

Metaphor, Nominalization, Appraisal: Analyzing Coronavirus-Related Headlines and Subheadings in *China Daily* and *The Wall Street Journal*

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ABSTRACT

This paper focuses on two corpora of headlines and subheadings from news articles about the coronavirus, published in *China Daily* (CD) and in *The Wall Street Journal* (WSJ) between January 7 and February 8, 2020. Applying Conceptual Metaphor Theory (Lakoff & Johnson, 1980) and Systemic Functional Linguistics, particularly the nominalization framework (Halliday, 1997/2004) and Appraisal (Martin & White, 2005), the paper explores how the virus and actions taken against it are framed in the corpora through the use of metaphors, nominalizations, and evaluative language in general. Results highlight similarities in the metaphorical conceptualization of the virus/disease in the corpora, but also key differences in terms of framing. In *China Daily*, metaphor and nominalization function to frame the situation and the actions taken in mainly positive terms; conversely, in *WSJ*, the emerging outlook is predominantly pessimistic. The conclusive section takes stock of such differences, also in the light of the socio-cultural contexts in which they are embedded. Finally, remarks are made about the usefulness of the proposed theoretical and methodological approach, the main advantages being the *holistic perspective* on textual data emerging from the combination of metaphor and nominalization analysis – as the two phenomena often work synergistically – and *systematicity* brought about by integrating the appraisal framework into metaphor studies. At the textual and contextual level, the relevance of the findings lies in their contribution to a deeper understanding of different national responses, and their media representation, at the onset of the coronavirus crisis.

Keywords: appraisal theory; conceptual metaphor; coronavirus; nominalization; presupposition

INTRODUCTION

This paper inserts itself in the field of critical media discourse analysis (e.g., Fairclough, 1995; van Dijk, 1998; White, 2004), linking up in particular to studies focusing on the language of headlines (e.g., van Dijk, 1988; Bell, 1991). This research addresses select linguistic features in a set of headlines and subheadings related to the same event, published in the same time span by two national newspapers, and their effects in terms of framing and event construal.

In January 2020, the outbreak of an unknown, pneumonia-like virus in Wuhan, China, began to attract media attention worldwide. This would soon be identified as a new coronavirus strain and provisionally given the name 2019-nCoV, later changed to SARS-CoV-2. In just two months, the disease caused by the novel coronavirus (Covid-19) –would be declared a global pandemic by the World Health Organization (March 11, 2020), forcing countries worldwide to take extraordinary measures such as national lockdowns. The spread of the disease was accompanied by an equally exceptional amount of information, conveyed through different channels with varying degrees of reliability, which in February 2020 was already officially called an *infodemic*: a potentially dangerous over-abundance¹. Consequently,

¹ See “Novel Coronavirus (2019-nCoV). Situation Report 13, 2 February 2020”, <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports> (accessed February 12, 2021).

numerous studies addressing the language of Covid-19 have appeared (e.g., Craig, 2020; Kranert et al., 2020; Nor & Zulcafli, 2020; Wicke & Bolognesi, 2020; see also the special section on Covid-19 in the 2020 and 2021 issues of this journal).

Against this background, this paper focuses on two corpora of headlines and subheadings from news articles about the virus, published in the English-language Chinese newspaper *China Daily* (published in Beijing, China) and in *The Wall Street Journal* (published in New York, U.S.A.) between January 7 and February 8, 2020². *China Daily* is the official English-language publication of the People's Republic of China. The newspaper mainly focuses on events taking place within the national borders, paying special attention to the Chinese government's policies and achievements. Occasionally, in the corpus under analysis, news items concerning China are also taken from international agencies or foreign newspapers; however, when this is the case, it is always with the aim of providing a comment, and so a Chinese perspective, on the events. In fact, being written in English, the newspaper also has a clear international vocation: Stone (1994:45) defines it as "the central means of communication between the Chinese government and the non-Chinese-speaking world". On the other hand, *The Wall Street Journal* is among the most widely circulated newspapers in the U.S.³ and is one of the most influential news outlets globally. With specific reference to China, such influence was demonstrated by the expulsion of three of its reporters from the country right at the beginning of the coronavirus epidemic, following the publication of a controversial editorial by Russell Mead in February 2020⁴. *The Wall Street Journal* is also generally held to be ideologically balanced, with a clear separation between conservative editorials and a liberal news section, and an evenly ideologically distributed audience⁵.

