adverbs, grammatical tenses, and adjectives that suggest the difference of the object, character, or scenario from the real one.

As for the relation between the dream-world and waking-world narratives, they are construed as concurrent and mutually updating spaces. Yet, their dynamic correlation results in two formally separate storylines. We propose to distinguish the ways of their correlation as either linear or parallel. At the same time, dream-world narrative spaces stand out as primary, while waking-world-tagged narration is an auxiliary means that suggests the vantage point of the narrator.

For the linear configuration, the inclusion of metanarrative comments is provided in the parenthesis with an explicit indication of the space status, which is usually inherent in construing a waking-world narrative space. A linear waking-world narrative space is evoked by specific linguistic markers.

Parallel waking-world narrative spaces are not tagged specifically and are concurrent with the counterpart dream situation. Parallel narrative spaces in dream reports are marked by contextual means that juxtapose the narrated dream events and the narrator's real life. These parallel spaces are distinguished only on condition that the inferred contextual clue is possible to develop into a proposition.

List of abbreviations

DJ – Dream journal

DJU – Dream journal ultimate

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Résumé

The article focuses on the COVID-19 dream narrative in terms of cognitive narratology. The objective of the study is to characterize the relationship of dream and reality narrative spaces as well as to pinpoint the means of navigation over them. The article is a case study of about 100 online dream reports that feature COVID-19 themes. The COVID-19 pandemic has overtaken the agenda in media discourse; moreover, dream reports reveal unconscious perceptions of the pandemic, which accounts for the relevance of the present research. Its basic method is narrative space modeling, which combines mental spaces and blending theories as its basis. The research divulges the typical narrative configuration of the dream report. It features two parallel dimensions of narrative spaces, that is the dream content and the auxiliary real-life context that serves as the vantage point of the narrative. The narrative spaces of the dream report manifest their inherent epistemic status as either dream-world or reality-world ones. The navigation means that signal the epistemic status of the narrative spaces split into explicit tags and contextual markers. Contextual markers include contrast and concession conjunctions and adverbs, grammatical tenses, and adjectives. Narrative space modeling allows for identifying two types of relationships between narrative spaces. In terms of space configuration, a real-world narrative space and dream-world narrative spaces may be either linear or parallel. In the linear configuration, a real-world narrative space may either precede/follow a meta-narrative comment or be inferred from linguistic prompts. Otherwise, a real-world narrative space may be concurrent or parallel with a dream space. In this case it conditions inference via contextual proposition.

Key words: dream narrative, cognitive narrative theory, navigating over narrative spaces, linear/parallel space configuration.

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LEGE ARTIS

Language yesterday, today, tomorrow

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METALINGUISTIC SIGNIFICANCE OF BASIC ITALIAN ONOMASTIC TERMINOLOGY: A CORPUS-BASED STUDY[1]

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Abstract: The paper addresses the metalinguistic conceptualisation of basic Italian onomastic terminology. A content analysis of corpus-based contexts and collocations aims to determine the significance of chosen terms in scientific and extra-scientific discourse. The co(n)texts (co- + contexts) and collocations indicate a diversity of senses that requires systematisation both within the framework of onomastic theory, and of the main branches of onomastics, i.e. anthroponomastics and toponomastics.

Key words: metalinguistic, Italian onomastics, scientific terminology, anthroponomastics, toponomastics, context, collocation.

1. Introduction

Every science seeks to develop its own terminology, introduced and elaborated according to the requirements of the systematic description of the research object. The object of linguistics is language and the complex of events that makes language a potential system and a material in the process of its use. According to this kind of findings about language, we focus on the considerations that make up the metalanguage

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and the perspective into which this property of language fits is metalinguistic (or reflexive as per the classical the classical Jakobsonian functions of language, see Jakobson 1973; cfr. Holmes & Wilson 2017; Lucy 1993). The paper likewise attends to the issue of metalinguistic awareness. This concept is well known in the field of language use and acquisition studies (see Altman et al. 2018; Bialystok et al. 2014). We have adapted it to denote the competence that is practised in its most advanced form by specialists, but, above all, by the average user reaching for "language about language" to varying degrees, as well as in a "pseudo-scientific" or "para-scientific" way discussing linguistic facts (cfr. Grucza 1999). In our view, metalinguistic awareness falls within the reasoning function of the language as *"a tool of thought"* (Finch 2003: 32).

The field of metalinguistics includes important sub-disciplines of linguistics which have acquired an interdisciplinary character due to the research object, but also due to the communicative situations and functions fulfilled by the actors of such situations, by the senders and receivers of communicated contents, by the authors of their formal modelling, by the discourse in which they occur, the transmission channel, etc.

Interdisciplinary linguistic sub-disciplines include onomastics, a branch of humanities that studies proper names – word or phrase units that denominatively individualise humans, other organisms, places, geographical objects and spaces, things, products, economic activities, undertakings of a cultural nature and their material or intellectual creations (for more details see, e.g., Bauer 1995; The Oxford handbook of names… 2016; Van Langendonck 2008; Vaxelaire 2005: 301-398). In all its branches, onomastics employs a vast variety of concepts of cognitive and metalinguistic nature, philosophical concepts inclusively (see Caprini 2001: 17-32; Philosophical approaches to proper… 2016; Vaxelaire 2005: 432-476). These concepts are represented by terms that carry functional and substantive significance, providing specific reference values in onomastic discourse.

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Onomastic discourse is successfully analyzed by onomasticians and representatives of other fields of linguistics philosophy, philology, anthropology, culturology, geography, history, marketing, and other studies. The discourse is also inherent in everyday communication, when we use proper names and talk about them. The issue of 'talking about' is particularly relevant here.

2. Research aims and theoretical background

In this paper we would like to pay special attention to the metalinguistic terminology concepts in Italian onomastics (henceforth IOT = Italian onomastic terminology / terms). The study of proper names in this cultural-linguistic area corresponds to the need for **a scholarly account of onomastic issues**, thus of linguistic facts, since it is indisputable that proper names are a full-fledged part of natural language (Algeo 1973; Blanár 2009; Blarasin 2019; Coates 2006, 2014; Harvalík 2021; Zabeeh 1968). The research objectives concern notions belonging to a strictly scientific language within basic branches of onomastics – anthroponomastics and toponomastics, as well as to a general communication (extra-scientific discourse), which takes over the terminological and conceptual resources of the former.

The study offers an overview on **the representation of the concepts** encoded in universal lexemes or expressions and on their **use in scientific and extra-scientific discourse** from the cultural context perspective (in connection with the textual domain in which it appears or the informational purpose of the reference, e.g., in knowledge compendia popularised by online hypertexts). We include in our considerations a range of selected Italian onomastic terms, which have their international equivalents, but which do not always coincide conceptually and therefore require a **critical examination** and possible modification.

We envisage that the outcome of the study will be, firstly, to revise the basic onomastic terms within the Italian linguistic space and, secondly, to isolate cases of coherence and non-coherence in the use of onomastic terms in Italian texts from specific corpus sources, in relation to their contexts and collocations.

2.1 Applied methodology and research material

The methodology we adopt in the study consists primarily in **content analysis** of linguistic (terminological) concepts and occurrences of IOT in the discourse, which is determined by the use of specific onomastic metalinguistic units. The applied method leads to a critical view of onomastic concepts in the Italian context, with regards to their scope and meaning levels.

A collection of key onomastic concepts in Italian, make the object of the study. The aim of the paper is to present an overview of terminological items in the form of a corpus material study according to a scheme, which models **the content and usage form of a given term** in a specific context and/or collocation. The scheme includes the elements for describing a terminological unit: its inherent and specific properties. The conclusions drawn from the observation of a selected set of terms create a generalising perspective of metalinguistic concepts for talking about proper names, categorising or classifying them, determining their functions and describing them in an onomastic and interdisciplinary perspective. We assume that the non-specialist use of scientific terminology can influence its conceptualisation. Indeed, "[i]n our everyday life the "packaging" of information is organized in one way or another through language means. On special occasions the content is wrapped up and presented to the hearer according to interlocutors' needs in discourse practices" (Manerko 2016: 139).

The implemented content analysis supports two vectors of textual linguistics, namely the formula of **context and collocation**. We define context following Goodwin and Duranti as "[t]he notion of context thus involves a fundamental juxtaposition of two entities: (1) a focal event; and (2) a field of action within which that event is embedded" (1992: 3). In addition, we consider context as a linguistic occurrence that shows a coherent relationship with reality and the textual environment (cfr. Janney 2002). In our opinion, context includes both the co-text and text, thus henceforth we propose the notation "co(n)text". The use of a specific **term in co(n)text** determines the message conveying the content and scope of the term used in a textual environment. This is an important aspect in approaching scientific terminology that can be semasiologically verified in co(n)text and thereby confirmed or questioned.

Collocation, then, is understood primarily structurally as the juxtaposition of a minimum of two words, formed on a basis similar to phraseology, but nevertheless subject to open-choice processes leading to *"semi-preconstructed phrases"* (Sinclair 1991: 109-110). The effect of collocation, however, is not only a cohesively and coherently formal structure but an achievement of a specific semantic dimension in the interpretation of the reference. In the considered cases, the distinguishing element of collocations is the main lexeme (a "pivot"), to which semantically and pragmatically determining elements from its left and/or right side are added, triggering the effect of joint occurrence (co-occurrence, see Krishnamurthy 2006). In my opinion, the pivot constitutes a central referential collocate.

Co(n)texts and collocations as perceptible "textemes" show the attribution of onomastic terms to authoritatively given scientific properties, but they can also modify these properties when confronted with non-scientific and interdisciplinary usage. Examples of this type of situation are observed in this study.

The research material is of corpus origin. It is subjected to content-based occurrences of terms in cultural texts, coming mainly from Italian language corpus resources, such as the Corpus of Italian language (*il Corpus dell'Italiano il PAISÀ* = CIP) and the Corpus of the journal La Repubblica (*il Corpus la Repubblica SSLMIT* = LaR); to a lesser extent the Italian radio lexicon (*il Lessico dell'Italiano Radiofonico* = LIR), the Italian television lexicon (*il Lessico dell'Italiano Televisivo* = LIT), the Lexicon of written Italian (*il Lessico dell'Italiano Scritto* = LIS), and the Google search engine (= GL) as well as certain bibliographical references. A total of several hundred scientific and non-scientific co(n)texts and collocations found in the indicated sources of material were examined.

2.2 Traditional and modern approaches to Italian onomastics

Before presenting the results of the assumed analysis, we shall introduce the current state of onomastic studies in Italy. Italian onomastics is defined in a way that does not deviate from the traditional approaches of this branch of linguistics in other cultural areas. Its origin shows relations with the ancient tradition, in which, starting with the Stoics, a distinction began to be made between *nominum proprium* (individual name applied to selected objects in a given class, Gr. κύριον ὄνομα *kúrion ónoma* 'proper noun') and *nominum appellattivum* (name applied to all objects in a given class sharing identical or similar characteristics, Gr. προσηγορικόν ὄνομα *prosēgorikón ónoma* 'common noun'; cfr. Marcato 2009: 13-14; Mladin 2020: 260-263; Vaxelaire 2005: 432-444).

Italian onomastics focuses mainly on the study of personal names (anthroponyms) and names of places and geographical objects (toponyms). It has achieved significant results in this field by describing personal and geographical naming in a way that is representative of the object of study in a synchronic and diachronic perspective (see, e.g., two dictionaries of Italian first names and surnames by De Felice (1978; 1986), or the resources of Italian toponymy – geographical names throughout the Italian territory, e.g., Dizionario di toponomastica… 2006). Also, in recent years, several compendia and dictionaries have been compiled that collect data on personal and geographical names in specific regions, localities, communities, historical periods, etc. (see, e.g., Bonifacio 2018; Cinausero Hofer & Dentesano 2017; Dizionario toponomastico trentino… 2017; Staccioli & Cassar 2017).

In the traditional approach, Italian onomasticians or other specialists interested in proper names (linguists, historians, and geographers besides literary theorists) studied the inventories of proper names from a structural-etymological point of view, taking into account in particular: linguistic origin, etymology and onymic function, typology, the appearance of the name in use and its diffusion, occurrence, frequency (De Felice 1987: 47). Migliorini limited 'traditional onomastics' to the study of personal names, which subsequently proved influential on the understanding of onomastics as a scientific discipline (1927: 15) (see the results of the analysis in Section 3; cfr. also Migliorini 1935).

Within Italian traditional onomastics, a trend devoted to the study of proper names in literary texts emerged quite early too (It. *onomastica fittizia* 'fictional onomastics', Migliorini 1927: 42-50). This means that the traditional approach to onomastics went beyond linguistics, directing its interest towards fictional names in lyric poetry, drama, and narrative genres, and also towards the names of real objects that occur in the literary world and similar sources.

It is significant that it is in this field that the paths of literary studies and linguistics meet (see the scientific achievements of the onomastic and literary school of Pisa published in the journal *il Nome nel testo. Rivista internazionale di onomastica letteraria*, Edizioni ETS). The text of literature and its components are, in fact, an object of linguistic analysis in the same way as other types of expression recorded in the spoken or written register.

Contemporary Italian onomastics, without abandoning its historical heritage, takes up new research challenges by expanding and methodologically developing the classical approach and introducing new naming scopes and new branches of onomastic description, discreetly including such onymic areas as urbanonymy, chrematonymy, zoononymy, cosmonymy, names in various types of texts, brand names (It. *marchionimi*), translation of proper names, etc. (see, e.g., Cantoni 2006; Cotticelli Kurras 2012; Janner 2012a, 2012b; Fatutta 2005; Marazzini 2005; Randaccio 2003; Viezzi 2004).

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A significant contribution to the advanced progress of contemporary onomastics in its various aspects has been made by the onomastic school which for more than 25 years has been developing very dynamically around *Rivista italiana di onomastica RIOn,* a journal published in Rome by the Società Editrice Romana and created thanks to the determined scientific commitment of its director Enzo Caffarelli. This Italian onomastician is the author of several hundred scientific publications dealing with almost every type of proper names in a wide variety of their reference objects. Much of his work is of a disseminative nature, otherwise relevant to the discursive perception and explication of communicative phenomena determined by 'onomastic content' (in languages pertaining to sports, religion, personal transportation, and other spheres of life, see, e.g., Caffarelli 2013; 2015; 2016a; 2016b; 2017; 2019). Caffarelli's contribution is also significant to the compilation of monumental onomasticons of Italian anthroponymy and toponymy (e.g., names of Italians, Caffarelli & Marcato 2008).

2.3 Lexicographical approaches in the field of Italian onomastic terminology

The rather eclectic approach of the school emerging around *RIOn* has perpetuated most of the current terminological concepts in modern Italian onomastics. Due to their non-hermetic approach, they have a character that takes into account the general humanist and conventional schemes, appropriate for non-specialist and lay users, who in everyday communication use metalinguistic terms that make it possible to talk about onomastic phenomena in linguistic reality and their objects in extra-linguistic reality.

Such a stock of mixed terminology is collected in a glossary compiled by Caffarelli and Gagliardi (2018). According to the authors' intention, this is a historical account of onomastic terminology as a 'sectorial language' within the linguistic sciences (It. *"linguaggio settoriale della linguistica"*, ibid., 11), taking into account the various terminographic innovations, the acceptance of particular terms and their occurrence. This is a quite pioneering approach, attempting to collate data on theory and "onomastic language", but at the same time leaving debatable inaccuracies in the scholarly circulation.

The terminological glossary of Italian onomastics can be compared with other studies of onomastic terminology that have so far been published around the world (mainly in Slavic countries and Germany; see in chronological order Svoboda 1960; Witkowski 1964; Karaś 1968; Základní soustava a terminologie… 1973; Подольская 1978/1988; Основен систем и терминологија… 1983; Бірыла 1993; Балкански & Цанков 2010; Бучко & Ткачова 2012; cfr. ICOS lists of…).

3. Results of the analysis of selected IOTs and discussion

The terms subjected to content analysis (consisting of semantic, conceptual, and usage formulas) are presented from the perspective of a certain hierarchy and, at the same time, of a classification valid for the internal division of onymy into main groups of names and theoretical concepts of their perception in the scientific and extra-scientific space. We take a particular notice of non-scientific co(n)texts, illustrating the need for "naming names" (meta-names), which may sound somewhat tautological but are lexically and by definition appropriate (e.g., with the "name" *limnonym* we "name" the "names" of lakes).

This study addresses co(n)textual and collocational occurrences of metalinguistic onomastic terms mainly in noun form, although also in the form of nominal syntagma – nominal groups with adjectives or other complements. The analysis was carried out in three conceptual fields: general onomastics (O), anthroponomastics (A), and toponomastics (T).

3.1 The general onomastic field

We begin the review and discussion of the research results with an analysis of the general problems of onomastics and the very concept of onomastics, which falls within the scope of the so-called onomastic theory as a *de facto* part of philosophical, linguistic

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and interdisciplinary thought, penetrating metalinguistically into various humanistic statements (see, e.g., Blanár 2009; Van Langendonck 2008; Vaxelaire 2005). Looking at "onomastic facts" from this perspective reveals not only the formal framing of the issue, but also its permeation between scientific and non-scientific binaries and general language, where scientific terminology is sometimes used in a semantically approximate or even erroneous way (also from a pragmatic point of view). In the case of IOT, this situation is relatively labile, as the following findings show.

3.1.1 IOT case I: Onomastica

The review of selected metalinguistic terms relating to Italian onomastics and the use of proper names in the different varieties of discourse of Italian speakers should begin with the term It. *onomastica* itself. It is a noun of feminine gender, which corresponds to two particular senses. The first and fundamental[1], but nevertheless reserved for the scientific onomastic community, denotes a subdiscipline or method of linguistics focused on a precise research object that is the complex area of proper names, the essential components of language (see Ex. 1, 2, 3). According to some former linguistic theories, proper names occupy the "margin of language" (Castiglione 2018: 135; Milewski 1965; cfr. Vaxelaire 2005: 83, note 1; Włoskowicz 2021: 28-34), however today this view is widely contested in favour of the legitimate participation of proper names in linguistic structure and communication (Blanár 2009; Harvalík 2021; Mrózek 1998; Van Langendonck 2018; Włoskowicz 2021; cfr. Rami 2016).

(1) ***Onomastica***[2] *(…) Settore della linguistica che studia i nomi propri di tutti i generi, le loro origini, l'etimologia, la motivazione, gli àmbiti d'uso e i processi di denominazione nell'ambito di una o più lingue o dialetti.* – [Onomastics (...) A field of linguistics that studies proper names of all kinds, their origins, etymology, motivation, areas of use and naming processes within one or more languages or dialects.][3] (Caffarelli & Gagliardi 2018: 43).

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(2) *Nella tradizione italiana, secondo l'uso odierno, anche specialistico, il termine* **onomastica** *è riferito alla scienza che studia nomi propri nel loro complesso sia oggi che nel passato* – [In the Italian tradition, according to current usage, also specialist, the term onomastics refers to the science that studies proper names as a whole, both today and in the past] (Marcato 2009: 9).

(3) *Gli studi linguistici e la lessicografia d'età moderna, riservando cure e attenzioni soprattutto al vocabolario comune delle varie lingue, e considerando con qualche diffidenza gli studi di* ***onomastica****, hanno rafforzato quest'idea.* – [Linguistic studies and lexicography in the modern era, which paid particular attention to the common vocabulary of the various languages and regarded onomastic studies with some diffidence, reinforced this idea.] (LaR #1189067001)[4].

Looking at the structures in an interlingual manner, we note that It. *onomastica* coincides with Lat. *onomastica*, which is the plural form of sing. n. *onomasticum*. In Italian, *onomastica* is exclusively singular, created like many other names with a rather productive suffix *-istica* (*linguistica*, *italianistica*, *legalistica*, etc., neological constructions as well).

A more colloquial meaning of the term *onomastica* leads to an understanding of the concept as a collection of proper names: miscellaneous names (Ex. 4), rarely geographical names (Ex. 5), or exclusively personal names (Ex. 6). Cases similar to 6 are quite frequent due to the association of the term *onomastica* with another noun referring to Italian names: sing. m. n. *onomastico* (see below).

(4) *Pochi altri elementi per lo studio dell'insubre provengono dall'****onomastica*** – [Few other elements for the study of the Insubre come from onomastics] (CIP https://www.corpusitaliano.it/static/documents/sources/000/0003513).

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(5) *Il nome di tale Santo sarebbe causa dell'***onomastica** *di Sanremo* – [The name of this Saint is said to be the origin of the onomastic name of the city of Sanremo] (CIP http://www.corpusitaliano.it/static/documents/sources/037/0372888).

(6) *Torriani in questo lavoro descrive le isole, le loro città principali e la loro storia, la geografia, la religione, l'antropologia,* ***l'onomastica****, e la toponomastica, oltre a fornire dati e piani per le sue fortificazioni.* – [In this work, Torriani describes the islands, their main towns and their history, geography, religion, anthropology, onomastics, and toponymy, as well as providing data and plans for its fortifications.] (CIP http://www.corpusitaliano.it/static/documents/sources/280/2809158).

In the sense-defining collections of names, the term *onomastica* is very often used with some adjective that narrows the scope of the names to a specific background reference, e.g., culture, nation, local area, locality, point of view, literary world, etc. (see Ex. 7, 8, 9, 10, 11). From a metalinguistic point of view, it is a question of possible collocations involving the component *onomastica*, which we consider further in the second part of this discussion (see Section 3.3 and Appendix 1).

In a scientific generalising sense:

(7) *L'autore, uno dei maggiori esperti dell'***onomastica italiana** *(…) tratta i vari argomenti in maniera approfondita, talvolta con attenzione ai minimi dettagli.* – [The author, one of the leading experts on Italian onomastics (...) treats the various topics in depth, sometimes with attention to the smallest detail.] (Gomez Gane 2020: 368).

In the sense of geographical names:

(8) *Paradossalmente, perfino autorevoli dizionari di* ***onomastica siciliana*** *si sono arresi alla pronuncia Bèlice* – [Paradoxically, even authoritative dictionaries of Sicilian onomastics have surrendered to the Bèlice pronunciation] (LaR #337576058).

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In a special sense of personal names:

(9) *Stefano Pivato scopre all'anagrafe dell'Italia centrale, soprattutto tra Emilia-Romagna, Toscana e Marche, il fiume sotterraneo dell'****onomastica ideologica****, rintracciandovi il complesso gioco di tradizione e rottura.* – [Stefano Pivato discovers an underground river of ideological onomastics in central Italy, especially between Emilia-Romagna, Tuscany and Marche, tracing the complex interplay of tradition and rupture.] (LaR #353186131).

(10) *Chiara infatti non gradisce* ***l'onomastica manzoniana****: preferisce la sua, cioè quella della Lombardia attuale.* – [In fact, Chiara does not like Manzoni's onomastics: she prefers her own, which is that of present-day Lombardy.] (LaR #279846038).

(11) *...la ragazza era in realtà greca e avrebbe un nome assonante con* ***l'onomastica italiana*** – [...the girl was in fact Greek and would have a name that resembled Italian onomastics] (LaR #253079048).

The root meaning of the Italian term *onomastica* is most recognizable in adjectival usage: It. m. adj. *onomastico*, f. adj. *onomastica* (see Ex. 12, 13, 14, 15). Also, here we are dealing with collocations reduced to metalinguistic, more precisely metaonomastic, references.

(12) *…****anarchia onomastica****, l'abitudine cioè, specie nei ceti popolari, di dare ai propri figli nomi insoliti* – [...onomastic anarchy, i.e. the habit, especially among the working classes, of giving their children unusual names] (LIS http://193.205.158.204:8983/solr/collection1/browse?q=onomastica).

(13) *Il poeta assegna questa* ***forma onomastica*** *a uno dei servi di Enea* – [The poet assigns this onomastic form to one of Aeneas' servants] (CIP https://www.corpusitaliano.it/static/documents/sources/243/2435736).

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(14) *...nella lingua di Wodehouse è la fulminante variazione onomatopeica sul nome Jeeves,* ***straordinaria invenzione onomastica****, un bocconcino da ghiottoni.* – [...in the language of Wodehouse is the fulminating onomatopoeic variation on the name Jeeves, an extraordinary onomastic invention, a gourmand's morsel]. (LaR #38022850).

(15) *Il* ***fervore onomastico*** *ha sempre attecchito nei ceti più deboli, tra le professioni più umili. I Comunardo, i Ribelle, le Aurora proliferano nell'Ottocento* – [Onomastic fervour has always taken root in the weaker classes, among the humblest professions. [The surnames] Comunardo, Ribelle, Aurora proliferated in the 19th century] (LaR #353186388).

The relevance of these considerations lies in the already highlighted fact that It. *onomastico* is also a noun (Ex. 16, 17) or an adjective (Ex. 18), in one of the senses referring to a personal name and the day on which a holiday associated with the name falls, originally the name of some saint.

(16) *E la ricerca spasmodica dei regali: compleanno, sanvalentino, anniversario, natale,* ***onomastico****.* – [And the spasmodic search for gifts: birthday, Valentine's Day, anniversary, Christmas, name day.]
(CIP https://www.corpusitaliano.it/static/documents/sources/700/7000052).

(17) *E la cartoleria con i romanzini-cards per tutti gli auguri di tutti gli* ***onomastici*** *Sabrina, Cinzia, Patrizia, Malachite, Deborah* – [And the stationery shop with romanzini-cards for all name day wishes Sabrina, Cinzia, Patrizia, Malachite, Deborah] (LaR #51840705).

(18) *Il suo giorno* ***onomastico*** *è il primo gennaio, il giorno in cui trionfò la nostra rivoluzione.* – [His name day is 1 January, the day our revolution triumphed.] (LaR #84613742).

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All the extracted Italian terms with the *onomast-* nucleus have a metalinguistic character, reducing the essence of the meanings to the proper name as such. Furthermore, their interlingual character is evident and inherent in many languages, apart from the forms in Examples 16, 17, as well as 18.

Additionally, it is plausible to recall two further terms with the determining component *onomast-* introduced in Italian scientific discourse: the first one is a Latinism, as well as an internationalism, namely the noun *onomasticon* used in the sense of a collection of proper names (Ex. 19)[5]; the second is It. *onomasta*, which means an expert dealing with proper names, Eng. *onomastician* (Ex. 20).

(19) *In questa sezione è disponibile un* ***onomasticon*** *dove vengono riunite e strutturate le informazioni sui matematici italiani.* – [In this section there is an onomasticon where information on Italian mathematicians is gathered and structured.] (GL http://mathematica.sns.it/autori/?lettera=).

(20) *da segnalare 8 intitolazioni a Joan Coromines e la prima, nella sua Reus, all'****onomasta*** *Ramon Amigó.* – [8 titles were given to Joan Coromines and the first, in Reus, to the onomastician Ramon Amigó.]
(GL https://www.gfn.name/fileadmin/nbs/neuerscheinungen/Attivit%C3%A0.pdf).

To sum up the first set of terms with the formant *onomast-* we can consider Table 1, which collects all the metalinguistic approaches to this kind of specialist and universalised vocabulary.

Table 1. The meanings of IOTs with the formant *onomast-* (Source: Own processing)

IOT case I	Scientific co(n/)text	Para-scientific co(n)text	Extra-scientific co(n)text	Other remarks
onomastica f. sing. n.	linguistic discipline / science	method of analysis of proper names	collection / scope of proper names	extra-scientific reference to personal names prevails; the historical equivalent *onomatologia* should be discarded

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onomastico adj.	adjective referring to onomastics as a science	connected with proper names	related to first name / sometimes another personal name	-
onomastico m. sing. n.	-	-	a day / holiday associated with a name (one's own, some saint's, etc.)	sometimes understood as a celebration of an event under a particular name
onomasticon m. sing. n.	collection of proper names	collection of (proper) names	-	in the historical sense, a list of specific objects, events, etc.
onomasta m./f. sing. n.	researcher in onomastics	-	-	a term not yet widely used in Italian onomastics

3.1.2 IOT case II: Nome proprio and *proprio nome*

Among the key terms in onomastics there is a structure consisting of two items *nome proprio* 'proper name', also expressed in onomastics by the univerbism *onimo* 'onym'. Let us look at its occurrences, stressing that in this form it denotes a linguistic unit, which individualises a single or serial object (e.g., one man bearing the surname Rossi and all living or deceased bearers of such a surname). In CIP, *nome proprio* appears 892 times, in LaR 213 times.

The Italian term *nome proprio* as a taxonomical operator is opposed to the expression *proprio nome*, in which the components, namely the noun *nome* and the adjective *proprio* are set in the reverse order. In the general language, the meaning of *proprio nome* is quite similar to *nome proprio*; the adjective *proprio* in the preposition, however, has a distinctive syntactic function, stressing the possessive linguistic value, even putting emphasis on the formal belonging.

The diversification of functional meanings allows us to note that *nome proprio* can indicate a personal name – first name, surname, nickname, and the like, in a way that additionally suggests genus / gender (see Ex. 21); it is moreover possible to specify that it is a personal name = *nome proprio di persona* (see Ex. 22). Caprini (2001: 11) argues the stereotypical position that *"in fondo il NP* [nome proprio] *di persona è il NP per eccellenza, perché è l'essere umano a costituire l'individuo (fisico e culturale) per eccellenza"* [after all, the PN [proper name] of a person is the PN par excellence,

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because it is the human being who constitutes the (physical and cultural) individual par excellence].

In the non-scientific language, the operator *nome proprio* is in fact quite spontaneously identified with an anthroponym, sometimes exclusively the name of a specific person (see Ex. 23, 24, 42). This testifies to an excessive narrowing of the meanings of the term, however, inherent in the usage, which bases its rules on a certain kind of intuition and, against all appearances, the need for precision.

(21) *Quanti sanno, per esempio, che la spedizione di Libia ha generato il **nome proprio femminile** Libia col maschile Libio e i derivati Libiana e Libiano?* – [How many people know, for example, that the expedition to Libya generated the feminine proper name Libia with the masculine Libio and the derivatives Libiana and Libiano?] (LaR #67973174).

(22) *Shaalan è un **nome proprio di persona** in uso tra le tribù berbere della zona.* – [Shaalan is a proper name for a person in use among the Berber tribes of the area.] (LaR #123536246).

(23) *Apostoli; hanno solo il **nome proprio**, si danno tutti del tu, e non sono proprietari di nulla* – [Apostles; they only have their own names, they all call each other by name, and they do not own anything.]
(LIS http://193.205.158.204:8983/solr/collection1/browse?q=id:stper336.xml).

(24) *…le romane non avevano un **nome proprio** come i loro uomini, venivano indicate solo col gentilizio.* – […Roman women did not have a proper name like their men, they were only referred to using their gentilities.] (LaR #7099228).

The usage in Example 23 is close to the metathesis of *nome proprio* in the *proprio nome* compound, which strips the term *nome* of its technical meaning and emphasises

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the affiliation signalled above, still identified with an onomastic function, e.g., in the juxtaposition of personal data *nome e cognome* 'first name and surname / full name' (see Ex. 25) or exclusively with reference to *nome* 'first name' (see Ex. 26).

(25) *...il fisco con il **proprio nome e cognome** / o denominazione dell'azienda* – [the tax authorities with your full name / or company name] (LIT http://193.205.158.203/v_dialit/?uts=00:05:21:505s&ute=00:05:31:004s&id=lit2_vit_004&).

(26) *...Enrico Teodoro Pigozzi si adattò così bene alla nuova patria da francesizzare addirittura il **proprio nome** (H.T.) e da parlare anche in famiglia l'idioma acquisito.* – [...Enrico Teodoro Pigozzi adapted so well to his new homeland that he even frenchified his name (H.T.) and spoke the acquired language in his family.] (LaR #9015985).

Interestingly, the difference in meaning induced at the syntactic level can be the basis of language games between *nome proprio* and *proprio nome* (see Ex. 27).

(27) *...padri e figli si guardano con nuovi occhi, si conoscono e si amano in modo nuovo, sono persone nuove l'uno per l'altro: hanno acquistato **il proprio nome**, **il nome proprio**". Quel "**nome proprio**" che hanno i figli di Giobbe dopo le tribolazioni del padre.* – [...fathers and sons look at each other with new eyes, they know and love each other in a new way, they are new persons for each other: they have acquired their own name, their own name". That "proper name" that Job's sons have after their father's tribulations.] (LaR #342217911).

Further account of possible co(n)texts evinces that *nome proprio* can equally be associated with a personal and/or place name (Ex. 28), specific name of an institution, a public object (Ex. 29, 30), etc. In Example 28, a particular feature of a proper name is observed, which can be of the nature of It. *nome parlante* 'speaking name', a designation with a cultural meaning (especially in literary texts, see Terrusi 2001).

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(28) *Cominciamo dal discorso critico. Esso si articola in sei saggi di cui il primo, densissimo, è dedicato al* ***nome proprio****, di persona o di luogo, in Montale; non solo come marca di individuazione, ma come tante altre cose: emblema di un momento culturale, realtà fonica di efficacia magica, struttura memoriale affiorante, elemento di aggressività linguistica o ironica, segno di un passaggio dal biografico al poetico.* – [Let us begin with the critical discourse. It is divided into six essays, the first of which, very dense, is dedicated to the proper name, of person or place, in Montale's work; not only as a mark of identification, but as many other things: emblem of a cultural moment, phonic reality of magical efficacy, surfacing memorial structure, element of linguistic or ironic aggressiveness, sign of a passage from the biographical to the poetic.] (LaR #44926000).

(29) *...nel giro di poche ore prosegue il responsabile dell'informazione ha trasformato una proposta politica, l'unità socialista, nel* ***nome proprio*** *del suo partito* – [...within a few hours the chief information officer has turned a political proposal, socialist unity, into his own party name] (LaR #126243670).

(30) *In pochi istanti è arrivata sul posto un'ambulanza del vicinissimo ospedale che prende* ***il nome proprio*** *dal quartiere, San Paolo.* – [Within moments, an ambulance from the nearby hospital named after the San Paolo district, arrived on the scene.] (LaR #380447391).

Metalinguistic and functional-onomastic awareness allows the term *nome proprio* to be used for designating also animals or other organisms, often because of the psychological need for discursive humanisation (see Ex. 31).

(31) *...i pastori che chiamano le pecore con* ***nomi propri*** *sviluppano dei sentimenti di predilezione per singoli animali, che scelgono per i loro accoppiamenti.* – [...shepherds who call sheep by their own names develop feelings of fondness for individual animals, which they choose as their company.] (LaR #17218318).

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Likewise, noteworthy is the perception of the denotational-connotational load of the proper name, which, from a position of general usage, may in turn bring to onomastic theory a view in favour of a synsemantic and reflexive approach to proper names. At least one of the contextual examples cited above could support this thesis (see Ex. 28: the cultural, aesthetic and linguistic values conveyed by the naming unit) as well as others (see below Ex. 32: the surname as a speaking name, especially when it evokes direct and metaphorical semantic associations (Ex. 33): the impression of the spiritual charge carried by the phrase functioning as a proper name, which is further underscored when the term is written with capital letters *Nome Proprio*).

(32) *Soprattutto per Totò il cognome più che* ***un nome proprio*** *era un'etichetta dal significato preciso, un oggetto, un'azione, un comportamento.* – [Especially for Totò, the surname, rather than a proper name, was a label with a precise meaning, object, action, and behaviour.] (LaR #290689995).

(33) *E invece fu una sorta di rivelazione celestiale: "Una parola come pirite, per esempio, non aveva avuto per me un valore puramente denotativo: era* ***il Nome Proprio*** *di un'Entità Sacra, al punto che se una mia zia lo pronunciava male, raddoppiando la erre, me ne scandalizzavo.* – [Instead, it was a sort of celestial revelation: "A word like pyrite, for example, did not have a purely denotative value for me: it was the Proper Name of a Sacred Entity, to the point that if one of my aunts pronounced it wrong, doubling the r, I would get scandalised.] (LaR #349885128).

In order to avoid possible ambiguity and irrelevant interpretation, onomastics has introduced at the international level a synonym for the term *proper name*, i.e. the elliptical *proprium* or unified *onym* (It. *onimo*). *Proprium* occurs very rarely in Italian scientific discourse. *Onimo* is more popular. Outside the purely scientific discourse, however, it is a non-existent operator, as is the term *onimia* (Eng. *onymy*), derived from it and indicating a collection of onyms. Its occurrence was not found in any of the consulted corpora. Meanwhile, both *onimo* and *onimia* remain a highly visible and indispensable component of numerous binary (Greek-derived or hybrid) meta-names. The same applies to adj. *onimico* 'onymic' (cfr. Marcato 2009: 13).

Meta-names are essentially technical denominations for proper names (and this is not a pleonasm), starting with It. *antroponimo* and *toponimo*. In more recent approaches to the onomastic issues of language, it is also It. *crematonimo* and *urbanonimo* or such peculiar constructs as It. *proprionimo* in the sense of a proper name derived from another proper name (for more examples, see Gałkowski 2020; 2021; cfr. Gałkowski 2019).

These are terms belonging to general onomastic theory as well as conceptual keys in many detailed onomastic and para-onomastic studies and taxonomies (see, e.g., the concept of *"poieronymic backronyms"* or *"apronyms"* in Borys & Materynska 2020). In the next section, let us consider two basic and traditional ones for Italian onomastic studies, i.e. *antroponimo* / *antroponimia* and *toponimo* / *toponimia*.

For a summary of the meanings of *nome proprio* vs. *proprio nome* see Table 2. Included in it are two terms that are, theoretically, derivatives from *nome proprio*. They have the character of internationalisms, but the first one is hardly integrated into IOT (see Ex. 34) therefore we treat it as scientific and at the same time para-scientific notion (the equivalent of Eng. *proprial*, see Harvalík 2021); the occurrences of the latter in scientific studies are solidly grounded in onomastic theory (see Ex. 35, 36). The Italian term *proprialità* is equivalent to Eng. *propriality* or *properhood* (see Coates 2006, 2014; Shokhenmayer 2017; Włoskowicz 2021). At this point it is also worth mentioning the occasionally occurring Italian term *proprializzazione* 'proprialisation', which is supposed to denote the proprial (i.e. onomasticized) "crystallisation" of some linguistic form in the onymic system (Castiglione 2018: 152).

(34) *Vi sono casi in cui l'aspetto* ***propriale*** *prevale – per es. – in modo chiaro, quando il nome di marca è accompagnato dalla preposizione* da – [There are cases in which

the proprial aspect prevails – e.g. – clearly, when the brand name is accompanied by the preposition 'da'] (Janner 2012b: 172).

(35) *La **proprialità** delle forme toponimiche è segnalata dalla maiuscola.* – [The propriety of toponymic forms is indicated by capitalization.] (Castiglione 2017: 17).

(36) *Quando il marchionimo è giunto a quel punto, fargli risalire la china della **proprialità** può essere difficile, nonostante le operazioni di marketing promosse dalle aziende.* – [When the brand name has reached that point, getting it back on the propriality curve can be difficult, despite the marketing operations promoted by companies.] (Janner 2012b: 169).

Table 2. Meanings and derivatives of *nome proprio* vs. *proprio nome* (Source: Own processing)

IOT case II	Scientific co(n)text	Para-scientific co(n)text	Extra-scientific co(n)text	Other remarks
nome proprio m. sing. n.+adj.	equivalent of onym	-	first name, personal name, other personal names	a key taxonomic operator in onomastics and, in general, onomastic area
proprio nome adj. + m. sing. n.	-	-	the name belonging to the person concerned	emphasis on the link to the name of the object
propriale adj.	refers to proper names / onyms	refers to proper names / onyms	-	this alternative term categorises scientific onomastic discourse
proprialità f. sing. n.	the property of being a proper name / having the characteristics of a proper name	-	-	the equivalent of concepts discussed in onomastics: Eng. *propriality* / *properhood*, Fr. *proprialité*
proprializzazione f. sing. n.	crystallisation of the onymic natureof a linguistic unit	-	-	-

3.2. Anthroponymic and toponymic fields

3.2.1 IOT case III: Antroponimo, antroponimia, antroponomastica

The Italian lexeme *antroponimo* as equivalent to personal proper name is a term quite commonly used in the humanities, also outside onomastics. Nevertheless, we barely find a single attestation in the corpora, in the case of CIP it is present only in Wikipedia entries (see Ex. 37, 38, 39).

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(37) *Alla base della nuova teoria è l'analisi del nome ricostruibile in etrusco come *Pursena, o meglio, *Purzena, derivato dall'**antroponimo** Purze* – [The basis of the new theory is the analysis of the name that can be reconstructed in Etruscan as *Pursena, or rather, *Purzena, derived from the anthroponym Purze] (LaR #373538609).

(38) *...il nome "Vitré" potrebbe ave,re origine da un **antroponimo** galloromano 'Victor' o 'Victrix'* – [...the name 'Vitré' may have originated from a Galloroman anthroponym 'Victor' or 'Victrix'] (CIP http://www.corpusitaliano.it/static/documents/sources/018/0181216).

(39) *Il noto giornalista e studioso di **antroponimia** siciliano Bent Parodi, nel suo libro "Cognomi Siciliani".* – [The well-known Sicilian journalist and anthroponymy scholar Bent Parodi, in his book "Cognomi Siciliani" (Sicilian Surnames), has written a book on the subject.] (CIP http://www.corpusitaliano.it/static/documents/sources/049/0494431).

The IOT *antroponimia* is opposed to the term *antroponomastica*, which in turn combines the initial component *antrop-* referring to the human sphere, common to both, and the component *onomastica* discussed above.

The IOT *antroponomastica* should mean a subdiscipline of onomastics or even constitute an individualised science among the many "onomastic sciences"[6] (see Ex. 40, 41), or at least a method of analysis of personal proper names (Raimondi et al. 2005) or a set of processes to which anthroponyms are subjected in the onomastic system (Carpegna Falconieri 1995; cfr. Samokhina & Pasynok 2017: 284-289)[7].

Meanwhile, the use of It. *antroponomastica* often indicates a set of anthroponyms, thus constituting a synonym for It. *antroponimia*, especially when some kind of territorial, ethnic, or social narrowing is suggested (see Ex. 42) or by way of generalization a reference to personal names (see Ex. 43). Putting the sign of equality between *antroponimia* and *antroponomastica* is sometimes unavoidable but scientifically incorrect (see Ex. 44, 45).

(40) *Esiste una disciplina che studia i nomi propri e i nomi di famiglia evidenziandone in particolare i rapporti culturali, politici e istituzionali a essi legati: si tratta dell'**Antroponomastica*** – [There is a discipline that studies proper names and family names, highlighting in particular the cultural, political and institutional relationships linked to them: it is Anthroponomy] (GL https://conoshare.it/2019/10/16/come-sono-nati-i-cognomi-italiani/).

(41) ***l'antroponomastica** indaga i nomi propri, attribuiti alla cultura, alla persona e alla nascita, e ha la funzione di identificare un determinato individuo all'interno della collettività* – [anthroponomastics investigates proper names, attributed to culture, person and birth, and has the function of identifying a particular individual within the community] (GL http://www.turiweb.it/attualita/38533-le-strade-di-turi-cambiano-nome-de-carolis-qsoddisfatto-per-metaq.html).

(42) *Indizi galloitalici nell'**antroponomastica popolare siciliana*** – [Gallo-Italic clues in Sicilian folk anthroponymy] (Ruffino 2009).

(43) *...a differenza di tutte le capitali africane che dopo la decolonizzazione rifiutarono ogni **antroponomastica europea** (Leopolville, Stanleyville...)* – [...unlike all African capitals which, after decolonisation, rejected all European anthroponymy (Leopolville, Stanleyville...)] (GL https://www.tripadvisor.it/ShowUserReviews-g187814-d8471560-r292878911-Palazzo_di_Brazza-Udine_Province_of_Udine_Friuli_Venezia_Giulia.html).

(44) ***l'antroponomastica** (o **antroponimia**), quel segmento della linguistica che studia specificamente i nomi propri di persona* – [anthroponomistics (or anthroponymy), that segment of linguistics that specifically studies proper names of persons] (GL

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http://www.iuncturae.eu/2018/06/11/di-mestiere-faccio-il-linguista-22-antroponomastica-contemporanea/).

(45) *molto spesso sia i termini* ***antroponomastica/antroponimia*** *sia i termini toponomastica/toponimia sono interscambiabili* – [very often both the terms anthroponomastics/anthroponymy and toponomastics/toponymy are interchangeable] (GL https://www.tesionline.it).

The confusion shown in the above examples is probably a consequence of a rather widespread synonymic approach to another terminological pair, to which more attention is paid in the next section, i.e. the formally unjustified equivalence between It. *toponimia* and It. *toponomastica*. In any case, however, It. *antroponomastica* in the sense of It. *antroponimia* creates an analogous effect of the metalinguistic need to communicate in a pretentiously erudite way about personal proper names subsumed in collections.

3.2.2 IOT case IV: Toponimo, toponimia, toponomastica

Terms from the field of geographical naming (It. *toponimia*) are much more frequent in the studied corpora than the above-mentioned constructs with the segment *antrop*-. In LaR It. *toponimo* appears 59 times, in the CIP more than 3000 times (!), while in the case of the CIP the occurrences of the term are almost exclusively limited to the Wikipedia hypertext, where *toponimo* is used in etymological explanations of certain place names / geographical names (including names of water objects (seas, lakes, rivers, etc.) for which it is customary to use a rather autonomous and internationally recognised term hydronym It. *idronimo*). The use of the term *toponimo* in this primary meaning is purely metalinguistic and does not raise questions among interested in etymology or other facts about toponyms discussed online (see Ex. 46, 47, 48, 49).

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(46) *La Maremma (...)* ***Il toponimo*** *deriva, per alcuni studiosi, dal latino "maritima"* – [La Maremma (...) The name derives, according to some scholars, from the Latin "maritima"] (CIP http://www.corpusitaliano.it/static/documents/sources/003/0032313).

(47) *...il comune di Fara è costituito da due nuclei abitati: Fara, propriamente detto, e S. Giorgio di Perlena (...) I* ***toponimi*** *dei due centri trovano una comune origine nell'epoca longobarda* – [The municipality of Fara consists of two settlements: Fara, as it is called, and S. Giorgio di Perlena (...) The place names of the two towns have a common origin in the Longobard period]
(CIP http://www.corpusitaliano.it/static/documents/sources/003/0037208).

(48) *...un discorso analogo vale, in Germania e in Svizzera, per* ***toponimi*** *come Isenburg, Isenheim, Isenberg, ecc.* – [...a similar argument applies in Germany and Switzerland to place names, such as Isenburg, Isenheim, Isenberg, etc.] (LaR #17678991).

(49) *Tolomei diede un nome italiano fin al più sperduto paesino, ruscello o dirupo della provincia, lambiccandosi fino al punto di mettere insieme la bellezza di 30 mila italianissimi* ***toponimi****, al posto dei tradizionali nomi tedeschi o ladini* – [Tolomei gave an Italian name to even the most remote village, stream or cliff of the province, pondering to the point of creating a beauty of 30 thousand most Italian place names in place of traditional German or Ladin names] (LaR #200697423).

The collective term *toponimia* is of less interest: in LaR it is found only twice, in CIP – 21. The use of this word is adequate to the established metalinguistic meaning in onomastics of toponymy as a collection of toponyms (see Ex. 50, 51).

As can be seen in the following examples, It. *toponimia* covers specific territorial or cultural domains, but it still encodes phenomena specific to the process of formation and reception of proper names, e.g., motivations in the creation of toponyms (Ex. 50)

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or associations considered as peculiar metaphors that can bring a certain colour to communication involving particular names in a given frame and situation (Ex. 51).

(50) *Oswaldo Bayer (...) nei suoi studi sull'espansione criolla verso la Patagonia ribelle, indica come la* ***toponimia argentina*** *sia piena di militari autori di genocidi di indigeni* – [Oswaldo Bayer (...) in his studies of criollo expansion into the rebellious Patagonia, indicates how the Argentinean toponymy is full of military men who committed genocide against indigenous people] (LaR #366579476).

(51) *"Prenda via Stalingrado, poi a sinistra via Aldo Moro". Col sospetto che dietro la* ***toponimia*** *di questa città si nascondano strane metafore, segui le indicazioni e ci arrivi subito.* – ["Take via Stalingrado, then turn left into via Aldo Moro". With the suspicion that the toponymy of this city hides strange metaphors, follow the directions and you'll soon get there.] (LaR #193639741).

In many occurrences, as already noted above, the term *toponimia* is confused with the concept of the sub-discipline *toponomastica* (Ex. 52). This is a consequence of another yet common problem, which concerns the latter term.

(52) *Lo studio dei nomi dei luoghi si chiama* ***toponimia*** – [The study of place names is called toponymy] (CIP http://www.corpusitaliano.it/static/documents/sources/006/0067234).

In Italian, even in a strictly scientific discourse, It. *toponomastica* is used as a synonym of *toponimia* or *toponomasticon*, i.e. specifically in the sense of a collection of toponyms, not in the sense of an onomastic science dealing with geographical names, place names, etc. The testimonies of such a usage are very numerous and it is difficult to assume a break with the trend so profoundly established of framing the term metalinguistically in different varieties of discourse in the Italian tradition (see Ex. 53, 54, 55).

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(53) *Inaspettatamente vince le elezioni, e per prima cosa ricostruisce topografia e **toponomastica** del vecchio centro urbano* – [Unexpectedly wins the elections and starts with reconstructing the topography and toponymy of the old town centre] (LaR #312072106).

(54) *...il sud della Cisgiordania, o Giudea, secondo la **toponomastica** biblica, dove la presenza di migliaia di coloni alimenta una spirale di odio* – [...the south of the Cisjordan, or Judea, according to the biblical toponymy, where the presence of thousands of settlers fuels a spiral of hatred] (LaR #209660884).

(55) *...di quelli uomini che strapparono alla montagna un fazzoletto di terra è rimasta **la toponomastica*** – [...of those men who wrested a piece of land from the mountain, the toponymy has remained] (CIP http://www.corpusitaliano.it/static/documents/sources/003/0036838).

Out of more than 560 occurrences of *toponomastica* in CIP or more than 230 in LaR, only in a few it is used in the sense of a subdiscipline of onomastics. The term is referred to in its correct sense when used in the function of the m./f. adj. *toponomastico* / *toponomastica* (see Ex. 56, 57).

(56) *Il compito principale della ricerca **toponomastica** è quello di ridare al nome di luogo (...) un significato possibilmente certo e di indagare sulle variazioni del toponimo nel tempo.* – [The main task of toponomastic research is to give the place name (...) a meaning that is as certain as possible and to investigate the variations of the place name over time.] (LaR #118711531).

(57) *Il volume raccoglie inoltre (…) una serie di indici preziosi, cronologico, onomastico, **toponomastico** oltre che per corrispondenti.* – [Furthermore, the volume contains (…) a series of valuable indexes, chronological, onomastic, toponomastic and referential.] (LaR #181009720).

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Cases of pseudo-scientific use of the term *toponomastica* in nominal or adjective form are also puzzling. As it turns out, one can speak figuratively, for example, of *"sogni toponomastici"* 'toponomastic dreams' (Ex. 58).

(58) *Ma non c'è solo Littoria nei sogni* ***toponomastici*** *del sindaco Finestra.* – [But there is not only Littoria in Mayor Finestra's toponymic dreams.] (LaR #294313993).