My aim in comparing these two sources was to investigate the representation of the virus and of the actions taken to arrest its spread as it emerges from two media outlets that are highly influential in their respective countries, but at the same time address an international audience, right at the beginning of the pandemic. The countries in question were chosen in view of the central role they had at the onset of the coronavirus crisis: the first cases of the new disease were officially recorded in Wuhan at a time when the commercial and political relationships between China and the U.S. were already quite delicate (as also shown by the case of the WSJ reporters mentioned above); the then President Donald Trump himself would soon start levelling criticisms against the Chinese authorities' handling of the situation.

As for comparability between the corpora, I assumed that this would be enhanced by *China Daily*'s international vocation, considering that different countries normally exhibit different stylistic conventions and "journalistic cultures" (Hanitzsch, 2008: 413)⁶. Furthermore, considering that the spread of the virus generated concerns about its economic impact from the very beginning, I also assumed that the focus on markets and finance emerging from some of the articles in the two corpora, and especially in WSJ, would make a relevant contribution to the research.

Concerning the theoretical framework(s) adopted, in my analysis I bring together insights from Cognitive Linguistics and Systemic Functional Linguistics specifically the appraisal theory, with special attention being paid to the Attitude system. The analysis focuses on metaphor, nominalization, and evaluative language in general as framing devices, capable of conveying a specific perspective (positive or negative) on an event. The study also aims to

² The texts, in electronic format, were retrieved from the online databank *ProQuest Central* (www.proquest.com, last access February 10, 2021; access granted by the University of Bologna). The list of articles making up the corpora is available here: https://osf.io/ag7mz/?view_only=f62e07f3f9b6466eaa7d1b0152e62de5. The two corpora are henceforth referred to as CD and WSJ.

³ See <https://www.statista.com/statistics/184682/us-daily-newspapers-by-circulation/> (accessed February 12, 2021).

⁴ See <https://www.wsj.com/articles/china-is-the-real-sick-man-of-asia-11580773677> (accessed February 12, 2021).

⁵ See <https://www.allsides.com/news-source/wall-street-journal-media-bias> (accessed February 12, 2021).

⁶ However, I should clarify that an in-depth analysis of the differences between the Western and the Eastern journalistic traditions is beyond the scope of this study, which is rather concerned with the construal of the coronavirus epidemic as it emerges from specific language choices made within the two newspapers.

unveil how these resources can be used by writers having different ideological and socio-cultural standpoints to effectively convey opinions on key societal issues (Simon-Vandenberg et al., 2007).

The composite theoretical background to this study is outlined in the following section, while details about the materials, data collection and analysis are provided in the section on Methodology. Findings are subsequently presented and discussed followed by a conclusion.

THEORETICAL UNDERPINNINGS

The salience of headlines for analyzing event construal and discursive strategies in the press is widely acknowledged. Van Dijk (1988:221) defines headlines as “the most prominent elements of news reports”, one of their key functions being to summarize and provide a perspective on the content of the news item, thus orienting the reader. Isani stresses the fundamentally pragmatic function of eye-catching headlines, in which “*language* [is] used as an attention-attracting strategy to engage with and challenge the reader’s accessibility skills and cognitive environment” (2011:7). Furthermore, headlines can potentially reach a very wide audience, even beyond those who buy the paper; this makes them one of the key sections, together with subheadings and leads, conveying ideological and cultural positioning in a newspaper (Downing, 2000:362).

Headlines have also been widely investigated from the viewpoint of their distinctive lexico-grammar, especially in English. Halliday speaks of an “economy grammar” characterizing headline style, including very dense and often ambiguous nominal compounds and nominalizations (1967/2003:57). Among the traits that have been identified as typical of the language of headlines we also find ellipsis, extensive presence of metaphor, tendency to resort to obsolete lexis, short words and acronyms, and alliteration (e.g., Mardh, 1980; Jenkins, 1990; Bell, 1991). Subheadings have generally attracted less attention, but were included in this study as, when present, they seemed to function as a relevant complement to the related headlines.

The remainder of this section focuses on the aspects taken into account in my analysis: nominalization, metaphor, and the language of evaluation.

A nominalization is the use of a noun, in place of a verb or an adjective, to represent an action or property. It would be more accurate to say that nominalizations ‘encapsulate’ the meanings of entire sentences (Thompson, 2014:244): thus, as stylistic devices, they are compatible with the economy grammar of headlines. But they are also pragmatic devices requiring the addressee to rely on inferential processes for their interpretation, and capable of triggering presuppositions, as in:

Transparency and *cooperation* are crucial to contain new coronavirus (CD, headline, January 22)⁷

This example illustrates the characteristic loss of explicit information brought about by the nominalizations ‘transparency’ and ‘cooperation’, whereby (i) temporal markers and agentivity patterns are suppressed, leaving the reader to supply information about who exactly should be transparent/cooperate, and when; (ii) the fact that there are transparent and cooperating ‘people’ is presupposed and thus presented as given. These aspects have led critical discourse analysts (notably Fowler, 1991) to stress how nominalization implicitly conveys world view and ideology.

⁷ In corpus examples provided throughout the paper, linguistic metaphors are underlined and nominalizations are italicized; in several cases, metaphor and nominalization conflate in the same word, which is both underlined and italicized.

Turning to metaphor, this is dealt with in this study under the umbrella of Conceptual Metaphor Theory (henceforth CMT: Lakoff & Johnson, 1980), which also provides a useful framework for categorizing occurrences of metaphor in text. The main tenet of CMT is that metaphor is both a linguistic and a cognitive mechanism. Linguistic metaphors are the visible output of metaphorical processes taking place in our conceptual system, whereby we understand and classify one domain of experience in terms of another. Concrete, physical domains are typically ‘mapped’ onto abstract or less familiar domains, facilitating comprehension. An unprecedented situation such as the spread of a newly discovered virus offers fertile ground for this kind of metaphorical conceptualization. Let us consider the following example:

U.S. restricts *entry* to combat virus (WSJ, headline, February 1)

Here, the linguistic structure triggers the underlying metaphorical scenario RESPONSE TO VIRUS/DISEASE IS WAR/CONFLICT. The concept WAR/CONFLICT is metaphorically associated with (in CMT terminology, ‘mapped’ onto) the concept (CORONA)VIRUS⁸. The concept that provides the basis for the metaphor (in this case, WAR/CONFLICT) is called ‘source’, while the concept that is metaphorically represented (in this case, CORONAVIRUS) is called ‘target’. Correspondences are also established between the individual elements making up the two domains (Kövecses, 2002): the U.S. is the warrior, the virus is the enemy, restricting entry becomes a military strategy. The example also shows that metaphor is a means through which we can convey our perspective on an event, frame it positively or negatively, and ultimately affect how the recipient will interpret it (Burnes, 2011). The U.S. is given an active, agentive role (U.S. *restricts* entry), while the virus appears in a passive role, as the object of the verb *combat*. Therefore, the writer underlines, at the lexico-grammatical level, the dynamic role taken on by the U.S. The choice of the specific WAR/CONFLICT metaphor is also relevant, as it entails that the country is acting with strength, bravery, and in a strategically sound manner. Thus, just like nominalization, though with operational differences⁹, metaphor invites the recipient to activate inferential processes to arrive at the full picture, which goes well beyond what is said. Corpus data discussed below suggest that subheadings, in this respect, often work cumulatively with headlines, expanding on one or more metaphors introduced therein.