Finally, let us analyse the co(n)text in which the m. sing. n. *un/il toponomastico* is employed in the sense of *toponimo*, which is also a testimony to a rather free purpose of *toponomastica* established in the usage, giving rise to word play (see Ex. 59). The collocation *"toponomastica del nudismo"* 'toponymy of nudism' can as well be treated in relation to a somewhat ludic expression, pointing to a certain idea and a mental shortcut interpreted by superimposing a sequence of assumptions: places associated with nudism = names of these places = toponomastics of nudism (Ex. 60).

(59) *Questo insediamento vichingo potrebbe essere ricondotto* ***al toponomastico*** *della città: "Dún Na nGall"* – [This Viking settlement could be traced back to the town's toponym: "Dún Na nGall"] (CIP http://www.corpusitaliano.it/static/documents/sources/004/0041395).

(60) *La strana* ***toponomastica*** *del nudismo sardo potrebbe continuare con l'Isola di Mortorio, con Cala Serena, Cala Tramontana e Baia Trinità.* – [The strange toponymy of Sardinian nudism could continue with the island of Mortorio, Cala Serena, Cala Tramontana and Baia Trinità.] (LaR #49355210).

The results of analysis in sections on anthro- and toponomastics are presented in a tabular summary (see Table 3).

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Table 3. Semantic fields of anthroponomastics and toponomastics (Source: Own processing)

IOT cases III and IV	Scientific co(n)text	Para-scientific co(n)text	Extra-scientific co(n)text	Other remarks
antroponimo m. sing. n.	personal proper name	its equivalent is *nome proprio*	name, personal name, personal name given to another object considered in anthropological terms	wide use in humanistic discourse
antroponimia f. sing. n.	collection of anthroponyms	-	-	possible use of the *anthroponomasticon* as equivalent
antroponomastica f. sing. n.	subdiscipline of onomastics dealing with anthroponyms	is sometimes confused with anthroponymy	collection of anthroponyms	the historical equivalent *antroponimica* is terminologically inactive
antroponomastico adj.	referred to anthroponomastics as a science	-	-	-
antroponomasta m./f. sing. n.	onomastician dealing with anthroponymy	-	-	use justified by analogy with *onomasta*
toponimo m. sing. n.	place / geographical proper name	-	place / geographical proper name	the most common onomastic term
toponimia f. sing. n.	collection of toponyms	confused with *toponomastica*	proper name of the place, any site in the area	possible use of the *toponomasticon* as equivalent
toponomastica f. sing. n.	subdiscipline of onomastics dealing with toponyms	common identification with a collection of toponyms, occurrence of toponyms	equivalent of *toponimia*	the potential historical equivalent *toponimica* is terminologically inactive
toponomastico adj.	refers to toponomastics as a science	-	-	in pseudo-erudite discourse can be nominalised (*toponomastico* m.n.) to mean a single geographical / place name
toponomasta m./f. sing. n.	onomastician dealing with toponomastics	-	-	use justified by analogy with *onomasta*

The proliferation of the term *toponomastica* makes the 'specification + *-onomastica*' model the basis for several other analogically created blendings referring to the space of proper names. In addition to the accepted It. *crematonomastica* 'chrematonomastics' (study of chrematonyms), this is, for example, the controversial It. *cognomastica* as an unconventional term meaning collection and explanation of surnames (It. *cognomi*). Just as the first of the terms finds its confirmation in the scientific onomastic discourse, while it is still absent outside of it, the second one is used almost exclusively outside the scientific space and in the specialized scientific language it could be treated as "bizarre", because of its paronym formation and pseudo-scientific association (see Ex. 61, 62, 63). As the use of italics in the nominal example (Ex. 61) or inverted commas

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in the adjectival example (Ex. 63) would indicate, the reference to the so-called *cognomastica* is laden with figurativeness, the term here having a peculiar pseudo-scientific meaning.

(61) *Le prime registrazioni notarili risalgono al 1300, e le persone venivano identificate con il nome del padre o del mestiere. In questo modo si codificano i cognomi, insomma nasce la **cognomastica**…* – [The first notarial records date back to the 1300s, and people were identified by the name of their father or trade. In this way, surnames were codified, in short, cognomastica was born…] (GL http://guide.supereva.it/italiano_dialetti/interventi/2002/12/127941.shtml).

(62) *Il toponimo "Delo" (…) la sua persistenza, anche in forme composte, per quanto rara, tanto nella **cognomastica** quanto nella toponomastica italiana viene sempre ascritta al termine greco* – [The toponym "Delos" (...) its persistence, even in compound forms, however rare, in both cognomastics and Italian toponymy is always ascribed to the Greek term] (GL https://agriturismodelo.it).

(63) *Vi confessiamo che ci eravamo confusi fra "Cuori" e "Fino all'ultimo battito", i cui protagonisti – Daniele Pecci e Marco Bocci – fra l'altro, hanno una vaga somiglianza fisica e "**cognomastica**".* – [We confess that we confused "Cuori" for "Fino all'ultimo battito", whose protagonists – Daniele Pecci and Marco Bocci – among other things, have a vague physical and "surname" similarity.]
(GL https://gazzettadelsud.it/).

Further terminology research may make it possible to find other lexical creations exploiting the combination of the segment -*onomastica* with some epiglottal element, which appropriately guides the semantic area of the term (this is confirmed by other occurrences in Italian scientific and para-scientific discourse, e.g., *idronomastica*, *protonomastica*, *urbanonomastica*, *socionomastica*, *fitonomastica*, *zoonomastica*, *astronomastica*, *odonomastica*, etc.; cfr. Castiglione 2018: 135, note 2).

3.3 Relevant and irrelevant O/A/T collocations

The next stage of our analysis concerns the identification of relevancy and irrelevancy of O/A/T collocations in the framework of IOT. The collocations perpetuate or generate occasional concepts of metalinguistic use of basic onomastic terms in scientific and extra-scientific discourse, sometimes suggesting an original theory. Some of them repeat the co(n)texts from the examples explored in the article, others create new bundles of features and possible formulas for understanding particular concepts and the communicative links they produce.

Appendix 1 presents a selection of such collocations (first column) in the order of the terms discussed (I = *onomastica* n./adj.; II = *antroponimo*; III = *antroponimia*; IV = *antroponomastica* n./adj.; V = *toponimo*; VI = *toponimia*; VII = *toponomastica* n./adj.). With each collocation in a given verse, the following observations in relation to pivot terms are specified: {1} = metalinguistic scientific significance; {2} = metalinguistic extra-scientific significance (going beyond onomastics but pragmatically tinged with naming interests; sometimes pseudo- or para-scientific metalinguistic co(n)texts); {3} = relevant use (inherent features of the scientific concept); {4} = irrelevant use (less applicable outside the co(n)text). The rationale for the degree of saturation with scientific or extra-scientific significance and, likewise, relevant and irrelevant properties depends on the broader discourse-textual frame in which the collocation occurred.

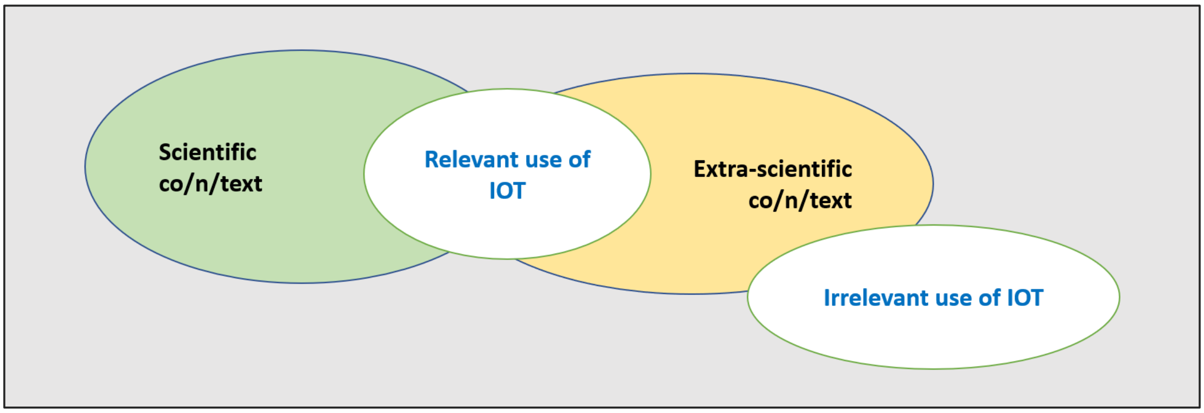

Figure 1. Interaction relationships of IOT collocations (Source: Own processing)

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The extracted collocations confirm the scientific, extra-scientific (+ para/pseudo-scientific) use of basic IOT. The most common terms seem to be those related to geographical naming, most notably *toponomastica* in its ambivalent formulation, perpetuating the notion of a set of toponyms, less so the science that deals with them. It is difficult to carry out a correction in the common semanticisation of the term *toponomastica*, but one should postulate an unambiguous connection between onomastic terms and the sphere of concepts to which they are supposed to point.

The identified collocations involving *onomastica*, *antroponomastica* / *antroponimia* e *toponomastica* / *toponimia* (O/A/T) in their nominal form confirm the variety of references to the areas in which proper names are noticed and considered in basic onymic categories. Here are their specific takes:

i. ethno-cultural terms (e.g., Greek O/A/T, Latin O/A, Germanic A, Romance A/T, Cypriot A, Venetian T, Tuscan A, Umbrian T, Ascolan T, Italian O/A/T, Soviet T, American T, Argentine T, Polish T);
ii. terms suggesting thematic scope / nominative space / category (e.g., patron saint O, rural A, urban A/T, criminal A, clergy A, namesake A, local T, locality T, zone T, commune T, lake T, roads and avenues T, street T, beaches T, nudism T, renaissance garden T, underground T, traffic accidents (map of death [sic!]) T, impulsive fans T, power T);
iii. terms expressing a time period, an epoch (e.g., ancient O/A/T, pre-German A, late medieval A, Napoleonic T);
iv. terms emphasising the motivation behind the name (e.g., cinematic T, musical T, influenced by exploratory expeditions T, toponymic A, alpine A);
v. methodological indications (e.g., ideological O, journalistic O, planned O, of pagan origin O, popular A/T, local O/A/T, indigenous T, correct T, political T, official T, parliamentary T);
vi. terms expressing subjective evaluation and point of view (e.g., difficult O, accurate O, little known O, of major importance T, inextricable and very

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complicated T, agonistic T, old T, banal T, sad T, interesting T, non-neutral T, causing pain T, subject to revolutionary changes T, melancholic T);

vii. determinations of philological focus (e.g., serial O, narrowed to one author, e.g., Boccaccio A, opera A, linguistic Neapolitan zone T, bilingual T, Berlusconi's T, learned in authors... T).

In adjectival form, O/A/T specifies the semantics of other concepts, among which we notice the following: "compilation", "continuity", "etymology", "origin", "tradition", "peculiarity", "coincidence", "bizarreness", "transposition", "mimesis", "variant", "replacement", "fantasy", "coquetry", "research", "confidence", "injustice", "mythology".

Also noteworthy is the use of verbs with all the terms considered in the quoted collocations (Appendix 1: I-VII), especially those occurring in sentences with *antroponimo* and *toponimo*. Here we can indicate such verbs as (we reduce them to infinitives): "investigate", "indicate", "trace", "use", "assign", "date back", "denote", "remember", "signify", "survive", "characterise", "respect", "learn", "influence", "derive", "belong", "relate", "assonate", "pronounce".

Moreover, collocations in which O/A/T terms are presented in an informative, pragmatic, mainly metaphorical context, which usually emphasises possible interpretations of naming units have an interesting communicative overtone (e.g., looking at names from the perspective of entertainment and aesthetic motivation, inspired by various spheres of artistic culture, social life, current affairs and history; feeling suggestions such as sadness, melancholy, pain).

Other terms derived from basic O/A/T should additionally be included in the collocational material analysed, e.g., the above mentioned adjectives *antroponimico* and *toponimico*, instantiated by fairly wide scientific usage, as well as more specialised ones, such as It. *deantroponimo* and *detoponimo* (forms deriving from personal or place

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/ geographical names), and potential ones, such as **antroponomaformante* / **antroponimoformante* and **toponomaformante* / **toponimoformante* indicating base, constituent or affixal particles forming anthroponyms and toponyms.

To sum up this section, we can observe that the majority of the considered collocational occurrences (nearly 70%), mostly scientific, though frequently extra-scientific (including pseudo- and para-scientific cases), show a high degree of relevance and may influence the prospective development of onomastic theory, as well as its applications in particular naming domains. The irrelevant use of an IOT in a specific collocation is processually reminiscent of the phenomenon of occasionalism or sentence hapax (the notion discussed in Lardilleux and Lepage (2009)), which in this sphere concerns language, but also culture, from which a collocationally modified case or a constructed new concept in the world of names and their perception may result. A high degree of extra-scientific occurrences is noted in the O/A/T terminological triad; at the same time, they are accompanied by a relatively noticeable relevance, testifying to the "metalinguistic liberation" of the onomastics concepts primarily in the general humanist discourse. This also applies to the adjectival uses of O/A/T.

4. Conclusions

The completed study leads to a conclusion confirming the assumed thesis that Italian onomastic terminology fulfils metalinguistic functions, serving expression in the scientific discourse (strictly onomastic or interdisciplinary), and that it additionally penetrates the extra-scientific discourse (general language), in which it may have a pretentious scientific or outright pseudo-scientific character. This is particularly true of the umbrella terms in this branch of linguistics (also recognised by other humanities), i.e. *onomastica* and *nome proprio*. The colloquial use of these terms is sometimes disturbed by a too narrow (e.g., *onomastica* as personal names) or too broad conceptual scope of the term (e.g., *onomastica* as a science and/or a collection of proper names of various categories).

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An understanding inconsistent with scientific intention may be influenced by the common functioning of formally similar terms, such as the lexeme *onomastico* (name day) and the phrase *proprio nome* with the reverse order compared to *nome proprio*, as well as the association of *nome* with the name of some human individual or other animate object, usually close to a human (animal, other organism, material, or immaterial entity). Indeed, It. *nome* has several contextual senses, where, for example, English can use non-equivalent terms such as name, noun, first name, Christian name, surname, etc.

A scientific solution to the ambivalence of It. *nome proprio* is certainly the use of the term *onimo*, which, however, has not yet penetrated common humanistic and colloquial language. It does, though, appear in terms such as *antroponimo* and *toponimo* (and similar ones in Italian onomastic language, e.g., *idronimo*, *teonimo*, *zoonimo*, *agionimo*, and many others), which have permanently implanted themselves in interdisciplinary and extra-scientific discourse, just as the related generalising terms, i.e. *antroponimia* / *antroponomastica* (A) and *toponimia* / *toponomastica* (T).

To conclude, it is worth mentioning that the co(n)texts and collocations, in which basic IOT occur, contribute to the production of rather fluid frames that determine the concepts involved in the study of proper names. The corpus-based methodological formula proposed in this study can be the basis for a content analysis of further terms within Italian onomastics, especially those considered as idiosyncrasies of scientific and extra-scientific language. Such a study starts from the semasiological basis on which the term in question was placed, achieving onomasiological knowledge in the use of a specific concept.

The content diversity in the case of O/A/T and others derivationally related to them was demonstrated by co(n)textual and collocational illustrations. Appropriate systematisation is still possible in this field, especially when confronted with the equivalents of basic onomastic terms in other languages. These terms should be

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unambiguous both in scientific and extra-scientific code as necessary metalinguistic concepts for the description of onomastic issues and units in global linguistic and interdisciplinary perspective.

The specialised and non-specialised linguistic positioning of the analysed IOTs confirms that they are metalinguistic in nature and fall within the metalinguistic consciousness of onomastic experts and average users of Italian.

Notes

1. In the first period after the establishment of onomastics as a science in Italy, the Italian term *onomatologia* was also used. Over time it gave precedence to the term *onomastica*, as in other linguistic and cultural areas developing the science in question (see Zgusta 1998: 190-191).
2. The use of bold in the examples is ours.
3. All English translations of the contextual examples analysed are our own.
4. Examples are marked with the original code from the respective corpus (e.g., #... in LaR) or with a link to the source website (last access to all quoted excerpts updated on 27.01.2022).
5. On other possible meanings of *onomasticon* see Gałkowski (2018).
6. The phrase "onomastic sciences" appears in the name of the globally recognised organisation ICOS International Council of Onomastic Sciences.
7. Historically and under the influence of other linguistic areas, *antroponomastica* may also have been referred to using the international term *antroponimica*, but this form has not been recognized in Italian onomastic language (cfr. Подольская 1978/1988: 33).

List of abbreviations

adj. – adjective

ch. – chapter

CIP – the Corpus of Italian language (*il Corpus dell'Italiano il PAISÀ*)

Eng. – English

Ex. – example(s)

f. – feminine

Fr. – French

GL – the Google search engine

Gr. – Greek

It. – Italian

IOT – Italian onomastic terminology / Italian onomastic term(s)

Lat. – Latin

LaR – the Corpus of the journal La Repubblica (*il Corpus la Repubblica SSLMIT*)

LIR – the Italian radio lexicon (*il Lessico dell'Italiano Radiofonico*)

LIS – the Lexicon of written Italian (*il Lessico dell'Italiano Scritto*)

LIT – the Italian television lexicon (*il Lessico dell'Italiano Televisivo*)

m. – masculine

n. – noun

sing. – singular

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Résumé

The paper sets out to investigate the significance of conceptual content of Italian onomastic terminology (IOT). The IOT is subjected to a scientific and extra-scientific contextual-collocational verification in the light of the thesis attributing metalinguistic values to a selected group of basic Italian onomastic terms. The terminology in the field of Italian onomastics needs to be examined through the prism of a specialized discourse, but especially of a general discourse, into which it penetrates due to the common use of the object of its research, i.e. proper names. The study of co(n)texts (cotexts + contexts) and collocations makes it possible to demonstrate multiple understandings of the most established onomastic terms. It turns out that in general, and very often in scientific language (be it onomastic, linguistic or humanistic) It. *onomastica* can be understood as a term describing a linguistic sub-discipline, or alternatively as a set of proper names, especially personal names. A similar imprecision can be found in the taxonomical operator *nome proprio*, which does not always correspond to the concept of onym (It. *onimo*) adopted in international onomastics. A wide range in the content of the terminological meaning is also observed in the names of the two basic branches of onomastics, namely It. *antroponomastica* and *toponomastica*. The confusion concerns their juxtaposition with the concepts of *antroponimia* (anthroponymy) and *toponimia* (toponymy). The former should refer to studies of given name categories and onomastic methodologies, the latter to collections of proper names, anthroponyms and toponyms respectively. The systematisation of IOT may serve endo-scientific as well as extra-scientific purposes, allowing for pertinent references in the general metalinguistic discourse of specialists and non-specialists. The content analysis of the occurrences of the basic IOT in the text collocations made it possible to determine the degree of relevancy and irrelevancy of the specific approaches of the considered theoretical-onomastic concept. The study leads to the conclusion that the semasiological approach can support the process of unifying the metalinguistic significance of IOT. The postulated terminological ordering should influence the perception of onomastic concepts in a broader linguistic and general humanistic perspective.

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Key words: metalinguistic, Italian onomastics, scientific terminology, anthroponomastics, toponomastics, context, collocation.

Appendix 1

Table 4. Basic IOT corpus collocations. The author's own formula

I	{1}	{2}	{3}	{4}
compilazione onomastica (CIP)	+	+++	+	+++
continuità onomastica (CIP)	+	+	+++	+
etimologia onomastica (CIP)	+++	++	+++	+
gli studi di onomastica (LaR)	+++	+	+++	+
l'antica onomastica germanica (CIP)	++	+	++	+
l'antica onomastica greca (CIP)	+++	+	+++	+
l'antica onomastica latina (CIP)	+++	+	+++	+
l'onomastica corretta di Elisabetta (CIP)	+	+++	+	++
l'onomastica del santo patrono (CIP)	+	+++	+	++
l'onomastica della classe dirigente (CIP)	+	++	+	++
l'onomastica di quei luoghi (CIP)	+	+++	++	+
l'onomastica giornalistica (CIP)	+	+++	+	++
l'onomastica ideologica (LaR)	+	+++	+	++
l'onomastica imaginifica (LaR)	+	+++	+	++
l'onomastica italiana (LaR)	+++	++	+++	++
l'onomastica pianificata (LaR)	+	+++	++	+
l'onomastica seriale (CIP)	++	+	++	+
l'origine onomastica (CIP)	+++	++	+++	++
la consuetitudine onomastica (LaR)	++	++	+	+
la difficile onomastica (CIP)	+	+++	+	+++
la esatta onomastica (CIP)	+	+++	+	+++
la festa onomastica (CIP)	++	++	+	+
la propria candidatura onomastica (LaR)	+	++	+	+
la solita onomastica operistica terrificante (LaR)	+	+++	+	++
la stessa peculiarità onomastica del titolo (CIP)	+	++		+
la sua prima forma onomastica (CIP)	++	+	++	+
la tradizione onomastica (CIP)	++	++	+++	+++
la tradizione onomastica italiana (CIP)	++	++	++	++
la variante onomastica (CIP)	+++	+	+++	+
straordinaria invenzione onomastica (LaR)	+	++	+	++
un processo di sostituzione onomastica (CIP)	++	+	++	+
un'identica onomastica sulle sponde dell'Adriatico (CIP)	+	++	+	++
un'onomastica poco nota (CIP)	+	+++	+	+++
una coincidenza onomastica (LaR)	+	+++	+	++
una manifestazione di bizzarria onomastica (LaR)	+	+++	+	+++
una onomastica di derivazione pagana (CIP)	+	++	+	++
una simile fantasia onomastica (LaR)	+	+++	+	+++
un'altra civetteria onomastica (LaR)	+	+++	+	++
usi di trasposizione onomastica (LaR)	+	+	++	+

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II	{1}	{2}	{3}	{4}
antroponimo strettamente imparentato (CIP)	++	+	++	+
l'antroponimo longobardo (CIP)	+++	++	+++	+
un antroponimo antico (CIP)	+++	+	++	+
un antroponimo appartenuto a qualcuno (CIP)	++	++	++	++
un antroponimo assai diffuso in oriente (CIP)	+++	+	++	+
un antroponimo celtico (CIP)	+++	++	++	+
un antroponimo gallo-romano (CIP)	++	++	++	+
un antroponimo latino (CIP)	+++	++	+++	+
un antroponimo maschile derivato (CIP)	+++	+	+++	+
un antroponimo tracio (CIP)	+++	+	++	+
un comune antroponimo in Giappone (CIP)	++	++	++	+
un finto antroponimo assonante con altre denominazioni (CIP)	+	++	+	++
III	**{1}**	**{2}**	**{3}**	**{4}**
antroponimia sabellica nelle iscrizioni greche (GL)	+	++	++	+
giornalista e studioso di antroponimia (CIP)	+++	+	+++	+
l'antroponimia criminale sul materiale italiano e polacco (GL)	+++	+	++	+
l'antroponimia romanza, ed in particolare dei nomi di famiglia o cognomi (GL)	+++	++	+++	+
l'antroponimia rurale nei registri cavensi (GL)	+++	++	+++	+
Studio di antroponimia toscana (GL)	+++	+	+++	+
IV	**{1}**	**{2}**	**{3}**	**{4}**
la tradizione antroponomastica dalle Alpi (GL)	++	+	++	+
antroponomastica indigena della Valle del Limari (GL)	+	+++	+	++
Antroponomastica pretedesca e preitaliana (GL)	+	++	++	++
Contributo per una ricerca topo-antroponomastica (GL)	+++	+	+++	+
diverse tendenze di antroponomastica cognominale (GL)	++	++	++	+
il caso dell'antroponomastica cipriota (GL)	+	++	+	+
Indizi galloitalici nell'antroponomastica popolare siciliana (GL)	+	++	+	++
la mimesis antroponomastica in Omero (GL)	+	++	+	+
L'antroponomastica del clero di Rotna (GL)	+	++	+	+
l'antroponomastica dell'intero corpus boccacciano (GL)	+	+++	++	+
l'antroponomastica indaga i nomi propri (GL)	+++	+	+++	+
Piante e fiori nell'antroponomastica altomedioevale (GL)	+	++	++	+
V	**{1}**	**{2}**	**{3}**	**{4}**
circa 7 mila toponimi non corretti (LaR)	+++	+	+	+
due toponimi padani (LaR)	++	+	++	+
esploratore di toponimi meridionali e settentrionali (LaR)	+++	++	++	+
i pochi toponimi storici italiani (LaR)	+++	+	+++	+
i vecchi toponimi fascisti (LaR)	++	+	++	+
il toponimo del presunto luogo di origine (CIP)	++	++	++	+
il toponimo significa Prati Irrigui (LaR)	++	+	++	++
il toponimo indicherebbe che l'insediamento (CIP)	+	++	+	++
il toponimo risalirebbe all'epoca romana (CIP)	++	++	++	+
Il toponimo utilizzato in passato (CIP)	+	++	++	++
la bellezza di 30 mila italianissimi toponimi (LaR)	+	++	+	++
la forma smagliante di toponimi di un certo universo (LaR)	+	++	+	++
le variazioni del toponimo nel tempo (LaR)	+++	++	+++	+

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lo studio del mondo parallelo dei toponimi (LaR)	+	+	+++	++
orfano del bel tiglio del toponimo (LaR)	+	++	+	+
i suoi toponimi doc in uso (LaR)	+	+++	++	+
Potenza evocatrice dei toponimi (LaR)	++	+++	+++	+
questi tristi toponimi (LaR)	+	+++	++	+
toponimi impronunciabili (LaR)	+	++	++	+
toponimo assegnato in epoca fascista (CIP)	++	+	++	+
toponimo brianzolo in corpore santangiolino (LaR)	+	++	++	+
toponimo che denota la località (CIP)	+	++	+++	+
toponimo del paese (CIP)	++	++	++	++
toponimo di origine etrusca (CIP)	++	++	+++	+
toponimo indicante una zona (CIP)	+	++	++	+
toponimo italianizzato (CIP)	++	++	++	+
toponimo papiense (LaR)	+	+++	+	++
toponimo turistico (LaR)	+	+++	+	++
tutti i toponimi che ricordano il male (LaR)	+	+++	+	+
un milione i toponimi presenti nelle tavolette (LaR)	++	+	++	+
VI	**{1}**	**{2}**	**{3}**	**{4}**
toponimia locale (CIP)	+++	+	+++	+
gli studiosi di toponimia (CIP)	+++	+	+++	+
La toponimia risale probabilmente a (CIP)	+	+++	++	++
la toponimia di questa città (LaR)	++	++	++	+
toponimia argentina (LaR)	+++	++	+++	+
VII	**{1}**	**{2}**	**{3}**	**{4}**
assicurarsi un intervento sulla toponomastica (LaR)	+	+++	++	+
Auschwitz, Oswiecim secondo la toponomastica polacca (LaR)	+++	+	+++	+
i titoli di una toponomastica (LaR)	+	++	+	+
La bizzarra toponomastica delle spiagge (LaR)	+	+++	++	+
la geografia sia soltanto toponomastica è aberrante (LaR)	++	++	++	+
La scelta della Commissione addetta alla toponomastica era suonata come un'offesa (LaR)	+	+++	+	++
la situazione toponomastica del Gadda (LaR)	++	++	++	+
La strana toponomastica del nudismo sardo (LaR)	+	+++	+	++
la sua toponomastica dei tempi di Napoleone (LaR)	+	+++	+	+
la toponomastica agonistica (LaR)	+	+++	+	++
la toponomastica americana (LaR)	+	++	+	+
la toponomastica appropriata (LaR)	+	++	+	+
la toponomastica ascolana (CIP)	+	++	+	+
la toponomastica cittadina (CIP)	+	+++	+	+
la toponomastica degli incidenti, la mappa della morte (LaR)	+	+++	++	++
la toponomastica del comune (CIP)	+	+++	+	+
la toponomastica del giardino rinascimentale (LaR)	+	++	+	++
la toponomastica del paese (CIP)	+	++	+	+
la toponomastica del settarismo più duro a morire in Europa (LaR)	+	+++	++	+
la toponomastica del tifo violento (LaR)	+	++	+	+
La toponomastica della cosiddetta staffetta (LaR)	+	+++	+	+
la toponomastica della zona (CIP)	+	++	++	+
la toponomastica delle nostre città (LaR)	+	+++	+++	+

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la toponomastica delle strade e dei vialoni (CIP)	+	++	+++	+
la toponomastica di alcuni luoghi situati lungo la linea costiera (CIP)	+	++	+++	+
la toponomastica di più rivelante importanza (CIP)	+	+++	++	+
la toponomastica di una delle metropolitane più famose ed efficienti del mondo (LaR)	+	+++	+	++
la toponomastica di via dei Lavatoi (CIP)	+	++	+	+
la toponomastica influenzata dalle prime spedizioni esplorative (LaR)	+	++	++	+
la toponomastica locale (CIP)	+	+++	++	+
la toponomastica non è neutra né indolore (LaR)	+	+++	++	++
la toponomastica politica (LaR)	++	+++	++	+
la toponomastica popolare (CIP)	+	+++	++	+
la toponomastica popolare del luogo (CIP)	+	+++	+++	+
la toponomastica rivoluzionata (LaR)	++	++	++	+
la toponomastica sovietica (LaR)	++	+++	++	+
la toponomastica ufficiale (LaR)	++	++	++	+
La toponomastica umbra (CIP)	+	+++	++	++
la toponomastica veneziana (LaR)	+	++	++	++
la vecchia toponomastica (LaR)	+	+++	++	++
l'anagrafe toponomastica (LaR)	+++	+	+++	+
malinconica toponomastica del potere (LaR)	+	+++	++	+
particolare confidenza con la toponomastica (LaR)	+	+++	++	+
questa amara ingiustizia toponomastica (LaR)	+	+++	+	+
questa toponomastica berlusconiana (LaR)	+	+++	+	++
ricostruisce topografia e toponomastica del vecchio centro urbano (LaR)	++	++	++	+
rispettare la toponomastica antica (LaR)	+	++	++	+
si modifica la toponomastica parlamentare in funzione di una persona (LaR)	+	+++	++	+
toponomastica appresa nei romanzi di Charles Dickens, Edgar Wallace e Somerset Maugham (LaR)	+	+++	++	+
toponomastica dell'area napoletana (LaR)	+	+++	+	+
toponomastica della futura capitale (LaR)	+	+++	++	++
toponomastica stradale cinefila (LaR)	+	+++	++	+
Una curiosa toponomastica caratterizza (LaR)	+	+++	++	+
una inestricabile e complicatissima toponomastica musicale (CIP)	+	+++	++	+
una mitologia toponomastica di sapore miltoniano (LaR)	++	++	++	+
Una questione toponomastica (LaR)	+++	+	++	+
una toponomastica banale (LaR)	+	++	+	++
una toponomastica bilingue (LaR)	+	+++	+++	+
una toponomastica che sopravvive ancor oggi (LaR)	+	+++	++	++
una toponomastica triste scandita dalla tragica fine di personaggi illustri (LaR)	++	+++	++	+

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TOWARDS AN ECO-FRIENDLY FUTURE: A CORPUS-BASED ANALYSIS OF MEDIA DISCOURSE ON "SAUDI GREEN INITIATIVE"[1]

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Abstract: This paper addresses the issue of the presentation of the Saudi Green Initiative in the Middle East media discourse. The specialized corpus has been prepared and analyzed using LancBox and SketchEngine software. The findings show that the Saudi Green Initiative is presented by the media as an aspiring venture of the Saudi Government. The analysis further reveals the ways the media has introduced the plan as ecologically beneficial, as per the stated objectives and environmental sustainability themes.

Key words: corpus linguistics, ecolinguistics, media discourse, Saudi Green Initiative, environmental sustainability, collocation network, themes.

1. Introduction

In the modern world, one of the terrifying issues the human race is dealing with is related to its survival on Earth. While searching for new moons and planetoids, human activities have devastated the only liveable planet known so far (Earth). From ozone depletion to species extinction, and from climate change to global warming, all of such calamities are

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consequences of human doings. According to a recent UN statement (United Nations intergovernmental report 2021), the current climate crisis is human-generated, which can be elicited from numerous pieces of evidence collected through observations, process comprehension, paleoclimate, and international and local climate simulations. Thus, efforts are needed to deal with these environmental issues at all levels (Gupta 2010). Kofi Annan (the former UN secretary) emphasized, "The world is reaching the tipping point beyond which climate change may become irreversible. If this happens, we risk denying present and future generations the right to a healthy and sustainable planet – the whole of humanity stands to lose" (quoted in Davis 2015). For this purpose, all human-related phenomena, from waste production to carbon emission, and from growing population to declining resources, need to be revisited and reviewed. There is no denying the fact that different nations and organizations are committed to addressing this issue, considering its urgency. At the national level, governments have to play their part. In this regard, the Saudi Green Initiative (hereinafter referred to as the SGI) is an important contribution along with the Middle East Green Initiative to fighting climate change, protecting the environment, preserving flora and fauna, and improving air quality in the region.

"To become a global leader in forging a greener world" (Saudi Green Initiative. His Royal Highness the Crown Prince … 2021) for a better future, the Saudi Government has outlined its detailed SGI program. This initiative is in line with the Vision 2030 (Saudi Vision 2030, *s.a.*) that aims to bring positive changes in the economic, social, as well as the environmental structures of the Saudi Kingdom. This initiative accentuates objectives that will cater to a sustainable future not only locally but globally as well. This initiative is proposed by the Saudi Regime seeking "to advance to the next level by unifying all sustainability efforts in the Kingdom to increase reliance on clean energy, offset the impact of fossil fuels, and combat climate change" (Saudi Green Initiative. His Royal Highness the Crown Prince … 2021). In fact, it is a much-needed action from a country that is already listed as one of the biggest oil producers in the world. Thus, it can be a role

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model for other countries as well. It should be noted that an environmental plan like this has not only a local but also a global impact. Therefore, it can be valuable for ecological rectification around the globe, as per UN representative (United Nations environment programme [Anderson statement], *s.a.*). A news report was published by Reuters as "Saudi Arabia sided with the club of climate crusaders" (Cox 2021). Seznec and Mosis (2021) in their report relate that the Gulf States like Saudi Arabia can face problems in the implementation of such plans as the official bodies need to make more efforts than they have envisaged in SGI. However, on the other hand, some reports also criticize the SGI as a mere greenwashing stunt by an oil-supplying state (e.g., Kennedy 2021).

According to its official website, the SGI is framed as an effective strategy for dealing with environmental concerns (Saudi Green Initiative [section: Homepage], *s.a.*). Moreover, the official web site lists the following key elements for this initiative: clean energy sector, carbon emissions reduction, oceans protection, wildlife defence, desertification prevention, and increased recycling (Saudi Green Initiative [section: Targets], *s.a.*). The plan implies using governmental and non-governmental resources (both human and financial) in order to join hands with the global community against the climate crisis. Thus, the overall focus of the SGI is on the environmental sustainability target listed as one of the commitment areas in the UN 2030 agenda for sustainability program (UN environment programme, *s.a.*). The present paper analyses the use of language in the SGI document as Vasko and Aleksiievets (2021) comment that language has been used carefully in the SGI documented version to highlight the state's concerns. Such language use is termed as discourse and with reference to media can be termed as media discourse.

Keeping in mind the crucial nature of environmental issues, media discourses around the globe have considered and investigated them from numerous perspectives. A number of papers have pinpointed climate-related disasters like global warming, fauna extinction, deforestation, smog, etc., based on their analysis of print media and social media reports (e.g., Anderson & Huntington 2017; Fest 2021; Fløttum et al. 2014; Pearce et al. 2019). These papers explore the representation of ecological issues in the selected media. Taher and Hajjar (2014) comment that environmental agitations have been centralized and prioritized in global policies. Thus, it is important to consider such environmental issues as crucial and therefore the Saudi Government has laid emphasis on it. As mentioned above, a number of researchers have explored various types of media discourse (e.g., Anderson & Huntington 2017; Fest 2021; Fløttum et al. 2014; Pearce et al. 2019) to see how ecological apprehensions are presented. No doubt, the media discourse plays an important role in emphasizing or deemphasizing a particular stance by giving the due coverage (Grundmann & Krishnamurthy 2010). Besides raising public awareness, the media can also be influential in promoting green initiatives around the globe. It helps us to understand what is being done in order to save Earth from climatic annihilations. SGI is a great ingenuity by Saudi Arabia enabling the country to use its resources not only for its own betterment but also for the benefit of the whole global village. Therefore, understanding how the media contributes to the promotion of this great green agenda is an important matter. Thus, the paper aims to scrutinize the selected media reports (related to SGI) and identify major thematic trends in its representation by using corpus-based tools. Accordingly, the objectives are as follows:

- to analyze media discourse in general and newspapers articles in particular for the representation of the SGI;
- to prepare a corpus of the selected newspapers reports;
- to scrutinize keywords related to the SGI in the selected corpus;
- to determine the collocational usage of keywords (based on thematic trends) and their collocations in the selected corpus;
- to analyze how keywords (linguistic choices) in the selected media present SGI goals;

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- to interpret the SGI major goals areas of concern as reported in the media with reference to ecolinguistic approaches and environmental sustainability framework.

Thus, the specific question which drives the research is:

- How the selected Middle Eastern media corpus have illustrated the SGI through the use of collocations and keywords?

The research is valuable in multiple respects. Firstly, it is a contribution to the domain of linguistics in general and Corpus Linguistic research in particular. Secondly, the present paper highlights the role of the media in spreading awareness regarding environmental issues as aimed in the SGI. Such studies can further create a positive impact on the world in need of ecological awareness. Thirdly, it sheds light on how the media plays its part in the promotion of the Saudi Kingdom's campaign for a healthy environment based on the SGI. The findings provide an important opportunity for the Saudi Government to advance its understanding of the approaches of the media towards reporting on eco-friendly initiatives put forward by the government. Finally, this study has a huge social significance as it contributes to raising awareness about SGI by the general public not only in Saudi Arabia but all over the world.

2. Literature review

An important dimension of the topic under consideration is discourse, which is generally defined as 'language in use'. However, this term has become multidimensional in the modern world due to its complex nature. It can be considered as an embodiment of religious, political, social, cultural assumptions, which are not only reflected but also (re)constructed in the language and through the language. This paper proceeds from the Foucauldian concept of discourse as a social practice, which is later defined by Fairclough (1989) as a process of symbolizing objects, entities, situations, etc. In this process of symbolizing, meanings are constructed, which is never a neutral process (Burke 1969).

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There is no denying that language is a cognitive tool facilitating world comprehension of the world (Erofeeva & Ushnikova 2017) and this tool becomes even more effective when related to media platforms. Grundmann and Krishnamurthy (2010) narrate that the media makes the news exciting to attract the audience, so as not to present information, but rather sell it. In fact, the media plays an important role in the contemporary world to spread the news to a larger audience through its diversified channels. Moreover, their online availability has made it more vulnerable to reach and affect a larger number of readers than ever. Bailey et al. (2014) report that in the contemporary world the media is more than just a source of information; news is created and crafted. Prihodko et al. state that the "population relies on the news media as the chief source of information and the base, on which they formulate their opinions, judgments, values, and voting decisions" (2020: 211).

The media discourse becomes noteworthy when related to pressing issues like climate change, poverty, crimes, etc. According to Lyytimäki, "media representations are an important part of the dynamics of contemporary socio-ecological systems" (2012: 1) given that media discourses serve as the explanatory system of modern societies, they have even become more important when discussing the issues related to climate change (Pasquaré & Oppizzi 2012). Boykoff narrates that "people abundantly turn to media – such as television, newspapers, magazines, radio, and Internet – to help make sense of the many complexities relating to environmental science and governance that (un)consciously shape our lives" (2009: 431). He further remarks that there is a large number of "approaches, methods, and research questions explored under this umbrella of media and climate change" (Boykoff 2011: 50). In this regard, Grundmann and Krishnamurthy (2010) have studied the media discourse of the Western countries (the USA, the UK, France, and Germany) with regard to the representation of climate change. Boykoff (2009) has examined the US and UK newspapers' coverage of climate change and reported that the majority of the news items are presented from an anthropogenic dimension (i.e., from human perspective). Carvalho and Burgess (2005) claim that media discourses report

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climate change as a socially constructed phenomenon. Fløttum et al. (2014) opine that linguistic techniques used by media to represent climate change have impacts on the psyche of the readers, the way they perceive and judge the phenomenon. Moser (2016) believes that such studies are transitional, as they tend to shift focus from awareness to action desired. He further argues that such efforts are needed to review climate-related actions in the light of the UN framework convention on climate change (ibid.).

As the media is a popular source of information for the masses, it is always useful to explore and analyze media discourses to identify underlying ideologies and linguistic patterns. The technical solution to such issues is discourse analysis. There are numerous ways to analyze discourses and one of the recent approaches is corpus linguistics. Baker and McEnery comment that "the relationship between corpus linguistics and discourse analysis has been in development for a quarter of a century" (2015: 6). Corpus Linguistics helps to explore larger sets of data (called corpora) than other manual discourse analysis techniques, therefore considered effective for the generalization of the results. Baker comments that corpus materials are effective "to analyze large bodies of 'real life' text, or corpora" (2006: 8). A corpus is created as a .txt file and then a variety of tools can be used to analyse it to meet the objectives of one's scholarly work. The most commonly employed techniques of Corpus Linguistics are those to identify concordances (based on collocations), words frequency, n-grams, and keywords. The present investigation is based on the identification of collocations and keywords (thematic trends) in the selected corpus. Collocations are defined as a linguistic context of words or words that tend to exist together (Evert 2004: 17). According to Baker (2012), collocations are fundamental to discourse analysis, as they may to expose the ways a particular fact or event is presented or interpreted by the media. A more recent approach is to display collocations as a network often illustrated as *GraphColl*, shortened from graphical collocations (Brezina et al. 2015). This tool is more extensive to explore and "uncover meanings and connections in text or discourse that may otherwise pass unnoticed" (Brezina et al. 2015: 141). This

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graphical representation can be explicated in terms of distance, frequency, exclusivity, directionality, etc. Each of these factors assist in the interpretation of the results. For example, the items near the central node (i.e., distance factor) are more important collocates than the words at distance. Another approach used in ~~in~~ Corpus Linguistics is a key word analysis, which implies identifying the terms extensively used in the texts for representation of certain phenomena and thus defining thematic trends. Baron et al. (2009) define keywords as the most significant words in a text, which can be identified through assorted corpus analysis tools. One of the recently designed tools in this regard is Sketch Engine (Kilgarriff et al. 2004), which is often used for various data queries: word frequency, collocations, n-grams, keywords, etc.

As the data studied through corpus techniques belong to a real-life context (i.e., social, political, economic, etc.), the results provide a comprehensive interpretation of any situation under investigation. Corpus techniques enable scholars to explore different forms of discourse from multiple perspectives. For example, Pérez-González (2020) studied climate science reports by corpus tools to identify antagonistic discursive practices used for constructing the climate discourse. Based on the findings, he reported that such ecologically unfriendly messages have always had a negative impact on society. Hameed et al. (2021) used a corpus-based approach to evaluate media discourses related to Saudi Vision 2030 arguing that corpora offer generalizable results owing to the processing of massive amounts of data. Wagner and Payne (2017) have studied the coverage of climate issues in Irish newspapers. Their findings show that "Irish newspapers produce and reproduce a narrow ideological worldview that is articulated, shared, and propagated by Ireland's political and economic elites" (ibid., 5). Urry and Dayrell have conducted an analysis of a large Brazilian Corpus related to climate change to test the assumption that the Brazilian news media emphasize "a consensus or gradualist view of climate change" (2015: 265). Their findings expose that the Brazilian media has given a comprehensive representation to climate-related issues. Grundmann and Krishnamurthy (2010) used a

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corpus-based technique to investigate climate change coverage, and found it effective for processing large sets of news data. Pearce (2008) used SketchEngine to explore the collocational behavior of men and women in the British National Corpus and exposed the functional behaviour of the identified lemmas.

Another important objective of corpus-based studies is to determine a hypothetical paradigm for interpretating the results obtained. For the present work, it is ecolinguistics that provides the required theoretical underpinning. Ecolinguistics or ecological linguistics is a "set of linguistic theories with a heavier focus on animals, plants, and the physical environment and how they are or are not represented" (Rapo 2020: 4). In modern times (as the world has faced the ramifications of the severe climate changes, particularly in the last few decades), it has become an influential domain of knowledge with its focus on environmental issues. There is no denying that anthropocentric attitude has caused the world many troubles like the rise in world's temperature, extinction of animal species, depletion of natural resources, etc. (Hameed 2021), and ecolinguistics aims not only to criticize such attitudes but also to evaluate the environmentally constructive efforts made by the world community. Stibbe narrates that ecolinguistics contributes to the "search for the new forms of language that inspire people to protect the natural world" (2014: 131). It provides various theoretic paradigms (from linguistic to ideological ones) to interpret discourses. This paper further develops the notion of environmental sustainability (Hansmann et al. 2012) as well as Stibbe's (2015) vision of conceptual nature of environmental or ecological discourses (explained below).

Environmental sustainability is the main concern of ecological treatises, as they tend to portray discourses as frameworks of ideologies and actions needed for a green future. Sutton (2004) defines environmental sustainability as a capability to sustain whatever is needed and cherished in the physical environment. He further explains the multitudinous dimensions of environmental sustainability including

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"actions to reduce the use of physical resources, the adoption of a 'recycle everything/buys recycled' approach, the use of renewable rather than depletable resources, the redesign of production processes and products to eliminate the production of toxic materials, and the protection and restoration of natural habitats and environments valued for their livability or beauty" (Stibbe 2015: 1).

For this study, environmental sustainability themes are identified on the basis of Hansmann et al. (2012) framework that includes: protection of the natural environment; responsible usage of renewable resources; reduction of the usage of non-renewable assets; protection from environmental threats, cutbacks of risks; fortification of natural spaces and biodiversity. Piccarozzi (2017) used the above-mentioned framework to analyze the role of innovative setups as a contribution to sustainability in Italy. Another key element of the philosophy behind ecolinguistics is the propensity to consider discourses as environmentally constructive or destructive. The proponent of this idea is Stibbe (2015) who describes environmental discourse as a story having a positive or negative impact on society. Thus, depending on ideologies embedded in them, he identifies beneficial, destructive or ambivalent discourses. The ideologies are arrays of linguistic features that repeatedly appear in texts (ibid.). Beneficial discourses are the ones that promote ideological standpoints to protect the environment; in contrast, destructive discourses promote capitalist activities that are harmful to nature; and, lastly the ambivalent discourses include talks about environmental aspects or issues that cannot be clearly marked as beneficial or destructive (ibid.). Fløttum and Gjerstad (2017) state that "stories" that are used to talk about climate change can positively contour the preferences and attitudes.

In recent times, a number of researchers around the world have focused on media discourses from eco linguistic perspectives as explained above as well (such as Carmen 2019; Grundmann & Krishnamurthy 2010; Pasquaré & Oppizzi 2012; Rapo 2020; Wagner & Payne 2017, and others). These studies explain how environmental issues or ecological visions are presented in diverse forms of media discourse. Some of these studies have also

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used corpus-based techniques (e.g., Grundmann & Krishnamurthy 2010; Rapo 2020). The present inquiry has also used corpus based techniques like graphical collocations and thematic patterns which have been further analyzed through the content analysis technique. Furthermore, there are limited studies available in the Saudi context in relation to the environment and ecology (e.g., DeNicola et al. 2015) and none related to the SGI so far. The study offers fresh and important insights to environmentally friendly media discourses regarding the SGI.

3. Research method

This study employs a mixed methods approach, as its goal is to provide a deeper understanding of the media discourse. The data collection process involves a quantitative approach (corpus-based) whereas the data analysis technique includes quantitative methods (with respect to the presentation of results in graphical formats) as well as qualitative ones (involving the discussion of results). Tashakkori and Teddlie define a mixed methods design as "products of the pragmatist paradigm that combines the qualitative and quantitative approaches within different phases of the research process" (2008: 22). Such an approach allows scholars to compile a comprehensive database and interpret the results. Consequently, the current paper aims primarily to examine the selected discourse for lexemes and themes (in line with this objective, respective software is used).

Bennet (2010: 12) defines 'corpus' as a large assemblage of written or spoken texts stored electronically. She defines corpus analysis as a practice to analyse and uncover linguistic patterns from the selected corpora. According to Baker (2012: 102), corpus analysis is one of the most effective tools to identify meaningful linguistic patterns in a huge amount of data. The use of corpus enables investigators to present generalizable results; therefore, for the purposes of this research there has been prepared a specialized corpus with the focus on the SGI. A specialized corpus is a kind of corpus based on "specific pre-

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established criteria as a guide to selecting the type of texts" (Mateo & Cazevieille 2015: 301). This kind of corpus is not readily available like the BNC or COCA but is built in line with the objectives set by the researchers. In specialized corpora, representativeness (i.e., corpus is representative of the selected theme / topic / token term / aspect, etc.) is a more crucial aspect than the length or size (Meyer & Mackintosh 1996). The study also has used the content analysis method to probe further into results obtained through software analysis. Content analysis is a method to explore the selected content for the identification or examination of a certain theme or concept. Kutter and Kanther (2012) developed an extensive design to scrutinize the content of corpus materials, which involves four stages: (1) key terms identification, (2) corpus analysis of lexical representations of key terms, (3) text-mining, and (4) qualitative analysis. In this way, the key items or results obtained through software can not only be identified but also studied within their contexts. This further provides extensive insights into the findings. For example, the findings from SketchEngine are further analyzed and categorized under the labels of the SGI targets and environmental sustainability themes.

The sample corpus is composed of newspaper reports and articles (online resources) from the selected English-language newspapers (Middle Eastern Media discourse). The following seven countries are considered to collect sample data: Saudi Arabia, the UAE, Qatar, Egypt, Bahrain, Cyprus, and Kuwait. The reasons for delimitation are time constraints (the project time frame), radical issues (no representation in some countries' media platforms due to internal issues like in Iraq and Palestine), and non-availability (some countries of the Middle East as Algeria, Oman, Turkey, etc. do not have reasonably enough material on some particular matters). From the above-mentioned countries, the following newspapers (based on the availability of the material) have been used to prepare the corpus:

- Arab News, Saudi Gazette (Saudi Arabia);
- The National Gulf, Gulf News, Khaleej Times, Gulf Times (United Arab Emirates);

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- The Gulf Times, Al Jazeera (Qatar);
- Egypt Independent (Egypt);
- Gulf Daily News (Bahrain);
- Kuwait Times (Kuwait);
- Cyprus Mail (Cyprus).

(The links to these newspapers are provided in Appendix A.)

The specialized corpus contains around 100 articles (of all types from political articles to business reports and from world to sports news items) published within the selected time frame from January 2021 to December 2021 (as the SGI was publicized and inaugurated within 2021). The key phrase used to select the material is Saudi Green Initiative / SGI. After the preparation, the corpus is cleaned for the analysis purpose (as corpus software accepts only simple text files). In this process, all the images, and formatting styles are removed from the text to prepare a text file with plain text. The .txt file is further created from the word file (most of the corpus analysis programs process only this file extension).

The analysis of the corpus is conducted using the following software: LancBox 6.0 (for collocations and collocation graphs) and SketchEngine (for the identification of key themes).