Finally, investigating evaluation and how it is enacted linguistically in a text or text collection is an important component of media discourse analysis and media stylistics. The expression of evaluation – especially when it is covert – is a key strategy in terms of writer-reader alignment (Stenvall, 2008) and is among the choices that can affect or shape the meanings conveyed by a text (Lambrou & Durant, 2014). Nominalization and metaphor are particularly relevant in this respect, since they function as implicit evaluative items, conveying the writer’s subjective viewpoint in covert ways; however, for the same reason, they also pose challenges to analysis (White, 2004).

In order to deal with evaluation and framing in a systematic way, this study deploys the toolkit developed within Appraisal Theory – an extension of Halliday’s Systemic Functional Linguistics (Martin and White, 2005; White, 2011). This framework comprises three interrelated systems: (i) Attitude, having to do with the activation of positive or negative positioning; (ii) Graduation, including resources to grade, or scale, attitudes, and (iii) Engagement, targeting the extent to which the speaker or writer engages with other voices (i.e., other sources of evaluation) besides his/her own. Attitude, which is the focus in the analysis

⁸ Following CMT conventions, conceptual metaphors and conceptual domains involved in metaphor are indicated using small capitals.

⁹ Indeed, Halliday speaks of nominalization as an instance of *grammatical* metaphor, where the metaphorical variation affects grammatical classes rather than lexical words or expressions. In his view, lexical and grammatical metaphors are two sides of the same coin (Halliday, 1997/2004: 191).

presented below, is further divided into three sub-systems, corresponding to three broad areas of attitudinal meanings: Affect, concerned with emotions; Judgement, concerned with the evaluation of human behavior in terms of social esteem (normality, capacity, tenacity) and social sanction (ethics and morality), and Appreciation, concerned with the evaluation of things and phenomena according to qualitative principles. The framework also operationalizes the distinction between two modes of activation: ‘direct’ and ‘implied’. Direct activation relies on explicit attitudinal lexis, while implied activation is based on “implication, inference and association” (White, 2011:17). For instance, in “U.S. restricts entry to combat virus”, in the absence of explicit attitudinal lexis, the metaphorical structure triggers implied positive Judgement of the nation/‘fighter’, which acts ethically, trying to protect citizens from the ‘enemy’.

METHODOLOGY

DATA COLLECTION

As noted in the Introduction, the two ad hoc corpora created for this study collect headlines and subheadings from a set of articles about the coronavirus, published by *China Daily* and *The Wall Street Journal* between January 7 and February 8, 2020. I chose to focus on these five weeks because they were crucial for the outbreak and spread of what would later become the CoViD-19 pandemic. To mention just some relevant events that took place in this time span, on January 7, Chinese scientists announced the discovery of the new coronavirus strain; on January 11, China reported its first death; on January 21, the first case of the new coronavirus disease was identified in the U.S.; on January 23, Wuhan was quarantined; on January 30, the WHO declared the virus a public health emergency of international concern; on February 8, the first foreign victims (a Japanese and a U.S. citizen) were announced in China.

The corpora were assembled using the advanced search function available on *ProQuest*. To ensure maximum coverage, I retrieved all the full-length articles published between the selected dates that contained at least one occurrence of ‘virus’ and/or ‘coronavirus’ anywhere: headline and/or subheading and/or body copy. After taking out irrelevant cases (e.g., a few articles about the swine fever virus in *China Daily*, or about a computer virus in *The Wall Street Journal*), the total articles amounted to 286 in CD and 193 in WSJ. From these, I extracted the headlines and, when present, the subheadings, creating two separate text files. As a consequence of the ‘inclusive’ search criterion adopted, while all the headlines and subheadings finally included in the corpora come from articles related to the virus, not all of them necessarily contain the search words ‘virus’ or ‘coronavirus’. Further details about the corpora in their final form are provided in Table 1.

TABLE 1. Headlines, subheadings, total analyzed sentences (1 headline/subheading = 1 sentence) in the corpora

| Corpus | Headlines/articles in corpus | Subheadings in corpus | Total analyzed sentences | Word tokens |
|--------|------------------------------|-----------------------|--------------------------|-------------|
| CD | 286 | 73 | 359 | 2,819 |
| WSJ | 193 | 31 | 224 | 1,720 |

As can be noted, the numbers in the ‘Headlines’ column do not match those in the ‘Subheadings’ column: this is due to the fact that not all the articles feature a subheading section. Actually, headline-only articles are more frequent in both corpora, amounting to 74.5% of the total in CD and 83.9% in WSJ.