Initially, LancBox (Brezina et al. 2020) software package is employed to analyze the data for the collocations of the key term in both formats, i.e., SGI and Saudi Green Initiative. Bennet defines collocations as "the statistical tendency of the words to co-occur" (2010: 8). These collocations are helpful to understand the ways a particular word is contextualized. There are several tools available for this purpose. For the current research, *GraphColl* format is used. It is a graphical representation that helps us to view and interpret the network of collocations based on color intensity, and the distance from the central node (Brezina et al. 2015). Moreover, the pictorial illustration helps researchers

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and the audience to comprehend the results hastily. The next part of the analysis involves the identification of key themes in the corpus. The purpose is to see which themes (in the form of lexical bundles) are presented most frequently. It would help to ascertain the emphasis of the selected media texts. For this purpose, SketchEngine (Kilgarriff et al. 2004) is used with its feature keywords. The results are further analyzed (using content analysis techniques) to identify the most frequently recurrent themes, themes in line with the SGI framework (Saudi Green Initiative [section: Targets], *s.a.*), and themes representing environmental sustainability (Hansmann et al. 2012). The results are presented in tabular and graphical formats. Finally, the results are discussed in light of the selected theoretical framework, i.e., concepts of environmentally beneficial and destructive discourses (Stibbe 2014) and environmental sustainability themes (Hansmann et al. 2012).

4. Findings and discussion

The specially designed corpus contains around 50,000 words. Further characteristics of the specialized corpus are given below:

Table 1. Details of the corpus (Based on LancBox report) (Source: Own processing)

Type of Corpus	Media / Newspapers
Tokens count	59,789
Words count	51,821
Sentences count	1,873
No. of the news items	100

The first step is to analyse the corpus for the presence of the keyword *Saudi Green Initiative*, and its abbreviated version *SGI*, with its widely used collocation formats. Collocations are words that appear close to a selected keyword and are therefore imperative to analyse as they divulge the linguistic patterns in which the keyword is

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employed. The graphical format is used to display collocations as they make data more evident than the traditional methods (as in list formats). Figure 1 presents a collocation network used for the keyword. This figure displays 46 collocates of the Saudi Green Initiative and 29 collocates of SGI (out of these 19 are shared collocates). Among the prominent collocates obtained through the software, lexical words are studied only (as the functional words are suitable to review grammatical patterns of the text which is not the focus of the present project). The prominent lexemes are nouns (*Saudi*, *initiative*, speech, *summit*, *Riyadh*, *forum*, *inaugural*, *emissions*, *event*, *vegetation*, *carbon*, *goals*, *2060*, *prince*, *opening*, *kingdom*, *billions*), verbs (*announce*, *aims*, *launched*, *cover*, *raise*, *reduce*, *achieve*, *work*) and adjectives (*green*, *ambitious*, *key*, *crown*, *east*). The distance parameter is not very prominent as for the Saudi Green Initiative majority of words are at almost equal distance from the center, except for a few which are slightly on the right side. The intensity parameter shows the following words as more projecting: *prince*, *crown*, *goals*, *sgi*, *east*, *carbon*, *initiative*, and *billions*.

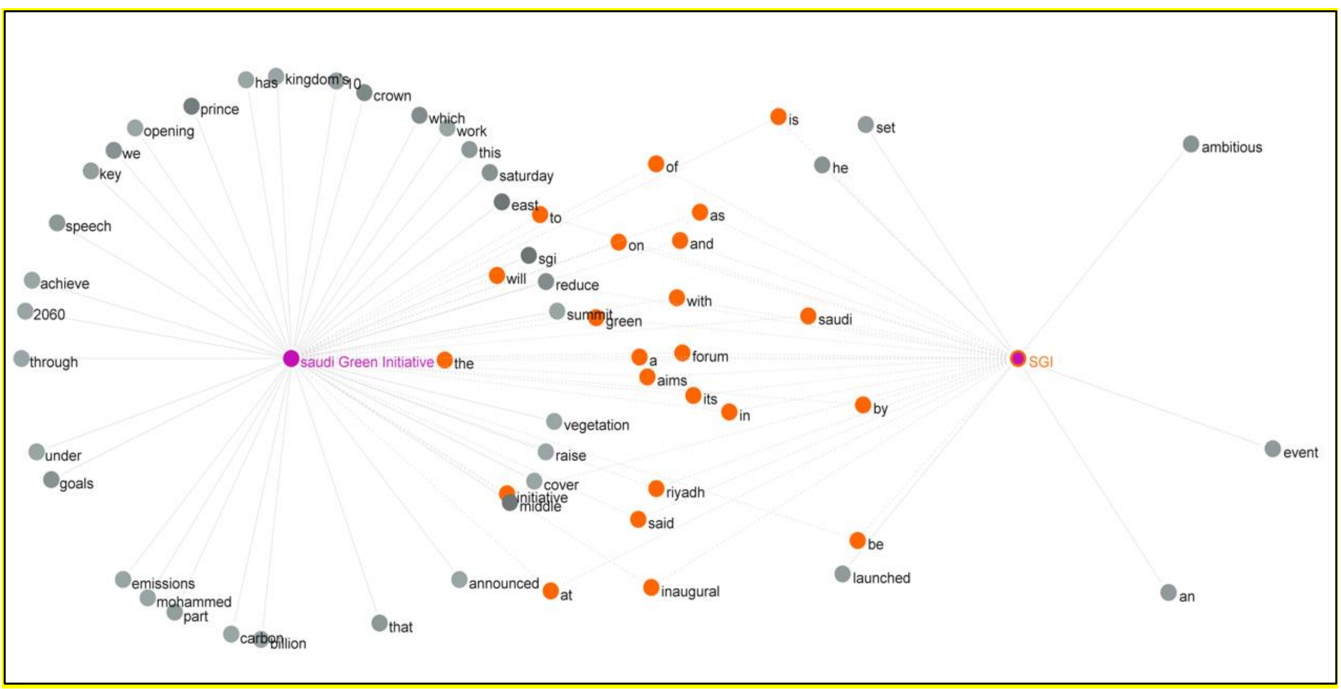

Figure 1. *GraphColl* for Saudi Green Initiative and SGI
(Source: Own processing. Created through LancBox)

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Figure 1 shows the significance of the Saudi initiative in the selected media in disparate dimensions (for more collocation details, see Appendix B). Firstly, the SGI is considered to be an ambitious plan set by the Saudi Government towards a green future. Secondly, in 2021 the inaugural Saudi Green Initiative forum was held in Riyadh, where crown prince Muhmmad bin Salman asserted himself as an initiator of this amazing proposal. Such collocates as *green vegetation*, *carbon emissions*, and *billions-dollars budget* appear to give an indication to the SGI goals. These nouns reflect the important dimensions of the plan, i.e., to work towards reduction of carbon emissions and promote green vegetation. According to a topical UN report (United Nations intergovernmental report 2021), these are the areas where human activities need to be reviewed for negative and positive impacts. Furthermore, the goals set by the Saudi Kingdom are presented by the use of verbs, such as *announced*, *launched*, and *aims* (from the *GraphColl*). In addition, the action words (verbs) like *work*, *achieve* provide fixation on the practical actions needed to attain the intended goals. The detected verbs signify the fact that SGI is not merely based on plans (as depicted through noun), but rather focuses on action (through the use of verb). The findings make it clear that the media has esteemed this project as a step to save the world. Erofeeva and Ushnikova (2017) speak about the significant role of the media in disseminating information owing its extended outreach capacity. Thus, the media do not only inform a wider audience about the SGI making available facts and figures on this endeavor but also inspire new ideas in this regard (which is the need of the time). Boykoff (2009) comments that the utilization of mass media sources by various actors – both individuals and collective – is quite a communal practice in order to contour perceptions of environmental issues depending on their viewpoints and interests.

The next important step of the paper is to identify the goals of this initiative as presented in the selected media. The purpose is to see how far these revealed objectives are in line with the actual goals set in the Saudi Green Initiative and, secondly, to examine these goals from the environmental sustainability perspective. This in turn helps to mark the

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project and the media discourse as environmentally friendly (from the ecological viewpoint), unfriendly or neutral (depending on the results). The SketchEngine was employed, in this regard, to identify the key terms based on the word sketches provided by the software. Using the advanced options, key items (multi-word level) are identified (see Appendix C). 634 key items (multi-words) representing major themes have been identified in the selected corpus. The initial content analysis of the list reveals that many of the themes are repeated (either in the same phrase format or in a transformed one, e.g., *green project*, *green bond*, *clean fuel*, *green fuel*, *clean energy*, *climate change*, *climate disasters*, etc.). These key items were further analyzed using the manual content analysis technique to find the recurrent themes. One of the goals of this research is to examine the themes (identified through the software) as related to the actual SGI agenda (Saudi Green Initiative [section: Targets], *s.a.*) as well as the ones related to environmental sustainability themes. In this regard, Table 2 outlines the major identified themes.

Table 2. Key themes in the selected corpus (Source: Own processing)

Key themes identified from SketchEngine results (Based on frequency)		
planting billions of trees	sustainability strategy	climate change challenge
net zero carbon emission	global contribution	global effort
cutting global methane emission	green hydrogen	environmental challenge
carbon neutrality	environmental initiative	climate crisis
climate action	green bond	marine life
energy transition	carbon capture technology	global temperature
land degradation	reforestation program	clean fuel
combat pollution	impact of fossil fuel	green summit
climate conference	green era	global trees
strategic initiative	climate change summits	stabilizing energy
climate target	strategic initiative	blue ammonia
green project	afforestation	ambitious roadmap
coastal environment	emissions cut	hydrocarbon technology
combating climate change	challenge of climate	environmental declaration
share of responsibility	global commitment	green future
sustainability initiative	climate mitigation	significant investment
global goal	invitation for the world	global warming
action-oriented approach	climate ambition	renewable energy capacity
renewable water	green future	sustainability initiative

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These identified themes in the selected media highlight the awareness of the Saudi state regarding climate change as a threat to the planet's future. The repetition of the themes such as "climate action" (frequency 26 in different phrasal formats), "sustainability initiative" (frequency 19 in different phrasal formats), "strategic initiative" (frequency 13 in different phrasal formats), "environmental initiative" (frequency 13 in different phrasal formats), and "environmental declaration" (frequency 7 in different phrasal formats) in the selected corpus shows that Saudi Arabia has set a significant agenda for a sustainable future, not only for the region but also for the whole world. The use of inflated language shows that the media is quite passionate about the project. (e.g., *climate ambition*, *significant investment*, *action-oriented approach*, *global commitment*, *global effort,* etc.). This in turn reflects the environment-friendly approach of the media that is highly emphasized by many scholars in their papers (Boykoff 2009; Carvalho & Burgess 2005; Erofeeva & Ushnikova 2017; Wagner & Payne 2017). The media emphasizes the need of the joint efforts by the world community and highlights the global significance of these efforts, which can be seen in keywords such as *global commitment*, *global effort*, *global contribution*, *invitation for the world*, etc. In addition, the media stresses that there is an inherent constant threat or challenge that the country is seeking to address by embarking on the SGI implementation (as mentioned through words such as *land degradation*, *climate change challenge*, *global warming,* etc.). The idea of global effort (the word *global* appears 23 times) has been repeatedly mentioned along with the importance of local practices and policies. In this regard, there remains the need for climate summits and conferences, which is in line with the Gupta (2010) assumption that the world needs an action plan to combat climate change. Moreover, the media depicts the SGI as an ambitious plan that is based on meticulous planning, sufficient budget, and well-determined objectives (viz. *strategic initiative*, *ambitious roadmap*, *significant investment*, *action-oriented approach, the share of responsibility*, etc.). Fløttum et al. (2014) have also reported the findings that show climate-related actions needed for a better world while working on blogs content. Boykoff (2009) remarks in this regard that the

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media can raise awareness of environmental challenges by speaking about them recurrently.

Afterward, it is crucial to compare the identified themes with the actual SGI goals in order to see which points have been covered more frequently. For this purpose, there has been analysed the list of keywords (obtained through SketchEngine), and recurrent themes have been listed under the SGI identified frameworks. As mentioned above, the *clean energy sector*, *carbon emissions reduction*, *oceans protection*, *wildlife defense*, *desertification prevention*, *and recycling increment* (Saudi Green Initiative [section: Targets], *s.a.*) are the cornerstone areas. The results are presented below in Table 3.

Table 3. SGI framework and representation of key themes in the selected media
(Source: Own processing)

SGI Targets	Examples from Media Discourse (from SketchEngine)
1. Clean energy sector	energy transition, stabilizing energy, blue ammonia, clean fuel, fossil fuel impact, green hydrogen, cutting global methane emission, stability of global oil, efficiency of energy production, reducing greenhouse gas emission, diversified energy, investment in renewable energy, wind farm, clean energy, renewable energy plant
2. Carbon emission reduction	carbon neutrality, net-zero carbon emission, emissions cut, hydrocarbon technology, carbon capture technology, circular carbon economy, initiative on slashing emission, amount of carbon, reduction in carbon
3. Oceans protection	marine life, global ocean
4. Desertification prevention	green area, planting billions of trees, global trees, green, afforestation, global tree-planting target, reforestation program, land degradation, billion trees in the region, trees in the desert, planting target, olive trees, protected area
5. Recycling increment	recycled water, renewable water
6. Wildlife defence	-

As Table 3 clarifies, the three main areas which are highly emphasized in the selected media reports are *clean energy sector*, *carbon emission reduction*, and *desertification prevention* (persistently mentioned). Conversely, the other three areas (in Table 3) of *oceans protection*, *recycling increment*, and *wildlife defence* are not much fixated on. In the domain of *oceans protection*, the only items detected are *marine life* and *global ocean*; similarly, in the domain of *recycling increment* only *recycled water* and *renewable water* (frequency 1 for each term) were found. The most repetitive goals in the news reports are related to carbon emission and its reduction (32% of the total key terms), and clean energy (19% of the total). Greening through plantation is also emphasized (12%) as one of the main goals of SGI. Nevertheless, the findings also indicate that the SGI agenda is not wholly reflected in the Middle East media as nearly half of the foremost topics are not covered in the media reports. Rapo (2020) suggests that ignoring certain features related to climate change can be devastating as it means that the world is not going for any solutions as well.

Another important dimension of this work is to understand SGI as represented in the media from ecological perspectives. For this reason, the environmental sustainability framework has been taken into consideration in order to investigate whether the media represents the SGI as a beneficial, destructive, or neutral story (Stibbe 2014). The key terms list (prepared by using SketchEngine) is analyzed and major themes are itemized under selected sustainability themes (based on Hansmann et al. (2012)). Table 4 presents the findings.

Table 4. SGI representation in media and environmental sustainability themes
(Source: Own processing)

Environmental Sustainability Themes	**Examples from Media Discourse (obtained from SketchEngine)**
1. Protection of the natural environment	planting trees, olive trees, carbon capture technology, net-zero carbon emission, reducing greenhouse gas emission, reforestation program, billion trees in the region, tackling climate change, carbon emission reduction target, global emissions cut, clean hydrocarbon technology, emissions reduction, green bond, green future, planting target, combat pollution, reducing greenhouse
2. Responsible use of renewable resources	stabilizing energy, energy transition, renewable energy plant, recycled water, clean fuel, energy export, hydrogen fuel, green hydrogen, investment in renewable energy, first wind farm, renewable water, renewable energy plant, investment in renewables, diversified energy mix

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3. Reduction of use of non-renewable resources	stability use of global oil, burning fossil fuel, less oil production, cutting global methane, new energy source, cut demand of oil, methane pledge, fossil fuels
4. Protection from environmental hazards, reduction of risks	dust storm, early warning of storms, climate-related weather-event, warning of storms, harsh climate, air capture, percent of waste, harsh climate conditions
5. Protection of natural spaces and biodiversity	marine life, protected area, desert area, global ocean, afforestation initiatives, allocating protected area, natural reserves, save desert state

Table 4 reveals that the SGI is a plan meant to contribute to respective dimensions of environmental sustainability, which is illustrated by the media as well. The themes most frequently and abundantly covered by the media include *natural environment protection* and *renewable energy conservation*. On the other hand, comparatively less emphasis is laid on such themes as *environmental threats reduction* and *wildlife preservation*. However, the overall impression is striking as the media views environmental sustainability as the cornerstone of the SGI. All the environmental challenges are reflected in the SGI and abundantly covered by the Middle East Media.

As Stibbe (2015) suggests, ecological discourses can be labelled as beneficial or destructive based on the ideologies embedded in them. In this regard, ideologies are often presented in linguistic features of texts like lexis, keywords, word associations, etc. The analysis of the media discourse displays a comprehensive list of keywords, collocations, and themes related to primary ecological concerns (see Figure 1, Tables 1, 2, 3, and 4). The issues of climate change have been considered from diverse perspectives (for instance, *energy issues*, *global warming*, *forestation*, etc.) and further, prominence has been given to the possible solutions, such as *climate revolution*, *energy use*, and *afforestation*. Similar findings were also reported by Fest (2021) while working on western media reports on climate change. The specifics of the SGI media coverage and the emphasized linkage of the SGI with environmental sustainability prove that the media discourse dealing with SGI can be defined as a constructive discourse (Stibbe 2014). All the aspects outlined in the SGI document are related to the preservation of nature and

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resources in discrete dimensions (environmental sustainability goals as listed by Hansmann et al. 2012). The distress caused by climate change and the challenging nature of environmental problems in the modern world is also highlighted in the SGI, the media exposes. According to Erofeeva and Ushnikova (2017), a media text "radiantly" epitomizes a national worldview; thus, such a media representation of the SGI exposes the Saudi Government's vision of this initiative, which seems to be an effective practical tool to tackle modern-day environment-related issues. In addition, Sutton (2004) advocates the idea that any national narrative in line with ecological sustainability is what is essentially needed for a green future.

5. Conclusion

There is no denying that human beings have no such option as another planet available for their survival. Living on Mars or some Earth-like planet in a parallel universe is possible only in some fictional discourse and can be defined as sci-fi. Thus, saving Earth for a sustainable future is the primary agenda in every field of knowledge in the present times. Such themes as *climate change*, *global warming*, *carbon capture technology*, *biodiversity*, *wildlife preservation*, *forestation*, etc. are focal points in various discourses (e.g., political, corporate, advertisements, etc.) including media. How the media covers such ecological apprehensions, particularly when they are raised at the national level, is the prime subject matter of this paper.

The Saudi Green Initiative is a representation of ecological trepidations as anticipated by the Saudi Kingdom to work for a sustainable future. Thus, the media, and in particular the local Arab Media has given it adequate reportage to bring forth and applaud the Saudi states' solicitude. To examine the efforts made by the Saudi Government apropos the global and local environmental issues, this paper explores the Middle East media discourse by using corpus-based techniques. The results are noteworthy as they expose how diverse the topical themes of the SGI are in terms of focus and range.

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It is worth noting that, as per media reports, almost all of the major climate issues have been emphasized in the SGI, for instance *controlling the carbon emission*, *replacing fuel energy with clean energy*, *sustainable uses of resources*, *protection of natural habitats*, etc. The practical solutions to deal with these calamities and to work for a green future are also highlighted quite frequently. The media evaluates the initiative as an ambitious effort with the focus on environmental sustainability themes. Moreover, it should be kept in mind that the promotion of such environment-friendly discourses inspires people to shield their natural habitation. There is no denying the world is in urgent need of some solutions to address such issues as global warming, climate change, waste management, depleting resources, etc. On the other hand, there have been identified certain gaps in the media representation. For example, the SGI focuses on such goals as *recycling*, *wildlife*, *ocean life*, *biodiversity* (as per official document) but these goals are not highlighted in the media discourse. In this regard, the research findings (Table 3) expose that certain targets of the SGI as *ocean protection*, *recycling*, and *wildlife* are not reflected in the selected media texts.

The findings reveal that the media of the Middle East presents the Saudi Green Initiative as a possible game-changer *vis-à-vis* environmental sustainability (besides the economic sustainability prioritized by the UN as well). There is no doubt that in the modern world, the media plays a vital role in shaping and reshaping opinions regarding people, actions, governments, agencies, corporations, etc.; thus, the coverage of the SGI by the Middle East media would help the Saudi Government to gain public recognition and appreciation. Due to outreach to a wider audience, media coverage of the Saudi Green Initiative can promote awareness and understanding of such environmentally beneficial projects. Nevertheless, this study remains mostly focused on the use of language as per the selected dimensions (collocations, and lexical bundles as thematic expressions) by the Middle East media to portray this green project (SGI) as a beneficial or disparaging story about nature

(Stibbe 2015). The study suggests further research of this project for the use of other linguistic choices and structures to uncover supplementary dimensions.

Finally, the analysis endorses that corpus techniques are helpful for the comprehensive investigation of media discourses (with big data) related to the description of the ecological concerns. In this regard, collocations networks and keywords (providing thematic trends) analysis can be useful techniques.

List of abbreviations

BNC – British National Corpus

COCA – Corpus of Contemporary American English

SGI – Saudi Green Initiative

UAE – United Arab Emirates

UN – United Nations

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Résumé

This study is an attempt to explore media representation of the contemporary ecological initiative that is based on the idea of the amelioration of the natural environment. This is referred to as the Saudi Green Initiative or SGI. Initiated by an Arab nation (Saudi Arabia), the project is welcomed by the world because it involves a country that is one of the largest suppliers of oil to the world. Along the lines, it is also esteemed and illustrated by various media platforms. In this regard, the current study analyses the Arab media discourse (in particular online newspapers) for the presentation of the SGI. To achieve the objectives, there has been prepared a corpus of the selected English-language Middle East newspapers (electronic versions). The findings disclose that the Saudi Green Initiative is appreciated and narrated in the selected media corpus as an ambitious endeavour. The

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projecting collocates (lexical words only) include nouns (*Saudi*, *initiative*, *emissions*, *event*, *vegetation*, *carbon*, *goals*, *summit*, *Riyadh*, *forum*, *inaugural*, *2060*, *prince*, *opening*, *kingdom*, *billions*), verbs (*raise*, *reduce*, *achieve*, *work*, *announce*, *aims*, *cover*, *launched*) and adjectives (*green*, *east*, *ambitious*, *key*). The identified key themes like planting billions of trees, net-zero carbon emission, cutting global methane emission, carbon neutrality, climate action, energy transition, land degradation, combat pollution, climate target, coastal environment, green project, etc. depict how environmental sustainability themes are addressed in the project. All in all, in terms of collocations and keywords, the selected media portrays the SGI as a plan with affirmative linguistic choices.

Key words: corpus linguistics, ecolinguistics, media discourse, Saudi Green Initiative, environmental sustainability, collocation network, themes.

Appendices

Appendix A

Web links for the Newspapers:

- https://www.arabnews.com/
- https://saudigazette.com.sa/
- https://www.thenationalnews.com/gulf/
- https://gulfnews.com/
- https://www.khaleejtimes.com/
- https://www.gulftimes.com/
- https://www.gulf-times.com/ (Qatar)
- https://www.aljazeera.com/
- https://egyptindependent.com/
- https://www.gdnonline.com/index.html
- https://www.kuwaittimes.com/
- https://cyprus-mail.com/

Appendix B

▼ Span 5<>5 ▼ Statistics 03 - MI

Saudi Green Initiative

Freq: 130 - Collocates: 46

Index	Status	Position	Collocate	▼ Stat	Freq (coll.)	Freq (corp...
1	○	L	speech_n	8.8705977...	7	6
2	○	L	opening_n	8.1627783...	5	7
3	○	L	inaugural_...	7.6482055...	5	10
4	○	R	forum_n	7.3180568...	35	88
5	○	R	vegetation_n	6.8826706...	5	17
6	○	L	key_adj	6.4258130...	6	28
7	○	R	cover_v	6.3851709...	5	24
8	○	R	sgi_n	6.2052619...	16	87
9	○	R	riyadh_n	6.0134898...	19	118
10	○	R	saturday_n	5.9757800...	8	51
11	○	R	raise_v	5.8002086...	5	36
12	○	R	east_n	5.7222060...	15	114
13	○	R	middle_n	5.6971150...	15	116
14	○	L	under_con	5.5778161...	5	42
15	○	L	at_con	5.3797166...	22	212
16	○	L	goal_n	5.1887738...	8	88
17	○	R	aim_v	5.0188488...	8	99
18	○	R	work_v	5.0159372...	5	62
19	○	L	through_con	4.9928535...	5	63
20	○	M	part_n	4.8581285...	6	83
21	○	R	which_other	4.5893117...	9	150
22	○	R	reduce_v	4.5864292...	10	167
23	○	R	include_v	4.5778161...	5	84
24	○	R	summit_n	4.5778161...	5	84
25	○	R	crown_n	4.5189224...	10	175
26	○	L	achieve_v	4.5052474...	6	106
27	○	R	announce_v	4.4518082...	6	110
28	○	L	the_other	4.4401106...	201	3715
29	○	R	investment...	4.4111662...	7	132
30	○	R	prince_n	4.3713652...	13	252
31	○	L	mohamme...	4.3407769...	5	99
32	○	R	on_con	4.2945685...	18	368
33	○	R	green_n	4.1435850...	10	227
34	○	R	will_v	4.1073240...	18	419
35	○	L	with_con	3.9578899...	11	284
36	○	R	billion_other	3.9477657...	5	130
37	○	L	of_con	3.7465705...	55	1644
38	○	L	say_v	3.7040163...	14	431
39	○	L	we_pron	3.6940091...	8	248
40	○	L	@card@_o...	3.6210893...	28	913
41	○	R	this_other	3.4129889...	6	226
42	○	R	in_con	3.3412795...	29	1148
43	○	R	its_pron	3.2706850...	7	291
44	○	L	by_con	3.2311201...	11	470
45	○	R	be_v	3.2243391...	28	1202
46	○	R	initiative_n	3.0269675...	9	443

Figure 2. Collocates of Saudi Green Initiative and SGI (Created by using LancBox 6.0)

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▼ Span 5<>5 ▼ Statistics 03 - MI

SGI

Freq: 87 - Collocates: 29 - Shared collocates: 17

Index	Status	Position	Collocate	▼ Stat	Freq (coll.)	Freq (corpu...
1	○	L	inaugural_...	8.4990212...	6	10
2	○	L	set_n	7.5579146...	5	16
3	○	L	the_n	7.0135942...	6	28
4	○	L	launch_v	6.6170769...	7	43
5	○	R	forum_n	6.4769948...	13	88
6	○	R	event_n	6.3484613...	5	37
7	○	R	ambitious_...	6.2359867...	6	48
8	○	R	aim_v	6.1915925...	12	99
9	○	L	green_n	5.7313662...	20	227
10	○	L	initiative_n	5.1997112...	27	443
11	○	L	at_con	5.0930287...	12	212
12	○	R	riyadh_n	4.6752717...	5	118
13	○	L	saudi_n	4.5507600...	22	566
14	○	L	the_other	4.1841951...	112	3715
15	○	R	will_v	4.1101427...	12	419
16	○	L	he_pron	4.0998499...	6	211
17	○	R	an_other	4.0422149...	5	183
18	○	L	with_con	3.8935944...	7	284
19	○	L	on_con	3.8823497...	9	368
20	○	L	say_v	3.8063707...	10	431
21	○	R	be_v	3.5283274...	23	1202
22	○	R	a_other	3.4110279...	16	907
23	○	R	its_pron	3.3730394...	5	291
24	○	R	to_other	3.2702024...	28	1750
25	○	M	in_con	3.2410047...	18	1148
26	○	L	of_con	3.1968482...	25	1644
27	○	R	by_con	3.1668246...	7	470
28	○	R	have_v	3.0187559...	5	372
29	○	R	and_con	3.0172392...	23	1713

Figure 3. More Collocates of Saudi Green Initiative and SGI (Created by using LancBox 6.0)

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Appendix C

Key Phrases (first 200 are attached as sample)

SKETCH ENGiNE

rpus.

tdated term extraction configuration (term grammar). Recompile your corpus with the latest term grammar for better results. R

Word	Word	Word
1 net zero	68 cutting global methane	135 tree in the region
2 billion tree	69 cutting global methane emission	136 impact of fossil fuels
3 circular carbon	70 net zero carbon emission	137 worldwide emission
4 circular carbon economy	71 zero carbon emission	138 role in the security
5 carbon economy	72 net zero carbon	139 fossil fuel export
6 carbon emission	73 billion of trees	140 oil revenue
7 degraded land	74 quality job opportunity	141 inclusive future
8 global target	75 climate conference	142 hydrocarbon industry
9 carbon neutrality	76 green hydrogen	143 area equivalent
10 crown prince	77 zero carbon	144 fuel export
11 global methane	78 strategic initiative	145 total land area
12 energy transition	79 environmental initiative	146 global airline
13 oil exporter	80 green bond	147 production in the region
14 climate action	81 previous target	148 hydrocarbon production
15 green initiative	82 ton of carbon emissions	149 green economy
16 global energy	83 carbon capture technology	150 high-quality job
17 hectare of degraded land	84 set of initiatives	151 climate change summit
18 global contribution	85 reforestation program	152 change summit
19 carbon capture	86 fossil fuel	153 sustainability strategy
20 climate envoy	87 capture technology	154 burning fossil fuel
21 land degradation	88 emissions reduction target	155 climate change challenge
22 combat pollution	89 next green era	156 practical solution
23 net-zero emission	90 reforestation program in the world	157 annual forum

keywords?corpname=user%2FAnsahameed%2Fmiddle_east_media_sgi&tab=advanced&alnum=0&exclude=1&ktab=terms&minfreq=3&onealpha=(

Keywords | Sketch Engine

24 top oil exporter	91 political climate action	158 change challenge
25 energy minister	92 percentage of protected areas	159 oil market
26 top oil	93 green summit	160 climate goal
27 circular economy	94 spare capacity	161 climate target
28 global methane pledge	95 total land	162 green project
29 methane pledge	96 summit last year	163 sustainable city
30 stability of global energy markets	97 global tree	164 investment fund
31 stability of global energy	98 quality job	165 regional centre
32 net-zero carbon emission	99 tonne of carbon emissions	166 economic diversification
33 net-zero carbon	100 global temperature	167 protected area
34 global initiative	101 clean fuel	168 cent of the global tree
35 energy market	102 emission of methane	160 cent of global contributions
36 determined contribution	103 reduction target	170 global tree planting target
37 global energy market	104 carbon emissions reduction	171 phase of afforestation
38 methane emission	105 climate crisis	172 leading role in strengthening security
39 billion riyal	106 global carbon emission	173 first phase of afforestation
40 opportunity for the private sector	107 pre-industrial level	174 percent of the global target
41 global effort	108 climate challenge	175 leading global producer of oil
42 reducing carbon emission	109 program in the world	176 open invitation for the world
43 global carbon	110 marine life	177 goal for individual states
44 reducing carbon	111 stabilising energy market	178 worldwide emissions target
45 green era	112 global initiative on slashing emissions	179 billion tree in the region
46 hectare of degraded lands	113 role in stabilising energy	180 stability of global oil markets
47 gas era	114 concept of a circular carbon	181 enhanced international relationship

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48 environmental challenge	115 role in stabilising energy markets	182 blue ammonia
49 investment in renewables	116 initiative on slashing emissions	183 tree planting target
50 oil producer	117 pioneering role in stabilising energy	184 facing many environmental challenge
51 climate summit	118 clean hydrocarbon technology	185 stability of global oil
52 global methane emission	119 slashing emission of methane	186 leading role in the security
53 pioneering role	120 million of high-quality jobs	187 role in strengthening security
54 confronting climate change	121 clean hydrocarbon	188 global producer of oil
55 confronting climate	122 stabilising energy	189 current global target
56 global oil	123 planting billion of trees	190 zero-net emission
57 economy approach	124 planting billion	191 net-zero target
58 combating climate change	125 first set of initiatives	192 invitation for the world
59 combating climate	126 initiative in the energy sector	193 agreement goal

:eywords?corpname=user%2FAnsahameed%2Fmiddle_east_media_sgi&tab=advanced&alnum=0&exclude=1&ktab=terms&minfreq=3&onealpha=(

Keywords | Sketch Engine

60 emissions reduction	127 dynamic baseline	194 afforestation initiative
61 emissions target	128 hydrocarbon technology	195 saudi energy
62 ton of carbon	129 initiative in the energy	196 academic pioneer
63 leaked document	130 recorded remark	197 achieving net-zero
64 coastal environment	131 leading role	198 total protected area
65 energy mix	132 circular economy approach	199 spark innovation
66 emissions cut	133 slashing emission	200 sustainable city in the world
67 tonne of carbon	134 ambitious roadmap	

Figure 4. SketchEngine key-terms results (Created by using SketchEngine)

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METAPHORICAL LEXICAL BLENDS RELATED TO *BREXIT*: COGNITIVE PROCESSES OF MEANING CONSTRUCTION AND DISCURSIVE EFFECTS

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Abstract: This study analyses three metaphorical lexical hyper-blends: *Brexistential crisis*, *Brexititis*, and *Brexchosi*s with the use of Conceptual Metaphor Theory and Conceptual Integration Theory. These neologisms and their humorous effects transpire as a consequence of blending, particularly its compression and decompression procedures. Discursive effects, namely, comism and persuasion, are elicited by Critical Discourse Analysis and Incongruity-Resolution Theory of humour.

Keywords: Brexit, Brexit-related discourse, comic effect, conceptual integration, conceptual metaphor, hyper-blend, meaning compression / decompression, metaphorical lexical blend.

1. Introduction

The main intention behind this article is to present the analysis of the metaphorical lexical blends based on the concept BREXIT. The meaning construal of such blends is explained in terms of Conceptual Metaphor Theory by Lakoff and Johnson (1980) and Conceptual Integration Theory by Fauconnier and Turner (2002). Additionally, the discursive effects of using lexical blends of the kind are explicated by means of Critical Discourse Analysis. The objective of the paper is to investigate the procedure of the blends' interpretation with recourse to underlying conceptual metaphors, as well as mapping input spaces, producing blending and compressing / decompressing linguistic data, together with the measurement of how such conceptual integration processes arise and what discursive effects they may produce. The expressions under scrutiny are collectively referred to as hyper-blends which arise due to compression/decompression processes of conceptual blending and whose basic meaning is motivated by conceptual metaphors, for instance, BREXIT IS A DISEASE. The discursive effect of these hyper-blends is comism emerging as a result of the duality of their origin. In its turn, this impacts on conceptualisers whose mental models are shaped by the media with the aid of such Brexit-oriented language, which produces an entertaining effect.

Brexit-related vocabulary has been studied extensively in the recent years due to its topicality. However, the present study is innovative within the field since it employs both Conceptual Integration Theory and Critical Discourse Analysis in order to account for the holistic meaning of metaphorical lexical blends pertaining to Brexit, including its sociological background.

The article offers an explanation of the fascination behind the Brexit-related language. It introduces the main toolkit to be used in the analysis, namely, Conceptual Integration Theory with its main tenets, such as mental spaces, mapping, blending, hyper-blends, running of the blend, or compression/decompression. Afterwards, the main postulates of Critical Discourse Analysis are presented, together with the introduction of humour-related concepts to be employed in the analysis, specifically, incongruity and incongruity resolution. Following the theoretical overview is the empirical part of the study, with the in-detail analysis of three metaphors related to Brexit: *Brexistential crisis*, *Brexititis*, and *Brexchosis*. Drawing on the results of this analysis, conclusive generalizations are formulated. In particular, it is established that blending can explain novel renderings of meaning in the metaphorical lexical expressions based on the

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cluster of entities of dual origin, one being linked to Brexit, the other referring to phenomena of everyday life.

Next, it is noteworthy that Critical Discourse Analysis has enabled the authors to draw the inferences concerning social cognition and interpretation of the blends under study. To be specific, it has been found out that the media using Brexit-related linguistic expressions are capable of impacting on their audiences, forming their attitude towards Brexit, for instance, via humour. This explains how emergent social meanings are influenced by the media. Eventually, it is vital to point to the novelty of synergizing conceptual blending and critical discourse analysis, which helps to capture the interpretation of the newly-coined British-oriented linguistic expressions and their impact on the language users and their mental models. To sum up, the combined toolkit may not only offer an extensive explanation of language workings and its processes, but can also relate to the social cognition of language users and the formation of collective mental models as influenced by the mass media which always use original and novel language for a purpose. Thus, the approach that combines the above-mentioned theories deals both with how and why humorous neologism are created and how they function in language use or social cognition.

2016 was a very important year for the contemporary British politics as on June 23 the British decided on their membership in the European Union by participating in a momentous referendum. The proponents of leaving the Union outvoted those, who preferred to remain part of it by a very narrow margin. Nevertheless, politicians decided to "follow the will of the people" and deliver what came to be known as Brexit, as promised. What followed was a long-drawn negotiation process and a lot of political rope-pulling between the UK and the EU. Finally, in 2019, the Withdrawal Agreement was signed and it entered into force on February 1, 2020. Unsurprisingly, all the stages that led to this conclusion were closely followed by journalists and political commentators all over the globe. The discourse narrating the Brexit referendum, negotiations with the EU, numerous changes in the British government, fluctuations in the public opinion concerning the issue as well as the final withdrawal and all its consequences created an adequately dynamic, innovative, and at times controversial discourse. Multiple heated debates in the British Parliament, a gamut of political speeches and vast media coverage as well as the never-stopping online commentary in various social media and Internet forums have generated a semi-specialised and highly specific Brexit-related terminology. For instance, the infamous phrase uttered by the British Prime Minister Theresa May *Brexit means Brexit* became a soundbite (for a constructionist analysis of the phrase see: Mompean and Manzanares 2019). Later, this tautological pattern appeared in a number of ironically coloured utterances, e.g., *Leave means leave* (Leave means leave, *s.a.*), *Trump means Trump* (Howes 2016), *Eurovision means Eurovision* (Ryan 2018). Due to its association with the precedent utterance *Brexit means Brexit*, the construction *X means X* came to be used humorously or ironically in order to bring the discussion on some thorny subject to an end or avoid answering a difficult question. *Brexit means Brexit* has been called a "meaningless mantra" by the opponents of Britain's leaving the European Union (Brooks 2016) and considered a firm statement of attitude by the Brexit supporters. With some degree of certainty, it can be claimed that even now, after Brexit has taken effect, the term still means different things to different people (Menon 2020).

More importantly, Brexit-related discourse has been a breeding ground for creation of multiple metaphoric linguistic expressions used to better explain and more graphically describe the political situation in the UK. This topic has been studied extensively, but it is beyond the scope of this paper to provide an exhaustive overview of respective studies that have already been published in this domain. It is, however, worth mentioning some of them for illustrative purposes. Musolff (2017) analyses the metaphorical slogan "Britain at the heart of Europe" and its possible role in influencing voters' preferences and shaping the result of the referendum. Bilyk and Pyliachyk (2018) focus on the role of metaphor in describing the experience of modern society.

In particular, they consider such conceptual metaphors of Brexit as BREXIT IS A HUMAN BEING, BREXIT IS A NATURAL PHENOMENON, and BREXIT IS A DISEASE and ponder on their role in shaping linguistic metaphors and conceptualisations (see note 0). Đurović and Silaški (2018) investigate the BREXIT IS A DIVORCE metaphor using the critical metaphor analysis approach. Tincheva (2019) focuses of the metaphorical representation of Brexit in the period immediately following the Brexit referendum. Charteris-Black (2019) provides a thorough overview of metaphors used in the rhetorical Brexit-related language and their implications. Finally, for monomodal and multimodal representations of conceptual metaphors of Brexit one can consult Morozova (2017)[0].

Apart from ingenious metaphors, other interesting expressions abound in Brexit-related discourse, for instance novel creations based on blending two or more lexemes. Lexical blends (Kemmer 2003), i.e., combinations of two or more lexemes creating a novel form whose meaning is not a direct derivative from the meanings of its constituent parts, but also includes emergent qualities (see in more detail below), are especially interesting. Lexical blends that are built on the concept BREXIT include, but are not limited to, the following examples:

Braccident (Brexit + accident) (https://comresglobal.com/pollwatch-from-graccident-to-braccident/);

Brangover (Brexit + hangover) (https://businessinsider.com.pl/international/welcome-to-the-brangover/q5hhz4l);

Brapocalypse (Brexit + apocalypse) (https://businessinsider.com.pl/international/there-isnt-going-to-be-a-brapocalypse/mjcwszy);

Brarmageddon (Brexit + Armageddon) (https://finance.yahoo.com/news/isnt-going-brapocalypse-133813818.html);

Bregret (Brexit + regret) (https://www.macmillandictionary.com/dictionary/british/bregret);

Bremain (Brexit + remain) (https://en.wiktionary.org/wiki/Bremain);

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Bremorse (Brexit + remorse) (https://www.dailysabah.com/feature/2016/07/02/first-brexit-then-bremorse-is-breturn-possible);

Brenial (Brexit + denial) (https://metro.co.uk/2016/10/16/brexiteers-are-in-brenial-according-to-nick-clegg-6194937/);

Brepression (Brexit + depression) (https://blogs.lse.ac.uk/brexit/2016/12/22/now-thats-what-i-call-brexit-delving-into-the-brexicon-of-brexit/);

Brevastation (Brexit + devastation) (https://slate.com/human-interest/2016/06/why-has-brexit-sparked-an-explosion-of-wordplay.html);

Brexacerbation (Brexit + exacerbation) (https://ukandeu.ac.uk/brexacerbation-and-the-embedding-of-brexit-in-everyday-family-life/);

Brexcrement (Brexit + excrement) (https://www.irishtimes.com/news/politics/miriam-lord-silence-is-the-golden-rule-for-brexit-1.3768458);

Brexenophobia (Brexit + xenophobia) (https://www.theodysseyonline.com/brexit-meme-blowup);

Brexicide (Brexit + suicide) (http://brexicide.org/);

Brexicitement (Brexit + excitement) (https://www.nationalreview.com/corner/brexcitement-polls-show-brexit-momentum/);

Brexicon (Brexit + lexicon) (https://www.theguardian.com/politics/shortcuts/2019/nov/07/the-brexicon-how-well-do-you-know-your-brexit-jargon);

Brexiety (Brexit + anxiety) (https://www.collinsdictionary.com/dictionary/english/brexiety);

Brexiternity (Brexit + eternity) (https://www.arabnews.com/node/1882771);

Brexodus (Brexit + exodus) (https://www.investopedia.com/terms/b/brexodus.asp);

Brexplosion (Brexit + explosion) (https://www.project-syndicate.org/commentary/market-vs-state-conundrum-by-yoon-young-kwan-2016-06);

Brexpulsion (Britain + expulsion) (https://blogs.lse.ac.uk/europpblog/2015/08/05/push-or-jump-why-the-uk-could-be-facing-a-brexpulsion-rather-than-a-brexit/);

Brextermist (Brexit + extremist) (https://globalnews.ca/news/5848254/brexit-what-does-it-mean/);
Brexthrough (Brexit + breakthrough) (https://www.thesun.co.uk/news/5738996/brexit-guy-verhofstadt-eu-citizen-rights-trade-talks-start-soon/).

There has also been an upsurge in visual as well as multimodal representations of Brexit and Brexit-related phenomena. Lennon and Kilby (2020) conduct a multimodal discourse analysis of Brexit based on a corpus of political cartoons. Oleiwi and Salih (2019) also research political cartoons concerning Brexit in order to account for cohesive ties between them. Dongying (2020) focuses on the JOURNEY metaphor in Brexit-related political cartoons. Apart from cartoons, Brexit-related themes have also been analysed on other types of data found on the Internet in general and in various social media in particular. For instance, Bouko (2020) and Bouko et al. (2021) analyse multimodal semiotic entities as means of representing emotional reactions to Brexit on Flickr. Brexit has also been addressed in an increasingly prolific genre of the Internet memes. Cana Ortiz (2019), among others, studies Brexit-related political memes. Multimodal research concerning Brexit is abundant; however, it is beyond the scope of the present paper to provide a detailed overview of this issue.

2. Materials and methods

The present paper is maintained within the methodological framework of cognitive linguistics as well as critical discourse analysis. Texts have been examined by applying Conceptual Metaphor Theory in order to bring to light conceptual metaphors underlying each hyper-blend, Conceptual Integration Theory, which explicates in detail how the correspondences between input space 1, which is BREXIT in each case, and another input, are attained and in what manner they blend, using compression and/or decompression. Further, the combined theoretical approach is enriched by the incongruity-resolution theories of humour, which start operating once the given blend is being run and its novel meaning interpreted; eventually, the socio-cultural context, which is elicited with the help of Critical Discourse Analysis, is reconstructed for the new meaning educed.

We find it necessary to point out that the present paper is not a corpus-driven quantitative study, but a qualitative study of a linguistic phenomenon, which is only illustrated here by a selection of examples extracted from Internet sources, including online press articles, blogs, and fora dealing with Brexit-related topics. The data set was sampled manually. First, we selected novel lexical blends prefixed with (*Brexi-*, *Brex-*, *Bre-*, *Br-*, *B-*) from online sources. Pre-selected blends were then verified in various dictionaries to establish their status as neologisms (defined in this article as words which are in the process of entering the more common use, but are not yet established enough to appear in mainstream dictionaries). Finally, we selected three expressions (*Brexistential crisis*, *Brexititis*, and *Brexchosis*) to serve illustrative purposes only. We made use of the intentional sampling method, i.e., the selection of empirical material was done with the purpose of meeting specific prescribed criteria. We believe that the three linguistic expressions subject to analysis are best-fit for showcasing the benefits of the analytical tools that we adopt in this research. Additionally, the above-mentioned expressions are all medically-oriented neologisms, and thus, we limit the scope of discussion to just one conceptual domain, which enables us to maintain the length of this article within publishable limits.

3. Conceptual Metaphor Theory, Conceptual Integration Theory, and Humour Studies Basics

Metaphor has been of interest to numerous linguists and other scholars for centuries. Traditionally, it was perceived only as a linguistic phenomenon, considered a stylistic device used in literary texts and poetry. The publication of Lakoff and Johnson's (1980) milestone book "Metaphors we live by" has challenged and changed this view of metaphor. Metaphors ceased to be perceived as restricted to language alone, but rather began to be conceptualised as matters of thought. "Both everyday language and the conceptual system we use for everyday purposes make use of linguistic metaphors and the corresponding conceptual metaphors that underlie them" (Kövecses 2015: ix). This view is known as Conceptual Metaphor Theory (hereinafter referred to as CMT).

Conceptual metaphor, like a traditional poetic metaphor, consists of linking two concepts together, creating correspondences between them in order to facilitate understanding of an abstract entity by structuring it like a more concrete one. In order for this metaphorical pairing to be established, there must be a certain degree of similarity between the two concepts or domains. As Kövecses explains,

> "[i]n *cognitive linguistic view, metaphor is defined as understanding one conceptual domain in terms of another conceptual domain. [...] Examples of this include when we talk and think about life in terms of journeys, about arguments in terms of war, about love also in terms of journeys, about theories in terms of buildings, about ideas in terms of food, about social organizations in terms of plants, and many others. [...] Thus, for example, we have coherently organized knowledge about journeys that we rely on in understanding life*" (2002: 4).

Two domains, the target domain (the more abstract, more complex, and less familiar one) and the source domain (the more concrete, simpler, and more familiar one) are connected by means of correspondences, or mappings, between their similar aspects.

Among the most common source domains, Kövecses (ibid.) mentions the human body, health and illness, animals, buildings and construction, machines and tools, money, light and darkness, heat and cold. They are commonly used because they refer to those domains of our experience that we are familiar with. Humans have life experience of most of them and have respective first-hand knowledge. Also, this knowledge is universal and shared across languages and cultures. Some of the most common target domains, according to Kövecses, are: EMOTION, DESIRE, MORALITY, THOUGHT, TIME, LIFE and DEATH. These are the concepts which are only indirectly accessible to our understanding and thus, "[m]etaphor has the power to create reality for us; it is the major way in which the human cognitive system produces nonphysical reality, that is, the social, political, psychological, emotional, and so on worlds" (2015: 83).

The importance of conceptual metaphor for analysing the discourse of the media has been already recognised (Kövecses 2018). However, it is also advisable to introduce yet another tool to the methodological toolbox in order to be able to account for a broader scope of discursive phenomena. Another conceptual operation that is frequently manifested in discourses of various sorts is conceptual integration. Conceptual Integration Theory (hereinafter referred to as CIT), also known as conceptual blending theory, has been one of the most influential and widely applied theories in cognitive linguistics in the recent years. It is a useful tool for explaining the creation of novel, unconventional forms with emergent meanings. CIT originates from the theory of mental spaces proposed by Fauconnier and defined as "constructs distinct from linguistic structures but built up in any discourse according to guidelines provided by the linguistic expressions" (1994: 16). The theory of mental spaces has been later developed significantly, however, it still finds its application in modern linguistics and interdisciplinary studies. CIT itself has been further developed (Coulson 2001; Fauconnier & Turner 2002; Grady et al. 1999) and refined (Brandt 2012; Brandt & Brandt 2005) throughout the years and continues to influence the field of cognitive linguistics. CIT postulates the dynamic and emergent nature of meaning creation, and thus can be successfully applied to the analysis of neologisms, occasionalisms, and other nonce formations. Also, contextual modifications of the meanings of compounds can be accounted for by means of CIT (Prażmo 2017; Waszakowa 2017). Additionally, the theory can be successfully applied for explaining the emergent nature of such discursive senses as humour, irony, or sarcasm.

Turner (2014) recognises within CIT the procedure, which he refers to as advanced blending, double-scope blending, or vortex blending. According to Turner, this mental capacity is connected to "[…] a level of blending that seems to be routine for human beings across all domains of thought, and yet, to all indications, unavailable to members of other species" (ibid., 29), which makes it a typically human ability. Advanced blending, then, takes place when we mix the contents of two mental spaces that are conflicting and whose organisational structure seems to be in sharp contrast with each other, which results in the production of highly creative blends. A case in point is Turner's statement: "If I were my brother in law, I would be miserable." where we clearly integrate two different inputs: the existence of Turner's and the life of his brother in law's (ibid., 29-30). Furthermore, Turner proposes that it is possible to use an already blended space as a novel input and mix its contents with another input mental space, which might or might not be a blend. This leads us to the origin of the so-called hyper-blend (ibid., 216), for example, the idea of a *selkie* (ibid., 29-30).

Another crucial operation that is needed in CIT is compression, e.g., compression of time, space, or identity, just to mention a few (ibid., 113-135). Interestingly, together with compression come disintegration and decompression as well, since frequently it is impossible for us to perceive the patterns of relations to be blended between two input spaces until we decompress and disintegrate the structure moderately. For instance, in the Buddhist Monk riddle, one decompressed element is the direction of travelling on the part of the monk, i.e., in one input he ascends, in the other he descends. Clearly, without such a mapping, despite the fact that it needs to be decompressed initially, we would not be able to superimpose the two inputs and resolve the riddle (ibid., 119). Further, conceptual blending often leads to the creation of metaphorical conceptualisations as two input spaces are commonly based on two separate domains[1]. Such metaphorical blends (Schröder 2015; Semino 2010) play an important role in structuring discourse.

The two theories depicted above can be used independently to account for the conceptual phenomena manifested in language, it is, however, advantageous to couple CIT with CMT while analysing more complex expressions. Grady et al. (1999) explore the relation between conceptual metaphor and conceptual integration theory. They recognise the existence of "metaphorical blends" in which prominent elements from the input spaces fuse into the blended space and a "single element in the blend

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corresponds to an element in each of the input spaces" (Grady et al. 1999: 114). Specifically,

> "[*M]etaphorical blends [...] involve a different kind of fusion, in which certain very salient aspects of input domain structure are prohibited from entering the blend, and in which some salient structure in the blended space is prevented from floating back to the inputs. That is, there is information from one of the inputs (the target) that must be ignored in the blend*" (ibid., 115).

Metaphorical blends differ considerably from other non-metaphorical cases of conceptual integration. In metaphorical blends, elements from input spaces fuse together without retaining their individual identity. Some blends are figurative, but not metaphorical and allow for the retention of individual identity, such as in the example of the imaginary discussion between a modern-day philosopher and Immanuel Kant (Fauconnier & Turner 1998) or a historical vs modern boat race (Fauconnier & Turner 2003). In these cases, there is no blending of identity, but rather imposition of two elements onto a single frame[2].

3.1 Comism emerging as a result of conceptual integration

Another theory that might prove influential in our research originates within humour studies. Humour is a multi-faceted phenomenon with numerous factors essential for its understanding. It has sparked interest across many different fields since antiquity, and today it is the métier of many. Humour is influenced by such notions as nationality, morality and language, or users of language who create and receive humour, with their individual subjective preferences (Chiaro 1992: 5; Ross 1998: 75-109). Specifically, what different people find amusing is closely associated with their gender, age, or most importantly, their social status and educational background. In addition, different communities and cultures, however, related they may be, usually exhibit a different style of comedy, as is the case with British and American people (Kuipers et al. 2005: 58-59). Thus, humour conveys a firm impression of being a complex notion.

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In the contemporary world, humour plays a special role due to the fact that it is used as a tool to convey messages, communicate, fight politically, raise awareness, or simply amuse. It is almost impossible to provide a short and succinct definition of humour, for the reason that humour is, in itself, an umbrella term (Dynel 2009) pertaining to different fields of study, such as literature, linguistics, or philosophy. As a genre, humour incorporates other related terms, e.g., comedy, joke, cartoon, slapstick, or stand-up, which accounts for the issue of circularity in terms of definition proposing. There are also notions such as 'laughter' or 'sense of humour' that inevitably lead to the definitional confusion. Humour, finally, constitutes such a versatile area of study that it needs a specific lens to be scrutinized under, in order to make sense of it. As this article is restricted to the field of cognitive linguistics and discourse analysis, we presume that the definitional aspect of it ought to be provided by such studies only. In this light, we can observe that humour is regarded as a clash of opposing elements, in alliance with incongruity theories of humour (Attardo 1994: 48-49).

Although the notion of incongruity is vague in itself or ill-defined, its role being greatly overestimated by theorists (Ritchie 1999; 2009; Veale 2004), it can be generally assumed for the purpose of this article that incongruity is synonymous to opposition or clash. The nature of such an opposition can be varied (Samokhina & Pasynok 2017: 286) and it depends heavily on the context of a language user. Yet, the crux of any humour lies in an opposition of a certain kind, which primarily hinges on the violation of what is being expected as contrasted with what actually occurs (Couder 2019: 5). Furthermore, incongruity theories have elicited the so-called resolution theories which entail that the perception of incongruity itself is merely a beginning of a comprehension procedure, and it is not enough for humour to ensue. What is needed is the incongruity resolution (hence the name of these set of theories, i.e., incongruity-resolution theories), which then allows for humour appreciation (Attardo 1994; Ritchie 1999; Rothbart 1976: 38)[3].

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As it happens, the resolution of incongruity goes hand in hand with CIT, for in the blending process, the running of the novel blend necessitates the re-evaluation of the inputs and their contents as well as the reshuffling of the meaningful elements within the blend, together with additional data that does not originate from the matrix of the mental spaces, for instance, the relevant cultural information. All this can be treated as a resolution of incongruous elements within conceptual integration and it ought to be accepted as such. Interestingly, the cultural element in humour also plays a crucial role within discourse analysis, as it constitutes another dimension of communication, namely social cognition. According to van Dijk, what we understand by social cognition pertains to "socially shared representations of social arrangements, groups and relations, as well as mental operations such as interpretation, thinking and arguing, inferencing and learning [...]" (1993: 257). In this manner, it is possible to conclude that humour is part and parcel of social cognition and impacts on the mental models and meaning creation of the social group it concerns. Therefore, humour ought to be regarded as a powerful tool which can be used to control discourse and the management of social representations, i.e., the minds of people and their opinions. Further, it is crucial to observe that conceptual integration facilitates the production of more complex blends on the basis of what seems to be already blended information. Thus, we arrive at hybrid blends which are complicated and which need contextual details in order to be deciphered. Yet in British humour, the more complex the output, the funnier it is found and the better it is received (Jabłońska-Hood 2020). Hence, such advanced conceptual integration, drawing on already blended data, can be said to be one of the fundamental features of the way in which humour operates within the British community. This quality of comedy leads to a competent discourse management to the extent that an individual using humour in discourse is well-perceived and can, via its comical effects, impact their audience (ibid.). For joining in laughter, especially to do with the emotion-inducing issues such as Brexit, enables the joining of the minds. This basic yet successful discourse strategy is noteworthy in politics, as we shall demonstrate below.

A crucial factor that bears an impact on any humour study is the socio-cultural context that aids the comprehension of what is funny. In British humour, social and cultural allusions are of particular significance. Namely, it has been noted (Richards 2009) that humour has shaped the notion of English identity for many years. Whenever one discusses English humour, one must simultaneously refer to the identity of the English who devised it. In fact, it is their identity that has been driving the urge to laugh and to find things amusing. It ought to be, therefore, acknowledged that English people define themselves and their sense of humour via their identity and vice versa. Hence, the question of their sense of humour must always be explicated in connection with their culture and how they perceived themselves through times, especially within the political context of Brexit. This fact should bear a profound consequence for critical discourse analysis (hereinafter referred to as CDA), since the close-knit relationship between comedy and its receivers/audience allows for the inspection of discourse analytical characteristics of neologisms that shape the mental models of their language users in the social, political, and ideological respects.

4. Data analysis

In this part, we put under scrutiny three selected examples of metaphorical blends. All of them are analysed within the theoretical framework of the conceptual integration model. One of the input spaces in all the analysed blends is occupied by the lexeme Brexit[4] which is a blend (or portmanteau word) in its own right, consisting of two parts: *Britain* and *exit*, originally created by analogy to *Grexit* (Greece + exit) (for a detailed analysis of the meaning and history of the word see Charteris-Black 2019). BREXIT appears in input space 1 in all the analysed examples, however, its contribution to the overall meaning of a blend differs significantly. Different elements of the domain are profiled in each case or, in other words, a different semantic potential is highlighted.

Thus, the blends put under the microscope in this part are, in fact, meta-blends, multiple-level blends, or hyper-blends, consisting of BREXIT (BRITAIN + EXIT) in one of the input spaces and other concepts, in the second one. Apart from the novel meanings emerging in the blended space, the emergence of discursive effects, namely humour and irony, can also be observed.

Case study 1: Brexistential crisis

The first element analysed – *Brexistential crisis* – is additionally extended to metaphorically include five different stages of the grief (also here): 1. *Brenial*, 2. *Branger*, 3. *Brargaining*, 4. *Brepression* or *debression*, 5. *Bracceptance* or *euukceptance*.

Examples:

(1) *A Brexistential crisis: So what happens now*? (https://www.thejournal.ie/brexit-what-happens-next-5-4567546-Mar2019/);

(2) *The UK is in Brexistential crisis. Is there a way forward?* (https://www.theguardian.com/commentisfree/2016/jul/01/uk-brexit-brexistential-vote-leave-eu-britain);

(3) *Is Britain having a Brexistential crisis?* (https://graziadaily.co.uk/life/real-life/britain-brexistential-crisis/).

Input space 1: Brexit

Input space 2: Existential crisis

Blended space: Brexistential crisis

In light of CIT, the neologism *Brexistential crisis* rests upon the following mental spaces: input space 1 which concerns Brexit, and input space 2 which pertains to existential crisis. Interestingly, the former is already a blended concept composed of two elements, i.e., Britain and its exit from the EU. This blend has operated as an entrenched concept for a couple of years now, and when used here to make a novel conceptual integration, it functions as a hyper-blend, according to Turner (2014).

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Similarly, due to the complexity of the inputs involved, we are faced with a highly creative neologism constituting an example of an advanced blending technique. Namely, *Brexistential crisis* blends the following: Brexit and the moment in life when a person in a dire predicament questions their life and lifestyle choices, the meaning of their existence and its purpose (input spaces 1 and 2 respectively). Hence, the resultant blended space may well be interpreted as a crisis regarding the moment of Brexit, rather than the sole existence. Further, we can extend the blended content and bring about new socio-cultural associations to it, in other words, the emergent structure allows us to interpret the crisis as regarding the British and their unsure future and fears in the face of Brexit. To be precise, we can presume that the *Brexistential crisis* befalls the British population who are opposed to the idea of leaving the European Union and wish to stay within its structure. What is interesting here is the fact that all the British who are dissatisfied with Brexit seem to be compressed to form one person suffering from the *Brexistential crisis*. Also, it is possible to add to the blend some other related issues, such as the political or economic uproar, instability and chaos within the UK, which would map onto the devastation in the life of the *Brexistential crisis* sufferer. All of this translates into the humorous side of *Brexistential crisis*, too. In particular, the neologism in question links two incongruous concepts: an existential crisis, which is a serious psychological disorder and may be a symptom of an underlying depression, and Brexit, a witty label for Britain leaving the EU. Such a striking mapping between divergent conceptualisations results in humour to the extent that it not only explains the state in which many British people have found themselves, but it also perpetuates comedy by means of the amusing link that gives rise to further associations between the original inputs. Namely, *Brexistential crisis* may well become associated, via the emergent structure, with the grave loss of power, position and benefits that Great Britain held within the EU, as well as with five stages of grief connected with such a loss. What this effectively means is that, again, we could perform a novel act of conceptual integration where loss with its five stages of grief would amount to input space 1, and *Brexistential crisis* (including Brexit) would operate as input space 2. As above, the latter is a hyper-blend that makes the whole procedure an act of advanced blending. Within this conceptual integration, we could distinguish a British person in input space 1 who experiences *Brexistential crisis* due to Brexit, which maps onto the person who has suffered from a grave loss of input space 2. Further, we could map *Brexistential crisis* and depressive thoughts and feelings about Brexit from input 1 onto the stages of grief in the following manner: Brexit and the denial of the grave loss equals *Brenial*, Brexit and anger due to the loss means *Branger*, Brexit and bargaining with oneself because of the loss add up to *Brargaining*, Brexit and depression after the loss result in *Brepression* or *Debression*, Brexit and acceptance/ UK or EU acceptance mould into *Bracceptance* or *Euukceptance*. The ease with which novel blended neologisms are formed certainly points towards the creativity of English neologisms, yet it also brings out the comic nature of such blends. They are original, surprising and hence witty, and they give pleasure to the language user who encounters such linguistic expressions. Moreover, their incongruous nature does enhance humour present in the blended space. In addition, it is possible to notice that Brexit and all the matters associated with it, although grave, become the butt of the comedy at hand. This, incidentally, is a very British quality – to amuse oneself at the expense of a painful or even disastrous situation, exaggerating it and laughing at it simultaneously (Jabłońska-Hood 2019, 2020), which in this case is achieved by joining the incongruent inputs of *Brexistential crisis* and a grave loss, namely, death with its grieving process. This socio-cultural referencing, attainable via the emergent structure and extensions to the blend, appears to be at the heart of British political humour, which simultaneously acquires a special rendition for the British public in this way. Namely, using funny neologisms allows for subtle management of society and its cognition, i.e., the access of the media to the public discourse and audience allows for the creation and monitoring of the basic opinions and social attitudes with regard to Brexit. Comedy acts here as a factor that disguises the discourse control and management on the part of the media and makes their social action control appear more subtle or even neutral. Moreover, as in the example above, the grieving person compresses and decompresses

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into the discontented British collectively. Interestingly, we can observe the following metaphors at work in this instance: STATE IS THE BODY as well as STATE IS THE MIND, or CONDITION OF THE STATE IS CONDITION OF THE BODY/MIND. In this light, *Brexistential crisis*, with all its stages, collectively pertains to the whole public of the UK, which definitely exaggerates the issue at take as well as enhances humour in this manner.

Case study 2: Brexititis

Examples:

(4) *Brexititis – A malady with no known cure* (https://www.shropshirestar.com/news/voices/opinions/2018/12/20/brexititis-a-malady-with-no-known-cure/);

(5) *Have you got Brexititis? The condition has a nation in its grip and it's spreading fast* (https://inews.co.uk/opinion/have-you-got-brexititis-condition-has-nation-grip-spreading-fast-81531);

(6) *Are you suffering from Brexititis?* (https://www.thearticle.com/are-you-suffering-from-brexititis);

(7) *Brexititis sufferer makes an emotional appeal to European Court of Justice to be allowed to die* (https://chattychimp.co/2018/12/14/brexititis-sufferer-makes-an-emotional-appeal-to-european-court-of-justice-to-be-allowed-to-die/).

Input Space 1: Brexit

Input Space 2: Inflammation

Blended Space: Brexititis

Online Urban dictionary defines *Brexititis* as "a neurological condition whereby the patient's real personality is suddenly revealed by their simple loss of ability to accept views different to their own, Leave or Remain, to the point at which they suspend all respect for others and then enter into raised levels of judgement and hatred creating social division" (Urban dictionary, *s.a.*). It is a condition caused by excessive thinking about the political situation surrounding Brexit, which manifests itself with a variety

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of symptoms ranging from simple headache through increased temperature, redness and even "hatred creating social divisions". According to Urban dictionary (ibid.), it can be highly contagious, often contracted in pubs and other places where close circles gather, and is most prevalent amongst people at the ages of 30+. It causes the feeling of general unease and angst. This emergent meaning results from the merger of *Brexit* (input space 1 and already a hybrid-blend) and the suffix *-itis* mostly used in medical discourse to designate inflammations (input space 2) of various bodily parts and organs, such as, for example, *appendicitis* (inflammation of the appendix), *tonsilitis* (inflammation of the tonsils), or *bronchitis* (inflammation of the bronchi). Any inflammation, on the one hand, is a highly undesirable state often accompanied by unpleasant symptoms such as swelling and pain. On the other hand, inflammation is part of the immune response by means of which an organism tries to combat an infection. These two frames, BREXIT and INFLAMMATION, coincide and bring about an advanced blend in which BREXIT is conceived of as a cause of inflammation that generates a number of unpleasant functions and at the same time may be combated by the metaphorical immune system of the state. This Brexit-caused INFLAMMATION is thus based on a very common conceptual metaphor STATE IS THE BODY, where social/political problems are diseases that the state is suffering from. Brexit is a disease, a "malady with no known cure", difficult to treat due to its unprecedented nature; there is a need for a doctor (competent politician) or effective treatment (responsible political decisions and sensible measures) in order to solve the problems caused by imminent Brexit and the current political chaos. STATE IS THE BODY is a very powerful metaphor due to its visceral, heavily embodied nature. It reaches deep into human experience and thus is likely to elicit strong reactions, including an actual reaction of the immune systems of the recipients of this metaphor (for more on behavioural immune system see, for instance, Aarøe et al. 2017; Ackerman et al. 2018; Sawada et al. 2018; Schaller & Park 2011). Along the same lines as in the previous example, the British society is compressed here into the sufferer of the *Brexititis*, and the procedure boosts the comical effects to the extent that it appeals to the particular members of the society, making it contextually relevant and hence even more amusing, irrespective of the individual political stance.

Furthermore, the humour of this instance centres upon the surprising and incongruous mapping between a complex socio-cultural phenomenon of Brexit and a malady. Certainly, these two frames do not have too much in common, and their juxtaposition produces a comic effect. Similarly, the strange relation of the incongruous concepts does seem to work for the British public who find the metaphorically-based blend of *Brexititis* amusing, given that there are frequent jokes circulating within the community which are based on the addition of the *-itis* suffix to certain phenomena in order to create a non-existent but funny blend of the name for some social conduct. This practice only strengthens the comism in the case of Brexit, where we encounter a serious political reality with serious consequences for the whole country, which is being made into a joke by comparing it to a disease.

Case study 3: Brexchosis

Examples:

(8) Boris Johnson warns against 'Brexchosis' in key Brexit speech (https://indianexpress.com/article/world/boris-johnson-warns-against-brexchosis-in-key-brexit-speech-5064241/);

(9) A new malady is afflicting the Brits: Brexchosis (http://www.robertfulford.com/2018-04-28-brexit.html).

Input Space 1: Brexit

Input Space 2: Psychosis

Blended Space: Brexchosis

Brexchosis is "a feeling of despair among those who voted to stay in the EU" (Essberger, *s.a.*). The term, like numerous others, was coined by Boris Johnson in one

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of his 2018 "Road to Brexit" speeches. It refers to a dominant, self-deprecating feeling that many people apparently have in regard to leaving the EU. It is the inability to perceive the benefits that would result from liberating the country from the perceived constrains of the EU's bureaucracy. The meaning is constructed on the basis of BREXIT, which functions here as input space 1, and PSYCHOSIS as input space 2, the latter defined as "an abnormal condition of the mind that results in difficulties determining what is real and what is not. Symptoms may include false beliefs (delusions) and seeing or hearing things that others do not see or hear (hallucinations)" (Wikipedia, *s.a.*). In this way, Brexit is represented as an abnormal condition of the state that results in (politicians' and citizens') difficulties in determining what is real and what is not. The so-called "Project fear" and multiple false promises that would never be delivered constitute delusional thinking inherent in *Brexchosis*. *Brexchosis*, similarly to *Brexititis*, is based on an extended version of STATE IS THE BODY metaphor, i.e., STATE IS THE MIND metaphor, or yet more specifically – CONDITION OF THE STATE IS CONDITION OF THE BODY/MIND. The state as well as the citizens are represented as sufferers from this Brexit-induced mental disorder, which leaves them delusional and psychotic. Introducing the concept DISEASE or DISORDER brings about the need for treatment, cure, and medical assistance. The need for cure, in turn, assumes the inadequate state of health and thus automatically activates negative connotations.

Again, in this example we also perceive the strange incongruity between the hybrid-blend *Brexit* and the medical condition *psychosis*, which is responsible for humour. Correspondingly, the public of the UK is compressed here into a person with *Brexchosis*, which reinforces humour via adding to the contextual socio-cultural relevance. Incidentally, based on all the above analyses, we can observe that the British society has a preference for medically-oriented neologisms to do with Brexit, where the idea of leaving the EU is compared to and contrasted with some form of life-threatening illness that affects the general public. What is more, such examples of humorous blending are based on the following metaphors: STATE IS THE BODY, STATE

IS THE MIND; coupled with BREXIT IS A DISEASE, which appear to be highly productive in case of Brexit-oriented, amusing neologism in the context of the British communicative space.

5. Conclusions

The present study investigates the emergence of semantic values as well as discursive effects in selected products of the process of conceptual integration. The object of this article pertains to the novel formations which were coined in Brexit-related discourse in the years following the Brexit referendum (June 23, 2016) and preceding the actual day when the UK has officially left the EU (January 31, 2020). From the wealth of linguistic hyper-blends of interest, i.e., those, which comprise the lexeme *Brexit* or its part, only three linguistic expressions have been selected for the in-depth analysis. They serve illustrative purposes and are meant shed light on the mechanism of conceptual integration and its potential in bringing about not only novel semantic qualities, but also producing specific discursive effects, such as humour via the emergent structure of the blended space as well as having socio-cultural implications. The benefits of combining CMT with CIT cannot be overestimated. Whereas both theories can be applied to successfully account for meaning creation, each of them focuses on different aspects of this process. Both metaphor and blending as cognitive phenomena facilitate understanding of complex social issues and the ways in which they are represented in linguistics discourse. Metaphors are relatively stable conceptual structures that only evolve to reflect human knowledge and understanding of the surrounding world. Thus, they are conventionalised products of social cognition that tend to preserve and perpetuate certain patterns, meanings, and values. Metaphors are well-entrenched and deeply-rooted in a particular community and are relatively slow to change. By contrast, conceptual integration is more dynamic and prone to change. It is better fit for accounting for on-line meaning creation in specific contexts and for specific purposes. Combining the two, thus, produces a synergistic effect in which both stable and flexible aspects of meaning can be accounted for. Additionally, conceptual

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blending – unlike metaphor – also makes it possible to explain non-derivable, emergent meanings and other extra-semantic qualities like humour. In a similar fashion, compression and/or decompression lead to the humour enhancement by making the comedy contextually more relevant for the humour receiver, i.e., a British person. In line with Conceptual Integration Theory, compression secures the linking of a Brit with the whole British society or nation for that matter, such a merger generating a closer relationship between the two. In this manner, the phenomenon of Brexit becomes more relevant for each individual UK resident. Also, the link itself and the possibility of its decompression empowers a straightforward switch between the two identities, the singular and the collective ones, thus exerting a more substantial impact on the humour receiver in shaping their attitude towards Brexit not only as a state concern, but predominantly as a personal affair. In spite of the possibility of both input spaces being negatively charged, the resultant blend possesses humorous and jocular tone since it is incongruous, and its striking incompatibility is usually medically-oriented and in a metaphorical fashion plays upon the convention of treating Brexit as a disease (BREXIT IS A DISEASE) that affects the British (STATE IS THE BODY/STATE IS THE MIND), making it even more relevant and hence funnier. This corporeal imagery produces a particularly strong response in the receiver, further enhancing the impact that metaphorical blends have on the conceptualisation of certain socio-political problems. Thus, both *Brexititis* and *Brexchosis* activate the visceral metaphorical framing by being based upon STATE IS THE BODY and STATE IS THE MIND metaphors respectively. These metaphors presuppose axiological evaluation (based, in turn, on highly embodied image schemas such as HEALTH IS GOOD, DISEASE ID BAD) and as a result, the blends clearly point out to the negative attitude towards Brexit by merging this concept with the concept of physical or mental disorder respectively. This negative evaluation does not hinder the emergence of humour, which appears as a result of incongruity between the input spaces (health-related vs politics-related domains) and the clash that this juxtaposition produces. The *Brexistential crisis* and Brexit five stages of grief exemplify the procedures of advanced blending and hyper-blending, basically referred to as creative

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procedures that scrutinize humour present within the neologisms.

In respect of CDA, it is necessary to conclude that since neologisms constitute a crucial part of text and communication within the mass media, their study must be related to social context. To be specific, the media that possess a direct access to the public domain discourse will create the novel interpretations and thus influence the minds of the British society with the use of humour and the above-mentioned metaphors, so as to produce a negative picture of Brexit. This will, on the other hand, become part of the social cognition for the British. Further, humour will also operate as an access route to manage social discourse and reinforce the negative attitude towards Brexit, too. Additionally, CDA together with CIT, and especially its emergent structure and compression, provide a cognitive toolkit, which is capable of explaining linguistic comedy in novel lexical phrases via its reference to social discourse practices. What is more, politically related, Brexit-oriented neologisms seem to bear a fair number of references to the socio-cultural arena of the British in order to enhance the comic effect and simultaneously gain access and shape the social cognition as well as mental models of the British, with the use of the already entertaining, incongruity-based neologisms. Hence, CIT and CDA ought to be collectively viewed as significant linguistic operations/procedures, which not only shape the social cognition and impact the mental models of language users, but also explicate how discourse may or may not create social emergent meanings and attitudes.

Notes

0. Brexit-related discourse is rife with texts structured upon very elaborate conceptual metaphors (BREXIT IS A DIVORCE, BREXIT IS A GAME, BREXIT IS A DISEASE), other metaphoric linguistic expressions based on orientational metaphors and image schemas (*to stay in the EU, to be out of the EU*) as well as objectification (here understood as the representation of a non-physical entity in terms of a physical one, e.g., describing the "abstract" political phenomenon as a tangible object, in expressions such as: *hard*,

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soft, *smooth*, *clean*, *messy*, *dirty*, *rough*, *spicy*, *mild*, or *hairy* Brexit). It is vital to distinguish between conceptual metaphors and linguistic metaphor. The former concerns two different domains that are brought together in order to create correspondences and help language users conceptualise a more abstract entity in terms of a basic and simpler one, e.g., TIME IS MONEY. The latter is concerned with linguistic expressions that exemplify the conceptual metaphor; here a case in point might be *You're wasting my time* (Lakoff and Johnson 1980: 7).

Other examples of common Brexit-related conceptual metaphors include: BREXIT IS A BATTLE, BREXIT IS A BOXING MATCH, BREXIT IS A CAKE, BREXIT IS A DISEASE, BREXIT IS A DIVORCE, BREXIT IS A GAME OF CARDS, BREXIT IS A GAME OF DICE, BREXIT IS A JOURNEY, BREXIT IS A LEAP (IN THE DARK), BREXIT IS A PRIZE, BREXIT IS A TRAIN CRASH, BREXIT IS A WAR, BREXIT IS AN OBJECT, BREXIT IS BUYING A NEW HOUSE (Charteris-Black 2019).

1. For instance, lexical blends such as *Brexititis* or *Brexchosis* create metaphorical mappings between two disparate domains – the domain of politics and the domain of medicine. Brexit is represented as a disease, and this conceptualisation, in turn, creates metaphorical framing underlying a text and provokes other metaphorical extensions (state as the body, politicians as doctors, policies as treatments, etc.). Incidentally, this metaphorical framing (STATE IS THE BODY) is very common, especially in the British political discourse. According to Musolff (2012), this framing has a number of implications including the entailment that a state can be healthy or ill, when it is ill, it suffers from certain diseases and needs therapy, and finally, the illnesses which devour the state may eventuate from various disease-carrying and disease-spreading agents (e.g., germs, parasites). He further explains the underlying mechanisms of this process in the following way:

"*What is relevant in this analysis from a CDA viewpoint is the argumentative advantage that the metaphor gives its users when they want to (dis-)qualify political developments, social groups or even individuals as threatening the identity or continued existence of a nation state. Instead of laboriously*

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having to demonstrate and back up their claims with facts, which could be critically tested and challenged, the speaker/writer invites the hearer/reader to access knowledge about the undesirability of illness and the necessity for therapy by referring to generally known illnesses and agents of disease. The respective conceptual items (cancer, parasites, decomposition) also carry social, emotional and aesthetic values that influence the interpretation of the utterance" (ibid., 303).

In this way, a certain metaphorical framing may influence the structure of discourse to a great extent, and for this reason neither conceptual metaphors themselves, nor metaphorical blends can be ignored in a comprehensive critical discourse analytical study.

2. Berberović and Mujagić (2017) claim that BREXIT IS A DIVORCE is a metaphor (see also Đurović & Silaški 2018) which gives rise to numerous creative metaphorical blends manifested in language in expressions such as *divorce bill* (financial obligations that the UK has to fulfil in order to leave the Union), *European family* (all the member states), *marriage of convenience* (UK's belonging to the Union), *open marriage* (the deal the UK apparently wanted, but the EU did not accept) and many others. In this blend the UK is represented metaphorically as one of the partners initiating divorce proceedings in order to end a marriage (UK's membership in the European Union represented as marriage of the UK and the EU). The generic space provides a schematic model for being in a relationship. Input space 1 contributes information concerning divorce proceedings and its implications. Input space 2 contains information about the functioning of the European Union and the UK's role in it. What emerges in the blended space is Brexit (Britain's exit from the EU) represented as a divorce. It melds together information from both input spaces and as a result creates a metaphorical blend in which unreal scenario (nation states behaving like humans, having personal relationships and problems, and eventually deciding to file for divorce) becomes possible to be conceptualised. Emergent scenario adds certain emotional colouring to the event (the UK leaving behind an increasingly possessive and abusive partner and terminating a dysfunctional relationship can be perceived as a good thing, even at the cost of a high divorce bill) and as a result may shape public opinion about an event in a certain way.

3. Another interesting perspective that seems to work well alongside incongruity is Koestler's idea of bisociation: "[…] humor results from bisociation – the perceiving of a situation or idea in two habitually incompatible frames of reference. The bisociation causes an abrupt transfer of the train of thought from one matrix to another governed by a different logic or rule of the game" (after Suls 1983: 40). However, Koestler thinks of bisociation as a characteristic of creativity, of which humour is one kind only (Levine 2006: 6). This means that there is no distinction between any other creative incongruity and humour (Suls 1983: 40), and such reasoning may be viewed as problematic in humour studies. Therefore, it is advocated that we veer towards the resolution of incongruity as the theory which will enable us to perceive humorous incongruities and resolve them in an attempt to understand and appreciate humour (for a detailed discussion of humour theory see the following: Attardo 1994; Chapman & Foot 1976; Jabłońska-Hood 2015; Martin 2006; Raskin 1984; Ross 1998).

4. Consider the following passage as an illustration of an exceptional morphological productivity of Brexit and prefixes that derive from it in English:

> "*Many U.K. citizens who voted to Bremain bemoaned the brevastation this brexplosion detonated. Assessing the damage, some Brexiteers now expressed bremorse and bregret, or regrexit, over the results. These Bracksies wondered how the U.K. might stage a breturn. Brecriminations in Parliament began to fly. Some who were in-bretween wished they hadn't skipped the polls on voting day. Dismayed and afraid, immigrants, urbanites, and businesses weighed a brexodus from the U.K. Plenty of brexperts weighed in. A number of tweeters have summed up this brexistential crisis with a tour de force take on Kübler-Ross' classic five stages of grief: brenial, branger, brargaining, brepression or debression, bracceptance or even euukceptance*" (Kelly 2016).

Brexit has provoked a number of forms of prefixes (*Brexi-*, *Brex-*, *Bre-*, *Br-*, *B-*) which continue to be quite productive in contemporary British political discourse, giving rise to numerous neologisms. Neologisms are understood in this article as novel linguistic formations, which are in the process of entering common use, but have not yet entered mainstream dictionaries. They are, however, used more than just once (unlike occasionalisms or nonce formations) and appear independently of their original place of coinage, e.g., on websites, blogs or in press. We argue that proliferation of such new forms accompanied by the creation of novel meanings and the corresponding expansion of the lexicon underpinned with one and the same cognitive mechanism: conceptual integration. This mechanism also accounts for humour, irony and sarcasm emerging in novel creations.

Abbreviations

CDA – Critical Discourse Analysis

CIT – Conceptual Integration Theory

CMT – Conceptual Metaphor Theory

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Résumé

This paper focuses on Brexit-oriented language as inspected from the cognitive linguistic perspective. It is maintained within the methodological framework of conceptual integration theory and critical discourse analysis. The aim of the article is to demonstrate that the English neologisms pertaining to Brexit are based on the following set of metaphors: STATE IS THE BODY, STATE IS THE MIND, and BREXIT IS A DISEASE. Additionally, the research is to prove the hypothesis that such novel expressions can be evaluated linguistically with regard to conceptual integration theory and critical discourse analysis. The study aims to convey that the Brexit vocabulary rests upon the hyper-blend BREXIT (which operates as input space 1) as intertwined with MALADY (which functions as input space 2). The negative connotations resultant from that are significant in terms of the attitudes of the British public. In accordance with the Critical Discourse Analysis, the mass media who propagate such phraseology induce the British to display negative emotions towards Brexit, consequently impacting the social cognition. Nonetheless, such negativity does not seem to disturb the comic effects which are simultaneously generated by the inherent incongruities arising from Conceptual Integration Theory. Thus, Conceptual Blending can be considered a valid tool for accounting for the emergence of discursive effects (such as humorous, ironic,

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or disparaging overtones). More importantly, it is the blending that becomes the source of social influencing for it sanctions the compression/decompression of a British language user with the whole nation as taken collectively. In general terms, the analysis of Brexit-related vocabulary exemplifies the intrinsic mechanisms of conceptualisations rendered via Conceptual Integration Theory, Critical Discourse Analysis, and humour research.

Keywords: Brexit, Brexit-related discourse, comic effect, conceptual integration, conceptual metaphor, hyper-blend, meaning compression / decompression, metaphorical lexical blend.

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SYNTHETIC AND ANALYTIC ADJECTIVE NEGATION IN ENGLISH SCIENTIFIC JOURNAL ARTICLES: A DIACHRONIC PERSPECTIVE[1]

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Abstract: This paper addresses the development of synthetic and analytic adjective negation in a corpus of English scientific articles from the mid-17th century towards the end of the 20th century. Analytic patterns of adjective negation are found to become less frequent in the language of scientific articles, but more conventionalised in their textual contexts. Conversely, prefixed negated adjectives are identified as more frequent and more diverse with regard to their contexts.

Key words: adjective negation, prefixation, clausal negation, scientific English, corpus-based diachronic analysis, surprisal.

1. Introduction

In this article, we explore the changes in the use of English adjective negation patterns with affixal and non-affixal negation markers. We specifically focus on synthetically negated adjectives with the prefix *un-* or *non-* (e.g., *unavoidable*, *non-magnetic*) and analytic patterns of adjectives after the negation marker *not* (e.g., *not avoidable*, *not*

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magnetic) in a diachronic corpus of scientific journal articles. Bauer et al. (2013:4) acknowledge that specialised languages of scientific disciplines do fall under the scope of word formation research, but they deliberately exclude the discussion of formatives that are productive in highly scientific or technical fields from their reference volume on contemporary English morphology. One of the reasons for this might be the limited availability of sufficient specialised corpus data for analyses. Negation and word formation in general, including affixal negation and negative affixes in specialised languages, continue to be presented in the literature as marginal topics illustrated only with a few examples.

We would like to address this research gap by putting the focus on the above-mentioned synthetic and analytic adjective negation patterns in English scientific articles as a particular type of scholarly publications that have evolved considerably over the course of time. Our general question within the context of the project "Information Density and Scientific Literacy in English –Synchronic and Diachronic Perspectives" to which this case study is related is whether English scientific writing in journal articles has become more informationally dense over time. Academic authors and readers of scientific articles can be expected to have shared specialised and register-specific knowledge including knowledge of the previous discourse. Choosing shorter, more condensed, and less explicit synthetic forms, when there is an option to do so, should therefore contribute to higher economy of expression in scientific writing. Authors of academic articles may use such register-specific strategies to manipulate the information density distribution of selected linguistic structures with regard to the expectations and processing capacity of their addressees. We therefore assume that changes in the use of negation variants towards more synthetic patterns contribute to a trend for informational densification in English scientific writing. Synthetic forms of adjective negation as shorter forms of encoding will show higher information density than adjectives negated by *not*. We expect to find more of synthetic adjective negation in more condensed patterns and a smaller number of less dense analytic adjective negation patterns.

For the purposes of this article we restricted our analysis to adjectives negated with *un*- or *non*- as these negation markers have been identified as the two most common negative affixes in adjectives (cf. Section 2.5). To our knowledge, there are no previous studies that focus on the usage contexts of these two affixes in particular. *Un*- has always been the most frequently used negative prefix in English. Already in Old English the number of lexemes in *un*- was very large, and *un*- remained one of the major formative elements in English (cf. OED entry on *un*-, prefix$_1$). *Non*- has increasingly gained in productivity and has become an equally important negation marker in Present-Day English (PDE) that is also classified as one of the major formative elements in English (cf. OED entry on *non*-). In terms of affixal or non-affixal negation, variants of negated adjectives are not always entirely semantically equivalent (cf. the example of *not likely* and *unlikely* in 2.3 or Tottie's (1999) discussion of *not happy* and *unhappy* emphasising that the scalarity of some predicates can make certain variants semantically non-equivalent). Nevertheless, corpus-linguistic, diachronic research into both types of negation is a viable undertaking that will lead to a better understanding of the constraints that may influence the variation between the two types (ibid., 233). The usage of phrasal elements such as non-clausal noun modifiers (e.g., adjectives in noun phrases) is typically associated with structural complexity (Biber & Gray 2010: 6). The development of patterns with analytic negation markers vs. more condensed ones with synthetic negation markers in English scientific journal articles is interesting with regard to their contribution to information density and to the relationship between word-internal, phrasal, and clausal complexity.

Tottie's hypothesis (1999: 234) was that variation between affixal and non-affixal negation of adjectives would over time reflect the existence of two stable systems in almost complementary distribution as scope, stylistic, syntactic, and lexico-semantic constraints continuously dictate the choice between such variants. We assume that

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these linguistic forms are also affected by register-specific contextual probabilities and expect to see a trend towards an increased use of affixal negation in the language of academic journals. Adjectives negated with prefixes contribute to achieving economy in terms of the number of words that are used, i.e. a shorter code is used. This may also result in higher information locality compared to *not* + adjective, where *not* might be further away from the adjective and therefore possibly overlooked. We assume that cognitive constraints on information flow play a role in forming conventionalised, syntactically condensed patterns of negated adjective constructions adopted by a specialised scientific discourse community over time.

Functional motivations probably gave rise to a number of specialised uses of synthetically negated adjectives. In scientific research articles, adjectives with negative prefixes such as *un*- or *non*- in attributive positions are an important means to increase word-internal and phrase-internal compression of semantic information. This is done in order to achieve a higher degree of both word-internal and phrasal complexity and to reduce clausal complexity of alternative clausal constructions with the negation marker *not* in terms of sentence length, subordination structures, and the use of non-affirmative clause types (e.g., *"non-magnetic metals", "unavoidable difficulties"* vs. *"metals which are not magnetic", "difficulties are not avoidable"*). In this article, we would like to draw special attention to densification strategies within adjective constructions themselves and on strategies related to the word-internal, morphological level in connection with negation.

Especially Late Modern English (LModE) has been described as a period where a remarkable trend of densification via a changing usage of premodifying and postmodifying structures (e.g., higher frequencies of nominal premodifiers that could alternatively have been expressed by larger linguistic units such as relative clauses) started in registers such as newspapers and academic prose and subsequently spread to other linguistic contexts (Smitterberg 2021: 188). One of the consequences of such densification processes that we expect to see in our corpus data already from the end of the Early Modern English period (EModE) onwards is that scientific language increasingly employed numerous negated adjectives as modifiers of head nouns. In this way, negated information has become generally more compressed into complex phrasal constructions enabling a tighter information structure (cf. Biber & Gray 2016: 4), while clausal negation patterns probably became restricted to fewer contexts. The usage of multimorphemic premodifiers such as synthetically negated adjectives as attributes in noun phrases, which often replace less compressed variants of clausal constructions, has an influence on the predictability of the upcoming words and on processing effort. Here we specifically consider **surprisal** (cf. Section 4.1) as an indicator of the predictability of words in context. Basically, higher predictability of a word in a given context leads to a lower surprisal score of this word, while lower predictability of a word in a given context means higher surprisal. As surprisal has been shown to be proportional to the cognitive effort of processing a word (cf. Hale 2001; Levy 2008), we can state that higher surprisal is related to higher cognitive effort.

The corpus used for the present article provides relevant data for exploring negated adjective constructions from late EModE to PDE in scientific articles. The **Royal Society Corpus** (RSC 6.0.1, cf. Fischer et al. 2020; Kermes et al. 2016; Menzel et al. 2021) consists of digitised texts from scientific journals such as the "Philosophical transactions" and the "Proceedings" of the Royal Society of London from 1665 to 1996. The authors are from the United Kingdom, the Commonwealth and beyond. We combine frequency-based analyses and information-theoretic modelling.

The structure of this article is as follows: Section 2 gives an overview of relevant background information from the literature on negation via affixes and other negation markers in English and discusses previous studies on the selected negation phenomena. In Section 3, we set out our hypotheses on the linguistic effects of the usage of affixal and non-affixal adjective negation in scientific writing. We describe our methodology and data set in Section 4. The results of the analyses are given in Section 5. Section 6 contains our conclusions and an outlook for the future research.

2. Adjective negation in English

This section will give a broad outline of publications on synthetically negated adjectives, individual negative affixes, and non-affixal, analytical negation to establish a theoretical framework for our analysis.[1] We will also present an overview of previous psycholinguistic and corpus studies on negation in English.

2.1 Synthetically negated adjectives

One important type of lexical negation in English, i.e. negation of individual words, is synthetic (morphological) negation. Apart from prefixation, suffixation, and compounding, Cartoni & Lefer (2011) also mention conversion (e.g., *to dust* = *to remove dust*), but prefixation is the most common type of morphological negation in English (Joshi 2020: 80). Many sources on negation in English address primarily analytic forms such as clausal negation with *not* from a philosophical and/or linguistic perspective, but not particularly the negation of specific clause, phrase, or word types, e.g., those that involve adjectives. Fewer scholars address synthetic negation (cf., for instance, Hulse 2010: 42-44 for a selection of references). Some sources discuss diachronic aspects of negation (e.g., Croft 1991; Horn 2001; Mazzon 2004). Various sources on antonymy patterns also discuss the possibility of creating antonymy through negation and mention prefixation as an important process for the formation of morphologically related antonyms of adjectives (e.g., Charles & Miller 1989; Jones 2003; Murphy & Andrew 1993). Standard grammars and various linguistic studies list different means of negation, but not many works address the relationship between the different types and the question of when they may function as semantically equivalent variants.

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English has various prefixes that can attach to adjectives and other word classes with different degrees of productivity to mark negation in general and specialised language, e.g., *a(n)-*, *de-*, *dis-*, *in-* (and its variants *il-*, *im-*, *ir-*), *non-*, *un-*$_1$, *un-*$_2$ (cf. Dixon 2014: 71; Marchand 1969; Zimmer 1964). Hulse (2010: 77) points out that some sources also list forms such as *anti-*, *contra-*, *counter-*, *dys-*, *ex-*, *extra-*, *mal-*, *mis-*, *para-*, and *sub-* as potential negative prefixes, and one might even add the rarely used *e-* (as in *ecaudate*). They all express negation to a certain degree, but in contrast to a free negation marker such as *not*, they potentially carry additional semantic characteristics to express nuances and different aspects in addition to negation, e.g., evaluative judgements. There is also the adjective-deriving suffix *-less* and the form *-free* (which is in between a suffix and a compound-forming element and also sometimes referred to as a combining form or a suffixoid, cf. Lieber 2004: 109) that can mark negation in adjectives synthetically and create English adjectives from nouns (e.g., *guiltless*, *carefree*) and thus change the word class of the base (in contrast to negative prefixes). Negated adjectives generally have several potential meanings. For the most part they foreground diverse denotational aspects of negation that are determined both by their internal elements and their respective context, e.g., their collocations.

Within this article, we can offer only a brief commentary on negation of adjectives with lexical antonyms (e.g., *hot ≠ cold; alive ≠ dead*), that is on a different means of creating opposites of adjectives, other than the formation of synthetically negated adjectives. The formation of synthetically negated adjectives that are potential words generable by regular word formation processes may in certain cases be "blocked" if lexical, morphologically unrelated antonyms of the non-negated form of the adjectives exist as rival forms. For instance, **unabsent/inabsent/non-absent* is probably non-existent not only due to the prefix *ab-*, but also due to the existence of *present* as an exact antonym of *absent* (cf. Kjellmer 2005: 160). *Absent* can only be negated analytically with *not* or by choosing its lexical antonym. From a PDE perspective, a few cases have become etymological cases of negation in which negation is marked rather implicitly and the negation marker and morpheme boundary are not fully transparent any longer (e.g., *disgusting*). Some negated forms of adjectives may drop out of usage (e.g., *ungood* meaning 'bad, evil', has been used from Old English onwards, but has become rare in PDE, cf. its OED entry) or are chosen primarily for stylistic purposes and as literary devices (e.g., OED quotations containing *ungood* in modern use come from literary contexts as in Orwell's [1954] fictional language "Newspeak", which also includes the coinage *uncold (= warm)* that has no OED entry). Hulse (2010: 27) quotes a usage of *undrunk* that has not become an established word in English with the opposite meaning of "intoxicated" but was easily understood by the audience in a specific context.

A negated adjective can have variants with different prefixes ("morphological doublets" (Okada 2010: 349) or "multiple negative derivatives" (Kwon 1997)) that may function as synonyms or involve subtle or substantial differences in meaning (e.g., *amoral*, *immoral*, *non-moral*, and *unmoral*, cf. Zimmer (1964)). Some dictionaries provide separate entries for all such variants, others only for a selection of them. Much of the information on negated adjectives and the semantic distinction between variants with different prefixes – even in dictionaries that have some basis in corpus data – has been taken over from traditional sources to provide information on the perceived correct usage (Kwon 2001). This does not always coincide with the typical usage of such multimorphemic words in actual data. Which negative prefix attaches to an adjective depends on its general productivity, its individual general meaning, the adjective type, and etymological constraints. The specific prefix meaning also has to be seen in connection with the morphemes of the adjective stem and, if applicable, their suffixes.

Prefixed negated forms may have a particular meaning and not always simply mean the opposite of their unprefixed base (e.g., *unalive* is not primarily used to mean "not alive" or "dead," but "lacking in vitality" and "being not fully susceptible to something," cf. its OED entry). The prefix *dis*-, for instance, like other negative

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prefixes whose roots go back to independent words that were not negation particles, often adds a specific meaning to English adjectives. It was borrowed under the influence of Latin and French (*des*-) during the Middle English period and is related to *bis* from Greek with the meaning "two," "divided in two." An adjective with *dis*- can simply mean the opposite of its base (*discontent*), but typically *dis*- also adds the meaning "away from," "apart" or "lacking a (valued) quality." It may also refer to a reverse state or process when attached to adjectives or to verbs from which adjectives are derived (Dixon 2014: 74, e.g., disconnected). It has a different origin than *dys*-, which is found in many medical terms (from Greek with the meaning of "ill," "bad," "abnormal," e.g., *dysfunctional*, *dysexecutive*). In Hulse's study (2010: 187) on the productivity of negative prefixes in the British National Corpus (BNC), hapaxes with *dis*- occurred only rarely in the language of the natural sciences and more frequently in areas that are more likely to influence non-specialised language use. The negative prefix *de*- means "to reverse an action" and can occur in adjectival participles derived from verbs typically ending in -*ize/-ise*, -*ate*, or -*ify* (*desaturated, dephosphorylated*). Certain types of synthetically negated adjectives may thus add additional nuances and a finer adjustment of information than negation with *not*. English negative prefixes can have a meaning of negation in connection with reversal of direction or action, inferiority, insufficiency, badness, wrongness, over-abundance, pejorative indication, opposition, or removal (Joshi 2020: 86).

The etymological origin of the stem of an adjective (and to a certain extent also the type of its suffix if it has one) plays an important role in the selection of the prefix. Some borrowed negative prefixes such as *a(n)*-, initially only attached to English words of Greek origin (e.g., *asymmetrical*), remain rare word formation elements in English (Funk 1971: 368), but have been shown to be much more important for the natural sciences than for other domains. They occur primarily in scientific and technical terminology, although some have spread to general language (Hulse 2010: 96). It has been suggested that rare negative prefixes such as *a(n)*- are more stylistically marked

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and can be expected to be replaced by less marked ones over long time periods, as in a gradual replacement of *atypical* by *untypical* during the 20th century, a development which Bauer (2001: 50, 137) observed in general English language data. We cannot confirm this observation by Bauer with regard to the developments observed in scientific writing. *Untypical* was used before *atypical* in the RSC from the 1860s onwards, but *untypical* as a less formal variant remains less frequently used in scientific articles throughout LModE and PDE than *atypical*.

Negative affixes are usually attached to positive bases and not to evaluatively/emotively negative adjectives denoting some negative or undesirable property (cf. Horn 1989: 274-275; Zimmer 1964: 15). For those adjectives, negation with *not* is more typical. Negative prefixes cannot be easily stacked, but Funk (1971: 368) emphasises the ability of *non-* to attach to adjectives with a negative prefix, e.g., *in-* or *un-*. Observations in the BNC and the Corpus of Contemporary American English confirm the low productivity of negative prefixes in combination with evaluatively negative adjectives (exceptions may be found, e.g., *undangerous*, *undark*, *unbroken*) and of multiple negative affixes in adjectives (De Clercq & Vanden Wyngaerd 2019: 426). Lexemes that contain two negative prefixes can be occasionally found in the RSC, for example participial adjectives with either *un-* or *non-* and *dis-* or *in-* (e.g., *undisrupted*, *undisinfected*, *undischarged*, *non-discharging*, *non-independent*).

One advantage of using affixes for adjective negation instead of negation with *not* is the possibility to derive forms in other word classes with the same base and prefix (e.g., *non-uniform*, *non-uniformly*, *non-uniformity*) and to use such words throughout texts as a means of lexical cohesion. Another advantage is that affixal negation allows the construction of affirmative sentences involving semantically negative notions by avoiding more explicit clausal negation that might have different effects on the reader (Joshi 2012: 52-53). As affixal negation leads to sentences that are affirmative in nature, one might argue that morphological negation is not *true* negation, and there is some discussion on which type of negation is the strongest or less ambiguous (Hulse 2010: 32). An important aspect of using affixes is economy of expression. Adjectives negated with prefixes contribute to achieving economy in terms of the number of words used (Joshi 2012: 52).

The following section provides an overview of ***un-*** and ***non-***, the negative prefixes we focus on in our corpus analysis.

2.2 Un- and non- in negated adjectives

Un-$_1$ as a prefix of Germanic origin is the most productive negative prefix throughout the history of English with its basic meaning comprising negativity ("not," "opposite") and an additional pejorative meaning such as "lacking a valued quality" (Dixon 2014: 74; Kastovsky 2006: 237). From a historic perspective, it is of different origin and has a more general meaning than the less productive negative prefix *un-$_2$* expressing the reversal or cancellation of an action in verbs such as *unload, untie, unlock* and their derived adjectival participle forms. Bauer & Nation (2020) pointed out that *un-*, which can attach to adjectives and verbs with these different meanings, is potentially ambiguous, e.g., in *unclothed* (*un-$_1$*), which may mean "not clothed" or "having had the clothes removed" (*un-$_2$*), or in *unlocked*, which can mean "not locked" (*un-$_1$*) or function as a participle derived from *unlock* (*un-$_2$*). According to the OED entry for this prefix, the productivity of formations in *un-$_2$* has declined particularly since the 17th century as the prefix *de-* has become more frequent in verbs with reversive meaning. In the following discussion and analyses, we use *un-* to refer primarily to the most productive morpheme *un-$_1$*. *Un-* can be attached to both Germanic and Romance stems and to simple adjective roots (*unkind, uncalm*), but also to more complex adjectives derived from nouns and verbs (*unsuccessful, unavoidable*). It is also frequently affixed to participles functioning as adjectives (*unchanging, unpublished*). *Un-* can easily occur with a variety of descriptive, qualitative adjectives that may be gradable and that

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can be modified by adverbs such as *very* and *rather* or used in comparative or superlative structures.