ANALYSIS

Analysis was mostly manual, given the manageable size of the corpora, but also considering that studies addressing semantics and context, as is the case with metaphor and appraisal, tend to resist automation (Halliday & Matthiessen, 2014: 70). It involved a close reading of the headlines and subheadings making up the corpora, in order to identify and classify instances of metaphor, nominalization, and appraisal patterns. It was also often necessary to take account of the full-text articles, to disambiguate elements in the headlines/subheadings or identify the types of evaluation involved. However, corpus linguistics techniques were also brought in as a complement to manual scrutiny at specific stages. The corpora were uploaded to the corpus query system *SketchEngine*, where they were automatically lemmatized and part-of-speech tagged; lemmalists and concordances were subsequently retrieved. Lemmalists – i.e., lists of POS-tagged lemmas found in the corpora, ordered by frequency of occurrence – were used to identify the most frequent nominalized items. Concordances, which display all instances of a search term in their original co-text, were used for metaphor and appraisal analysis, to navigate through the different instantiations. The step-by-step procedure I followed, which was specifically designed for this study, is described below.

Firstly, I annotated each headline and subheading for the presence of nominalizations and linguistic metaphors related to the virus, also taking note of cases in which they co-occurred within the same sentence. Linguistic metaphors related to the virus emerging from corpus data were divided into three groups, which can be located on a cline of explicitness, as described below.

Group 1. Metaphors where the target concept (CORONA)VIRUS is explicitly construed in the linguistic structure, through the lexical units ‘coronavirus’, ‘virus’ and ‘viral strain’: e.g., “Wuhan sealed to contain virus” (CD, headline, January 22).

Group 2. Metaphors whose linguistic structure includes other lexical items linked to the target concept, such as ‘outbreak’ in “Governments step up fight against *outbreak*” (WSJ, headline, February 5). The other lexical units related to the target concept that were found in the data are: ‘contagion’, ‘disease’, ‘epidemic’, ‘illness’, ‘infection’, ‘outbreak’, ‘pandemic’, ‘pathogen’, ‘pneumonia’¹⁰.

Group 3. Metaphors where the target concept goes unexpressed in the linguistic structure, e.g. “Xi: Nation engaged in serious battle” (CD, headline, January 29). Metaphors belonging to this group are those that put a heavier interpretive load on the reader, requiring him/her to supply missing information in order to fully understand the metaphorical statement.

The linguistic metaphors belonging to the three groups were subsequently classified in terms of their underlying conceptual mappings: for instance, “Wuhan sealed to contain virus” was classified as an instance of THE VIRUS/DISEASE IS A PHYSICAL OBJECT. This classification was meant to provide a clearer picture of the ways in which the target concept is metaphorically portrayed in each corpus. The full list of mappings emerging from analysis is provided in the ‘Results and discussion’ section below.

Finally, I examined how metaphors and, when present, co-occurring nominalizations were used in the corpora, looking at their functions in the original co-text. All instantiations of metaphor were further classified as positive or negative, considering whether they provided an overall optimistic or pessimistic perspective on the circumstances surrounding the outbreak and/or a positive or negative evaluation of the people and entities involved. To this end, I took note of the cases in which metaphor and nominalization played complementary functions in terms of event construal; I also took into account the appraisal patterns they enacted. Appraisal analysis was carried out in terms of the system of Attitude and, more specifically, of the three

¹⁰ In the corpora under analysis, the disease caused by the new coronavirus is never referred to as CoViD-19, as this expression was coined later. Therefore, in what follows I refer to the disease using general expressions, in line with corpus data.

sub-systems it includes: Affect, Judgement and Appreciation (see the ‘Theoretical underpinnings’ section above). The presence of direct (explicit) expressions of evaluation and of multiple layers of evaluation within the same sentence (e.g., different sub-systems of Attitude overlapping, or a primary negative evaluation triggering a secondary positive one) was also given due consideration.