There is a certain historical competition of *un-* with *in-* that has received some attention in the research literature (between the 15th and 17th centuries largely a matter of choice according to the OED, cf. also Kwon 1997). According to Jespersen (1917: 139-140) *un-* is preferred before shorter, *easy* words and when a word has a native ending, and *in-* before longer ones and those of a more learned nature. *In-*, a borrowed prefix (*inanimate*, *inefficient*), and its phonologically conditioned allomorphs *ig-*, *il-*, *im-*, and *ir-* involving assimilation depending on the initial consonant of the adjective bases (*ignoble, illegitimate*, *impossible*, *irregular*) primarily attach to Latinate words (*impure* vs. *unclean, illegible* vs. *unreadable*). In most cases, the replacement of one negative prefix by another is not possible *(*insuccessful, *unadequate)*. However, in Early and Late Modern English when many negated adjectives were newly coined, *un-* and *in-* variants were introduced and sometimes continued to coexist for a while or have acquired particular connotations (cf. OED entry on *un-*, prefix$_1$). In cases of a prefix variation in adjectives with identical meaning, there is typically a dominant variant in Modern English (e.g., *inadvisable* is preferred to *unadvisable* in our data; the last usage of the form *unadvisable* in the RSC occurs in the 1960s). *Un-* has spread to certain words that were initially formed exclusively with *in-*, especially in cases where the form with *in-* has acquired a more specific sense (e.g., *inhuman* vs. *unhuman*, cf. Hulse 2010: 27). *In-* is used in various multimorphemic borrowings from Latin and French. Although *independent*, *impossible*, and *irregular* are the most frequent examples of all synthetically negated adjectives in the RSC, this prefix is not very productive in PDE data compared to *un-* and other negative prefixes (cf. also Hulse 2010: 8).

Non- as a borrowed affix has become one of the most productive negative affixes for adjectives in PDE. Initially, it was mainly used in specialised legal, scientific, or technical contexts. It has been added to adjectives with increasing productivity and

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fewer restrictions from the 17th century onwards and has started to occur frequently in specialised and non-specialised registers. It also creates opposites for nouns (e.g., *non-conductors*). It occurs in adjectival participles (*non-thermalized*, rsta_1966_0057), and it is rarely attached to verbs as in *non-dimensionalize* (RSC 6.0.1 text ID: rspa_1969_0040). There is no agreement in the literature on the word class of forms with *non-* in examples such as *non-stop flight* or *non-slip soles*. Their first constituent may be analysed as a prefixed adjective or a compound adjective where *non-* is attached either to a verb and changes its word class, to an adjective created by conversion, or to a shortened form, e.g., created by a backformation from an adjectival participle as in *non-stopping flight*. Therefore, there are also different opinions on the question of whether the entire constructions function as nominal compounds or phrases (Allen 1978; Štekauer 2000: 211).

Like *un-*, *non-* can be used to create semantically transparent negated adjectives. Dictionaries do not list all of them as entries. *Non-* has the meaning of "not a member of a specified class" and can have scope over single words and complex constituents (e.g., *non-[profit-making] company*) of various etymological origins (Dixon 2014: 74, 92). *Non-* differs from *un-* in that it predominantly expresses a binary contrast (e.g., *non-scientific* vs. *unscientific*, cf. Quirk et al. 1985: 1540). Semantically, *non-* is the prefix that is most similar to the black and white nature of negation with *not*. Adjectives with *non-* are typically classifying adjectives that are contradictory antonyms of their corresponding non-negated forms and express contrast without gradability (Funk 1971: 372, e.g., *green and non-green algae*, rstb_1986_0042). Exceptions of gradable adjectives with *non-*, e.g., modified by *very*, are rare (e.g., *a very nonlinear world*, rstb_1994_0162, *a very non-trivial problem*, rsta_1989_0083). *Non-* is generally less emphatic than *un-* and primarily confined to descriptive, i.e. *neutral*, terms (Zimmer 1964: 33-34). It generally adds a less pejorative meaning than *un-*.

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Non- has a hyphenated and a non-hyphenated variant (*nonconducting power/non-conducting power*). Due to the optional hyphen as a visible boundary between the morphemes, *non-* has more flexibility than *un-* with regard to its possible scope over single words or complex constituents. *Un-* is rarely used as a hyphenated variant (e.g., *ice-like and un-ice-like species*, rspa_1958_0206). *Non-* can attach freely to native bases (*non-flesh-forming material*, *non-singing small species*) and is flexible as a marker of various words and word-like units from different word classes. The patterns it attaches to in scientific language are quite diverse (*non-insulin dependent diabetes*, *non-vacuum jacketed calorimeter*, *non-single-unitary symmetric functions*, *non-species-specific inhibition*, *non-electro-negative bodies*, *non-heat-evolving medium*, *non-uniformly heated portion*). It can also be attached to premodifying items with capital letters, such as eponyms or acronyms (*non-Euclidian geometry*, *non-NGF dependent neurons*, *non-GI visceral organ*), and to other forms that would be difficult to be negated by other prefixes, e.g., colours and numbers (*non-yellow homozygotes*, *non-zero current levels*). *Non-* is potentially less ambiguous than *a(n)-*, *de-*, *dis-*, *in-* (*il-*, *im-*, *ir-*) and *un-* as it rarely occurs in non-negated adjectives that start with the same sequence of letters (e.g., *nonic*).

The next section will give an overview of phrasal and clausal constructions that contain adjectives and the negation marker *not*.

2.3 Analytic negation with 'not' + adjective

This section discusses some aspects of non-affixal negation by the addition of the negative particle *not* (cf. Biber et al. 1999: 158). It is debatable whether the world can actually be described without the use of the word *not* as Russell suggested (1948: 520, cited in Horn 2001: 50). The scope of negation with *not* may extend from the negative marker to include the entire clause. Negation with *not* produces a contradictory opposition that is binary and non-gradable. It may co-occur with main or subclause patterns that involve adjectives which are not synthetically negated. *Not* also has the contracted form *n't* that can be attached to auxiliary verbs, but this form does not occur in the scientific articles in the RSC. Using the negation marker separately makes emphasis on *not* possible. The negation marker may, for instance, occur in the topic position to receive a special focus (*Not identifiable with any prominent alias is the largest peak in the PA spectrum.* rsta_1976_0020). Adjectives often carry a new information load. Using an adjective in a clause-final position and not as a noun premodifier puts it into a focus position. A clause-final occurrence of a predicatively used adjective combined with the function word *not* may lead to a slightly lesser informational peak than a morphologically more complex, synthetically negated adjective in this position.

The scope of negation with *not* may also be restricted to individual adjectives or adjective phrases without making the clause negative, but this type of local negation is beyond the scope of our analysis (e.g., *a not very successful approach*). *Not* can occur with synthetically negated adjectives in double negation (litotes) in registers that are rich in figures of speech. Litotes can also be found in scientific contexts (*the walls are not non-reflecting*) or function as a politeness marker in academic discourse (*it is not disrespectful to say …,* rsbm_1944_0016) where *not* may reduce the negative force of a negative adjective. In this article, we are specifically interested in structures with *not* + positive adjectives.

The question of whether synthetically negated adjectives and constructions with *not* and corresponding non-negated adjectives are equivalent in meaning cannot be answered straightforwardly. Due to the nuances in meaning that a negative prefix may add to an adjective, there might be subtle differences in meaning between prefixed negated adjectives and constructions with the negation marker *not*. Some adjectives cannot be negated synthetically, and a few adjectives with negative prefixes do not have an independent non-negated base in PDE or their base is not easily recognizable (e.g., *inept, inert, uncouth, unkempt*, cf. Bauer & Nation 2020; Horn 1989: 275).

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According to Calude & Bauer (2021), there is a sequence of degrees for scalar and stance adjectives, e.g., *likely* – *not unlikely* (= rather / fairly likely) – *not likely* – *unlikely*. Therefore, *likely* and *not unlikely* as well as *not likely* and *unlikely* are not perceived as synonymous by them. Also, *not happy* is not necessarily *unhappy* and the adjective *invalid*, for instance, has different senses of which *not valid* is only one possible meaning. Nevertheless, synthetically negated forms can be identical in meaning or at least approximately synonymous with adjectives negated by *not*. There seems little semantic distinction between the types of negation in examples such as in (1) or between the variants of (2).

(1) a) *A bachelor is a man who is not married*.
    b) *A bachelor is man who is unmarried*.
    c) *A bachelor is an unmarried man*.
(2) a) *The remark was inappropriate.*
    b) *The remark was not appropriate.*

In fact, very few theoretical, corpus-linguistic or psycholinguistic studies compare the functions of different types of negated adjective constructions, such as affixal vs. non-affixal patterns. Tottie (1980; 1999) is one of the few who discusses both patterns. She contrasts adjective pairs from Middle English and PDE texts such as *unprofitable* vs. *not profitable* with regard to the issue of semantic equivalence or difference of such pairs and the productivity of selected affixes. Tottie points out some stylistic and syntactic reasons for opting for one of these variants. Her hypothesis was that the variants represent different systems in almost complementary distribution, which is why she assumes that they remain stable over time (1999: 247, 258-262). Her results partly confirm this and show that certain constraints on affixal and non-affixal negated adjective constructions remain relatively similar from Middle English to PDE. However, she also notes that sampling restrictions led to sparsity of data for specific constructions and the Late Middle English and PDE data have different rhetorical

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styles.

Aina et al. (2018) used web-crawled corpora and built a distributional semantic model to investigate the relation between adjectives negated with *not* (e.g., *not cold*, *not happy*), the adjectives themselves, their lexical antonyms (e.g., *hot*), and their morphologically related antonyms derived by adding a prefix (e.g., *unhappy*). Their findings on the respective contexts of use suggest that adjectives negated with *not* are typically more similar to the adjectives themselves than to their antonyms, but this effect seems to be weaker when antonyms are derived via negative prefixes.

2.4 Previous research on the mental processing of negation

Farshchi et al. (2020) state that research focussing on the processing of negation has primarily targeted analytic forms of negation, and the processing of prefix negation has been given little attention in empirical analyses. The results from psycholinguistic studies on prefix negation, which tend to be based on short sample sentences considered in isolation, are not in agreement with each other. As there is little research on how prefixed patterns are processed or how they are comprehended in comparison to other forms of negation, it is not clear yet whether the processing of synthetically negated adjectives is similar to that of adjectives negated with *not* or non-negated adjectives. Nevertheless, Farshchi et al. (ibid.) were among the first to conduct a psycholinguistic study on the processing of synthetically negated adjectives, the negation of adjectives with *not* and non-negated affirmative adjectives. Their experiment was based on a set of generated, relatively long sentences that resemble actual language use in news media texts. The results suggest that generally both types of negation involve a higher processing cost for working memory than non-negated adjectives. Farshchi et al. (ibid.) only partly found evidence in support of existing models on the processing of negation, and they also note that not all instances of negation function simply as rejections of information and may also convey attitudinal aspects.

2.5 Previous corpus studies on synthetic and analytic negation

This section presents an overview of several previous corpus studies on selected aspects of negation in English. There are corpus studies on various negation patterns, but only a few on synthetically negated adjectives. The corpus-linguistic studies that investigate negative prefixes typically address the distribution of selected prefixes and the question of how to measure their productivity, as studies from other linguistic fields also did, for instance, via psycholinguistic experiments (e.g., Baldi et al. 1985). Various often-cited works on negation in general and on adjective negation in particular were published as early as several decades ago (e.g., Funk 1971; Jackendoff 1969; Zimmer 1964) and are, for obvious reasons, not yet based on actual usage in larger corpora. Jiménez-Zafra et al. (2020) list a few corpora annotated with various means of negation, mostly syntactic negation markers. A difficulty they noticed was that potential negation markers can be ambiguous and do not always function as negators. Tottie (1991) compared negation with *not* and *no* in corpus data. She also analysed synthetically negated adjectives in Middle English data from the Helsinki Corpus and compared them to a PDE sample (several hundred thousand words in total, 1999). The samples included text types such as romance, drama and private letters. She focused on *un*-, *in*- and *dis*- and did not study the usage of *non*- as a negative prefix as it was not freely used yet in Middle English (only in a few technical and legal terms from the end of the 14th century onwards) and it only became productive from the mid-17th century onwards.

In Kjellmer's (2005) analysis of affixal negation of adjectives in the PDE Cobuild Direct Corpus including both speech and writing, *un*- occurred in 43% of the negated adjectives, *non*- in 22%, *in*- in 12%, and *dis*- in 6% of the negative prefixes that were studied, while 17% of the negated adjectives in the data had prefix variation. A high number of synthetically negated adjectives had no attested corresponding positive forms occurring in this dataset (e.g., *disadvantaged*, **advantaged*). Prefix variation most typically occurred in adjectives of Romance origin, sometimes with semantic

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differences between them, and in most cases included a form with *non-* (e.g., *inorganic* – *non-organic* – *unorganic*; *disfunctional* – *non-functional*). He also found some variation among Germanic adjectives (e.g., *nondrinkable* vs. *undrinkable*). A brief look into our RSC data also shows that there are several variants as well (*unchemical* – *non-chemical*; *unmagnetic* – *non-magnetic*), possibly many *non*-words have early *un-* variants that did not become the dominant form. However, in scientific texts – particularly from a diachronic perspective – differences in meaning or synonymy might be more difficult to detect than in general PDE data.

A detailed synchronic analysis of the productivity of five negative prefixes occurring in adjectives and other word classes has been performed by Hulse (2010). She created a database of all negatively prefixed open-class words based on the BNC and compared prefix productivity and domain specific preferences. Different variables such as types, tokens, and hapaxes were examined to compare their role in various formulae used to measure morphological productivity. She found that in the PDE dataset *non-* is the most productive of the examined prefixes, while *in-* is the least productive. The application of productivity formulae involving the words that occur only once in a corpus (cf. also Baayen & Lieber 1991) led to the observation that the prefixes that turned out to be generally the most productive in written English, were not very common in spoken language, while the least productive ones in writing were among the most common ones in speech. An explanation for this might be that, in spoken language, negative prefixes occur primarily in familiar, high frequency words, but not in many infrequent words and new coinages (Hulse 2010: 187). In our case of diachronic, highly specialised data, we are aware of a still notable frequency of optical character recognition (OCR) errors among hapaxes despite the application of post-correction techniques. It is more difficult to automatically process large amounts of historical electronic texts across a time span of more than 300 years with high accuracy compared to data from only contemporary texts. It is also more difficult to linguistically annotate specialised scientific corpora than general language corpora. It would therefore be only partly possible to replicate previous studies such as Kjellmer's (2005) and Hulse's (2010) by applying their methods and queries to our datasets. When working with variables such as **types** (i.e. the distinct word forms or lemmas found in a corpus) or **hapaxes** (items occurring only once in the corpus), differences in corpus size, annotations layers, query options, and corpus-specific error types, e.g., in POS tagging, need to be taken into consideration.

In their attempt at building a dictionary of affixal negations, Van Son et al. (2016) noted that if one wanted to consider all types of affixal negation, this would be rather difficult to detect automatically without a substantial false positive rate. Blanco and Moldovan (2011) stated that no simple search could unequivocally distinguish between negated words such as *ineffective* and other words that happen to begin with the same letters. The problem might be partially solved by checking if the word is still valid when the prefix is removed, but this method would falsely classify *informed* as negation because *formed* is still a valid word.

Biber et al. (1999: 159) used the Longman Spoken and Written English Corpus and found that negative words (*not* [so called *not*-negation], *no*, *nothing*, *nobody*, *nowhere*, etc. [so called *no*-negation]) in general are more common in speech than in written language as conversation is rich in verbs, and clausal negation is often tied to the verb. PDE academic prose has been identified as a register with a lower number of negative words than conversation, fictional prose, and news reportage. However, *not*-negation is most frequent in the two rather different registers of conversation and academic prose (ibid.). An explanation for this could be that these two have a higher proportion of negative clauses than other registers and they involve argumentation, and consequently greement and disagreement. Additionally, various verbs collocating strongly with *not* are frequent in both, e.g., mental verbs such as *know* or *think*.

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There are several corpus studies that look cross-linguistically at selected negative prefixes in comparable corpora or parallel corpora. It has been confirmed that the productivity of negative prefixes varies in a comparable way across registers in English and French (Lefer 2012: 7), where prefixation is more productive in news editorials and scientific articles than in fictional texts. Another finding in translation corpora was that translators often resort to non-morphological translations when translating from English into a Romance or other Germanic language, even if a prefixed equivalent with identical meaning is attested and frequent in the target language (Cartoni & Lefer 2011: 813; Lefer 2012). In their work on learner corpora with texts from learners of English with different native languages, Gilquin & Lefer (2017) noted a general tendency among learners to underuse morphologically derived adjectives and to overuse syntactically negated adjectives. Translators and learners of English as well as native English speakers in specific registers seem to prefer morphologically less complex forms and a lower degree of phrasal complexity features.

On the basis of the challenges that were identified related to precision and recall in previous studies when applying queries for a great diversity of negation phenomena and on the basis of Kjellmer's (2005) finding that *un*- and *non*- are among the most productive negative prefixes, we decided to restrict our analysis of synthetically negated forms to adjectives with two negative prefixes, *un*- and *non*-, as relatively frequent negation markers and rather unambiguous sequences of letters – and to contrast it with *not*-negation of adjectives.

3. Hypotheses on linguistic effects of affixal vs. non-affixal adjective negation in scientific language

We focus on the diachronic development of affixal vs. non-affixal adjective negation. In particular, we consider the prefixes *un*- and *non*- paired with adjectives in comparison with the *not* + adjective forms for the reasons explained above. Our theoretical framework is based on the register theory (Biber 1995; Halliday 1985;

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Quirk et al. 1985) as well as the information theory (Shannon 1948, cf. Section 4.1) adopting a communicative perspective. Our general question is whether academic writing overall has become more informationally dense over time. Given shared knowledge among academics, more condensed synthetic forms contribute to higher economy of expression (i.e. use of shorter, less explicit linguistic encodings), functioning as register-specific strategies used by writers to manipulate the information density distribution of particular linguistic structures with regard to the expectations and mental processing capacity of their addressees.

We assume that scientific argumentation needs a certain amount of disagreement markers including *not*. In scientific writing, we expect to find a high number of negated constructions with non-scalar adjectives expressing contrasts and non-evaluative meaning transfer in a descriptive, informative, and non-pejorative way. Negated adjectives also play an important role in conventionalizing collocations with nouns and in term formation (cf. Degaetano-Ortlieb & Teich 2019). Especially when the prefix *non-* is used and when *un-* or *non-* are attached to adjectival participles, clausal variants with *not* + the corresponding positive adjective or adjectival participle will be potentially equivalent in meaning (e.g., *uncontaminated water* [rspa_1925_0127] = *water that is not contaminated).* Some scholars have suggested that affixal negation is generally more likely to be found in written, formal language, whilst forms of negation with *not* are more typical of spoken language (cf. Tottie 1980: 104 or the study on the BBC by Hulse 2010: 188). We therefore expect to see a decreasing use of negation with *not* and an increasing usage of affixal negation in scientific writing over time. Particularly scientific papers before the Present-Day English period will probably be characterised by a more involved style and a higher proportion of analytic negation markers. Thus, we pose the following hypotheses:

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H1: *Increase in the number of prefixed negated adjectives*: In scientific English, prefixed adjectives with *un*- and *non*- will increase in frequency over time compared to the *not* + adjective form.

H2: *Synthetic forms are more informationally dense*: Adjectives prefixed with *un*- and *non*- as shorter, more compact forms of encoding will show higher information density than adjectives negated with *not*.

From a cognitive perspective, one of the reasons to favour more informationally dense forms, as in Example (3a) from the RSC, might be to avoid additional memory workload caused by complex syntactic patterns (i.e. long dependency length with regard to the distance between a linguistic head and its dependents, see Gibson 2000; Juzek et al. 2020). The generated alternative (3b) results in a longer variant with a relative clause and an analytically negated adjective that is further away from the head noun than in (3a).

(3) a) *Those experiments apply only to the heat evolved from a non-luminous source.*
b) *Those experiments apply only to the heat evolved from a source which is not luminous.*

Regarding the evolution of modern science and the development of scientific language, scientific English reflects processes of specialization resulting in the ongoing creation of new lexemes (Degaetano-Ortlieb & Teich 2019), many of them formed according to regular word formation rules and processes. This process of specialization has also contributed to an increasing need for adjectives that denote properties, including logically complex properties such as "negative properties" (Zangwill 2011). Additionally, conventions have formed such as the use of formulaic expressions or terminology, and stylistic preferences have contributed to a shift towards fewer oral and more literate features (Biber & Finegan 1997; Degaetano-Ortlieb et al. 2019; Degaetano-Ortlieb & Teich 2016). Such specialization and conventionalization

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processes seem to act as a balancing mechanism allowing an optimal code of scientific communication (Degaetano-Ortlieb & Teich 2019). Thus, we will also consider how affixal vs. non-affixal adjective negation might be affected by specialization and conventionalization processes.

4. Methodology and corpus data

4.1 Tracing the development of informationally dense structures

Besides comparing frequency distributions over time, we use surprisal as an information-theoretical complexity metric to measure the amount of information particular patterns carry and a predictor of cognitive load (Hale 2001; Levy 2008). Surprisal is the context-specific predictability of linguistic items, e.g., how probable the occurrence of a particular word is after a specific preceding context. For example, given the three words *Jane bought a,* surprisal indicates how predictable the following word *book* would be in comparison to how predictable *book* would be after *Jane read a*. As *book* more frequently occurs with the verb *read* rather than *bought*, the word *book* would be more predictable given the context with the verb *read*. Formally, surprisal *S* is calculated by the $-\log_2$ probability *p* of a *word* in *context* denoted by the formula $S(\text{word}) = -\log_2 p(\textit{word}|\textit{context})$.

In accordance with previous work on the RSC (Degaetano-Ortlieb & Teich 2019), we consider a lexical trigram context window of three tokens (including words and punctuation marks) to the left of each word. If a word has high surprisal, its predictability given the previous context is low, while words with low surprisal are more easily predictable given their previous context (consider again *Jane bought a book* vs. *Jane read a book*). High surprisal and low predictability indicate a large amount of information, while low surprisal and high predictability indicate a small amount of information. We will use surprisal to test whether prefixed adjectives with *un-* and *non-* are more informationally dense than the *not* + adjective form and to test whether the amount of information in these patterns has changed over time. For the purpose of comparison of surprisal over time, surprisal models are sensitive to time periods. For example, to compare periods of 50 years, surprisal models are based on probabilities obtained from 50-year periods in the corpus data. This is an important step to ensure comparability when analysing change in language use, as the probabilities of word occurrence will change over time based on the contexts words appear in.

Surprisal has been shown to be proportional to cognitive effort, i.e. words with high surprisal indicate higher processing effort for these words, while words with low surprisal are easier to be processed (cf. Hale 2001; Levy 2008). This becomes particularly clear when considering words in conventionalised lexico-grammatical contexts vs. specialised terminological contexts (cf. Degaetano-Ortlieb & Teich 2019): in a formulaic pattern such as *it is not possible to*, the adjective *possible* is quite predictable in comparison to the adjective *non-luminous* in the sequence *evolved from a non-luminous source*. Thus, the comparison of surprisal of adjectives across local linguistic contexts (such as three preceding tokens) and over time will allow us to (1) examine whether the prefixed adjectives with *un*- and *non*- (we will refer to them also as *un*- and *non*-adjectives) become more informationally dense over time in comparison to the *not* + adjective form and (2) whether those forms are subject to diachronic conventionalization and specialization processes.

4.2 The Royal Society Corpus

The data set used for our analyses is the Royal Society Corpus (RSC 6.0.1) available from the Saarbrücken CQPweb interface. It is a well-curated corpus of scientific English covering approximately 350 years. Version 6.0.1 contains 47 837 texts and 295 895 749 tokens (of which almost 80 million tokens from more than 250 years are part of the freely accessible open corpus version). Table 1 presents an overview of the seven 50-year subcorpora in the RSC and their respective size.

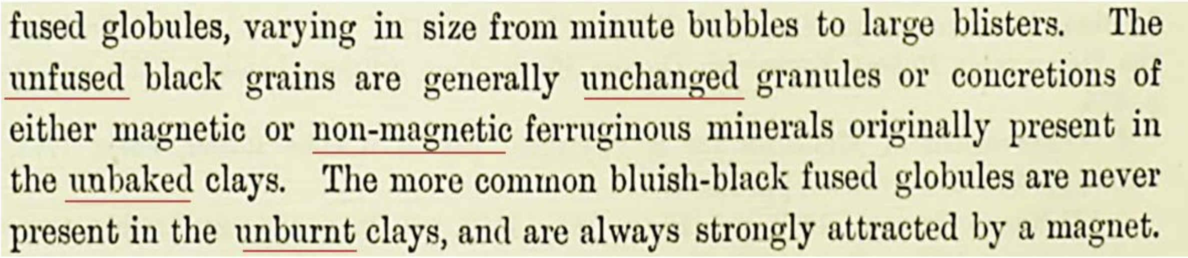
Table 1. Size of the Royal Society Corpus 6.0.1

Time Period	Tokens
1650 (1665–1699)	2 582 856
1700 (1700–1749)	3 414 795
1750 (1750–1799)	6 342 489
1800 (1800–1849)	9 112 274
1850 (1850–1899)	36 993 412
1900 (1900–1949)	65 431 384
1950 (1950–1996)	172 018 539

The RSC texts are digitised versions of professionally published scientific journal articles, mainly from the "Philosophical transactions" and the "Proceedings" of the Royal Society of London from 1665 to 1996. Both journals were rather general in the early years and became more specialised in the mathematical, physical and biological sciences over time after they split into A and B series in 1887 and 1905 respectively. Word formation aspects in the language of these academic journal articles (e.g., with regard to combining forms and eponyms) have, for instance, been addressed in Menzel (2021) and Menzel & Degaetano-Ortlieb (2017). The following extracts in Fig. 1 and 2 illustrate the language used in such articles and contain various examples of negated adjective constructions, several of which are adjectival participles with a negative prefix, particularly in Fig. 2.

mediate between both. It is not the former, because its planes of
polarization are not rectangular; nor the latter, because they are
not parallel. The examination of a pencil of this description by a
doubly-refracting medium, which was the test employed by those
who conceived the polarization to be complete in one portion while
the remaining portion was wholly unpolarized, does not afford the

Figure 1. Extract from "On the law of the partial polarization of light by reflexion ",
D. Brewster, 1833, RSC ID: 107890



fused globules, varying in size from minute bubbles to large blisters. The unfused black grains are generally unchanged granules or concretions of either magnetic or non-magnetic ferruginous minerals originally present in the unbaked clays. The more common bluish-black fused globules are never present in the unburnt clays, and are always strongly attracted by a magnet.

Figure 2. Extract from "The magnetic materials in claywares", A. Hopwood, 1913, RSC ID: rspa_1913_0058

4.3 Selection and extraction procedure

In our diachronic corpus analyses the focus is on synthetically negated adjectives with *un*- and *non*- (we make no particular distinction between *un*-$_1$ and *un*-$_2$ in our queries as very few adjectives in the data fall under the latter category, cf. Section 2.2). These two prefixes are also much less ambiguous sequences of letters at the beginning of adjectives in contrast to other negative prefixes representing quite ambiguous sequences of letters that occur in many non-negated adjectives, for instance, *distributed*, *illustrious,* and *impending* do not contain the negative prefixes *dis*-, *il*-, and *im*- respectively.

For the sake of simplification, we also disregard the possibility here that the different patterns that we contrast with each other might sometimes represent variants with slight semantic nuances or may not be easily interchangeable in certain functions and contexts. They might also represent negation subtypes in connection with specific adjective constructions which are beyond the scope of our analysis and will not be searched for in our queries, e.g., negation with *not* when adjectives are premodified by adverbs in the RSC as in *"considerable portions of a ship's iron which are not permanently magnetic"* and contexts of double negation with *not* preceding adjectives with a negative prefix as in *"These cross-loads are not unfrequent in the mines on North Downs"*.

We use **CQPweb**, an online corpus analysis system (Hardie 2012), to search the RSC for the three POS patterns: (1) adjectives prefixed with *un*-, (2) those with *non*-, and

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(3) analytically negated adjectives with *not*. POS information in our dataset has been annotated using the Penn Treebank tagset. An alphabetical list of the POS tags from the tagset can be found online (Penn Treebank tagset, *s.a.*), and a more detailed explanation of the tags is given in Santorini (1990). We consider only words tagged as adjectives (JJ.*) in our queries. To increase the precision of the results, we restrict the query for analytically negated adjectives by excluding all words that contain special nonalphabetic characters arising from OCR errors. In the case of adjectives negated with *un*-, we exclude words with the prefixes *uni*- and *under*- from the query to enhance its precision considerably (although this also excludes occasional cases that might have been relevant negated forms). The queries for the adjectives negated with *non*- were refined by excluding special characters and possible Latin lexemes (e.g., *nonnihil*).

4.4 Analytical approach

First, we adopt a macro-analytical perspective to investigate general changes of frequency distributions as well as surprisal over time for the two negative prefix + adjective patterns and the *not* + adjective pattern. Second, we take a micro-analytical view to inspect the local linguistic context of all three forms and the possible impact the context might have on surprisal. For this, we inspect part-of-speech (POS) sequences preceding and following the three forms. Due to a high number of different POS tags in the original tagset, e.g., distinguishing between tense- and aspect-related information, in our analysis we disregard some of the more detailed POS distinctions of the original tagset that have little relevance to our purposes here. For instance, we summarise VBZ (verb, *be*, present) and VBG (verb, *be*, progressive) to VB, etc. In our case study, we also subsume all noun forms under N, all adjective forms under J and all adverbs under RB. Also, we summarise round brackets and quotation marks to PUNCT.

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5. Analysis

5.1 Distribution of prefixed adjectives and not + adjective forms

Looking at the development of prefixed adjectives with *un-* and *non-* as well as *not* + adjective in the RSC, in line with our first hypothesis, we find that both affixal negations become more frequent over time, while negative non-affixal patterns with *not* slightly decrease (Fig. 3).

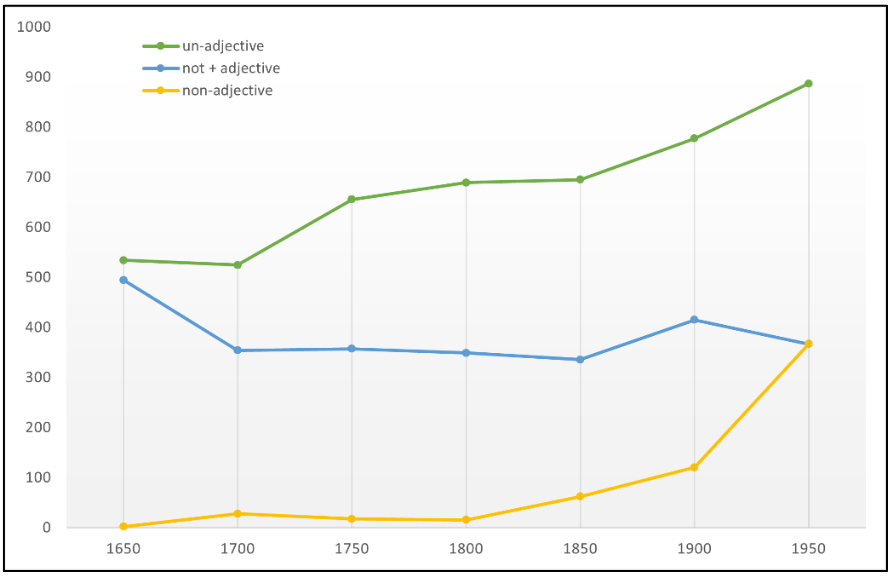

Figure 3. Relative frequencies (per million tokens) of negated adjectives with *un-* and *non-* and of adjectives preceded by *not* across 50-year periods in RSC 6.0.1 (i.e. 1700 covering 1700–1749, 1950 covering 1950–1996, etc., cf. Table 1)

Adjectives with the prefix *un-* almost double in frequency (~500 to ~900 instances per million tokens) and show a consistent increase in number over the whole observed time span. Adjectives with *non-* remain vanishingly infrequent during the 17th and 18th centuries to increase steeply between 1800 and 1996, especially in the last 50-year period. Adjectives with *non-* have become a popular word formation pattern in the more recent texts, while *un-* started out as a common negative prefix and has continuously become more frequent. *Not* + adjective, instead, shows an overall moderate decrease towards the end of the 19th century and a slight increase afterwards. At the end of the 20th century, adjectives with *non-* and the *not* + adjective pattern are equally frequent. We can confirm our first hypothesis that, over time, affixal negation

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of adjectives with regard to the selected two prefixes is used more strongly in English scientific journal texts, whereas analytic adjective negation has become less frequent.

5.2 Development of informationally dense forms

For our second hypothesis, we use surprisal to see whether synthetically negated adjectives are more informationally dense than analytically negated adjectives (Section 5.2.1), and whether the amount of information these forms transmit may change over time pointing toward processes of conventionalization or specialization. We analyse both the preceding and following contexts (Section 5.2.2).

5.2.1 Macro-analytical surprisal tendencies

In general, adjectives preceded by *not* have the lowest surprisal of all three negation patterns confirming our second hypothesis (compare Fig. 4 to Fig. 6). In addition, diachronically the surprisal of adjectives negated by *not* decreases despite their decreasing frequency over time (cf. Fig. 3). This indicates that adjectives negated by *not* start to require less processing effort over time, since they become more predictable. This might be counterintuitive given the fact that adjectives negated by *not* decrease with regard to their overall frequency. A plausible explanation for this development is that, over time, the contexts in which this negation pattern occurs become increasingly conventionalised, i.e. they occur with increasingly similar preceding contexts compared to earlier time periods (e.g., *"similar if not identical"*, *"n.s. = not significant"*), while other contexts are highly unpredictive with regard to this negation pattern (*"compound was not diazotizable," "Postosuchus are not crocodilian"*). So, the frequency with which the preceding trigram occurs with an exact word, in our case with a specific adjective, in relation to how often it occurs with other words determines the predictability of that word. For example, *"similar if not"* is always followed by *"identical"*, so the adjective is highly predictable. In contrast, *"compound was not"* occurs before many different adjectives, e.g., *hydrolysed*, *soluble*, etc., so this sequence is not very predictive of the adjective *diazotizable*, and hence

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diazotizable has a high surprisal value in this context.

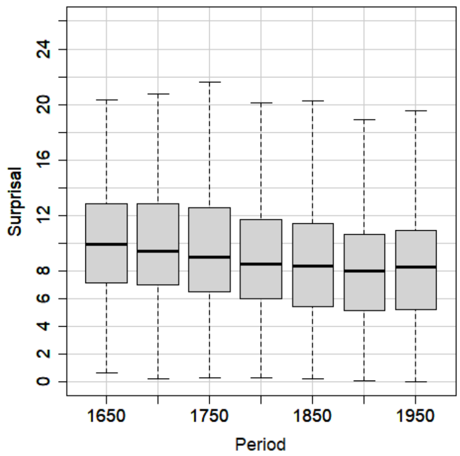

Figure 4. Surprisal of adjectives preceded by *not* across 50-year time periods in RSC 6.0.1

Adjectives prefixed with *un-* (Fig. 5) show median surprisal values that are higher than the surprisal values of adjectives after *not*, but lower than those of adjectives with the prefix *non-* (Fig. 6). Over time, the median surprisal for *un*-adjectives decreases very slightly. The boxplots show that 25% of the surprisal values occupy a lower and decreasing range of values in the last half of the 20th century compared to the 17th century, while 75% of the surprisal values between 1950 and 1996 occupy a larger range than those in 1665–1699. This shows that in 1950–1996, the surprisal values are more concentrated in the lower area between 9 and 13. However, the increasingly large whiskers in the bar plots of the period of 1950–1996 show that in this period surprisal could stretch from very low to increasingly high values pointing to *un*-adjectives occurring in very general, nondeterministic contexts (*"that of the unpierced"*, *"the nature of undead"*) as well as more conventionalised and more frequently occurring contexts (e.g., *"in scrapie-infected and uninfected")*. Note that some contexts occur among the frequent ones if they are part of longer constructions that are quoted verbatim throughout different publications such as references to article titles. The use of quotations and references has become particularly frequent in the last 50 years of the data.

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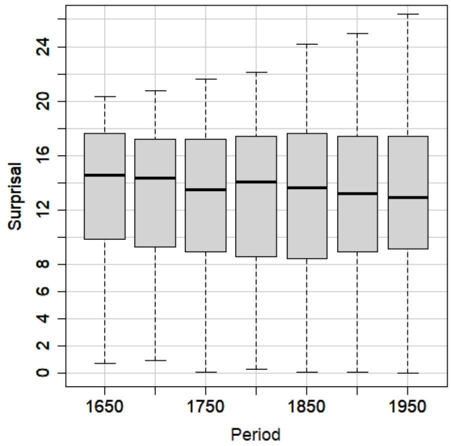

Figure 5. Surprisal of adjectives with *un-* across 50-year time periods in RSC 6.0.1

For *non*-adjectives (Fig. 6) surprisal is the highest of all the three negation patterns.[2] Interestingly, despite the much lower frequency of *non*-adjectives between 1650 and 1850, surprisal values start out with lower medians in the first two periods and increase towards 1750. Afterwards, the surprisal medians stabilise approximately between 16 and 18. The boxplots indicate that in the first 100 years when adjectives with *non-* are generally quite infrequent, they are used in rather similar contexts (indicated by lower surprisal), while in the later periods their frequency soars and with it the variety of contexts as well increments (indicated by higher surprisal). In addition, in the latest period (1950–1996) the surprisal median drops again, possibly indicating that some of the uses of the relatively new form of negation settle in conventionalised contexts. Also, the surprisal range is relatively wide for adjectives with *non-* indicating both the use of highly unpredictive contexts (*"Self-order in flexible non-mesogenic"*) and increasing processing effort on the adjective, and more predictive contexts (e.g., *"useful ores and non-metallic," "the mimetic and non-mimetic"*) where less processing effort is needed.

In summary, the surprisal analysis has shown that, indeed, the analytic pattern *not* + adjective becomes easier to process due to increased predictability of the adjectives within their preceding contexts. We assume that this higher predictability can be attributed to the pattern occurring in increasingly similar contexts. The constant use of the function word *not* also has a certain influence on the overall surprisal of the trigrams

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preceding the adjectives in this negation pattern. The two synthetically negated adjective types develop in divergent directions. *Un*-adjectives tend to require slightly lower processing effort over time, which can be attributed to the increasing frequency alongside rather stable contexts of *un*-adjectives, while *non*-adjectives overall become harder to process, possibly due to a diversified use in varied contexts.

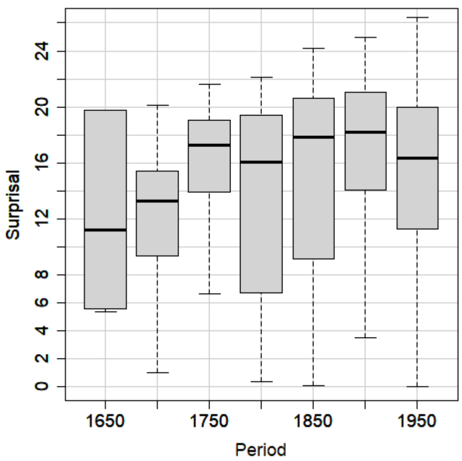

Figure 6. Surprisal of adjectives with *non*- across 50-year time periods in RSC 6.0.1

5.2.2 Micro-analytical inspection of preceding and following contexts

To find out why exactly surprisal values of the adjectives in the synthetic and analytic negation patterns diverge, we conduct a micro-analysis of the preceding contexts of the negated adjectives that we identified with our queries. To obtain an overview of their grammatical syntagmatic contexts, we extract the preceding **POS trigrams** concentrating on the most frequent ones in each time period. We further extract the most frequent preceding **lexical trigrams**, which ultimately form the basis of the surprisal score calculated for each adjective (cf. Section 4.1).

5.2.2.1 Not + adjective

We first look at the most frequent POS trigrams preceding the pattern *not* + adjective. For this, we extract all trigrams that are found among the five most frequent POS trigrams in at least one of the 50-year periods of the corpus and highlight the five most frequent ones of each period with a black border (Fig. 7). We see that three trigrams become increasingly prominent over time: [N-N-VB: noun – noun – verb *be*] (green), [J-N-VB: adjective – noun – verb *be*] (dark blue) and [SENT-PP-VB: full stop – personal pronoun – verb *be*] (light blue). The first two represent parts of complex noun phrases followed by the copular verb *be*. The third pattern represents sentence-initial evaluative patterns (e.g., *". It is not possible", ". It is not correct"*) of a highly conventionalised form.

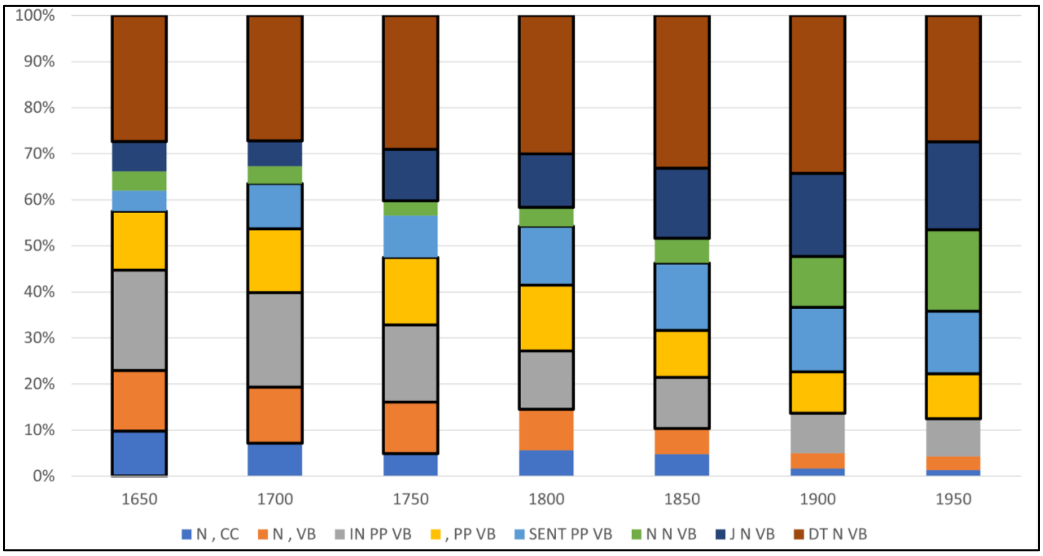

Figure 7. Development of trigrams preceding *not* + adjective in RSC 6.0.1 that were among the top five in at least one of the 50-year periods [the top 5 highlighted in the bar for each period respectively]

Since the surprisal of each word (cf. Section 5.2.1) is calculated given its preceding tokens, we check which lexical realizations contribute most to the decreasing surprisal of adjectives in the *not* + adjective pattern. To do so, we extract the five most frequent lexical trigrams preceding this pattern (Tab. 2). In the last time period (1950–1996), the most frequent lexical trigram (. *It is*) largely corresponds with the highly frequent preceding POS pattern [SENT-PP-VB], while the most frequent lexical trigrams in the first period are more heterogeneous (*"I thought it", "that it was", "that I was"*). Specifically, we can observe that in 1650–1700 not only the preceding trigrams but also the adjectives themselves are more varied (*amiss*, *possible*, *strange*, *able*), and not all of them have prefixed negated forms and/or could occur before nouns, while at the

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end of the 20th century all preceding contexts contain *it is / was* and three out of five adjectives are the same (*possible*).

Table 2. Top five lexical trigrams preceding *not* + adjective in RSC 6.0.1

1665–1699	1950–1996
I thought it not ***amiss***	*. It is* not ***possible***
that it was not ***possible***	*. It is* not ***clear***
that I was not ***able***	*, it is* not ***possible***
, it is not ***strange***	*. It is* not ***surprising***
, I am not ***able***	*. It was* not ***possible***

Therefore, we can confirm our assumption that the decrease in surprisal of adjectives negated by *not* derives from increasingly conventionalised contexts preceding such adjectives. In addition, we see that the contexts not only become more similar over time, but also less informationally dense, i.e., they contain overall more function words carrying less information (*it* instead of *I*, copula *be* instead of a lexical verb). Also, the trigrams in the last time period include a punctuation mark (generally carrying extremely low information content) pointing to a change in syntactic position of the *not* + adjective form from predominant use in subordinate clauses in 1665–1699 to the sentence-initial position in 1950–1996, i.e. functioning as an introductory, quite conventionalised evaluative phrase with low information content in the thematic position.

We further look at the right contexts of the construction by extracting the five most frequent subsequent POS trigrams. While the right context does not affect our surprisal values, it may however indicate the conditions under which the *not* + adjective form continues to be used. As shown in Fig. 8, there are three groups of trigrams following the analytic negation pattern: trigrams starting with *to*, e.g., [TO VV DT] (*to* – verb – determiner), trigrams starting with a preposition or subordinating conjunction, e.g., [IN DT N] (preposition / subordinating conjunction – determiner – noun) and a trigram starting with a comma [, IN DT] (comma – preposition / subordinating conjunction – determiner). The latter trigram represents cases where the adjective is not further defined, while the other two trigrams represent cases where the adjective is

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complemented by a *to*-infinitive or a prepositional phrase. In an aggregated version of Fig. 8, we summarise the trigrams into prepositional phrases (PP) and *to*-infinitives (TO INF) and the pattern starting with a comma (COMMA) (Fig. 9).

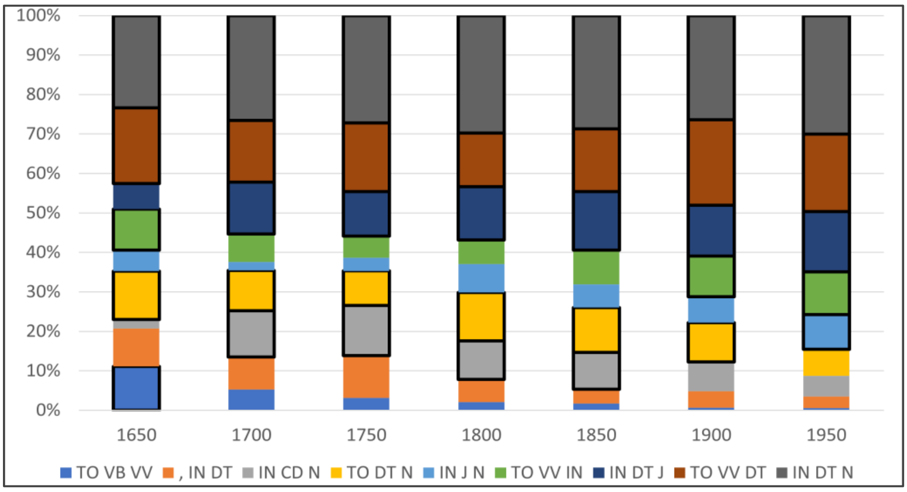

Figure 8. Development of trigrams following *not* + adjective in RSC 6.0.1 that were among the top five in at least one of the 50-year periods [the top 5 highlighted in the bar for each period respectively]

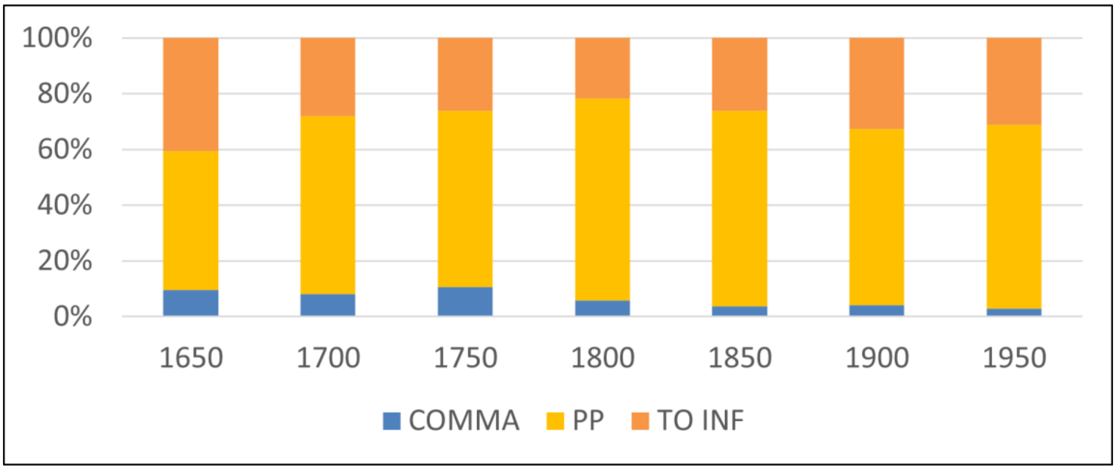

Figure 9. Five most frequent trigrams following *not* + adjective in RSC 6.0.1, aggregated into those followed by a comma and two tokens not further specified here (COMMA) indicating the occurrence of *not* + adjective in a clause-final position and those indicating the use of a *to*-infinitive clause (TO INF) or a prepositional phrases (PP) directly after the *not* + adjective sequence

We find that in all the time periods, analytically negated adjective constructions are most frequently followed by prepositional phrases (e.g., *not sensible of pain*). *To*-infinitives (e.g., *not possible to find*) represent the second most frequent pattern

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declining towards the mid-19th century and increasing again in the 20th century. The only pattern clearly fading out of the picture is the pattern starting with a comma, which represents negated adjectives without further defining information. We conclude from this that analytically negated adjectives continue to fulfil an important function in contexts where postmodification with a prepositional phrase or a *to*-infinitive is required. Postmodified adjectives cannot be placed in an attributive position, e.g., *"The person was not sensible of pain"* cannot be rephrased to *"*The non-sensible of pain person"* or *"the problem was not possible to be solved"* to *"*The not possible to solve problem."* A negated adjective that is not postmodified can more easily be prepended, e.g., *"The function was not linear" –> "the nonlinear function."* Note that *to*-infinitives can, for instance, be rephrased using affixation, encoding semantic information on the morphological level, i.e., "it was not possible to solve" can be rephrased as "It was *not solvable,"* or *"it was not easy to recognize"* as *"It was not easily recognizable,"* which is why they might be less frequent than prepositionally complemented adjectives.

Finally, considering a smaller window of context right of the *not* + adjective construction (the top ten unigrams following the analytic construction, Fig. 10) allows us to see in a more detailed way which grammatical contexts shape the use of *not* + adjective. We not only find the expected increase in the number of prepositions and subordinating conjunctions (IN) and the slightly decreasing proportion of *to*-infinitives (TO), but also an interesting proportional change in the overall sentence position of the analytically negated adjectives (sentence-final position [SENT] as compared to clause-final position [,]). As suggested by the trigram patterns, *not* + adjective increasingly occurs in the sentence-final position (around twice as often in 1950–1996 compared to 1665–1699), while its occurrence in the clause-final position (before a comma) declines by 50%.

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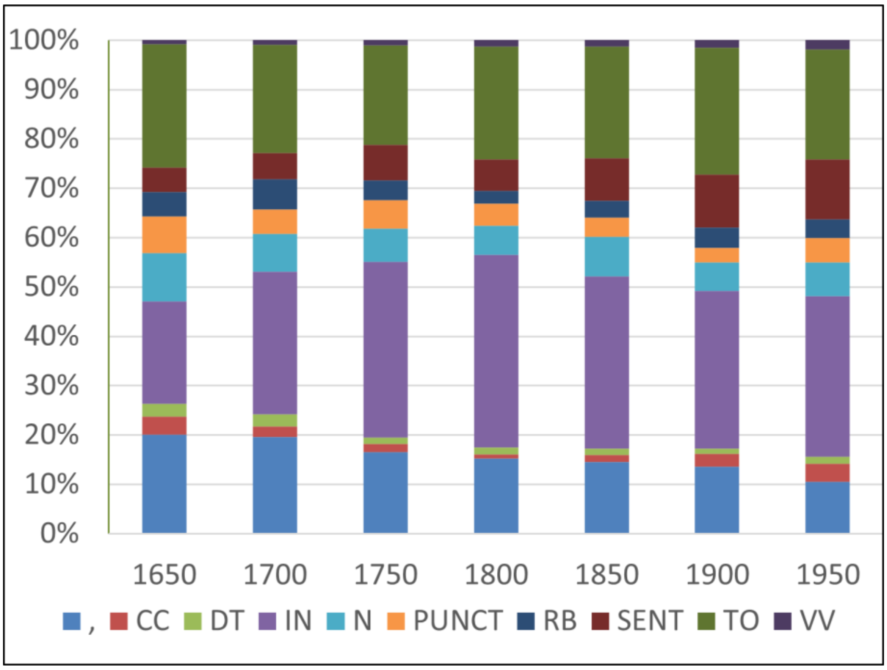

Figure 10. Top ten unigrams following *not* + adjective in RSC 6.0.1

In summary, analytically negated adjectives increasingly occur in conventionalised sentence-initial contexts, while the right context is dominated by prepositional phrases and *to*-infinitives. In terms of the sentence position, they seem to move to the beginning or end of a sentence, while their occurrence in the mid-sentence position seems to become less frequent over time.

5.2.2.2 Adjectives with prefix un-

Looking at the five most frequent POS trigrams preceding *un*-adjectives (Fig. 11), we find an increasing proportion of copular constructions including the verb *be* (VB), e.g., [N VB RB], [DT N VB] and [J N VB] where *un*-adjectives take the role of a predicative adjective phrase. Also, the most frequent pattern [N IN DT] (noun – preposition / subordinating conjunction – determiner) becomes more frequent. This trigram represents a context in which the adjective stands in the attributive position. Note that the context further to the left is potentially ambiguous since the POS tag IN can represent a preposition or a subordinating conjunction. The pattern may indicate the use of *un*-adjectives occurring in complex noun phrases of the type *"unequal distribution of the…", "undeniable proofs in the…"*) or of the type *"unexpected result*

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that the…", "unequivocal evidence that the…"), although the latter is not frequently used in the RSC.

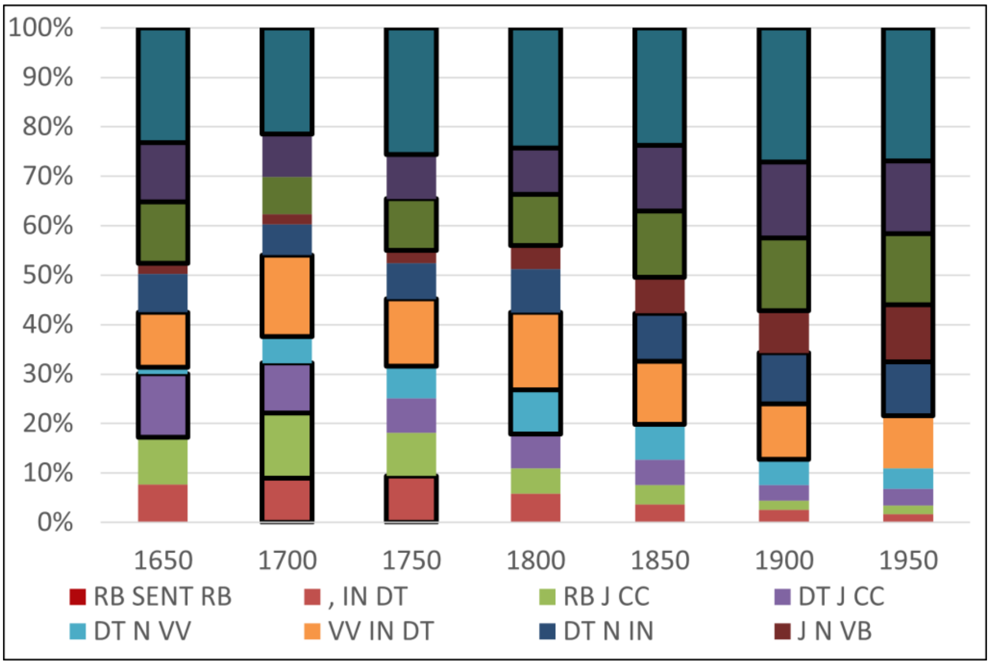

Figure 11. Development of trigrams preceding adjectives with *un-* in RSC 6.0.1 that were among the top five in at least one of the 50-year periods [the top 5 highlighted in the bar for each period respectively]

We aggregate the top 5 trigrams into three types of patterns: those that introduce the *un*-adjective in the attributive position (ATTRIBUTIVE), e.g., [DT J CC] (determiner – adjective – coordinating conjunction); those that introduce the adjective in the predicative position (PREDICATIVE), e.g., [DT N VB] (determiner – noun – verb *be*); those that are not categorizable into either of the two groups (NA) (see Fig. 12). We find that, indeed, *un*-adjectives increasingly occur in the predicative position in connection with verb phrases (40% in 1950–1996) while their use in the attributive position drops to slightly over 50% after 1850. These developments point to a versatility of usage options for *un*-adjectives. This versatility could explain the highest overall frequency of *un*-adjectives amongst the three patterns as well as the steep increase in the frequency of *un*-adjectives compared to *not* + adjective, which is confined to the predicative position.

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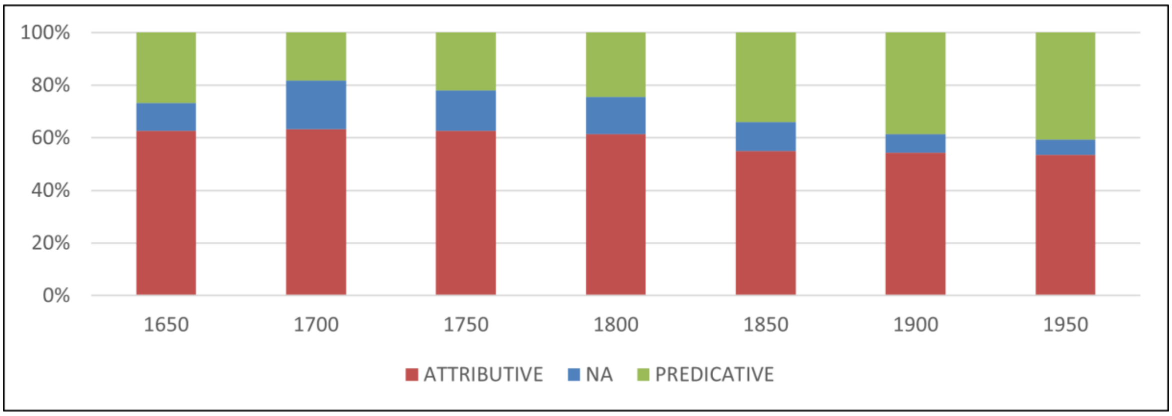

Figure 12. Five most frequent trigrams preceding adjectives with *un-* (cf. Fig. 11) in RSC 6.0.1, aggregated into predicative, attributive, and non-categorised (NA) patterns

Looking at the right contexts of *un*-adjectives (Fig. 13), we find a relatively stable distribution with three trigrams dominating the position throughout all the time periods: [N IN DT], [IN DT N], and [N IN N]. The three patterns confirm that *un*-adjectives most frequently occur immediately followed by a noun (attributive position) or followed by a preposition (predicative position). In addition, at the end of the 20th century *un*-adjectives in the attributive position occur increasingly at the end of sentences ([N SENT DT], [N) SENT]), while their occurrence in the clause-final position, e.g., [N , IN] (noun – comma – preposition or subordinating conjunction) decreases over time. This may point to a general shift of heavy and informationally dense noun phrases to the end of sentences.

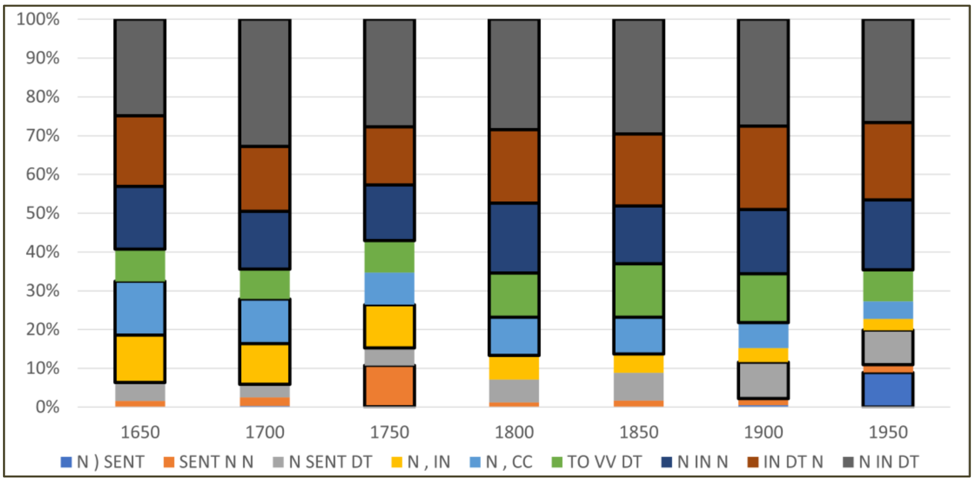

Figure 13. Development of trigrams following adjectives with *un-* in RSC 6.0.1 that were among the top five in at least one of the 50-year periods [the top 5 highlighted in the bar for each period respectively]

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A look into the most frequent lexical trigrams preceding *un*-adjectives reveals a similar development as the one found for the analytically negated adjectives (*not* + adjective) explaining the decline in surprisal. In the 17th century, the left lexical contexts of *un*-adjectives are lexically and grammatically heterogeneous, representing a mix of attributive and predicative positions of the *un*-adjectives. At the end of the 20th century, contexts are strongly conventionalised: four out of the five patterns represent sentence-initial (*". It is unlikely"*, *". It seems unlikely"*) and clause-initial (*", it is unlikely"*) copula patterns expressing evidentiality. Also, the *un*-adjectives in the first time period are more diverse (*unusual, unknown*, *unwilling, unequal*) than in the last period (*unlikely*, *unable*). Interestingly, the development of the lexical contexts of *un*-adjectives correlates strongly with that of the *not* + adjective pattern in that both increasingly occur in sentence-initial formulaic copula constructions of the type *". It is* *not* + adjective / *un*-adjective*"*.

Table 3. Top five lexical trigrams preceding adjectives with *un*- in RSC 6.0.1

1665–1699	1950–1996
, concerning an ***unusual***	*. It is* ***unlikely***
, with other ***unknown***	*, it is* ***unlikely***
which we are ***unwilling***	*. It seems* ***unlikely***
which was then ***unknown***	*, it seems* ***unlikely***
to be very ***unequal***	*we have been* ***unable***

5.2.2.3 Adjectives with prefix non-

A look into the five most frequent POS trigrams preceding *non*-adjectives (Fig. 14) indicates that in the 17th century the preceding contexts for *non*-adjectives were dominated by adjectives followed by coordinating conjunctions [DT J CC] (determiner – adjective – coordinating conjunction), [IN J CC] (preposition / subordinating conjunction – adjective – coordinating conjunction), [VB J CC] (verb *be* – adjective – coordinating conjunction). This shows that *non*-adjectives at earlier stages were mostly used in combination with other adjectives. In the following time periods, the coordinating conjunctions become less frequent, while trigrams representing parts of noun phrases preceding *non*-adjectives take over the slot, e.g., [N IN DT] (noun –

preposition or subordinating conjunction – determiner), [DT N IN] (determiner – noun – preposition or subordinating conjunction), [J N IN] (adjective – preposition or subordinating conjunction – determiner).

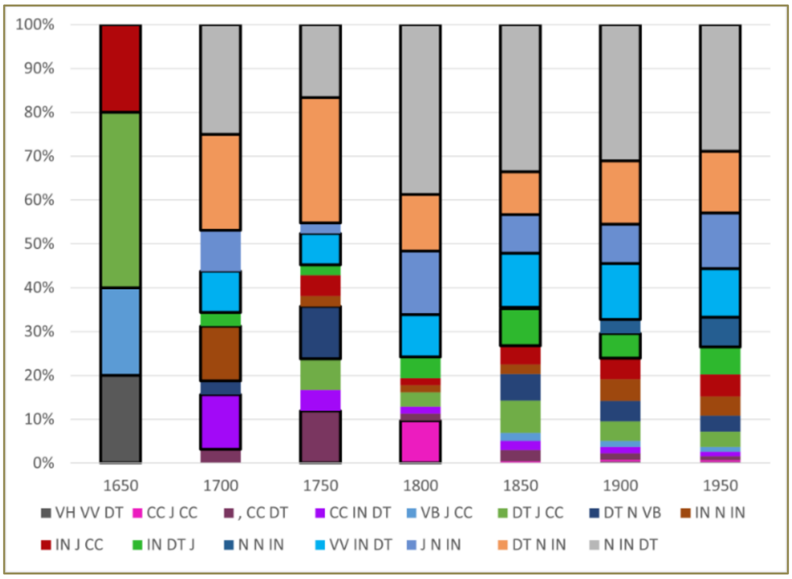

Figure 14. Development of trigrams preceding adjectives with *non-* in RSC 6.0.1 that were among the top five in at least one of the 50-year periods [the top 5 highlighted in the bar for each period respectively]

These contexts containing nouns and adjectives are informationally very dense, which could provide an explanation for the increasing surprisal values of the *non*-adjectives. Nouns usually carry more information than function words and make upcoming words less easily predictable.

Aggregating the entire group of the top five trigrams preceding the *non*-adjectives into predicative (patterns including the verb *be*) and attributive (those patterns that represent parts of noun phrases left of an attributive adjective) patterns (Fig. 15), we find a predominantly attributive use of *non*-adjectives throughout all the time periods. The right contexts (Fig. 16) are even less ambiguous since all of them start with a noun or an adjective followed by a noun. There is only one exception to this in the period between 1665 and 1699: [, RB VV] (comma – adverb – verb). These findings represent a contrast to adjectives negated with *un*-, which frequently occur both in attributive and predicative positions.

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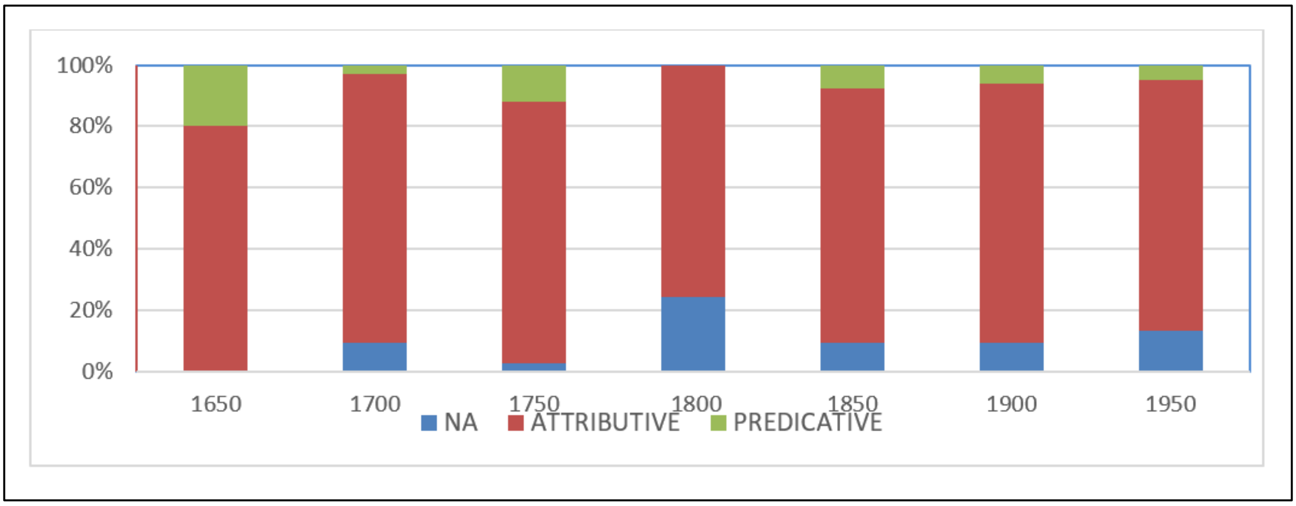

Figure 15. Five most frequent trigrams preceding adjectives with *non-* in RSC 6.0.1 aggregated into attributive, predicative and non-categorised (NA) patterns

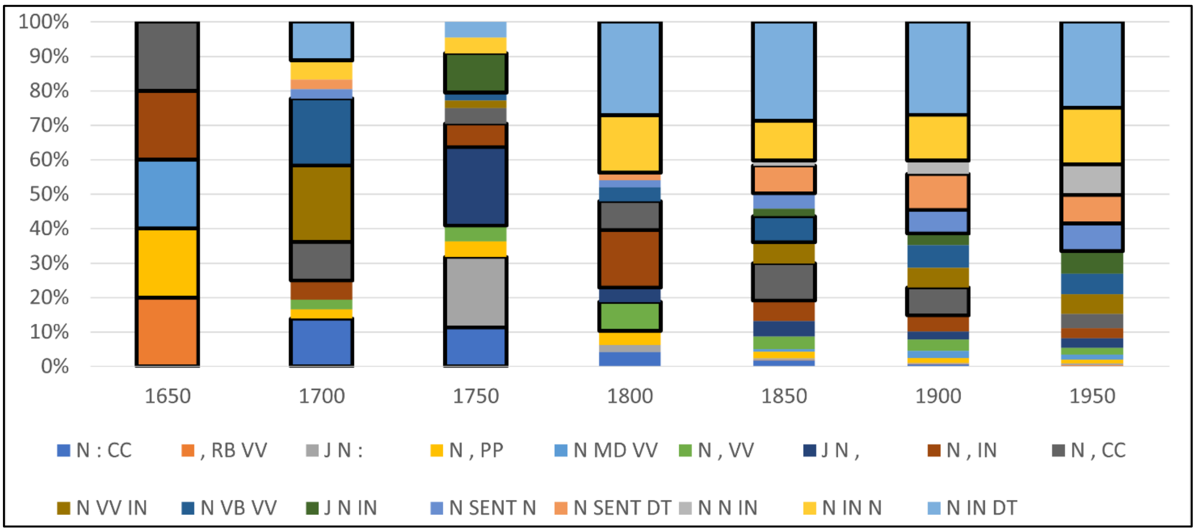

Figure 16. Development of trigrams following adjectives with *non-* in RSC 6.0.1 that were among the top five in at least one of the 50-year periods [the top 5 highlighted in the bar for each period respectively]

In 1665–1699, we see coordinate adjective structures as parts of noun phrases and predicative expressions among the top five POS trigrams of this time period (e.g., *"with impertinent and nonsensical"*, *"The new and non-descript"*, *"are new and nondescript"*, etc.) (Tab. 4). The prevailing *non*-adjective is *nondescript* (with and without hyphen). The most frequent lexical trigrams in 1950–1996 still contain coordinate adjectives (*linear and nonlinear*), but also parts of different types of complex noun phrases and prepositional phrases (predominantly with the recurrent adjective *nonlinear*). Some occur here again as frequent collocations as they are parts of constructions such as

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article titles that are quoted throughout different publications. We can assume that it is the more specific vocabulary in more complex noun phrases in contexts around *non*-adjectives that push surprisal values to increase in the later time periods.

Table 4. Top five lexical trigrams preceding adjectives with *non*- in RSC 6.0.1

1665–1699	1950–1996
with impertinent and ***nonsensical***	*1974 Linear and* ***nonlinear***
The new and ***non-descript***	*solutions of the* ***nonlinear***
such rare and ***non-descript***	*solution of the* ***nonlinear***
hath seen the ***nondescript***	*the linear and* ***nonlinear***
are new and ***nondescript***	*) On the* ***non-radial***

Another reason for the increase in surprisal may be a generally more diverse set of *non*-adjective types (Fig. 17).

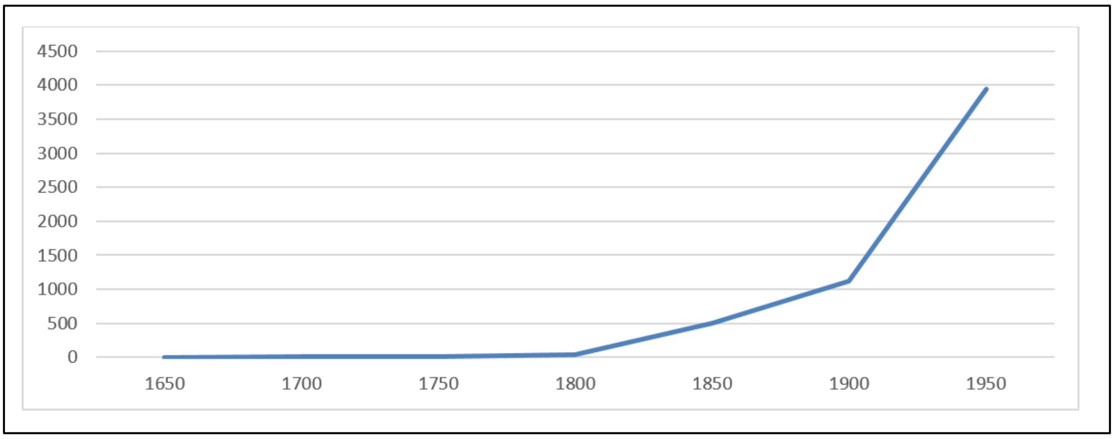

Figure 17. Different adjective types, (i.e. distinct word forms) with *non*- in the different time periods from the RSC 6.0.1

The fact that *non*- becomes increasingly frequent while *not* + adjective combinations become rare could suggest that *non*-adjectives gradually take over the function of predicative analytic adjectives in contexts where this is possible: e.g., *"the equation is not linear" – "the nonlinear equation"*. However, predicative adjectives with *to*-infinitives or complements cannot be moved to the attributive position (4 & 5):

(4) a) *The water was not proper for these Eels…* (RSC 6.0.1 text ID: 102744)

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b) **The non-proper for these Eels water…*

(5) a) *… its spring is not sufficient to resist this pressure,…* (RSC 6.0.1 text ID: 102201)

b)* *… its non-sufficient to resist this pressure spring…*

5.2.2.4 Summary of micro-analysis

In summary, we have observed a diachronic change in use from analytic negation patterns towards synthetically negated adjectives in scientific journal articles. The analytically negated adjectives do not only become less frequent, but also less cognitively demanding over time as their predictability in context increases. Their decrease in information density is caused by strongly conventionalised left contexts, both on the grammatical (POS) and lexical levels. Grammatically, analytic negation patterns occur increasingly at the beginning of sentences, often embedded in copula constructions of the type ". *It is not* + adjective", or at the very end of sentences. Furthermore, the remaining adjectives negated with *not* increasingly occur in combination with a postmodifying *to*-infinitive or a prepositional phrase and represent cases that cannot easily be reformulated by using synthetically negated adjectives.

For both synthetically negated adjective types (*un-* and *non-*) we observe a strong increase in frequency between 1665 and 1996. While adjectives with *un-* are already very frequent in the 17th century, adjectives with *non-* soar in the last two centuries. The long-established adjectives with *un-* become increasingly predictable and less cognitively demanding over time settling in versatile, attributive, and increasingly predicative contexts. The predicative contexts are strongly conventionalised and possibly account for their decreasing surprisal overall. Like the analytically negated adjectives, adjectives with *un-* progressively gravitate towards the sentence beginning in copula constructions (*". It is un*-adjective*"*). Adjectives with *non-*, representing new members to the negation paradigm, represent the informationally most dense type of the three observed patterns. These adjectives seem to be confined to the attributive position increasingly occurring as parts of complex noun phrases such as *"solution of*

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the non-linear equation".

6. Directions for future research

In the future, we would like to compare scientific language to other registers and to register-mixed diachronic corpora. For the comparative purposes related to diachronic aspects of synthetic and analytic adjective negation in the LModE period, we are planning to use the Corpus of Late Modern English Texts (CLMET, a relatively register-balanced corpus with a substantial part drawn from prose fiction, 1710–1920, De Smet et al. 2015) as a reference corpus. Scientific English and general English have become more distinct from one another over time (Degaetano-Ortlieb & Teich 2019). In the RSC, *un-* and *non-* become more frequent indicating a trend towards compressed negation patterns, but in the CLMET, we expect *un-* to become less frequent and adjectives prefixed with *non-* occurring only occasionally. As the variation between adjective negation via affixes and via analytic negation marker is not restricted to English, a contrastive study might be another interesting suggestion for future work, e.g., a comparison to German and French, where the status of *non(-)* or *nicht(-)* in front of adjectives is less clear than that of *non-* in English, so that these patterns are in between prefixed, morphological constructions and syntactic constructions with a negative particle (e.g., variants such as *non syndical* vs. *non-syndical* or *nichtabgeschlossen, nicht-abgeschlossen, nicht abgeschlossen* can be found, cf. Dugas 2014; Schneider 2020).

Another possible avenue for future research is the use of word embeddings of the RSC, a model that captures the usage patterns of the words and the distributionally most similar words in the corpus data (Teich et al. 2021). The interactive visualization (Word embeddings, *s.a.*) contains various clusters of multimorphemic adjectives that have formed and conventionalised particularly throughout LModE usage in scientific articles and that occur in close neighbourhood to each other. This application may provide useful insights on the diachronic development of synthetically negated forms

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and structurally similar adjectives as well as their typical lexical contexts.

7. Conclusions

In the present paper we followed the hypothesis that prefixed negated adjectives become more frequent than analytically negated adjectives in scientific English over time. Our frequency-based analysis confirms the hypothesis showing that adjectives prefixed with *un-* and *non-* increase in frequency, while analytic forms of adjective negation become less frequent. In line with our second hypothesis, our surprisal-based analysis shows that analytically negated adjectives are less informationally dense (showing overall lower surprisal) than prefixed negated adjectives. By looking at the grammatical as well as lexical contexts of the negation patterns we found that analytically negated adjectives occur in increasingly conventionalised contexts and become therefore more easily predictable. Synthetic forms, while becoming more frequent, also become more diverse in terms of their contexts. Adjectives with the prefix *un-* are used versatilely in attributive and predicative positions. Adjectives with *non-* have become common premodifying items typically embedded in complex noun phrases carrying a high information load. Scientific language thus shows a trend towards informational densification due to using more condensed forms of adjective negation, while conserving less dense structures only where syntactically needed or where the formation of a synthetically negated adjective is blocked. Additionally, the function of prefixes concerning adding nuances and contributing to a finer adjustment of information than negation with *not* (as discussed in Section 2.1) seems to play an increasing role, at least with regard to the usage of *un-*.

Notes

1. "Affixal negation" / "morphological negation" / "synthetic negation" as well as "non-affixal negation" / "analytic negation" and the terms "patterns," "constructions" and "forms," respectively, are used synonymously in this paper.

2. In contrast to *un-*, *non-* has a hyphenated and a non-hyphenated form. The hyphenated form is the dominant one throughout the data. To a certain extent, the

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existence of individual spelling variants for some forms might also have an influence on surprisal.

Abbreviations

BNC – British National Corpus

CQP – Corpus Query Processor

CLMET – Corpus of Late Modern English texts

EModE – Early Modern English

LModE – Late Modern English

OCR – Optical character recognition

OED – Oxford English Dictionary

PDE – Present-Day English

POS – part-of-speech (individual part-of-speech name abbreviation from the tagset used in this paper can be found in the Penn Treebank tagset, *s.a.*)

RSC – Royal Society Corpus

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Résumé

This paper examines the development of synthetic and analytic adjective negation in an English diachronic corpus of scientific journal articles (Royal Society Corpus 6.0.1 – RSC, 1665–1996). We specifically focus on synthetically negated adjectives with the prefix *un-* or *non-* (e.g., *unavoidable, non-magnetic*) and analytic patterns in adjectives after the negation marker *not* (e.g., *not avoidable*, *not magnetic*). The use of more condensed synthetic forms contributes to economy of expression and represents a register-specific strategy used by writers to optimise the information density distribution in linguistic structures with regard to the expectations and processing capacity of their addressees. Synthetically negated English adjectives contribute to word-internal compression as multimorphemic noun premodifiers or predicative expressions (e.g., *"non-magnetic metals"*, *"unavoidable difficulties"*) in contrast to clausal structures containing positive adjectives and the analytic negation marker *not* (e.g., in *"metals which are not magnetic"*, *"difficulties are not avoidable"*), which often represent less compressed variants. Besides comparing frequency distributions over time, we use surprisal from an information-theoretic framework to measure the amount of information that particular patterns carry. Overall, we find that analytic patterns of adjective negation become less frequent in scientific writing, but more conventionalised – and therefore more easily predictable – in their textual contexts.

Prefixed negated adjectives become more frequent and more diverse with regard to their contexts. Adjectives with the negation marker *un-* are used in a more versatile way in attributive and predicative positions. Adjectives with *non-*, an initially rare word formation pattern, become established as common lexemes in scientific terminology, typically embedded as attributive modifiers in complex noun phrases carrying a high information load. English scientific journal articles thus show a trend towards informational densification by using more condensed forms of adjective negation while conserving less dense structures primarily in contexts where they are syntactically or grammatically required.

Key words: adjective negation, prefixation, clausal negation, scientific English, corpus-based diachronic analysis, surprisal.

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STUDYING THE IMAGE-SYMBOL *LABYRINTH*: A MYSTERY? A POSSIBLE ROUTE? OR A TRIAL?

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Abstract: Grounded on the integrity of the linguosemiotic, cognitive linguistic, linguocultural, and narratological methods of the literary image research, the paper focuses on the ways of construing the image-symbol *labyrinth* in the anti-utopian novel "*The maze runner*" by James Dashner. Considering the multileveled structure of the *labyrinth*, the paper studies it at three textual vectors (verbal, conceptual, and symbolic) applying the theory of possible worlds.

Key words: image-symbol, possible worlds, anti-utopian novel, linguocultural approach, linguosemiotic aspect.

1. Introduction

The labyrinth is something that attracts by its sacredness, its powerfulness, and mysteriousness. Everybody at some point (in their life) can find themselves in a situation, which can be conceived of as the *labyrinth* and must complete the quest to find the way out of that situation. The unconventional and diverse nature of the *labyrinth* activates a broad range of interpretations and implementations in various literary genres.

A *labyrinth* can be treated as a mystery, a secret route, a trial to be overcome, a set of challenges to be tackled. In this interpretation, the labyrinth correlates with the concept of MYSTERY (Knobloch 2003). Knobloch studies the ways of implementation of the mystery in the plot of detective stories looking at the etymology and semantics of lexemes, which provide some explicit or implicit characteristics to produce the concept of MYSTERY. Nevertheless, his inquiries are not merely concerned with the image or symbol *labyrinth,* though they give the insights on the main aspects of the concept of MYSTERY, which lies at the heart of interpretation of the image-symbol *labyrinth*.

Our research **aims** at a multidimensional study of the image-symbol of *labyrinth* in the anti-utopian novel "*The maze runner*". In this paper, we study extralinguistic and reveal linguistic factors, which influence the construing of the image-symbol *labyrinth* considering its mythological, folklore background and features of the genre of the novel "*The maze runner*", which is the anti-utopian one. The **tasks** of our paper are as follows: to analyse various interpretations of such notions as "image", "verbal image", and literary image"; to reveal the mythological and folklore backgrounds of the phenomenon of labyrinth for its further construing in the novel "*The maze runner*"; to work out an algorithm for construing the model of the image-symbol *labyrinth* in the anti-utopian text.

2. Material and methods

The present study investigates the image-symbol *labyrinth* in the 21st century American anti-utopian literary text. The factual **material** of the research is the novel "*The maze runner*" written by contemporary American writer James Dashner. The story runs about fifty teenagers, who must find their way out of the *Maze* to survive after a catastrophe.

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The beginning of the 21st century is characterised by a swift change of ideas and mainstreams in the anti-utopian genre, its reinterpretation of the new world's values and ideologies. Anti-utopia is a genre that has been in the focus of literary scholars' attention for many decades (Kumar 1987). However, recently some state-of-the-art linguistic studies of anti-utopian texts have started to evolve. Some linguists and philologists such as Volkova (2017) and Shishkina (Шишкина 2007) investigate the structure and compositional aspects of various concepts' verbal representations, the choice of the syntactic constructions and language means, which are dominant in the image formation.

Paying our linguistic attention to the image-symbol *labyrinth* in the anti-utopian novel we apply the **methods** of linguosemiotic, cognitive linguistics, linguocultural, and narratological analyses. The **methodology** for the study of the image-symbol *labyrinth* in the anti-utopian novel is grounded on the integration of basic statements of linguosemiotics (Степанов 2004; Morris 1938; Peirce 1991; Volkova 2018), cognitive linguistics and linguoconceptology (Langacker 1991; Prihodko & Prykhodchenko 2018; Talmy 2000; Vorobyova 2017), linguoculturology (Panasenko 2020; Stashko 2017; Volkova 2018), cognitive poetics (Marina 2018; Stockwell 1992; Vorobyova & Lunyova 2020;), the theory of possible worlds (Eco 1978; Doležel 1998; Lewis 1986; Ryan 2006), and the theory of mythologically oriented semiosis (Колесник 2003; Kravchenko et al. 2021; Volkova 2016).

3. Understanding the notions of "verbal image", "symbol", and a "literary image"

The image-symbol *labyrinth* in the paper is studied as a complex syncretic system. What do we mean by that? When uttering the word of the *labyrinth*, one can imagine the object of the *labyrinth* first. Certain graphical associations of this image come to the mind when the labyrinth is conceived of as some space to pass through. One may think about it as a form of some sets of circles curling like a spiral; one may associate it with a square which consists of some "rooms", where each next room starts from the point where the previous one ends, and so on so forth.

Based on the material of our investigation, the text by James Dashner *"The maze runner"*, we study the *labyrinth* from different perspectives. We are interested not only in the meaning of *labyrinth* as such as defined in the dictionary, but we study it as an image, which has mythological and social backgrounds. The points of our linguistic interest are as follows: What is *labyrinth* in the anti-utopian text? What images does it conjure up? If it is a symbol, what does it symbolize? What are the ways of conceptualizing this symbol in the text?

The theoretical studying of the notion "image" starts from the ancient world. It is originated from the Greek word "eidos", which was used by ancient philosophers to state the form of interpreting and exploring the world by humans (Філософський енциклопедичний словник 2002). Plato associates "image" with the term "idea", where the former is understood as some incorporeal entity, which exists prior to a physical thing and independently of it (Kraut 2017). Ideas or images according to philosopher's view precede all real physical objects and can be perceived by mind rather than senses (Філософський енциклопедичний словник 2002). German philosopher Humboldt (2000) proclaims that words, which are used as signs of objects, create not only the images of corresponding objects but keep their implicit relations with one another. English philosopher Russell (1993) notices that images are necessary to explain the words that do not correspond to any physical objects.

In linguistic terms, "image" is treated as the verbal image, which can be of two types – a language image and a speech image. Based on the theory of verbal image developed by Belekhova, the verbal image is classified as a way of organizing the language canvas of every poetic text, where some knowledge structures of the world acquire certain physical characteristics (Бєлєхова 2002). The verbal image is a segment of a speech act where a word or collocation bears some abstract information, and its final sense

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does not equal the individual meanings of its constituents. The verbal image is a tool to create a unique structure of a poetic text, in which some predetermined world knowledge obtains its specific physical shape (Горчак 2009).

Verbal signs always convey some specific image in the text, which in turn creates the symbolic connotation of this image, the so-called verbal symbol. The verbal symbol is a consistent associative set that exists in people's consciousness and carries a range of semes, which are culturally, stereotypically, and archetypically determined; in other words, they bear some ancient mythological origin (ibid.).

The image-symbol is an implicative, macro contextual, and dynamic verbal image, which is characterised by a duality of references and the domination of a derivative meaning over a denotational one (Нестеров 2002). The duality of references means that the name of a verbal image-symbol correlates at the same time with a certain object in the extralinguistic reality, which is qualitatively different from the construct in a person's consciousness and based on the context and personal interpretation of this name.

The symbol is an essential part of peoples' language worldview; some researchers even consider it to be a sign representation of the ethnic mindset. Based on the definition provided by Shelestiuk we understand the symbol as a sign, which transcends its original meaning and becomes more abstract and general (Шелестюк 1997). The researcher also states that symbols are nationally specified and rooted in the collective psyche, as their configuration dwells on the shared experience, which has been accumulated by successive generations (ibid.). Symbols belong to both language and speech because they transmit some abstract 'aura', which originally exists in the activation of the word and can further lead to the activation of two and more symbolic senses depending on the context where they activated. The relation between a symbol and an input word can be of different types such as comparison, opposition, and causality (Потебня 2000).

Some scholars study the symbol from the perspective of a three-layer structure that consists of an image, a sign, and a symbol. Firstly, the image denotes the relevant object, which exists in people's knowledge system and experience. Further, the sign points to a set of images, which define its interpretation. Eventually, the symbol facilitates a particular field of abstract notions that revolve beyond a connotative meaning of the given sign in the immediate moment and context (Алефиренко 2009).

As is seen from the above explanations of the notion 'symbol', it should always be grounded in some distinctive image or correlation of images. The symbol of labyrinth incorporates a range of interrelated images and facets that evolve into a unique but worldwide renowned symbol. In turn, the range of images that lie at the heart of the labyrinth are grounded in some verbal signs, and indeed the sign can be considered as the minimal feature that triggers the development of some higher-level formations as symbols and images. These advanced formations strive to represent a synergy between a person and their environment, experience, and subjective perception of the surrounding world. From a linguosemiotic perspective, the image is a product of mapping real or abstract objects by means of verbal signs. From the standpoint of linguosemiotics, people's shared worldview is a result of accumulating some information about the world that is accompanied by signs production and an evolution of their meanings and discursive senses (Лотман 1992). The collaborative nature of the sign displays its relations between reasoning, culture, language, and speech (Лотман 1996). Volkova (2018: 449) shares quite a similar view on the notion of symbol focusing her attention on the ethnocultural symbols in Amerindian texts. She studies the syntactic imagery representation that correlates with the construction of higher symbolic meanings.

Images and symbolic meaning and function are always in the focus of linguists. For example, Stashko (2017) in her stylistic analysis of female images in American song folklore examines how symbolic language elements contribute to the construction of verbal images. Panasenko (2020) in her study of the novels by Iris Murdoch demonstrates how focal and subsidiary colours influence the plot development and text perception, how they weave into the texture of a work of fiction, creating rich images and characters. With such a focus of the novel analysis she concludes that "analyzing female and male characters, who may be antagonists or protagonists, considering moral aspects of the novels describing the battle between the good and the evil, we must always bear in mind symbolic meaning of colours typical of different cultures" (Panasenko 2020: 188). Through the prism of intermediality Vorobyova and Lunyova (2020) study the relation between a word and an image examining John Berger's views on writing about art.

Summarizing various approaches to understanding the terms a *verbal image*, a *symbol*, and a *literary image*, we treat the *labyrinth* as a literary image-symbol and analyse it in the anti-utopian novel as a sophisticated advanced formation that is produced at three distinctive textual levels.

4. Results and discussion

The research results prove that the image-symbol *labyrinth* is a complex construct, which has mythological, folklore intertextual components in combination with those given to it by the author of the anti-utopian text. All these influence its content and make it possible to model it as a product of multi-levelled structure. In this section the image-symbol *labyrinth* is investigated regarding its mythological, folklore, and anti-utopian features considered together.

4.1 Construing the image-symbol labyrinth in the "The maze runner"

"*The maze runner*" is a story of survival, where a group of 50 teenagers try to escape from a sophisticated and doomed construction called the *Maze*. *Thomas* is the protagonist of the story who seems to know something more than others. He is the key to passing the *Maze* and can navigate quite fast through the spirals and meanders of this formation as we can read it in the fragment from the text:

(1) "*I don't have a clue what I did before they shipped me here in that metal box, but my gut tells me that being a Runner is what I'm supposed to do. I can do it*" ("*The maze runner*", p. 99).

In fact, only the *Runners* are mature enough to go through the *Maze* and come back to the safe place, the *Glade*, and they are the only who can find the solution to the *Maze*.

Starting from the outer layer of the text, the image-symbol *labyrinth* is created by the verbal signs that carry some factual, denotative information; at this point we merge two theories – the way of construing the verbal image and the first stratum of executing an image-symbol. At the next step the image-symbol *labyrinth* is transmitted through some distinctive image; in our case, this image is the labyrinth itself. At this phase, the verbal signs are rethought and acquire a deeper meaning based on the context where they function. The last stratum of the image-symbol *labyrinth* is the symbol itself. The symbol *labyrinth* is not a physical object as it can occur at the image layer; it is an advanced formation that carries an abstract idea and reader's implications. During the symbol construction, the reader reinterprets the obtained image from a cultural perspective and personal experience. At this phase, the image-symbol *labyrinth* facilitates its universal meanings, which are intrinsic to each culture and ethnic group; it also gathers some connotations based on people's experiences and worldviews. We need to take into consideration the author's general background and the narrative genre, which influence the development of the image-symbol *labyrinth*. Figure 1 represents the schematic algorithm for construing the image-symbol *labyrinth*:

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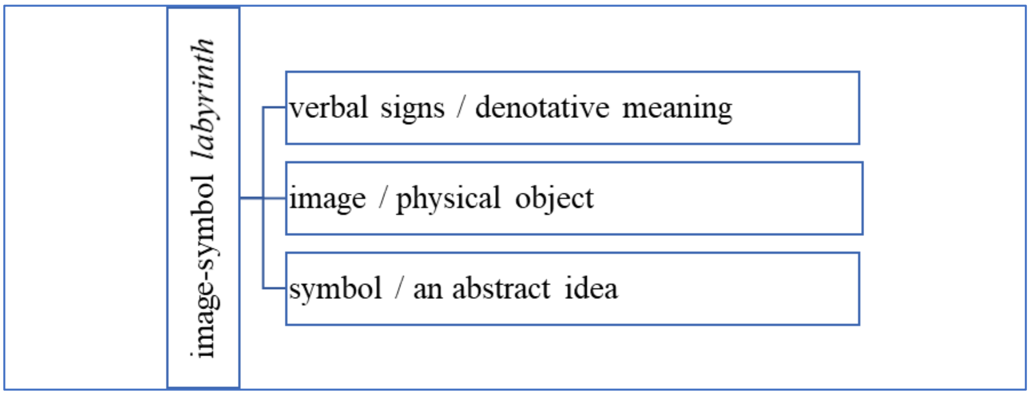

Figure 1. The schematic algorithm for construing the image-symbol *labyrinth* in the anti-utopian text (Own processing)

The outlined levels of the image-symbol *labyrinth* are fundamental points, in which each stratum further incorporates some distinctive features borrowed from a myth or a fairytale, which construct the whole possible universe of the anti-utopian text.

4.2 Mythological and folklore features of the anti-utopian image-symbol labyrinth

The image-symbol *labyrinth* in modern anti-utopian texts appears as some mosaic, checkered construction that integrates a range of quotes, allusions, and reminiscences of mythological texts and fairy tales. To comprehend their value and relations at each step of forming the image-symbol *labyrinth*, we need to underline the difference between two main categories: a myth and a fairytale.

The study of a myth and sacred tales was initiated by anthropologists, such as Levi-Strauss, Malinowski, and others in the 20th century (Levi-Strauss 1962; Malinowski 1984). Levi-Strauss (1962) led to the new notion of myth as a model. The scholar shifted attention from the diachronic approach developed by Malinowski to the synchronic framework, attempting to relate the paradigms he discovered to cosmology and worldview (ibid). Prior to anthropologists, some philosophers tried to explore the roots and meanings of myths. Malinowski argued that even if the content of the myth does not correspond to reality, the imaginative plot of a narrative builds a cultural potential of some ethnic group (poetic, imaginative, logical, and aesthetic). Hume considered that at the heart of a myth lie people's fears and hopes (The Oxford

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handbook of Hume 2016). Taylor (2003) and Spencer (1991) supposed that a myth is a substitution of scientific facts and logic by falsified beliefs about natural phenomena; the myth is a people's endeavour to cogently explain some vague and incomprehensible phenomena. The well-known psychiatrist Freud (1919) in one of his works defined a myth as a reflection of emotions, experience, and personal feelings, which are governed by psychological and ethical social rules.

For the sake of this inquiry, we focus on the study by anthropologist Malinowski. The scientist was one of the first who gave the rigorous distinction between such notions as the myth and fairytale. Following the definition provided by Malinowski, the myth is not a symbolic, but a direct expression of its subject-matter; it is not an explanation in satisfaction of a scientific interest, but a narrative resurrection of a primeval reality, told in satisfaction of deep religious wants, moral cravings, social submissions, assertions, even practical requirements. The myth fulfils in primitive culture an indispensable function: it expresses, enhances, and codifies belief; it safeguards and enforces morality; it vouches for the efficiency or ritual and contains practical rules for the guidance of man. The myth thus is a vital ingredient of human life; it is not an idle tale but a hard-worked active force; it is not an intellectual explanation or an artistic imagery, but a pragmatic charter of primitive faith and moral wisdom (1984: 199).

In the anti-utopian narrative, the myth functions as a primitive, initial, objective reality, where characters exist, and the main action takes place. For the protagonist, *Thomas*, and other 50 teenagers *the Maze* is a place to live, it has rules and rituals to follow, beliefs that are shared and common to natives residing there. At this point, the myth is incorporated at the image level into the image-symbol *labyrinth* model.

The myth as a source of perception and comprehension of the world is usually supplemented by some fantastic narratives. These stories form the bulk of fairytales, which are passed down from generation to generation. The fairytale alters its interpretation depending on the environment, historical shifts, and general

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development of humankind. The fairytales can be regarded as a kind of prism that transmits people's attitudes, desires, and values, which are produced by epoch. The tale and the narrator appear as ancient carriers of human experience and life-wisdom about social postulates and spiritual practices. They use engaging performances and a plot full of suspense and tension (decision-making, riddles, and wonders). One of the most famous and still exploited works on fairytales is "Morphology of the folktale" by Propp (2011) who looks at the discomposure of some famous fairytales into the most basic components. These constituents form a series of functions performed by the protagonist in a particular predetermined order. Even though some fairytales may lack components in their plot, typically the order of the functions usually remains the same. Propp describes the function as an event or an action (ibid., 25-66).

Tales in the anti-utopian narrative are guidelines for inhabitants to adhere to. The anthropologist Malinowski states that tales live in the memory of man, in the way, in which they are told, and even more in the complex interest, which keeps them alive, which makes the narrator recite with pride or regret, which makes the listener follow eagerly, wistfully, with hopes and ambitions roused. Thus, the essence of a fairytale is not to be found in a mere perusal of the story, but in the combined study of the narrative and its context in the social and cultural life of the natives (1984: 203).

Zinkevich-Evstigneeva elaborates on the theory that each fairytale synchronizes three realities:

1. <u>The reality of common human values</u> such as truth, creativity, cooperation, faith, and dignity. This reality is conceived through the aesthetic education whose main aim is to raise a versatile, artistic individual, who carries proper moral values, great intellectual abilities, and a strong will.
2. <u>The social reality</u>. It is grounded on relation between biological (intrinsic individual abilities) and moral (a priori social). Socialization aims at expanding moral principles

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over biological ones. The process of socializing implies moral upbringing, acquiring communicative competence, and interactive flexibility.

3. The subjective reality. This reality is also called a self-identity, where some I-concepts are formed. The subjective reality cannot function without common human values (Зинкевич-Евстигнеева 2007: 84).

These realities form one structured universe that can be transmitted into the anti-utopian narrative in the form of allusions and reminiscences. Fairytales themselves are already sophisticated structured models that differ from the image-symbol in the way that they are represented through some verbal sign system that postulates each mentioned above reality. The anti-utopian text itself is an action that strives to reveal the consequences humankind may suffer in the future following the path we are choosing at present. The function of fairytales in this context is to remind people of the timeless shared values that existed many centuries ago and continue to lead us in the present reality. That is why in our model of the image-symbol *labyrinth* fairytales reside at the level of image, where they merge with the myth, and at the level of symbol, where they trigger some abstract arcane ideas, which are universal for every culture.

Integrating the identified features of the myth and fairytale into the general model of the image-symbol *labyrinth* we obtain such a schema (Fig. 2):

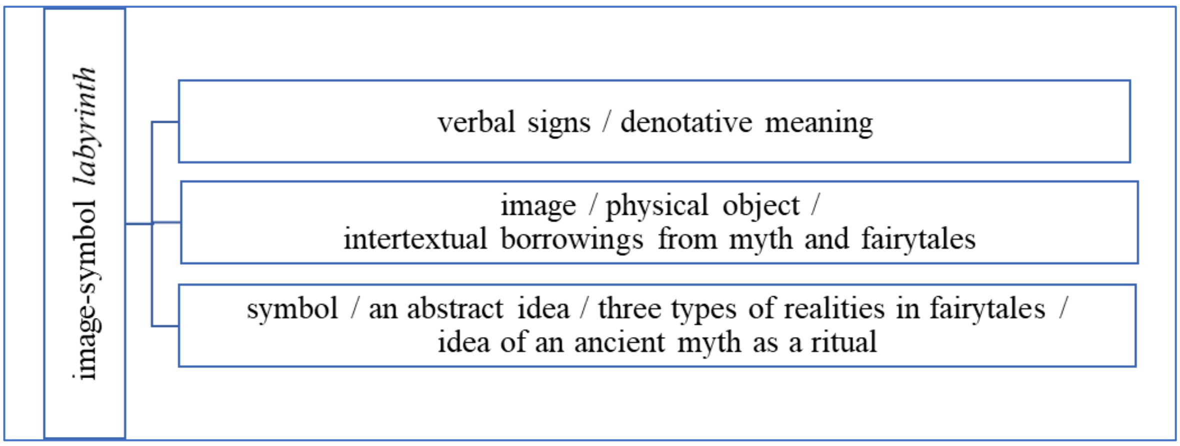

Figure 2. The schematic model of construing the image-symbol *labyrinth* in the anti-utopian text (Own processing)

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Zinkevich-Evstigneeva names three levels of fairytales disclosure as 'realities' that can be perceived by the reader through interpretation and analysis (Зинкевич-Евстигнеева 2007). These realities can be further studied through the broader and holistic theory of possible worlds developed by Ryan (2006).

4.3 The construing of the image-symbol labyrinth in the focus of the theory of possible worlds

The anti-utopian novel "*The maze runner*" is a unique universe revolving around the image-symbol *labyrinth* that in its turn resides on three levels: the stratum of verbal signs, the image, and the symbol. The image and symbol can be presented through some epistemic possible worlds, which are facilitated by the intertextual integration of myths and fairytales. In this part of the research, we will delve into the verbal configurations of the image-symbol *labyrinth* that reveal subsidiary possible worlds of myths and tales.

One of the world's renowned mathematicians Leibniz (1985) stated that God can create infinitely many universes, but he chose to create ours and as God is always good, then our universe is the best of all possible. We will not debate in this article whether our universe is the best or not, but Leibniz postulated one of the greatest theories that is currently being investigated in mathematics, logic, physics, and linguistics – the theory of possible worlds. Firstly, logicians after many decades turned their attention back to Leibniz's idea. Hintikka (2010) and Lewis (1986) established their models based on the mathematical logic, which we can now observe in studies of artificial intelligence and formal semantics. Further possible worlds theory was adapted to the fictional worlds of narrative by Doležel (1998), Eco (2014), Ronen (1994), Ryan (2006), and others.