RESULTS AND DISCUSSION

OVERALL QUANTITATIVE RESULTS: NOMINALIZATION AND METAPHOR

Let us begin by considering some overall quantitative data resulting from corpus analysis. Table 2 reports, for each corpus, the number of headlines and subheadings, and the total number of analyzed sentences, containing at least one instance of nominalization.

TABLE 2. Headlines, subheadings, total analyzed sentences (1 headline/ 1 subheading = 1 sentence) with nominalization

| Corpus | Headlines with nominalization | Subheadings with nominalization | Total sentences with nominalization |
|--------|-------------------------------|---------------------------------|-------------------------------------|
| CD | 165/ 286 (57.7%) | 48/ 73 (65.7%) | 213/ 359 (59.3%) |
| WSJ | 115/ 193 (59.6%) | 19/31 (61.3%) | 134/ 224 (59.8%) |

Nominalizations are present in more than half of the headlines and subheadings, and so also of the total analyzed sentences, in both CD and WSJ. While this breakdown is in line with observations on the economy grammar of headlines, it is also worth noting that the relative frequency of subheadings with nominalization is higher than that of headlines with nominalization found in the same corpus. Thus, in the corpora under analysis, nominalizations also feature strongly in subheadings, even if these have fewer structural and stylistic constraints than headlines. Furthermore, the percentage values in CD and WSJ are similar in each of the three columns, suggesting that the two newspapers, despite representing different varieties of English and journalistic traditions, are stylistically compatible from this perspective.

In order to have a clearer idea of the most frequent nominalized elements, a frequency list of the items tagged as nouns was retrieved from SketchEngine and nominalizations were manually isolated. ‘Outbreak’ emerges as the most frequent nominalization in both CD (33 hits, approx. 1 every 11 sentences) and WSJ (18 hits, approx. 1 every 12 sentences). Even if ‘outbreak’ can be considered a lexicalized specific term, it still functions to all intents and purposes as a nominalization, in that it concentrates the meanings of a sentence: ‘the virus/disease breaks/broke/has broken out’. In CD, the second most frequent nominalization is ‘effort’ (21 hits, approx. 1 every 17 sentences), followed by ‘fight’ (10 hits, approx. 1 every 36 sentences). According to the Concise Oxford Dictionary of English Etymology, ‘effort’ is a historical nominalization, from Old French *esforz* (verbal noun from *esforcier*); synchronically, it may also be considered a nominalized form of the related (though morphologically different) verbs ‘try’/‘attempt to’. In WSJ, the items with higher frequency values after ‘outbreak’ are ‘fear’ (11 hits, approx. 1 every 20 sentences), ‘sale’ (8 hits, approx. 1 every 28 sentences), ‘yield’ and ‘worry’ (7 hits each, approx. 1 every 32 sentences). All other nominalizations occur fewer than 5 times. These data are not enough to make generalizations; however, leaving aside ‘sale’ and ‘yield’ – considered as specific terms of the lexis of economics characterizing *The Wall Street Journal* – it is worth noting that ‘fear’ and ‘worry’ are negatively connotated items, while this is not (or not necessarily) the case with ‘effort’ and ‘fight’. These data already point to different attitudes emerging from the corpora, which are discussed also in connection with the metaphors in the following section.

Table 3 focuses on the linguistic metaphors where the target concept is construed in the linguistic structure, at various levels of explicitness, through different lexical items (groups 1 and 2). The table reports, for each corpus, the total number of hits for the relevant lexical units and, within these, the number and percentage of hits that form part of a metaphorical expression.