The fundamentals of the theory of possible worlds find their applying in modern Ukrainian philological studies. For instance, Ivanenko (Иваненко 2010) looks at the implementation of possible worlds in the intellectual novel by Iain Banks. Some applied aspects of possible worlds were designed by Ukrainian scholars Kahanovska (Кагановська 2002) and Savchuk (2018).

The main postulate of the theory declares that textual reality is a distinct universe that consists of various elements. This universe functions according to the established hierarchy: an arduous element, around which other constituents revolve, rests in the centre. This main element corresponds to the real world and, according to the theory, is called the actual world. Every entity that exists beyond the actual world belongs to some possible world (Ronen 1994). The boundary between the actual and possible world, according to Ryan (2006), depends on the value of accessibility that can be inferred from the interpretation. Ryan considers the possible worlds to be philosophical and narrative ones. Her reason is that if the relation between the philosophical concept of the possible world and narrative worlds turns out to be a metaphorical transfer, the narratological applications of the possible world theory will not be invalidated, for the value of the concept of the possible world for narratology depends not on a literal application, but on whether or not "specific features of fictional worlds can be identified only against the background of this model frame" (2014: 740).

One of the first linguists who adopted the theory of possible worlds into his scientific inquiry was Doležel (1988). The researcher studied a narrative world not as a means of simulating the reality, but as a holistic ontological unit that exists on its own and is in any sense possible. The access to this world is gained by the reader through the verbal signs written previously by the author. The linguist calls the narrative produced by the author as "the set of instructions" (ibid., 30) for the reader, according to which they reconstruct this possible world. The textual world for Doležel is autonomous, but ontologically incomplete, i.e. this world is characterised by certain gaps. Some of these gaps are temporary and later are filled by the author, for example, in detective stories the reader always finds out who the murder is at the end of the story. However, some of these gaps can remain blank permanently.

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Eco (1978) considers the possible world to be the world of people's dreams, imaginations, and desires, highlighting that not every text presupposes the construction of a possible world. Some stories provide direct access to the actual world. Eco regards the semantic field of the narrative as a universe that incorporates a range of possible worlds. He names the fictional narrative as "the tool for manufacturing possible worlds", which carry four distinctive characteristics: 1) possible world is the probable state of objects, which is constructed according to propositional logic and possesses such parameters as p or ~p; 2) it describes a number of individuals together with their characteristics; 3) as some of the characteristics maintained by the characters or some parameters are actions, that is why the possible world is itself the probable course of events; 4) considering that this course of events is not actual, it must be determined and governed by someone, in other words, possible worlds are the worlds in which people put their trust, that are dreamt about, imagined, and desired (ibid., 5-72). Eco assures us that the reader's observations form such effects as suspense, commitment, and curiosity, as well as cause deceptive assumptions.

Grounded on the work developed by Eco on the tools for manufacturing the possible worlds in the fictional texts, Ryan (2001) formulates her own system of narrative worlds. The level of a story where the author describes extralinguistic, objective physical is called "the possible actual world" or "the textual actual world" as an analogy to the actual world (ibid., 57). The textual actual world becomes an ontological centre that gives rise to the characters' worlds. They accumulate some knowledge acquired from the textual actual world and are called the knowledge world. The accumulated knowledge and experience may contain some gaps, restrictions, and vagueness, but from the perspective of each of the characters, this knowledge world appears to be the only true and complete one. The worlds of character's desires, obligations, and character's fantasies can also bare a distinctive meaning in the worlds' canvas (2014).

In our study, we distinguish one more relevant and salient world that can be found in the knowledge world of each character; this is the world of memories. The *Maze* in the novel appears as a complex, extraordinary construction that possesses the textual possible world as an ontological centre, which integrates the epistemic knowledge worlds of characters and some creatures existing in the fictional space of the *labyrinth*. The knowledge worlds are themselves multidimensional; that is, they are composed of worlds of wishes, fantasies, obligations, memories, and many components. The interaction of these worlds forges the complete interpretation of the image-symbol *labyrinth.*

To build a thorough model of the image-symbol *labyrinth*, we should integrate the theory of possible worlds into three levels of the image-symbol activation defined above. The textual actual possible world lies in the centre of the narrative universe; that is why it is created at the very beginning of the story. The textual actual world exploits some plotlines and motifs intrinsic to the myth. It facilitates the objective image of the *Maze* and its constituents. The textual actual world is a dynamic system, which updates its propositions based on the actions carried through the story. It can be amended through the characters' knowledge worlds; that is why relations between the textual actual world and knowledge worlds are direct correlations where the alteration of information in one world directly updates the knowledge base of the ontological centre. As can be seen further in Figure 3, the main knowledge worlds of the protagonists of the story interrelate with the main textual actual world. The allusions to fairytales can be regarded as separate possible worlds, which are integrated into the story to serve as guidelines and ancient wisdom, which evoke some abstract ideas and associations, which are essential for symbol's formation.

So, the image-symbol *labyrinth* can be presented as a universe with the distinctive worlds and their interrelations:

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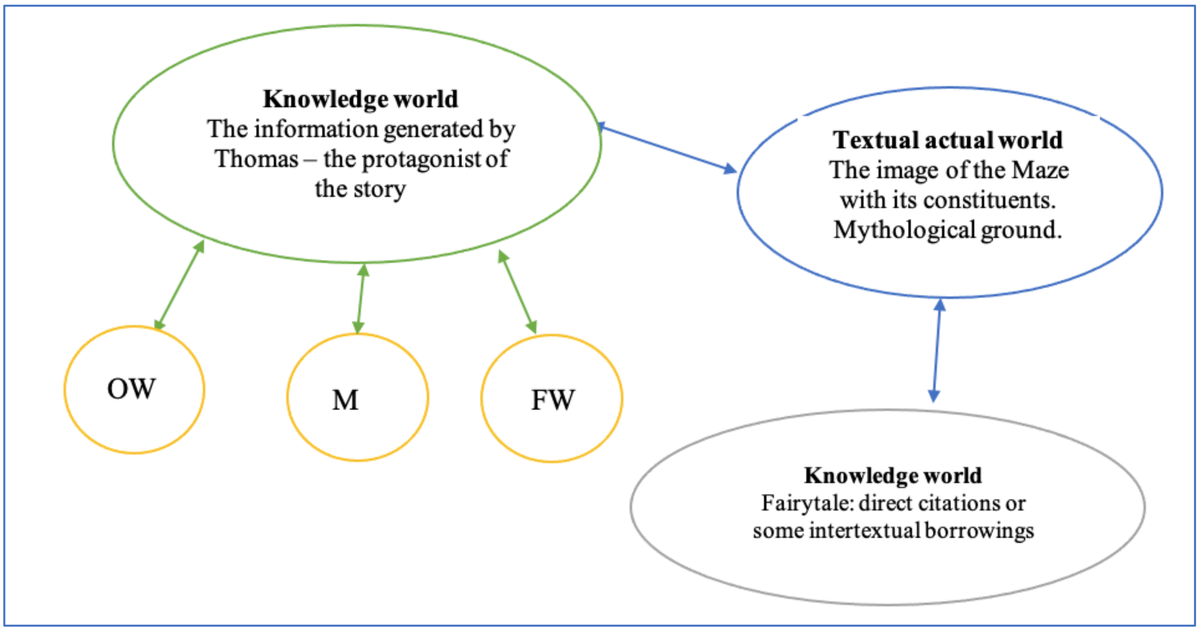

Figure 3. The integrated model of possible worlds in construing the image-symbol *labyrinth* (Own processing)

The presented worlds are just the schematic outlines of a greater structure that appears while reading the text. This research focuses mainly on the worlds and their features that are relevant to the image-symbol *labyrinth*; that is why we take into consideration such worlds as: the textual actual world, fairytales knowledge worlds, and some information from the characters' knowledge worlds.

4.4 Mythological intertextual elements as components of the image-symbol labyrinth

The textual actual world of the anti-utopian text *"The maze runner"* resets on the allusions and intertextual borrowings from the plot and ideas of some ancient myths about the labyrinth. Following Kofman's definition, every labyrinth has its centre, the ground zero where the development of the main plot line starts and is considered by ancients to be the sacred place that maintains a range of unique features (Кофман 1997). As the anthropologist Malinowski (1984) stated, myths are closely connected with the religious practices and allude to the tribal rituals and beliefs.

The *labyrinth* in the anti-utopian text "*The maze runner*" dwells on two prominent myths: the myth about the Minotaur, which is a part of the world literary heritage, and the arcane description of a ritual that represents resurrection, transcending from one state or world into another.

Studying the image-symbol *labyrinth* in the novel "*The maze runner*" as some arcane ritual, we are highlighting such characteristics of the *labyrinth* as:

1. It should have the state of initiation.
2. It should provide some trials and challenges.
3. It should always have an exit.
4. Sometimes it may lead to death and resurrection.

The initial state of the textual *Maze* is the *Box*. In the novel "*The maze runner*" it is described as "*an old lift in a mine shaft*". Based on the following explanation, it can be inferred that the Box is a state of initiation:

(2) "*He began his new life standing up, surrounded by cold darkness and stale, dusty air*" ("*The maze runner*", p. 1).

In this fragment, *new life* stands for the ground zero, and launches the process of construing a character's knowledge world and the textual actual world based on the environment where he exists now. An extra feature that we can observe in the anti-utopian image of the *labyrinth* is that the protagonist has no prior personal memories but possesses the wisdom and knowledge obtained from the experience of his ancestors. He is the transmitter of a universal intelligence and common sense.

Considering that the myth also governs the formation of the main textual image of the *labyrinth*, we observe the general description of the *Maze*:

(3) "*In front of him, through the East Door, he could make out passages leading to the left, to the right, and straight ahead. And the walls of the corridors were similar to those that surrounded the Glade, the ground made of the same massive stone blocks as in the courtyard. The ivy seemed even thicker out there. In the distance, more breaks*

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in the walls led to other paths, and farther down, maybe a hundred meters or so away, the straight passage came to a dead end" ("*The maze runner*", p. 1).

The *Glade* mentioned in the given above fragment is the place where the protagonist and his fellows live. It surrounds the *Box* and gives access to the *Doors* leading to the *Maze*. As one can see, the textual *labyrinth* does not resemble the common picture of that in myths and fairytales. The anti-utopian *labyrinth* is not a curvy passage that leads to some dead ends or an exit; the textual *Maze* is a highly complex and sophisticated system governed by someone else and aimed at unleashing people's abilities and potentials:

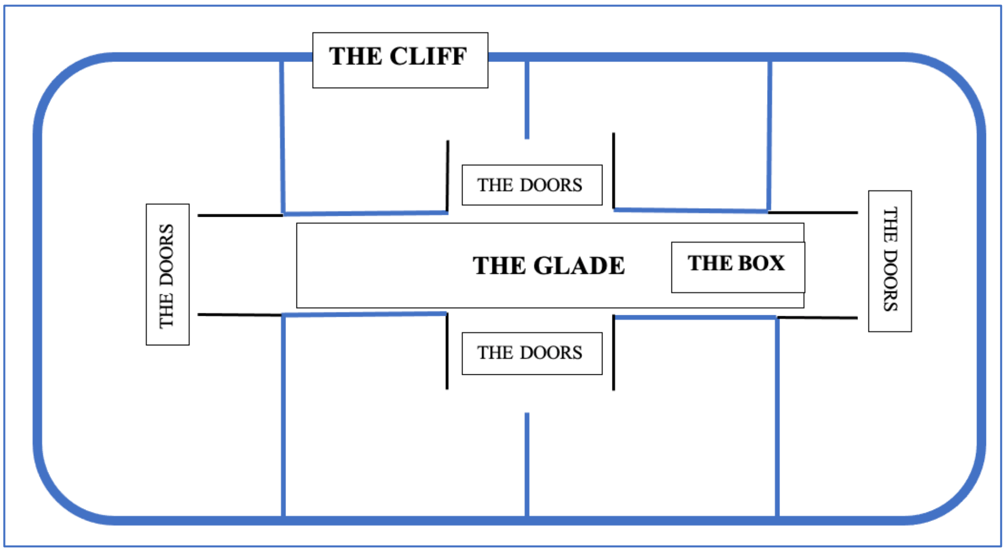

Figure 4. The scheme of the Maze (Own processing)

The anti-utopian *labyrinth* bears more resemblance to a jigsaw puzzle that must be solved rather than an ancient *labyrinth* that must be gone through without much mental effort:

(4) "*So we have the Glade, surrounded by eight Sections, each one a completely self-contained square and unsolvable in the two years since we began this freaking game. The only thing even approaching an exit is the Cliff, and that ain't a very good one unless you like falling to a horrible death. ... The walls move all over the shuck place every evening – same time as our Doors close shut. At the least, we think that's when,*

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because we never really hear walls moving any other time" *("The maze runner",* p. 204*).*

The third parameter that should be considered in construing the image-symbol *labyrinth* is the presence of the exit. As the textual *Maze* can be treated as a game or a jigsaw aimed to trick and confuse its inhabitants. The exit is the hardest thing to find. Nevertheless, the only object that maintains the immanent characteristics of an exit is the *Cliff*:

(5) "*The corridor didn't end in another stone wall. It ended in blackness. He could see the stars. As they got closer, he finally realized that it was an opening – the Maze ended. <…> They had indeed reached a way out of the Maze <… >All Thomas could see in every direction, up and down, side to side, was empty air and fading stars. It was a strange and unsettling sight, like he was standing at the edge if the universe <…> It was like somebody had built the Maze and then set it afloat in the sky to hover there in the middle of nothing for the rest of eternity. Careful, you wouldn't be the first shank to fall off the Cliff*" ("*The maze runner*", p. 134).

From the example given above, we can see the description of the *Cliff* adds some more additional connotations to the image-symbol *labyrinth*. It is considered now as the point of death and rebirth, unexplored and frightening like the concept of life after death.

The last feature of the *labyrinth* that we have revealed in the anti-utopian text at the levels of textual actual world and knowledge worlds are trials and challenges, which should be overcome by the story characters. At this point, we shift our attention from the ancient arcane myth to one of the most recognizable myths – the myth about the Minotaur.

The myth runs that the Minotaur was the son of Pasiphae, the wife of King Minos of Crete. Queen Pasiphae slept with a bull sent by Zeus, and gave birth to Minotaur, a

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creature half man-half bull. King Minos was embarrassed, but did not want to kill the Minotaur, so he hid the monster in the *Labyrinth* constructed by Daedalus at the Minoan Palace of Knossos. Son of Minos, Androgeus, went to Athens to participate in the Panathenaic Games, but he was killed during the Marathon by the bull that impregnated his mother Pasiphae. Minos was infuriated, and demanded Aegeus, the king of Athens, send seven men and women every year to the Minotaur to advert the plague caused by the death of Androgeus. In the third year, Theseus, son of Aegeus decided to be one of the seven young men that would go to Crete, to kill the Minotaur and end the human sacrifices to the monster. Theseus was the one who killed the Minotaur with the help of Ariadne's thread he managed to find his way back ("*The myth of Theseus and the Minotaur*", *s.a.*).

The first similarity that may attract the reader's attention is the resemblance of the leading names *Theseus – Thomas*. The central beast of the story – the *Minotaur* – transforms into the metallic spider-like creatures with poisonous needles – the *Grievers*. In the novel "*The maze runner*" like in the myth of "Theseus and the Minotaur" every month the *Maze* welcomes one newcomer:
(6) "*They put us in the Box and sent us up here – a big group to start and then one a month over the last two years*" ("*The maze runner* ", p. 172).

The *Grievers* trigger the main action and force the characters to take moves and make decisions. These creatures carry poisonous needles and if a character gets stung by one of them, he or she goes through the process called the *Changing,* which resembles a resurrection, and those who can live through it partially restore their memories.

The Changing and *the Grievers* can be considered as the separate knowledge worlds in the narrative universe. They play an essential role for the knowledge ground of the textual actual world and have the valuable impact on the characters' knowledge worlds.

The intertextual borrowing from the myth about the Minotaur is also present at the beginning of the story and overlaps with the primordial ritual described before:

(7) "***Once a month****, we get a Newbie like you, never fails.* ***Once a week****, we get supplies, clothes, some food*" (*"The maze runner"*, p. 42).

From the fragment above, we may realise that sometimes the boundary between the myth and the fairy-tale blurs and they merge with each other taking the idea of the newcomers from the myth and the manner of the narration from the intrinsic characteristics immanent in fairy-tales (*once a month, once a week*).

Over the centuries, The Bible has become the book of wisdom and prophecy. It prescribes the rules to follow and warns humanity about consequences that will be faced on the doomsday. The image-symbol *labyrinth* in the anti-utopian texts acquires new connotations; it transforms its initial meaning of a primeval ritual and a road of epiphany into the way of transformation and a new evolution. The *Maze* serves as an intermediate point between old rules and a newborn reality.

In the Old Testament, humankind evolved from Adam and Eve, a woman who committed the greatest sin trying to grasp the forbidden knowledge. Rethinking the symbolic idea of this action, Dashner places the only girl in the *Maze* full of teenage boys, linking her to the protagonist. Teresa and Thomas, like Adam and Eve, are the only people who possess the greatest wisdom and power to cope with the *Maze*. The allusion to the biblical plot is directly highlighted in the text:

(8) "*It's a girl… She spoke one sentence – her voice hollow and haunted, but clear. Everything is going to change. Clutched in her hand was a wadded piece of paper. Scrawled across the paper in thick black letters were five words: She's the last one. Ever*" (*"The maze runner"*, p. 56);

(9) "*Any signs of a crazed girl bearing the notes of doom…*" ("*The maze runner*", p. 63).

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The biblical story is integrated into the narrative worlds' structure at the level of textual actual world. It produces the knowledge world of a girl and updates the information generated by the protagonist as well as the knowledge worlds of the other characters. The motifs of the Bible reinforce the image-symbol *labyrinth* interpretation and underlines another perspective of its explanation.

Fairytales are separate, distinct worlds that occur at a higher level of the image-symbol construction. In the anti-utopian texts, they represent a person's primeval and intrinsic knowledge and wisdom. As a protagonist in a fairytale, Thomas is described by the same common categories that each hero should possess:
(10) "*To survive the buggin' Maze, you gotta be smart, quick, strong. Gotta be a decision maker, know the right amount of risk to take. Can't be reckless, can't be timid, either*" *("The maze runner",* p. 98).

As we have noticed before, some verbal structures can merge certain characteristics from the myth and the fairytale. That updates the symbolic understanding of the *Maze* as a construction that can be objectively observed in reality and can be easily faced by every human being and as an abstract idea, a primordial entity that is comprised of three realities immanent in the fairytale.

The direct allusions to the well-known fairytales underline the versatility of the image-symbol *labyrinth* rethinking through the anti-utopian canons. For example, one of the characters tells the fairytale about Hansel and Gretel:
(11) "*As he did so, he pulled one of his knives from a pocket and, without missing a beat, cut a big piece of ivy off the wall. He threw it on the ground behind him and kept running. "Bread crumbs?", Thomas asked, the old fairy tale popping into his mind. "Bread crumbs," Minho replied. "I'm Hansel, you're Gretel*" *("The maze runner*", p. 209).

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Instead of the *breadcrumbs*, boys use the *ivy leaves* to mark their way back. So, the ivy leaves serve here as symbol of returning. It is well known in medicine and science that ivy had a great deal of significance in ancient times. It was a symbol of fidelity in ancient Greece and was associated with the Roman god of revelry and good times. The ivy leaf is widely used in medicine due to its tolerability and medicinal properties (Noveille 2015).

Another narrative is retold by the character Minho:
(12) "*At dinner Minho had told him an old story – one of the bizarre and random things he remembered from before – about a woman trapped in a Maze. She escaped by never taking her right hand off the walls of the Maze, sliding it along as she walked. I am doing so, she was forced to turn right at every turn, and the simple laws of physics and geometry ensured that eventually she found the exit. It made sense*" ("*The maze runner*", p. 198).

This summary gives some clues how to navigate through the *labyrinth* (the *Maze* in the text). It highlights the common principles of physics and geometry, which should be understood by every educated person who muses upon the sense of the *labyrinth*.

Considering the examples and explanations provided for the textual actual world and some knowledge worlds of the characters, we may state that myths and fairy tales comprise a vast layer of the image-symbol *labyrinth* construction. They form the image representation at the textual actual world level of the narrative and trigger the interpretation of the hidden meanings and senses adopted from common ideas and beliefs encoded into sacred texts of myths and tales.

5. Conclusions

The given analysis of the criteria and factors influencing the process of interpreting and construing the image-symbol in anti-utopian texts makes us think of the image-symbol *labyrinth* as such a complex construct, which may be studied from multiple perspectives considering its mythological, folklore, philosophical, scientific, and literary features.

The fact that the *labyrinth* as a complex phenomenon incorporates a range of interrelated images and facets, which evolve into a unique, but world known symbol, predetermined our applying the set of methods, such as linguosemiotic, cognitive linguistics, linguocultural, and theories, such as the theory of possible worlds, narrative genres, and mythologically oriented semiosis. The paper considers the image-symbol *labyrinth* to be a multilevel linguotextual construct, whose mythological, psychological, sociological, folklore, and narrative elements are taken into account.

The research focuses on the possible worlds and their features, which are relevant to the image-symbol *labyrinth*. So, the paper presents the integrated model of the image-symbol *labyrinth*, which is based upon the incorporation of different worlds in the anti-utopian text "*The maze runner*", such as the textual actual world, fairytales knowledge worlds, and characters' knowledge worlds.

So, we concluded that the *labyrinth* in the anti-utopian text "*The maze runner*" dwells on two prominent myths: the myth about the Minotaur that is a part of the world's literary heritage, and the arcane description of a ritual, which depicts resurrection, transcending from one state or world into another. It means that the *labyrinth* acquires new connotations; the *Maze* transforms its initial meaning of a primeval ritual and a road of epiphany into the way of transformation and a new evolution. In a way, the *Maze* (the verbal image of the *labyrinth* as image-symbol) serves as an intermediate point between old rules and a newborn reality, in which characters of the novel found themselves. Sometimes the boundary between the myth and the fairy-tale blurs, and they merge with each other taking the idea of the newcomers from the myth and the manner of the narration from the intrinsic characteristics immanent in the myths and fairy-tales.

To sum up, the scheme of the *Maze* given in the paper illustrates that the textual *labyrinth* does not resemble the common image of that in myths and fairytales. The anti-utopian *labyrinth* is not a curvy passage that leads to some dead ends or an exit; the textual *Maze* is a highly complex and sophisticated system governed by someone else and aimed at unleashing people's abilities and potentials. Though the construing of the image-symbol *labyrinth* in the anti-utopian text is performed by means of different lexicostylistic means, such as metaphors, allusions, intertextual elements, one cannot state exactly if the *labyrinth* is a mystery, a possible route, or a trial.

Abbreviations

FW –fairytale world

M – myth

OW – ontological world

PW – possible world

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Résumé

The *labyrinth* is an ancient complex cognitive structure that remains popular even nowadays. Its curves and meanders inspired many generations of authors to use the image of *labyrinth* as a background for their narratives. The image-symbol *labyrinth* has become especially popular among sci-fi writers and further – antiutopian authors. The structure of texts, which use the image-symbol *labyrinth* as their main narrative space, is complex and sophisticated. In this paper we study extralinguistic and reveal linguistic factors, which influence the construing of the image-symbol *labyrinth* considering its mythological, folklore background and features of the genre of the novel "*The maze runner*", which is an anti-utopian one. The image-symbol *labyrinth* in the current study is analysed as a complex syncretic system that rests on three levels: verbal signs, which carry some denotative meanings; the image, which depicts some physical labyrinth, and the symbol, which evokes some abstract ideas. The outlined

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levels of the image-symbol *labyrinth* are fundamental points, where each stratum further incorporates some distinctive features taken from a myth or a fairytale, which construct the whole possible universe of the anti-utopian text. In order to define more precisely the possible universe of the text, we focus on the theory of possible worlds, which gives the ability to structure the textual actual possible world unfolding on the basis of the intertextual integration of some myths; we also define some other knowledge worlds, which stand for the well-known fairy-tales that are incorporated explicitly in the textual canvas. The construing of the image-symbol *labyrinth* in the anti-utopian text is performed by means of different lexico-stylistic means, such as metaphors, allusions, intertextual elements; one cannot state exactly if the *labyrinth* is a mystery, a secret route, or a trial.

Key words: image-symbol, possible worlds, anti-utopian novel, linguocultural approach, linguosemiotic aspect.

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CONSTRUCTION PRAGMATICS: A BRIEF SKETCH

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Abstract: Construction grammar is a theory of linguistic knowledge as well as a branch of cognitive linguistics, which claims that constructions are basic units of language, i.e., form-meaning pairings, and knowledge of language is a large inventory of constructions. But unfortunately, the pragmatic aspects of constructions are not investigated quite enough. The paper, based on construction grammar and pragmatics, spells out the pragmatic issues of constructions, and points out that a new discipline "construction pragmatics" needs to be established.

Key words: cognitive linguistics, construction, construction grammar, construction pragmatics.

1. Introduction

Construction grammar is an important component of cognitive linguistics, which has made fruitful achievements in recent years. Construction grammar holds that there is no strict boundary between semantics and pragmatics, as Goldberg states:

> *"Construction grammarians also share an interest in accounting for the conditions under which a given construction can be used felicitously, since this is taken to be part of a speakers' competence or knowledge of language; from this interest stems the conviction that subtle semantic and pragmatic factors are crucial to understanding the constraints on grammatical Constructions"* (1995: 6).

But from the current state of research on construction grammar, it is still mainly concerned with syntactic and semantic issues, with little or no attention to the pragmatic aspects of constructions, and pragmatics touches little on issues of constructions as well. Therefore, it makes good sense to combine the study of constructions with pragmatic studies, examining both the form and meaning of constructions as well as the pragmatic aspects of constructions. The purpose of the paper is to establish a new discipline "construction pragmatics" by combining construction grammar with pragmatics. First of all, it explains construction and construction grammar in terms of some Chinese and English examples, then it accounts for the relationship between construction and pragmatics, and finally it explicates why it is necessary to have such a discipline.

2. Construction and construction grammar

The term "construction" has existed since the period of structuralist linguistics, during which it was referred to as the general structure of language, equivalent to "structure". *A Student's Dictionary of Language and Linguistics*, for example, defines construction as "any grammatical structure which appears systematically in some language or any particular instance of it" (Trask 1997: 53). *The Oxford Dictionary of English Grammar* defines construction as "A conventional pairing of a particular syntactic structure or pattern with a meaning. The term is not always defined precisely, and different concatenations of linguistic elements can be said to qualify as constructions" (Aarts et al. 2014: 93). Bloomfield also says: "Whenever two (or, rarely, more) forms are spoken together, as constituents of a complex form, the grammatical features by which they are combined, make up a construction" (1933: 177). Thus, the grammatical features of the form *duchess* combined by "duke" and "-ess" constitute a construction, or the grammatical features of the form "poor John ran away" combined by "poor John" and "ran away" also constitute a construction. This view is, of course, influenced by atomism, componentialism, and reductionism in philosophy. However, this view is clearly inappropriate for the analysis of idioms in language. For idioms have their own characteristics in at least two aspects: (1) their meanings cannot be predicted exclusively on the basis of the words that they consist of, that is, it is difficult for us to determine the meaning of an idiom based on the meanings of the composite words in the idiom; (2) they may sometimes even violate the rules of syntactic combination. For example, it is difficult to judge the meaning of the following Chinese (Ch.) and English (Eng.) idioms by the meanings of their constituent words.

(1) a. Ch.破釜沉舟 (Eng. burn one's boats), Ch. 刻舟求剑 (Eng. disregarding the changing circumstances), Ch. 朝秦暮楚 (Eng. change one's loyalty frequently), Ch. 画蛇添足 (Eng. gild the lily), Ch. 东山再起 (Eng. stage a comeback), Ch. 声色犬马 (Eng. luxury enjoyment)

b. call it a day, have ants in one's pants, pull smb's leg, warm the bench

The following idioms even violate the rules of syntactic combination.

(2) a. Ch. 非不为也，是不能也 (Eng. Neither do I, nor can I)

b. no can do, year in year out, trip the light fantastic, by and large, take sick

Obviously, linguistic phenomena such as Examples 1 and 2 pose problems and challenges for the study of componential grammar. First, the semantics of most of the idioms here are irreducible and cannot be broken down into different units based on the constituent words. Thus, these idioms seem to be more like lexical items, the pairs of forms and meanings. Second, the idioms in Example 2 do not follow the general rules of grammar. From a componential point of view, all languages have such complex structures. It is because of these unique idioms that such complex structures hold a special status.

In addition to the idioms, a large number of sentence patterns have their own syntactic rules, such as the following sentences in English:

(3) a. The thing is they speak like that, the question is why.

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b. There was a farmer had a dog.

c. Go help your mother.

d. What, me worry?

What is interesting is that some native speakers think that these sentences are unacceptable, but others think that they are acceptable and use them.

In addition to the above linguistic phenomena, sometimes the syntax itself is self-consistent. Both componentialism and reductionism argue that words have fixed meanings. The problem, however, is that words in a complex structure are semantically self-consistent with each other and will gain specific construal in the actual context in which they are used. For example,

(4) a. My book was broken.

b. My pen was broken.

c. My car broke down.

(5) a. The boys were swimming in the sea.

b. The dog was swimming in the sea.

c. The fish was swimming in the sea.

In Examples 4a, 4b, and 4c, the construal of those broken things is certainly different. The possible situation can be that the book cover was lost, the pen ran out, and that the car driver failed to get the engine started. Similarly, the construal of the concepts of "swimming" (5a, 5b, 5c) is also different in some aspects.

The various examples above demonstrate that there seems to be a close correspondence between the conceptual structures and syntactic structures that originate in everyday life, and that the overall meaning of a complex structure never comes from the simple

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summary of the meanings of constitute words but has its own meaning independent of the meanings of words. As far as the self-consistency of sentences is concerned, certain words seem to get part of their meanings from the complex structure. From this, we can conclude that a construction is an abstract mental or cognitive structure consisting of concrete forms and meanings. Of course, just like metaphor, it can be divided into conceptual metaphor or metaphorical concept, and linguistic metaphor or metaphorical linguistic expression. Conceptual metaphors are based on our bodily experiences, while linguistic metaphors are the realizations or manifestations of conceptual metaphors in language. Analogically, we can also divide construction into conceptual construction, which is a psychological or cognitive structure that comes from human bodily experience with the characteristics of embodiment, and linguistic construction, which is the realization of the conceptual construction in language. For example, we have the mental or cognitive structure of the ditransitive constructions, which are realized by different linguistic constructions in the same language or in different languages.

Construction grammar views constructions as the speaker's grammatical knowledge and argues that the meaning of complex structures is not fully reducible. As Langacker (1987) puts it, full attention is paid both to the actual use of the language system and the speaker's knowledge about the actual use of the language; grammar includes the full range of conventional linguistic knowledge that the speaker has, whether or not it can be incorporated under a more general name. The model based on use is a non-reductionist approach that uses a clear and explicit graphical network and emphasizes the importance of low-level graphs in study of language structures.

In order to achieve this, construction grammar had to abandon atomism as well as the reductionist philosophical thoughts and develop a new theory of grammar. According to this theory, grammatical knowledge is actually based on the complex structure of language, which is construction, or form-meaning pair, not entirely dependent on the meaning of constitute words. Thus, construction grammar is actually a linguistic theory

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concerning the nature of a speaker's linguistic knowledge. Constructions are the basic units of language, which themselves convey some conceptual content and can be used to express basic conceptual scenarios or basic concepts, which are what Goldberg calls "the Scene Encoding Hypothesis", that is "Constructions which correspond to basic sentence types encode as their central senses event types that are basic to human experience" (1995: 39). For example, many of the grammatical constructions discussed in constructive grammar, such as argument structure constructions, ditransitive constructions, caused-motion constructions, resultative constructions, existential constructions, middle constructions, etc., are closely related to basic human experience situations. The fact that grammatical constructions can be used to express basic meanings and basic experiences in human life is one of the greatest benefits of using the concept of constructions, which makes the study of constructions very interesting and valuable.

3. Constructions and pragmatics

Although construction grammar includes different theoretical schools of thought, such as the "cognitive construction grammar" by Lakoff (1987) and Goldberg (1995), the "construction grammar" by Fillmore et al. (1988), "radical construction grammar" by Croft (2001), "embodied construction grammar" by Bergen and Chang (2005), "fluid construction grammar" by Steels and Beule (2006), "sign-based construction grammar" by Michaelis (2010) and "cognitive grammar" by Langacker (1987), they hold much in common: The basic unit of language is construction; knowledge of language consists of a large network of constructions, and nothing else in addition; and grammar is not a modular system so it cannot be studied by separating the aspects of phonology, vocabulary, syntactic, semantic, pragmatic, and textual functions; language, like all other cognitive systems, is intricately woven into all cognitive systems; and linguistic structure, or grammar, is formed in language use. These claims define the research scope and content of construction grammar.

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Construction grammar emphasizes that syntactic, semantic, and pragmatic information are so equally important that none of three can function independently of the other two, e.g., Fillmore et al. argue that "a large part of a language user's competence is to be described as a repertory of clusters of information including, simultaneously, morphosyntactic patterns, semantic interpretation principles to which these are dedicated, and, in many cases, specific pragmatic functions in whose service they exist" (1988: 534). However, as far as the research results of construction grammar are concerned, little attention has been given to pragmatic issues in construction grammar. Moreover, the issues of constructions are rarely mentioned in pragmatics research as well. Pragmatics generally examines context-dependent meaning and rarely deals with the meaning of linguistic forms. For instance, the constructions in Example 6 appear to contain intrinsic pragmatic points, that is, pragmatic information may have some conventional relations with these particular linguistic forms to form grammatical constructions. These constructions conventionally link specific pragmatic forces or pragmatic effects to specific morphosyntactic structures (Wen 2014: 22), and some constructions even possess meaning or pragmatic effects only in certain specific contexts.

(6) a. Good morning/afternoon
    b. There, there
    c. Once upon a time
    d. I pronounce you husband and wife.
    e. See you later.
    f. How are you doing?
    g. Him help an enemy?

In Examples 6a and 6g, for instance, "Good morning" is generally used in the morning until lunchtime (around 1 p.m.), when it has pragmatic effects; "Good afternoon" can only be used in the afternoon (around 2 p.m. to 6 p.m.), when it has pragmatic effects.

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Both expressions can be used in the situations of meeting or breaking up, with the rising tone in the former situation and falling tone in the latter one. Example 6g conveys a skeptical attitude.

Similarly, there are a large number of examples in Chinese.

(7) Ch. 幸会幸会，久仰久仰 (Eng. It's a pleasure to meet you. It's an honor to meet you at last.)

The expressions of "幸会幸会" and "久仰久仰" are all polite expressions indicating an honor to meet with the other party, and they are meaningful and possess pragmatic effects only when used in a meeting situation. From the point of view of construction grammar, the pragmatic effects of these constructions come from the transmission of language convention, not the result of conversational reasoning.

In fact, the constructions themselves contain pragmatic information, and their use is often limited by context, since most of them derived from our bodily experience, which in turn is context-based. Not surprisingly, construction grammar, cognitive linguistics in general, is a usage-based theoretical model with the claim "WYSIWYG" (what you see is what you get) (Winters & Nathan 2020: 20).

In the following, we will talk specifically about information packaging constructions (IPCs) or information structure construction, and metalinguistic constructions. The constructions of this kind can demonstrate how constructions are related to pragmatics. To study information-packaging constructions, we have to deal with information packaging and verbal communication. By information packaging, according to Chafe, it means how "the speaker accommodates his speech to temporary states of the addressee's mind, rather than to the long-term knowledge of the addressee" (1976: 28). Chafe discusses the statuses of some nouns or noun phrases, which are related to how

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information or content of the utterance is packaged by the speaker and send to the hearer:

"I have been using the term packaging to refer to the kind of phenomena at issue here, with the idea that they have to do primarily with how the message is sent and only secondarily with message itself, just as the packaging of toothpaste can affect sales in partial independence of the quality of the toothpaste inside" (ibid., 28).

Obviously, packaging is closely related to verbal communication, which involves the sending and receiving of information. In communication theory, this process is stated in a very simple model: S (message source) to N (noise or interference) to R (receiver). This model is called the conduit model. For human communicators the process of communication is regarded as a more complex set of interactions, negotiated across a wide spectrum of linguistic, cognitive, cultural, and situational contexts. It usually needs to conform to the "5W Communication Mode", i.e., who, say what, through which channel, to whom and with what effect is produced. In the mid-20th century, the American mathematician C.E. Shannon created the Information Theory, which was later applied to many fields in the natural and social sciences. If we evaluate verbal communication activities from the point of view of information theory, we do not judge whether the speaker's speech is grammatical or not, but whether the speaker conveys a large or small amount of information, whether it is useful (effective) or useless (ineffective) information, whether it is primary or secondary information, whether it is necessary or redundant information, and whether it is new or old information, etc. In general, successful verbal communication depends to a large extent on the ability of the listeners to combine new information with old information. This is often the case with information packaging constructions or information structure constructions, which organize and arrange meaning, combining new information/meaning with old information/meaning, rather than just conveying meaning. In a given context, a speaker chooses a particular information construction based on his or her own assumptions, such as what is known to the listener, what the listener might deduce, what information is new to the listener, and so on. Thus, when discussing information packaging

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constructions, we have to think about these assumptions, i.e., we have to take these pragmatic issues into consideration.

Information packaging constructions are closely related to information structure, which is defined by Lambrecht as "that component of sentence grammar in which propositions as conceptual representations of states of affairs are paired with lexicogrammatical structures in accordance with the mental states of interlocutors who use and interpret these structures as units of information in given discourse contexts" (1994: 5).

Based on this definition, we can try to construct the characteristics of the information packaging constructions: information-packaging constructions are the sentence-level constructions that the speaker uses to express complex meanings when recognizing the current knowledge of the listener. They are used to serve "the function of organizing and arranging meanings, relating new meanings to old meanings, rather than conveying meanings themselves" (Hilpert 2014: 102). Lambrecht (1994: 51) argues that propositions, i.e., complex meanings, typically link information known to the listener with information unknown to him or her. According to this, we can also consider that information in sentence-level constructions is partly old information and partly new information. For example,

(8) When did you stop beating your wife?

This example is an ambiguous sentence that philosophers usually employ to make people confused. If you were not smart enough, absolutely you would be cheated, because Example 8 has a pragmatic presupposition "You used to beat your wife". According to Lambrecht (1994), old information is actually pragmatic presuppositions which are propositions that are activated by the vocabulary or syntactic structure of a sentence or knowledge that the speaker assumes to be known or shared by the hearer

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or what is taken for granted by the speaker. New information is pragmatic assertion: a proposition expressed in a sentence, something that the speaker expects the hearer to know, or takes for granted when the hearer hears the words. Linking known information with pragmatic presuppositions and new information with linguistic assertions is exactly the kind of analysis that combines construction grammar and pragmatics, and thus we can also reveal the pragmatic features of constructions.

Let's analyze the metalinguistic constructions in language. Metalinguistic constructions are those constructions about the discussion of language itself, such as hedging constructions, whose main pragmatic function is to make things or meanings vague or ambiguous, or to moderate the tone of speech. For example,

(9) Loosely speaking, metaphor is more fundamental than metonymy.

Although some cognitive linguists believe that metonymy is more fundamental than metaphor, still other cognitive linguists believe that metaphor is more fundamental than metonymy. The use of the hedging constructions "loosely speaking" in Example 9 significantly moderates the tone of speech and makes the idea more acceptable to the readers.

Some hedging constructions can also change the constituent structure of a category. Let us take the category "bird" as an example. If we use the hedging constructions "par excellence", we get the following sentences (Lakoff 1973; 1987):

(10) a. A robin is a bird par excellence.
b. *A chicken is a bird par excellence.
c. *A penguin is a bird par excellence.
d. *A bat is a bird par excellence.

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The purpose of "par excellence" is to pick out the typical members of the category of "bird". Since robin is a typical member of the bird category, and chicken, penguin and bat are atypical, only Example 10a is acceptable, while Examples 10b-d are not. If we use the hedging constructions "loosely speaking" to comment on the above sentences, we get the following:

(11) a. *Loosely speaking, a robin is a bird.
b. Loosely speaking, a chicken is a bird.
c. Loosely speaking, a penguin is a bird.
d. Loosely speaking, a bat is a bird.

"Loosely speaking", in contrast to "par excellence", excludes the typical members of the category of "bird", but includes the atypical members of the category of "bird". Therefore, Example 11a is unacceptable, while Examples 11b-d are acceptable. From the above analysis, we can at least conclude that the hedging constructions have special pragmatic effects, which can change the truth-value of a proposition.

4. Construction pragmatics

Construction pragmatics is a new interdisciplinary study of the combination of construction grammar and pragmatics, which focuses on examining the pragmatic issue of constructions from the perspective of pragmatics. One of the keys to the study of pragmatics is to consider the important factor of context. Whether it is a cultural context, a situational context, or a linguistic or contextual context, it can be a limiting condition for language use and comprehension. The American anthropologist Hall (1976) also divides context into high and low contexts, arguing that meaning making and comprehension vary significantly across contexts. For example, the American culture is often considered as a "low-context culture", where the meanings that people express in communication are often literal and have little to do with the context. For example, when Americans say "Great job", they mean it literally, and their

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understanding is not dependent on the context. In contrast, in a "high-context culture", the same linguistic expressions can have different meanings depending on the context. For example, in Italian, "Great job" is likely to be a bit sarcastic, because Italians do not like to give or receive such comments in public and are immediately suspicious if someone says in this way.

The context is such a great limitation and constraint on language use. By the same token, the production, use, and understanding of constructions are also constrained and influenced by the context. It is based on this understanding that we propose the idea of a new discipline of Construction Pragmatics, in order to provide a new perspective on the study of Construction Grammar and to further enrich and improve the theory of Construction Grammar. Of course, it is not an easy task to establish a new discipline, and some basic questions must be addressed and answered, such as the nature of the discipline, basic theories, guiding principles, main perspectives, research methods and scope of research, the pragmatic conditions for the formation, change and variation of constructions, the relationship between constructionalization and pragmaticalization, the pragmatic characteristics of constructions, the contextual constraints on the use and comprehension of constructions, the relationship between the constructional meaning and pragmatic meaning. The following is a brief explanation of the "assertive construction" in Chinese.

Assertive constructions are constructions that determine what the subject is or is not. The subject and the predicate are both nouns or noun phrases. For assertive constructions in Contemporary Chinese, a copula "是" (shi, to be) or "不是" (bu shi, not to be) is added between the subject and the predicate (Lv 1990: 59), while for ancient Chinese, the copula "是" came into use until around the Eastern Han Dynasty. As in the line "问今是何世" (wen jin shi he shi) in "The Travel of the Peach Blossom Garden" by Tao Yuanming, which means "to ask what dynasty is now". In ancient Chinese, there are other ways of expressing the assertive construction, such as using

"者 (zhe)", "也 (ye)", the verb "为 (wei)", the adverbs "即 (ji)、乃 (nai)、则 (ze)", the indicative pronouns "此 (ci)、是 (shi)", the auxiliary words "维 (wei)、惟 (wei)", the negative adverbs "非 (fei)、匪 (fei)", nouns or noun phrases, and so on and so forth. For example,

(12) a. 陈胜者，阳城人也。（《史记》）

Chen Sheng zhe, Yangcheng ren ye.

Chen Sheng, Yangcheng person

"Chen Sheng, the local person of Yangcheng." (*Records of the Grand Historian of China*)

b. 知之为知之，不知为不知，是知也。（《论语》）

zhi zhi wei zhi zhi, bu zhi wei bu zhi, shi zhi ye.

To know is to know, not know is not know, this is wisdom

"You must not pretend to know when you do not know, and pretend not to know when you know, which is wisdom." (*The Analects of Confucius*)

c. 吾乃梁人也。（《战国策》）

wu nai liang ren ye.

I am Liang person

"I am from Liang dynasty." (*Strategies of the Warring States*)

d. 滔滔者，天下皆是也。（《论语》）

tao tao zhe, tian xia jie shi ye.

Surging floods are everywhere

"There is growing unrest and bad social climate." (*The Analects of Confucius*)

e. 明德惟馨。（《左传》）

ming de wei xin.

Bright virtue only sweet smelling

"It's virtue that matters most." (*The Chronicle of Zuo*)

f. 子非鱼，安知鱼之乐？（《庄子》）

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zi fei yu, an zhi yu zhi le?

You are not fish, how do you know the enjoyment of fish?

"Don't always judge others in your own light." (*Chuang Tzu*)

With respect to these linguistic assertive constructions, it seems that we can ponder such a question: are their constructional meanings the same as their pragmatic meanings? How did they come into being? Can they all be used in the same context, or differ in contexts of use? Is its understanding context-dependent (high context)? Do the assertive constructions differ for different languages? Do they differ in the context in which they are used? And so on. All these questions appear to be difficult to solve without consideration of the context and other pragmatic factors. It follows that the pragmatic issue of constructions is worth being examined, and that the discipline of construction pragmatics can be established.

5. Conclusions

In this paper, the relationships between construction and construction grammar and between construction and pragmatics have been discussed. Constructions are the basic units of language, and grammatical constructions can be used to express the basic meanings of human life. Pragmatic information is combined in grammatical constructions, so that construction grammar and pragmatics can be integrated and studied. Construction grammar is a theory of linguistic knowledge, and pragmatics is the study of linguistic meaning in context. Construction pragmatics proposed in the paper is the integration of construction grammar and pragmatics aimed to study the pragmatic issues of construction so as to compensate for the deficiencies in the study of construction grammar and also to enrich the study of pragmatics. Admittedly, this new discipline has just started and is in need of further exploration.

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Résumé

Construction grammar is a theory of linguistic knowledge as well as a branch of cognitive linguistics. It is one of the important components of cognitive linguistics, and a very hot topic of cognitive linguistics as well. Construction grammar was developed

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to cope with such cases as idioms, set phrases, and fixed expressions that generative grammar did not deal very well with. According to construction grammar, constructions are basic units of language, i.e., form-meaning pairings, and knowledge of language is a large inventory of constructions, i.e., a CONSTRUCTICON. Within construction grammar, syntax, semantics and pragmatics are equally important, none of which can play roles without the others. But unfortunately, the pragmatic aspects of constructions are not investigated quite enough. In order to solve such a problem of construction grammar, we think it is imperative to establish a new discipline "construction pragmatics" which focuses on the study of the pragmatic issues of constructions. The present paper, first of all, explains constructions and construction grammar. And then based on the theories of construction grammar and pragmatics, it spells out the pragmatic issues of constructions in terms of information packaging constructions (e.g., *When did you stop beating your wife*?) and metalinguistic constructions in language (e.g., *Loosely speaking, a chicken is a bird*), which shows that pragmatic issues are closely related to constructions. For example, "*When did you stop beating your wife*?" is a discourse that philosophers usually take use of to make you be cheated. If you were not smart enough, absolutely you would be cheated, because this construction has a pragmatic presupposition "*You used to beat your wife*". Finally, this paper points out a new discipline "construction pragmatics", a new interdisciplinary study of the combination of construction grammar with pragmatics.

Key words: cognitive linguistics, construction, construction grammar, construction pragmatics.

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Language yesterday, today, tomorrow

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AUDIOBRANDING IN AMERICAN AND SLOVAK TELECOMMUNICATIONS ADVERTISING: A LINGUISTIC STANDPOINT

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Abstract. This paper examines the phenomenon of audiobranding from a linguistic perspective. It presents the results of the phonosemantic and acoustic analyses of American and Slovak commercial telecommunications advertisements, providing the reader with a deeper understanding of how audio-based advertising elicits an emotional response from consumers, which holds a potential of influencing their buying behaviour.

Key words: audiobranding, commercial, advertisement, emotional, American, Slovak, influence.

Introduction

Our increasingly media-saturated society considers advertising as one of the most powerful influences that can shape and affect opinions. In order to remain relevant, credible, and effective, modern digital telecommunications meticulously work out their advertising campaigns, focusing their attention on the language used in the advertising media (Hekelj 2017). Easily affected by technological and economic factors, the telecommunications industry, made up of cable companies, internet service providers, satellite companies, and telephone companies (Telecommunications industry, *s.a.*), expands, forcing companies to go abreast of the newest developments in order to win subscribers and customers. Peppard and Rylander (2006: 128-129) argue that communicating over a distance is our future, and nowadays mobile operators are in a dominant position due to owning the mobile delivery channel and relationships with customers. In order to reap rewards, the authors continue, operators must maintain their current privileged position yet provoke innovation and excitement in the kind of products and services that will create value for customers, thus unceasing the revenue growth. In addition to this, the mobile phone is today more than just a functional piece of technology used to connect to mobile transmission networks. The scholars conclude that it can hardly replace the landline since it is also a fashion item that has become an essential gadget and even one of key facets of identity.

One cannot argue with Dyer (1982: 1), who emphasizes the compellingly persuasive nature of modern advertising, increasingly "involved in the manipulation of social values and attitudes and less concerned with the communication of essential information about goods and services". As William Bernbach, one of the founders of the Doyle Dayne Bernbach advertising agency, states "advertising is the art of persuasion" (as cited in Avi 2019). Advertisers have started focus more on the advertisement appeal with the aim of affecting their potential consumers, persuading them (Dralliou, *s.a.*: 8; Dyer 1982: 66; Mudrochová & Panasenko 2021; Zabuzhanska 2021). Taking into consideration that some commercials last less than a minute, one may agree that the spoken word plays a relatively minor role in them, giving way to the combined power and impact of visual and aural material (Dyer 1982: 115; Zabuzhanska 2021: 40).

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A persuasive message is always loaded with emotions. People subconsciously or sometimes deliberately shift toward using more emotional language to enhance their powers of persuasion (Rocklage et al. 2018). Since emotion studies have recently come to the forefront of scholarly explorations (Adelman et al. 2018; Bongers 2019; Dralliou, *s.a*; Ogarkova et al. 2013; Rodero 2011; Rodero & Larrea 2021; Soriano et al. 2013; Stashko 2018; Van Dijck 2006; Zabuzhanska 2017), the timeliness of the present research, which sheds light on the role of emotions in audiobranding, is obvious.

Little is known, however, about the interplay between sound, meaning, and persuasion in rational processes of decision making concerning modern telecommunications. Recent decades have witnessed a considerable interest of scholars to sound symbolism in advertising, which can be accounted for by its ability to provide businesses with valuable knowledge, which can be applied in copywriting. Furthermore, respective publications offer insight on how sound symbolism elicits an emotional response that can affect buying intention. However, most of this research, as mentioned above, is focused on brand naming, namely, on how sound symbolism in brand names (Bongers 2019; Dyer 1982: 112; Matúš & Martovič 2016; Pio Correia 2017) and slogans (Nufer 2018; Scorupa & Dubovičienė 2015; Zabuzhanska 2021) can convey information about product features. There is abundant research on the role of emotions in decision making in the Slovak language (Hudíková et al. 2020; Ihnátová 2013). However, to date, no empirical work on the topic in Slovak telecommunications advertising has been done. Therefore, the **aim** of this research is to bring out cross-linguistic and cross-cultural features of the phenomenon of audiobranding.