TABLE 3. Metaphors related to virus/disease, groups 1 and 2: number of hits and metaphorical hits for each lexical unit

| Lexical unit | | CD | | WSJ | |
|--------------------------|--------------------------------------|------------|-------------------|------------|-------------------|
| Group 1 | | Total hits | Metaphorical hits | Total hits | Metaphorical hits |
| 1. | coronavirus | 21 | 12 (57.1%) | 27 | 10 (40.7%) |
| 2. | virus | 40 | 27 (67.5%) | 29 | 17 (58.6%) |
| 3. | viral strain | -- | -- | 1 | 1 (100%) |
| Subtotal | | 61 | 39 (63.9%) | 57 | 28 (49.1%) |
| Group 2 | | Total hits | Metaphorical hits | Total hits | Metaphorical hits |
| 4. | contagion | 7 | 5 (71.4%) | 2 | 1 (50%) |
| 5. | disease | 9 | 6 (66.7%) | 3 | 2 (66.7%) |
| 6. | epidemic | 14 | 7 (50%) | 3 | 2 (66.7%) |
| 7. | illness | 1 | 1 (100%) | 3 | 1 (33.3%) |
| 8. | infection | 7 | 3 (42.9%) | 1 | 0 (0%) |
| 9. | outbreak | 31 | 15 (48.4%) | 18 | 8 (44.4%) |
| 10. | pandemic | 3 | 1 (33.3%) | 1 | 1 (100%) |
| 11. | pathogen | 2 | 1 (50%) | -- | -- |
| 12. | pneumonia | 9 | 4 (44.4%) | 1 | 0 (0%) |
| Subtotal | | 83 | 43 (51.8%) | 32 | 15 (46.9%) |
| Group 1 + Group 2 | | Total hits | Metaphorical hits | Total hits | Metaphorical hits |
| 13. | outbreak of virus/ virus outbreak | 2 | 2 (100%) | -- | -- |
| Subtotal | | 2 | 2 (100%) | -- | -- |
| Total | | 146 | 84 (57.5%) | 89 | 43 (48.3%) |

As can be observed by looking at the ‘Metaphorical hits’ for each individual lexical unit, in both CD and WSJ the lexical units in groups 1 and 2 emerge as being frequently used in a metaphorical sense. In most cases, the relative frequency of the metaphorical hits, calculated against the total number of hits for each lexical unit, equals or exceeds 50% (see lexical units number 1, 2, 4, 5, 6, 7, 11 and 13 in CD, and lexical units number 2, 3, 4, 5, 6 and 10 in WSJ). However, CD shows a slightly higher preference for metaphorical language overall. Indeed, the conclusive ‘Total’ figures (last line in the table) show that more than half of the hits for both groups taken together are metaphorical (57.5%); in WSJ, the value is lower (48.3%). It should also be noted that, in group 2, ‘illness’, ‘infection’ and ‘outbreak’ are also, at the same time, instances of nominalization.

In order to provide the full picture of the presence of metaphors related to the virus/disease in the corpora, Table 4 combines the raw frequency values of metaphorical hits for groups 1 and 2 with those for group 3, where the target concept goes unexpressed in the linguistic structure.

TABLE 4. Overall presence of linguistic metaphors related to virus/disease in CD and WSJ, groups 1-3

| Corpus | Group 1 (metaphorical hits for 'virus', 'coronavirus', 'viral strain') | Group 2 (metaphorical hits for otherlexical units) | Group 1 + Group 2 | Group 3 (metaphorical hits with target concept left implicit) | Total |
|--------|--|--|----------------------|---|-------|
| CD | 39 | 43 | 2 | 38 | 122 |
| WSJ | 28 | 15 | -- | 11 | 54 |

The highest number of metaphors was found in the headlines (98 out of 122 in CD – 80.3%; 44 out of 54 in WSJ – 81.5%). Furthermore, 15 out of the 24 subheadings with metaphor in CD (62.5%), and 5 out of the 10 subheadings with metaphor in WSJ (50%) further develop metaphorical meanings already introduced in their respective headlines, indicating a semantic link between the two sections from this specific perspective.