The paper is structured in the following way: **Section 2** reviews the historical background and the psychological nature of advertising, shedding light onto types of commercial advertisements, as well as discussing the current state of advertising. The purpose of **Section 3** is to present the sampling procedure and the methodology of the research. The most extensive **Section 4** attempts to describe the application of

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audiobranding from a linguistic standpoint in both US and Slovak telecommunications advertising. Finally, conclusions as well as further perspectives of the study are suggested in **Section 5**.

1. Advertising as a means of communication in the new millennium

Before turning to the specifics of modern advertising language, it is necessary to give a brief overview of the historical development and psychological nature of advertising, as well as of its typology and functional capacity.

2.1 The old vs new advertising and the advent of audiobranding

Advertising is any form of paid communication by an identified sponsor aimed at informing and/or persuading target audiences about an organization, product, service, or idea (Dyer 1982: 8; Fennis & Stroebe, 2015; Krajčovič & Čábyová 2016; Kusá et al. 2020; Scorupa & Dubovičienė 2015: 109). Its commencement dates back to such major civilizations of the ancient world as Greece, Rome, Egypt, and Mesopotamia, where sellers verbally advertised their products in the market. Later, in Medieval Times, public criers, who shouted out the wares of local traders and shopkeepers, became well-known figures (Dyer 1982: 11; Holm 2017: 18). The 17th century marked the appearance of the first printed newspapers, also called mercuries, containing various announcements. They bore resemblance to "classified", or "small ads", as we call them today. However, as trade expanded and manufacturing substantially increased, it changed the "face" of advertising – the formal language was replaced by words set out in blocks, more spacing between sentences and contrasting type sizes were introduced (Dyer 1982: 11-24). Beyond the promotion of individual goods, nineteenth-century advertising also served the wider role of presenting the new consumerist way of life in an attractive way (Holm 2017: 22). Dyer (1982: 31) emphasizes that by the end of the 19th century advertising "had reached new heights of boldness and confidence if not to say impertinence". In a similar vein, Holm (2017: 23) affirms that that period was marked by conflicts in the advertising industry regarding the establishment of acceptable practices, regulations, and codes of ethics. As the 20th

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century progressed, advertising moved to the centre of the nation's economy. Marketers adopted new ways of appealing to and persuading shoppers. For instance, the use of psychology provided them with the technique of "associations" (Dyer 1982: 35). In his famous contribution to media communication "Advertising as communication", Dyer reports a piece of advice that was given to advertisers by an American instinct psychologist:

> *"An advertisement should be presented in such a way that a reader would associate it with his own experience, which was best done by appealing to his ruling interests and motives. These include the desire to be healthy, to hoard, to possess, to wear expensive clothes etc."* (ibid.).

Later on, the theory of subliminal advertising stemmed from such a psychological approach suggesting that images or words secretly implanted in advertising, below the level of conscious perception, could exert powerful control over the behaviour of the audience. Therefore, the advertisements of that time were filled with pseudo-scientific arguments (Holm 2017: 24), yet they employed a wide range of methods for inserting such subliminal messaging. They included subtle photo manipulation, quick-fire editing, and audio back-masking (Dyer 1982: 66; Holm 2017: 29). It is posited that the period featured massive expansion of American consumer society:

> "*In this environment, advertising appeared, on the one hand, as a potential menace that could harness the power of new developments in social science and psychology to steer the minds of the masses. On the other hand, the Creative Revolution promised a rejuvenation of the power of advertising to entertain and enliven everyday life*" (Holm 2017: 15).

Consequently, among the promotional methods brought about in the aftermath of World War II was the product jingle – catchy songs about a product or service that usually carry the advertising theme and a simple message (Nufer 2018: 7). At first, they were considered an irritating but effective catch phrase or piece of verse set to a catchy tune, e.g., "Murray Mints, Murray Mints, Too good to hurry mints" (Dyer 1982: 47) or the one by McDonald's "I'm lovin' it". The success and popularity of jingles is explained by the strong mnemonic effect they achieve (Gustafsson 2015: 28; Nufer 2018: 7).

The 21st century advertising once more changed its style, in which realism and rationality prevailed: prose became simpler, claims were accurate, and imagery appeared to be tasteful and relevant (Holm 2017: 24). The other key part of this shift was a transition from understanding advertising as a form of art to understanding it as a form of science through the greater integration of statistical and psychological approaches (ibid., 25).

Speaking about the advertising of the new millennium, one must agree with Holm, who postulates that "advertising now is all about the new" (ibid., 14). Such novel frontiers encompass new digital technologies, new online platforms, and new forms of data gathering. They all contribute to the creation of new forms of advertising, new spaces, in which to advertise, and new conditions for unprecedented monitoring of consumers' behaviour (ibid.).

Hence, a relatively new tool in advertising – audiobranding (also called sound branding, acoustic branding, or sonic branding) – has recently appeared (Gustafsson 2015: 21). The first development of audiobranding began with a publication by Bruner (1990), who studied the idea of music in marketing. The importance of the brand's sound identity is out of question since branding strategists have started to realise that people in their purchase-making decisions respond to more than simply the tangible product or service being offered (Kotler 1973: 48) and addressing the consumer only by visual stimuli is no longer enough (Matúš & Martovič 2016).

However, nowadays audiobranding is viewed as an approach that applies the strategic use of sound, one of the main sensory channels (Kotler 1973: 48), in order to better differentiate a product or a service, enhancing recall, creating preferences, building loyalty and trust, and eventually helping to increase sales (Gustafsson 2015: 23; Holm 2017: 26; Pio Correia 2017: 1). Moreover, it can convey a brand's essence and values while meeting the listener's emotions and cognitive processing of the message (Nufer 2018: 3; Rodero & Larrea 2021: 74). Rodero and Larrea (2021: 74) claim that audiobranding stems from the fusion of two domains putting together sound from a communicative perspective and branding from the marketing field aimed at creating meaning. This statement is also supported by Gustafsson (2015: 23).

The idea of using sound to create meaning in marketing has led to the creation of "The audio branding academy", founded in Hamburg in February 2009 with a company motto "Make the world sound better" (Audio branding academy, *s.a.*) – the first independent institution for acoustic brand communication. Since an effective audio design "affects us emotionally oftentimes beyond our awareness and our field of action" (Rodero & Larrea 2021: 71), the main goal of the academy is to promote a deliberate and responsible usage of audible elements within brand communication.
Audiobranding traditionally includes:

- **an audio logo** (an analogue of a visual logo) – the main brand identifier, a short instrumental or vocal composition that can be used in almost any situation;
- **a jingle** – a short version of a brand's advertising campaign, often with the brand's name or slogan sung; its use is usually temporary;
- **a corporate anthem** – an image tool, an integral attribute of the business style, embodying company's values and mission;
- **a corporate song** – an event instrument created for specific events, for instance, for a company's birthday, New Year, etc.;
- **a beat** – a short melody, lasting 1-2 seconds, marking the beginning and end of the advertising message;
- **a corporate voice** – an important tool for the sound image of the brand, which can be used in advertising and informational videos, in a voice greeting, audio clips on the website and in social networks (Audio branding academy, *s.a.*).

Though the advantages of audiobranding are quite evident, some theorists still fiercely oppose its application. In particular, apart from being a strategic asset for the company (Gustafsson 2015: 31), Bradshaw and Holbrook (2008: 26) perceive it as a sort of manipulation and, paradoxically, a means of social control. In other words, audiobranding began to be associated with "the dark side of the new consumer society" (Holm 2017: 29).

As one can see, the idea of audiobranding strongly resonates with the idea of marketing phonosemantics (Danilchuk 2018: 1) and the theory of sound symbolism (Sapir 1929). The symbolic value of sounds has never been a secret to linguists that is why they have extensively explored sound symbolic mappings in many languages over the last century and prolific literature can be found in this area (Adelman et al. 2018; Bongers 2019; Nuckolls 2003; Preziosi & Coane 2017) revealing hidden dimensions of richness and meaning in language (Sidhu & Pexman 2018: 1637). Since Sapir's (1929) groundbreaking research, which established a direct correlation between phonemic (e.g., /i/ vs /a/) and size contrast (e.g., 'small' vs 'big'), traditional linguistic theory has been producing evidence that supported non-arbitrary (iconic) mappings of sounds and their meanings (Panasenko & Mudrochová 2021: 428-432; Sidhu & Pexman 2018: 1619; Stashko 2017; Zabuzhanska 2021). In its simplest sense, sound symbolism is the study of the associations between the phonetic sounds in words and meaning (Bongers 2019: 4). It is noteworthy that these associations arise from some quality of the phonemes, which are regarded as multidimensional bundles of acoustic and articulatory features (Sidhu & Pexman 2018: 1619-1624). However, Nuckolls (1999: 228) suggests that not only a single phoneme, but a syllable or a tone can directly express some kind of meaning. His statement is in line with the opinion of Hinton et al. (1994: 4) who call sound symbolism synesthetic and viewed it as the process when certain vowels, consonants, and suprasegmentals are chosen to consistently represent visual, tactile, or proprioceptive properties of objects. Following the lead, Hirata et al. (2011: 929) have extended the definition, adding such referents as colour and emotion.

A substantial contribution to the theory of sound symbolism was made by linguists suggesting the idea of crossmodal correspondences – sensory interactions among the senses (Spence 2011: 971). According to Sidhu and Pexman (2018: 1637), such symbolic associations illuminate the multimodal nature of human cognition. Emerging research on cross-modal correspondence has revealed that cross-modal correspondence is most commonly reported between vision and audition (Kanaya et al. 2016: 1111), but the association between the acoustic effect of a sound and light, size, and even taste (especially sweetness) is stable across language borders (Liberman 2005: 30). Previous linguistic research has documented correspondence between segmental and suprasegmental phonetic units of speech and shape, size, duration, temperature, and emotions (Stashko 2017; Thompson 2013; Zabuzhanska 2021).

The arrangement of sounds in language has always been at the heart of poetry. However, Borys and Materynska (2020: 10) explain that the incessant fusion of various branches of linguistics leads to colossal terminological interchange. Therefore, one may speak about the migration of such terms far beyond the domain of poetics and its vast application in mass media communication (Roper 2011; Scorupa & Dubovičienė 2015; Stashko 2018; 2020; Zabuzhanska 2021). Thus, we speak of alliteration as the recurrence of the same consonant sounds, assonance – relatively close juxtaposition of similar sounds, and rhyme (correspondence in terminal sounds of units of composition or utterance) (MWOD) as manifestations of audiobranding on the segmental level.

Our study does not limit sound symbolism to phonemes only. The linguistic aspect of audiobranding includes an in-depth analysis of intonation as an instrument for arousing various sensations in the listener (Rodero 2011: 26). According to Wells (2006: 1), intonation is the melody of speech. To be specific, that is how the voice pitch rises and falls and how speakers use this pitch variation to convey linguistic and pragmatic meaning. Amongst an array of the functions it performs, the attitudinal one comes to the fore in this context – it serves to express people's attitudes and emotions, to show shock or surprise, pleasure or anger, etc. (ibid., 11). Conversely, it can be used to evoke such emotions.

Several intonation studies explore how emotions are encoded in the tone of voice (Забужанська 2016; Musiienko 2017; Orlandatou 2012; Zabuzhanska 2017).

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Specifically, the high pitch is reported to convey positive emotions, such as euphoria, excitement and joy. This pitch is recommended to be used in case the brand aims at transmitting energy, freshness and amusement. On the other hand, extensive usage of syntagms with a high pitch signals the presence of alertness, fear, or nervousness. Regarding its perception, the high pitch in speech is associated with clarity and intelligence as well as transparence. Conversely, negative psychological states such as sadness and depression are associated with low-pitched voices. However, they can also be used to convey relaxation and tranquility. Rodero (2011) and Rodero and Larrea (2021: 80), for instance, hypothesize the perception of low-pitched voices as more credible and reliable – an indispensable quality while persuading and manipulating.

The current study focuses on audiobranding from a linguistic point of view, delineating the use of sound in a broader context (both segmental and suprasegmental levels) to create additional meaning and evoke an emotional response, and thus excluding the research of music.

1.2 The psychology of advertising: Argument-based vs affect-based appeals

Psychology has always played a crucial role in the success of an advertising campaign since a great many of psychological ploys are used by advertisers in marketing, which Dyer (1982: 66) calls "psychological warfare". In other words, marketers apply the latest developments in psychoanalytic research and social anthropology in order to develop a better sense of the person's hidden anxieties and insecurities, values and desires of the consuming public. Equipped with such knowledge, advertisers can appeal to the subconscious and irrational drives of consumers. As a result, they purchase goods or services "for which they had no rational need or desire" (Dyer 1982: 66; Holm 2017: 28). Therefore, these psychological persuasive strategies help companies understand their consumers and reveal how personal characteristics can affect the response of people towards products (Dralliou, *s.a*: 11; Gustafsson 2015: 21; Holm 2017: 33). Moreover, they are aimed at influencing consumers' behaviour since

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when exposed to an advertisement people can have not only cognitive but also emotional responses (Dralliou, *s.a.*: 13; Dyer 1982: 64; Holm 2017: 26).

Therefore, as rightly grouped by Fennis and Stroebe (2015: 45), advertisements can use different types of appeal: argument-based and affect-based. The first one invokes reason and uses fair-minded arguments while the second one uses emotions and feelings to convey the message. Dyer (1982: 2) supports this statement, emphasising that advertising is an irrational system that mostly appeals to people's emotions and has nothing to do with the purchasable goods. Based on such an approach, it is claimed that the products that are evaluated by personal preference lend themselves well to affect-based appeals. This category encompasses beverages, perfumes, designer clothes, etc. since they are evaluated by taste, flavour, or style. Having little cognitive content, such products are primarily based on effect. It is noteworthy that "the rise of television created favourable conditions for ever greater emphasis on affective appeals and aesthetic play... which can be seen in the emphasis on 'emotional selling points' that shaped advertising in the 1980s." (Holm 2017: 31). Alternatively, such products as computers, TV-sets, and some other electronic devices are typically promoted with the help of with argument-based (logical) appeals. It can be explained by the presumption that cognitive learning processes, through which consumers obtain information about a product or service which is going to be stored in their memory and will be used in a future decision making process, embrace all consumer mental activities (Batkoska & Koseska 2012: 73).

Consequently, the aforementioned dichotomy enabled Dralliou (*s.a.*) to distinguish two types of advertisements: affect-based (designed primarily to provoke emotions) and argument-based ones (using data and the functional characteristics of a product). Dyer (1982: 4) supports such a classification, mentioning that producers are hardly likely to provide us with neutral information. Regardless of the type, the advertisements' primary function is to introduce a wide range of consumer goods to the public and thus to support the free market economy (ibid., 1). The universal functions of advertising are to inform, persuade and influence potential consumers (Dralliou, *s.a*: 8; Dyer 1982: 77; Zabuzhanska 2021: 39). From a broader perspective, advertising contributes to society's wellbeing and raises peoples standard of living by encouraging the sales of mass produced goods, stimulates production, creates prosperity.

2. Material and methods

Within the framework of this research, a wide range of American and Slovak mobile network commercial advertisements has been analysed. Our sample consists of 45 commercial advertisements of three most popular American network and mobile operators: T-Mobile, Verizon, and AT&T Wireless and 30 Slovak commercial advertisements of 3 network and mobile operators: Telekom 1, O2, and Orange. The body of the data includes the advertisements released at the time of Christmas (2011-2022). The details necessary for the research are provided in Table 1.

Table 1. Details of the data sample

American mobile network advertising				**Slovak mobile network advertising**			
Network and mobile operator	Number of advertisements	Number of syntagms	Duration	Network and mobile operator	Number of advertisements	Number of syntagms	Duration
T-Mobile	15	860	20 minutes	Telekom 1	10	216	5 minutes
Verizon	15	480	10 minutes	O2	10	190	4 minutes
AT&T Wireless	15	458	14 minutes	Orange	10	164	6 minutes
Total	**45**	**1798**	**44 minutes**		**30**	**570**	**15 minutes**

The methodological strategy breaks down the research into a sequence of logical steps. On the segmental level, both phonological and phonosemantic analyses (including quantitative and qualitative content analyses) are employed while on the suprasegmental level the speech units undergo an acoustic analysis. Thus, the material obtained from the YouTube Channels and the official sites of the abovementioned telecommunications services was converted into sound files in the *.*wav* format with the help of the Audacity 1.3 program. Beta (Unicode) (Audacity 2022). Fixation and graphic visualization of the fundamental frequency was done with the help of Praat (Boersma & Weenink 2021).

The fundamental frequency was studied by:

1) localizing pitch maximum and minimum of the syntagms;

2) determining the frequency range of syntagms – the difference between the maximum and minimum indicators of the fundamental frequency, and is calculated by the formula

$$i = \frac{f_{\max}}{f_{\min}},$$

where i is the interval of two tones, f_{max} is the highest frequency, and f_{min} is the lowest frequency of the analysed fragment.

These parameters were set separately for each syntagm, and the results obtained were summarized in protocols, the samples of which are provided in Table 2 for American commercial advertisements (e.g., "Video calling Santa for Christmas" by T-Mobile) and Table 3 for Slovak commercial advertisements (e.g., Sk.: "Máme vianočný darček pre každého." [Eng.: "We have a Christmas present for everyone"]).

Table 2. Protocol for recording acoustic measurements of "Video calling Santa for Christmas" (abridged)

Syntagm	**f_{max} (Hz)**	**f_{min} (Hz)**	**Interval of two tones**	**Frequency range**
Happy holidays	353	79	4.5	expanded
Happy holidays from T-Mobile	479.8	81.4	5.9	wide
Do you, guys, think	192.9	83.8	2.3	narrowed
You can help me	179	83	2.2	narrowed
Spread some Christmas cheer	487	80	6.1	wide

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Table 3. Protocol for recording acoustic measurements of the Slovak advertisement "Máme vianočný darček pre každého" [Eng.:"We have a Christmas present for everyone"] (abridged)

Syntagm	f_{max} (Hz)	f_{min} (Hz)	Interval of two tones	Frequency range
Sk.: "Tati, tati" [Eng.: "Dad, Dad"]	526.4	103	5.1	wide
Sk.: "ten bicykel je super" [Eng.: "that bike is great"]	478.4	98.5	4.9	expanded
Sk.: "A ty si dal už Môj darček Mišovi" [Eng.: "And you have already given my gift to Misha"]	493.6	218.8	2.3	narrowed

The high pitch includes the expanded and wide frequency range, while the narrow and narrowed frequency ranges belong to the low pitch domain.

4. Discussion

4.1 The US telecommunications advertising

Before embarking on the analysis of applying audiobranding on the segmental and suprasegmental levels, it is necessary to specify that 30% of American commercial advertisements under investigation appeared to be purely affect-based (examples 1-3), appealing to consumers' emotions, while 40% are argument-based since they are communicated with logical appeal (examples 4-6).

(1) "*John! Is that really you? We were just talking about you and how you saved the wireless industry from the abominable carriers [Verizon and At&T Wireless]. Oh, yes, the abominable carriers, they only cared about silver and gold and how to take it from the people of the world!*" ("The year without a Santa Claus", T-Mobile);

(2) "*Hi! Hello! Happy holidays! Do you guys think you can help me spread some Christmas cheer?*" ("Virtual caroling with T-Mobile's senior leadership team", T-Mobile);

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(3) "*What I really want is my mummy not to work and I want her to be fine, I don't want her to be stressed and I love her so much!*" ("Video calling Santa for Christmas" T-Mobile);

(4) "*Can you help Santa with a new data plan? Sure, a thing. Right now you have 15 Gb of data for the price of 10Gb.*" (AT&T Wireless);

(5) "*I wish we had iPods to practice math more. But two iPods means two data plans. That's crazy. Maybe not. With AT&T adding and iPod is just 10$ a month*" ("We wish we had iPods", AT&T Wireless);

(6) "*That's the unlimited effect. Switch AT&T and have direct TV.*" (AT&T Wireless). The remaining 30% of the advertisements provide potential customers not only with factual information, but are also aimed at bringing positive emotions (7-8). Since it is difficult to draw the demarcation line here, we refer these advertisements to mixed-appeal ones (argument+emotion):

(7) "*Get the technology they love and a network they deserve…and Galaxy Nexon or Samsung Stratosphere for unlimited time get twice the data. Verizon.*" (Verizon);

(8) "*This is our best unlimited plan ever…Up to 10 times the speed. Or 5G data is unlimited. Because a better plan deserves a better phone.*" (Verizon).

Moreover, these findings convey an important implication regarding the companies in question. In particular, the market leader company in the USA – Verizon – makes use of the advertisements that are both affect- and argument-based. Being the second and simultaneously the rival, T-Mobile plies affect-based advertisements, while AT&T Wireless that closes the top 3, avails itself of mainly argument-based appeals.

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4.1.1 Audiobranding on the segmental level

On the segmental level, audiobranding includes the use of various phonological (also called phonostylistic) devices: rhyme, alliteration, assonance, etc. The analysis demonstrates that rhyme is not so widely applied in the language of telecommunication advertising. The obtained results reveal that only 10% of the studied commercials contain rhyming words and syllables. Interestingly enough, some mobile operators resort to rhyme only in those cases when they either use Christmas poems which are well-known to an average American consumer, e.g., "A visit from St. Nicholas" by C.C. Moore (9) and carols "Jingle bells" and "Deck the halls" (10-11), or release a special corporate song – and updated spin on the holiday classic, "(There's no place like) Home for the holidays" (12):

(9) "*'Twas the night before Christmas, when all through the **house***
*Not a creature was stirring, not even a **mouse**;*
*The stockings were hung by the chimney with **care**,*
*In hopes that St. Nicholas soon would be **there***" (Verizon);

(10) "*Jing**le** be**ll**s, jing**le** be**ll**s*
*Jing**le** a**ll** the **way***
Oh, what fun it is to ride
*In a one-horse open **sleigh***" (T-Mobile);

(11) "*Deck the halls with boughs of **holly***
Fa la la la la, la la la la (fa la la la la, la la la la)
*'Tis the season to be **jolly***" (T-Mobile);

(12) "*From Atlantic to **Pacific**,*
*Gee the traffic is **terrific**!*
*For the pleasure that you **bring***
*When you make that doorbell **ring**...*" (T-Mobile).

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It is evident that such songs have always evoked positive emotions. Thus, the persuasive effect is achieved by the potential influence of literature and music – they interfere with the feelings and thoughts of their recipients. The evidence is supported by Gustafsson (2015: 24) who stated that original music in advertising is more effective as a memory device than parodies of songs. It goes in tune with Van Dijck (2006), who investigated the crucial role of music in the construction of personal and collective cultural memory processes. Classical Christmas favourites, already precedent, sound heartwarming and seem imprinted in the consumer's DNA.

Upon closer examination, examples (13-17) show that Verizon, the largest wireless carrier in the United States with over 142.8 million subscribers at the end of 2021 (Verizon, *s.a.*), frequently employs alliteration to strengthen its attempts at persuasion:

(13) "*Smile because this holiday Verizon is doing it better. Right now you can get Iphone pro from us. Just bring in your older damaged phone and we'll give you the phone everybody wants and America's most reliable network on any unlimited plan. Better. Better. And everyone gets up a thousand dollars when they switch. Okay. Everyone, say "Better", "Better", "Better" holiday with Verizon. Because everyone, everyone, everyone deserves better. Shop online, in a store or call today*";

(14) "*You are gonna fit right in here. Five times more 3G coverage. Verizon wireless is your destination for great gifts*";

(15) "*Verizon has amazing gifts that last the whole year through. With a new HTC-Rezound power by Verizon. HTC-Rezound. For the same low price. Get the technology they love and the network they deserve*";

(16) "*Are you listening, Snow is glistening…Verizon now has the gifts everyone wants. Get last minute holiday gifts deals. Save 50 dollars on selected devices*";

(17) "*Holidays at Verizon. And the best deals around the best network. With no surprise coverages. Get the best deals and the best network only on Verizon*".

The alliterating phonemes /s-z/ can be found in each commercial by Verizon. Moreover, one may notice that the phoneme /z/ is also used in the name of the brand. These findings allow room for speculation about the sound symbolic usage of the aforementioned alliterating sounds as some studies demonstrate that sibilants may express power, liveliness and seduction (Stashko 2017: 315-316; Stashko 2018: 139). The other US telecommunication service companies – T-Mobile and AT&T Wireless – once in a while resort to this persuasive phonological device. The only striking example (18), spotted in the body of the data, is the abovementioned "Virtual caroling with T-Mobile's senior leadership team" by T-Mobile:

(18) "*Jingle bells, jingle bells*
Jingle all the way
Oh, what fun it is to ride
In a one-horse open sleigh";

"*Deck the halls with boughs of holly*
Fa la la la la, la la la la (fa la la la la, la la la la)
'Tis the season to be jolly
Fa la la la la, la la la la (fa la la la la, la la la la)
Don we now our gay apparel
Fa la la la la, la la la la (fa la la la la, la la la la)
Troll the ancient Yuletide carol
Fa la la la la, la la la la".

Particular attention should be paid to the sonorant /l/, which is considered "soft", "nice" (Crystal 2009), and "smooth" (Zabuzhanska 2021: 44). Coincidentally, this commercial contains some vivid cases of assonance. It is apparent that the vowel /ʌ/ is

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recurrent in carol (18). According to some research, this sound tends to be associated with big things (Preziosi & Coane 2017; Stashko 2017: 305-306; Thompson 2013). In this context, big things are connected with big Christmas attributes such as gifts, a Christmas tree, wreaths, candy canes, etc.

Several other instances of assonance are found in the commercials by Verizon:

(19) *"Smile because this holiday Verizon is doing it better. Right now you can get IPhone pro from us. Just bring in your older damaged phone and we'll give you the phone everybody wants and America's most reliable network on any unlimited plan. Better. Better. And everyone gets up a thousand dollars when they switch. Okay. Everyone say "Better", "Better", "Better" holiday with Verizon. Because everyone, everyone, everyone deserves better. Shop online, in a store or call today".*

This example demonstrates the extensive use of the English vowels that can be classified into the e-type (timbre) [e, ə, æ, ɜː, eɪ, eə, əʊ, eɪə, əʊə] (the words which contain them are underlined in the text above).

Needless to say, assonance is less apparent to the eye and sometimes to the ear than alliteration; therefore, it is much harder for the listener to identify (Zabuzhanska 2021: 40) in view of the English vocalic subsystem: the inventory of vocalic phonemes in English is richer than the inventory of vocalic phonemes in Slovak (Gregová 2008: 19). The research results reveal that AT&T Mobility LLC, also known as AT&T Wireless, an American telecommunications company with 100.6 million subscribers as of the end of 2021 (AT&T Wireless, *s.a.*), uses the persuasive potential of phonological devices least of all since no apparent cases of rhyme, alliteration, and assonance have been found.

4.1.2 Audiobranding on the suprasegmental level

It is common knowledge that the suprasegmental level features larger speech chunks and refers to stress placement, speech rhythm, and intonation patterns. It should be

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stressed that only pitch analysis and interpretation are under scrutiny in this study. This constrained is necessitated by a complex nature of intonation (Забужанська 2016; Wells 2006).

The acoustic analysis of the audio material reveals that the pitch of the speakers of different age and gender, which is employed in the commercials under consideration is used in different ways. However, our analysis suggests the following tendency (Fig. 1): the top market leader, Verizon, releases commercials where 81% of syntagms have the low pitch, while 19% – the high pitch. T-Mobile, the runner up, prefers the commercial advertisements with 58% of high-pitched syntagms and 42% of low-pitched syntagms. AT &T Wireless, which closes top 3, also makes use of low-pitched syntagms (64%) against the high-pitched ones (36%).

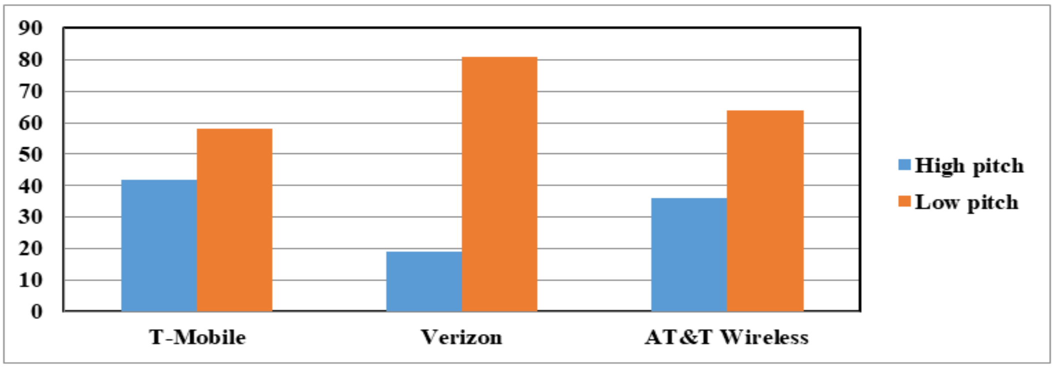

Figure 1. Distribution of syntagms with low and high pitches
in advertisements of different companies (Source: Own processing)

Furthermore, the acoustic analysis of the US telecommunications advertisements demonstrates that the high pitch is predominantly used in those syntagms that do not have any deliberately employed phonological devices, such as alliteration or assonance, as is shown in example (20) and Figure 2.

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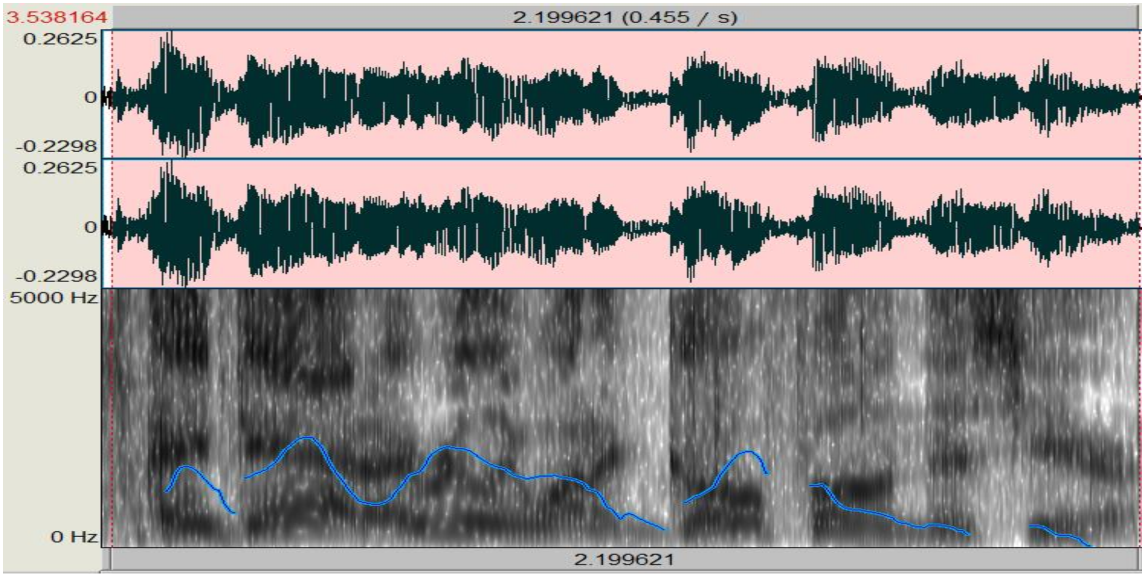

Figure 2. Spectrogram and oscillogram of the utterance "Hey, dad, I really want a go phone this year" (Source: Praat).

(20) *"Hey, dad, I really want a go phone this year"*

These findings confirm the hypothesis put forward by Rodero and Larrea (2021: 80) that with the aim of persuading and manipulating low-pitched voices are to be used in advertising since the target audience perceives them as more credible and reliable. One more significant conclusion can be drawn: the more successful the company is the more commercials with low-pitched syntagms it releases.

Additionally, as regards the application of audiobranding on the segmental and suprasegmental levels, we can visualize it with the help of two models in the following way (Fig. 3).

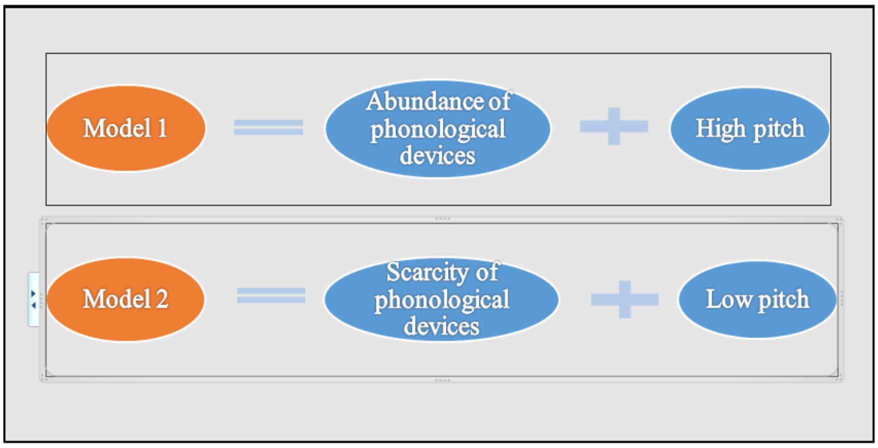

Figure 3. Models of segmental and suprasegmental interplay

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Thus, the profound effect of persuasion and, supposedly, manipulation results in either the abundant use of phonological devices (of the same type or in combination) and the high-pitched voices of the speakers (model 1); or the predominance of low-pitched speech segments without a significant backup on the part of a segmental level (model 2).

4.2 The Slovak telecommunications advertising

The general analysis of Slovak commercials against the suggested typology "argument-based vs affect-based appeals" demonstrates that 70% of Slovak commercial advertisements under investigation are entirely affect-based (21), appealing to consumers' emotions, while 30% are of a mixed appeal (argument+emotion) (22).

(21) Sk.: *"Pripojiť sa k zaujímavej komunite, aj s kamoškou? Kulturisti! Moje nervy. Tak to si si pekne naložila. Skúsme niečo iné. Ummm, linecké. Otužilci? Bacha na močáky. Sssss, ešte teraz sa klepem. Aaa, toto bude nejaká burza. Kaktusov? Kam nás internety povedú tento krát. Spevokol. Vianoce za rohom, treba oprášiť koledy. Kamoši precítili. Vy dve ste sa našli. Spoľahlivý internet vás pripojí k rôznym komunitám. A v ponuke love ho môžete mať ešte výhodnejšie. Orange.*" – [Eng.: Join an interesting community, even with a friend? Bodybuilders! My nerves. So you handled it nicely. Let's try something else. Ummm, Linz. Hardeners? Watch out for swamps. Sssss, I'm still knocking. Aaa, this is going to be a stock market. Cacti? Where the internet will take us this time. Singer. Christmas around the corner, carols need to be dusted. The buddies felt it. You two found each other. Reliable internet connects you to different communities. And in the offer of love you can have it even more advantageous. Orange];

(22) Sk.: "*No ale toto. No tak ale toto. To je čo? K O2 smart paušálu vám dáme teraz 5G telefón navyše.*" – [Eng.: But this. Come on, this. What is it? We will now give you an extra 5G phone for the O2 smart package].

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4.2.1 Audiobranding on the segmental level

No instances of rhyme used in Slovak telecommunication advertising have been revealed. In contrast to the US mobile network advertising, which, though seldom, but still uses rhyme as part of Christmas poems, carols or corporate songs, Slovak Christmas commercials makes use of exclusively famous backing tracks. As regards other phonological devices – alliteration and assonance – some vivid examples (23-29) illustrate their extensive application in the Slovak advertising language. In particular, alliteration has been found in the commercials launched by Telekom 1 (23-26) and Orange (27-29):

(23) Sk.: *"Sadni, MIšo sadni, Sadni. Máme nové Vianočné pre**k**vapenie, **k**toré sadne **k**aždému. Príďte si po smart televízor a my **k** nemu pribalíme smartfon a**k**o darče**k**. Váš Tele**k**om."* – [Eng.: Sadni, MIšo sadni, Sadni. We have a new Christmas surprise that will suit everyone. Come for a smart TV and we will pack a smartphone as a gift. Your Telecom];

(24) Sk.: "***T**a**t**i **t**a**t**i, **t**en bicykel je **s**uper. A **t**y **s**i dal už Môj darček Mi**š**ovi. Nie, chcel **s**om, aby **s**me **t**o **s**pravili **s**poločne. Ve**s**elé Vianoce, kamo**š**.*" – [Eng.: Dad, Dad, that bike is great. And you have already given my gift to Misha. No, I wanted us to do it together. Merry Christmas, buddy];

(25) Sk.: *"**Ch**ce to len hlboký nády**ch** a odvážny tón. Pomalý výdy**ch** a… **Ch**ce to len hlboký nády**ch** a odvážny tón. Pomalý výdy**ch** a to ide von. Počúvaj u**ch**om a dolaď to hneď, podrž to bru**ch**om a haj naspamäť. O jeeee, rád si zahrá na fujareeee. Už ide internet. **Ch**valabohu. Záleží nám, aby ste boli opäť rý**ch**lo pripojení, preto v prípade nečakaného výpadku máme záložný internet pre každého. Máte v ruká**ch** celý svet."* – [Eng.: It just needs a deep breath and a bold tone. Slow exhalation and then it just takes a deep breath and a bold tone. Slow exhalation and it goes out. Listen with your ear and fine-tune it now, hold it in your stomach and keep it in mind. Oh jeeee, he likes to

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play fujareeee. The internet is coming. Thanks God. We care that you are quickly connected again, so in the event of an unexpected outage, we have a backup internet for everyone. You have the whole world in your hands];

(26) Sk.: "*Stál, stál, pred vzdialeným cieľom. Stál, stál pred pláňou bielou. Stál, stál v neľútostných búrkach. Choďte radšej tam, kde ešte všetci neboli. Šiel šiel… Darujeme vám nekonečné dáta, aby ste mohli objavovať nekonečné krásy Slovenska. Aktivujte si ich v Telecom aplikacii. Záleží nám, aby ste mali v rukách celý svet.*" – [Eng.: He stood, he stood, in front of another goal. He stood, standing in front of the white plain. He stood, standing in relentless storms. You'd better go where not everyone has been before. Went, went… We give you endless dates so you can discover the endless beauties of Slovakia. Activate them in the Telecom application. We want you to have the whole world in your hands];

(27) Sk.:"*Pripojiť sa k zaujímavej komunite, aj s kamoškou? Kulturisti! Moje nervy. Tak to si si pekne naložila. Skúsme niečo iné. Ummm, linecké. Otužilci? Bacha na močáky. Sssss, ešte teraz sa klepem. Aaa, toto bude nejaká burza. Kaktusov? Kam nás internety povedú tento krát. Spevokol. Vianoce za rohom, treba oprášiť koledy. Kamoši precítili. Vy dve ste sa našli. Spoľahlivý internet vás pripojí k rôznym komunitám. A v ponuke love ho môžete mať ešte výhodnejšie. Orange.*" – [Eng.: Join an interesting community, even with a friend? Bodybuilders! My nerves. So you handled it nicely. Let's try something else. Ummm, Linz. Hardeners? Watch out for swamps. Sssss, I'm still knocking. Aaa, this is going to be a stock market. Cacti? Where the internet will take us this time. Singer. Christmas around the corner, carols need to be dusted. The buddies felt it. You two found each other. Reliable internet connects you to different communities. And in the offer of love you can have it even more advantageous. Orange];

(28) Sk.: "*Tak čo si vyskúša Ivanka dnes? Pripojiť sa k zaujímavej komunite. Pankáč. Fúúú, začíname zostra. Ten účes vyzerá stabilne, aj ten internet. Od pankáčov k*

umelcom? Tak čo, spokojná? Nevadí. Pokračujeme ďalej. Šach, v tomto si sa našla. A ďalší ťah. Uuuuu, futbal. Talent. Na ten sa netreba vždy spoliehať. Aspoň, že na internet sa môže spoľahnúť. Spoľahlivý internet vás pripojí k rôznym komunitám. A v ponuke love ho môžete mať ešte výhodnejšie. Orange." – [Eng.: So what is Ivanka trying today? Join an interesting community. Punk. Wow, we're starting sharply. That hairstyle looks stable, even the internet. From punks to artists? So, satisfied? Never mind. We continue. Chess, you found yourself in this. And another move. Uuuuu, football. Talent. You don't always have to rely on it. At least the internet can count on it. Reliable internet connects you to different communities. And in the offer of love you can have it even more advantageous. Orange];

(29) Sk.: *"Pozrite sa všetci na mňa. Netvárte sa tak nedostupne. Náš pevný internet je dostupný pre takmer všetky domácnosti na Slovensku."* – [Eng.: Everybody, look at me. Don't look so inaccessible. Our fixed internet is available for almost all households in Slovakia].

The examples above confirm a wide use of recurrent plosive consonants /k/, /t/, and a post-alveolar affricate /ʧ/. Alliterating fricatives /s/ and /ʃ/ often go "hand-in-hand", as well as sonorants /l/, /m/, and /n/ contribute to pleasant tonality.

As regards assonance, its vivid instantiation is relatively scarce except for the commercials released by O2 Slovakia, a Slovak telecommunications company, mobile communications provider operating in the country since 2002 (O2 Slovakia, *s.a.*):

(30) Sk.: "*Trasú sa mi ruky trasú. Čakáš niekoho? Dobrý. Daj robota. Päťgéčko, päťgécko, prišiel jeho čas. Priniesol ho O2 k nám, potešilo zas, hej! Moja, máme pre nich niečo? Niečo iné sa nenájde? Toto je nová generácia… Vianočné darčeky pre sieť novej generácie na vás čakajú v O2 predajniach.*" – [Eng.: My hands are shaking. Are you waiting for someone? Good. Give the robot. Five-gecko, five-gecko, his time has come. O2 brought him to us, pleased again, hey! My, do we have anything for them?

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Is there anything else found? This is a new generation. Christmas presents for the new generation network are waiting for you in O2 stores];

(31) Sk.: "*N**o** ale t**o**t**o**. N**o** tak ale t**o**t**o**. T**o** je č**o**? K **O**2 smart paušálu vám dáme teraz 5G telef**ó**n navyše.*" – [Eng.: But this. Come on, this. What is it? We will now give you an extra 5G phone for the O2 smart package];

(32) Sk.: "*H**o**v**o**rím **o** t**o**mt**o** sú Vian**o**ce. P**o**čkať! Hal**o**? Tam si? Ner**o**bte si star**o**sti. K **O**2 smart paušálu vám teraz dáme 5G telef**ó**n navyše.*" – [Eng.: I'm talking about this is Christmas. Wait! Hello? There you are? Don't worry. We will now give you an extra 5G phone in addition to the O2 smart package].

Given that the inventory of the vocalic phonemes in Slovak is relatively limited (in comparison to the English language), it seems natural that the use of assonance (30-32) is scanty and the only vividly recurrent vowel is of the o-type (***o-ó***). However, likewise by Verizon, one may speculate about whether it is a coincidence or rather a deliberate symbolic name of the brand (O2).

4.2.2 Audiobranding on the suprasegmental level

The acoustic analysis of Slovak telecommunications commercials identifies the use of the following pitches (Figure 4): the low pitch is observed in 75% of syntagms (Orange), 63% of syntagms (Telekom 1), and 51% of syntagms (O2). Against this background, the high pitch is observed in 25% (Orange), 37% (Telekom 1), and 49% (O2) of syntagms respectively.

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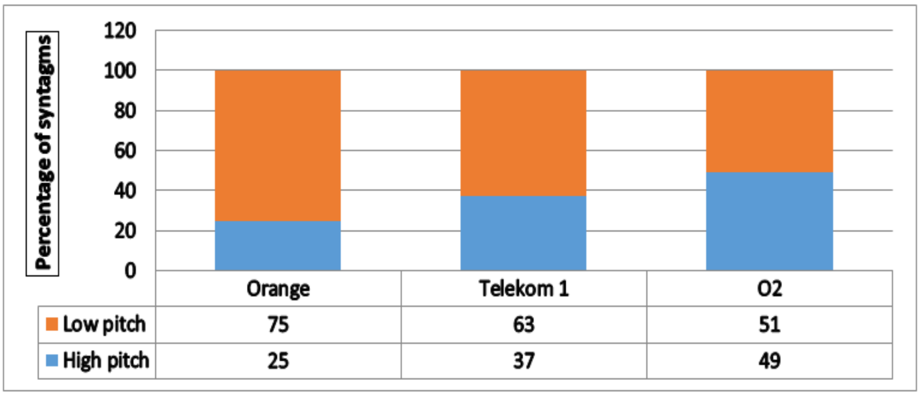

Figure 4. Distribution of syntagms with low and high pitches in advertisements of different companies (Source: Own processing)

Figure 5 presents the oscillogram of utterance (33) Sk.: *"Veselé Vianoce, kamoš."* – [Eng.: "Merry Christmas, buddy"] in which the minimum pitch is 82 Hz while the maximum one is 123 Hz, so the interval of the two pitches is just 1.5.

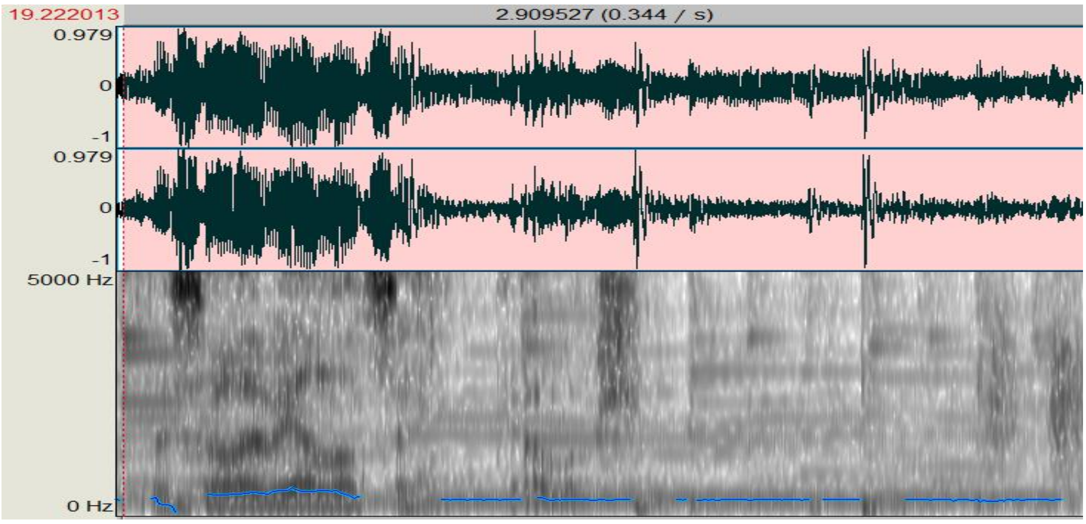

Figure 5. Spectrogram and oscillogram of the utterance Sk.: "Veselé Vianoce, kamoš." [Eng.: "Merry Christmas, buddy"] (Source: Praat)

It is worth mentioning that we deliberately excluded the utterances pronounced by children as they always speak in high-pitched voices. Additionally, some considerations on the interplay between segmental and suprasegmental levels as regards Slovak telecommunications advertisements can be made. In particular, Orange, by far the most successful telecommunications company in Slovakia (Orange, *s.a.*), has Christmas commercials with low-pitched voices, which contributes to the feeling of credibility and trustworthiness and confirm the tendency as regards to the US mobile

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advertising. The runners-up, Telekom 1 and O2, also use the low pitch in their advertisements, however, less. Instead, more cases of alliteration and assonance contribute to a strong persuasive effect. Thus, the interplay between the segmental and suprasegmental levels can be visualized with the help of the models elaborated in (*4.1.2*).

5. Concluding remarks

The fast pace of telecommunications industry development inevitably leads to innovation and excitement, considerably changing advertising campaigns. On the one hand, advertising contributes to society's wellbeing and raises people's standard of living by encouraging the sales of mass-produced goods, stimulates production, creates prosperity. On the other hand, it is often associated with persuasion and manipulation appealing to emotions rather than logic. In contrast to the old practices in advertising where the visual component dominated, the current stage of its development is necessarily associated with sound – a powerful communication resource. Maintaining their lead in the market, mobile operators resort to audiobranding – deliberate use of speech sound on all the levels to enhance the persuasive power of commercials.

This contrastive analysis of the American and Slovak telecommunications advertisements allows us to draw some conclusions. The similarities concern, first of all, the types of advertisements based on psychological appeal. It has turned out that, contrary to popular belief, telecommunications advertisements are instantiated with emotion-based appeals. Secondly, multiple mechanisms play a role in a single persuasive effect that contributes to the success of the advertising campaign. However, it is done not always simultaneously, but rather sequentially. On the segmental level, the application of audiobranding manifests itself in the use of alliteration and assonance mainly. The recurrent sounds are used symbolically, which agrees with the sound symbolism theory. On the suprasegmental level, the low pitch is predominantly used, implying more credibility and trust – an essential pre-requisite for persuasion and manipulation.

Third, the significant effect of persuasion and manipulation can be enhanced by the abundant use of various phonological devices (of the same type or in combination) and the high-pitched voices of the participants or the predominance of low-pitched utterances without a significant backup on the part of a segmental level. This interplay seems productive since as we found out both the most successful telecommunications companies – Verizon (the USA) and Orange (Slovakia) betake it.

We have detected some differences as well. In order to maximize effectiveness, US mobile advertising sometimes resorts to rhyme only in those cases when they either use Christmas poems or carols, which are well-known to an average American consumer, or updated spins on the holiday classics. The persuasive effect is achieved by means of appealing to the collective cultural memory.

It is possible to enlarge the scope of the study, encompassing further contrastive phonological research (incorporating a larger set of variables – tempo, pauses, and intensity) and such facets of non-verbal communication as appearance, age, gender, manner, etc.

Notes

All the examples in the text from Slovak into English are translated by the authors – Matej Martovič and Marija Hekelj.

Abbreviations

Eng. – English

Hz – Hertz

MWOD – Merriam-Webster online dictionary

Sk. – Slovak

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Résumé

This pilot study focuses on the notion of audiobranding in modern telecommunications

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advertising as the deliberate use of sound in a broader context (both segmental and suprasegmental levels) to create additional meaning and evoke an emotional response. Our sample includes American and Slovak commercial advertisements of the countries' most successful telecommunications industry companies. The authors argue that in an extremely volatile and competitive telecommunications market, advertising relies more on emotional rather than logical appeal. The research of two typologically different languages has proved that the multiple mechanisms combine (sometimes simultaneously, but predominantly sequentially) to play a major role in enhancing the persuasive power of an audio-based commercial advertisement. These mechanisms include the application of phonological devices and the speech pitch. The evidence shows that the profound persuasive effect is achieved with the help of either the abundant use of phonological devices (of the same type or combined) given their sound symbolic usage and the high-pitched voices of the speakers or the predominance of low-pitched speech segments without a significant backup on the part of a segmental level. However, two different linguistic traditions are observed: persuasion is achieved by means of appealing to the collective cultural memory through well-known precedent songs, poems, etc. only in American advertising. The phenomenon of audiobranding is studied cross-linguistically and, consequently, can contribute to effective cross-cultural communication. This research can be seen as an obvious impetus for an extended contrastive project encompassing further comparative phonological study (incorporating a larger set of components – tempo, pauses, and intensity) along with various facets of non-verbal communication.

Key words: audiobranding, commercial, advertisement, emotional, American, Slovak, influence.

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