In WSJ, group 1 metaphors have a higher incidence overall (28 out of 54, 51.8%). In CD, the breakdown is more homogeneous, with the 3 groups being almost equally distributed (group 1: 39 out of 122, 32%; group 2: 43 out of 122, 35.2%; group 3: 38 out of 122, 31.2%). Group 1 metaphors are temporally the first to appear in both corpora (January 10 in CD, January 11 in WSJ). Metaphors from the other groups appear only later (group 2: January 21 in CD/January 24 in WSJ; group 3: January 17 in CD/January 22 in WSJ). Since these metaphors require the reader to work out connections with the 'core' concept (CORONA)VIRUS, or fill in informative gaps, writers and copyeditors probably began using them only when they felt that the topic was well-established in the community of readers.

Concerning the simultaneous presence of metaphor and nominalization, most instances of metaphor (cf. Table 4 above) co-occur with one or more nominalizations within the same sentence: 78 out of 122 in CD (63.9%) and 36 out of 54 in WSJ (66.7%). In the vast majority of cases (73 in CD – 93.6%; 32 in WSJ – 88.9%), co-occurring metaphors and nominalizations also emerge as playing complementary functions, either because it is a nominalization that activates the metaphor (e.g., the noun 'fight' triggering WAR/CONFLICT), or because nominalized elements take on key semantic roles within the metaphorical scenario (e.g., 'contain virus outbreak', where 'outbreak' functions as the patient entity, metaphorically represented as a physical object). This finding suggests that metaphor and nominalization work together in framing the virus/disease and is in line with previous studies highlighting their synergistic patterns (e.g., Ritchie & Zhu, 2015; Luporini, 2019).

FRAMING THE VIRUS: METAPHOR, NOMINALIZATION AND APPRAISAL

As explained in the 'Methodology' section, the linguistic metaphors from the three groups were further classified considering the source concepts involved. The full set of conceptual mappings emerging from this stage of analysis is provided in Table 5, with illustrative corpus examples. It should be noted that mappings are common to both corpora, with the exception of THE VIRUS/DISEASE IS A SUPERNATURAL ENTITY, which only occurs once, in WSJ.

TABLE 5. Metaphorical mappings with (corona)virus and related concepts as target in the corpora

| Metaphorical mapping | Corpus example |
|---|---|
| THE VIRUS/DISEASE IS AN ANIMAL | how quickly contagion is <u>reined in</u> (CD, subheading, Feb 1) |
| THE VIRUS/DISEASE IS A COMPETITION/GAME | Data key to <u>staying ahead of</u> pneumonia (CD, headline, Jan 23) |
| THE VIRUS/DISEASE IS A HUMAN BEING | A <u>communist</u> coronavirus (WSJ, headline, Jan 30) |

| Metaphorical mapping | Corpus example |
|---|---|
| THE VIRUS/DISEASE IS A NATURAL FORCE/DISASTER | Life goes on in Wuhan, virus <u>epicenter</u> (CD, headline, Jan 31) |
| THE VIRUS/DISEASE IS A PHYSICAL OBJECT | Wuhan <u>sealed</u> to <u>contain</u> virus (CD, headline, Jan 22) |
| THE VIRUS/DISEASE IS A SUPERNATURAL ENTITY | spreading disease <u>spooks</u> investors (WSJ, headline, Jan 28) |
| RESPONSE TO VIRUS/DISEASE IS WAR/CONFLICT | Governments step up <u>fight</u> against <u>outbreak</u> ” (WSJ, headline, Feb 5) |

Table 6 breaks down the total number of linguistic metaphors found in the corpora (122 in CD and 54 in WSJ: see Table 4) by mapping involved. As a complement to the table, Figure 1 visually represents the incidence of each source concept in CD and WSJ¹¹.

TABLE 6. Metaphorical mappings involving (CORONA)VIRUS and related concepts: number of hits in each corpus

| Metaphorical mapping | Hits in CD | | Hits in WSJ | |
|---|------------|-------------|-------------|-------------|
| THE VIRUS/DISEASE IS AN ANIMAL | 7 | (5.7%) | 1 | (1.9%) |
| THE VIRUS/DISEASE IS A COMPETITION/GAME | 5 | (4.1%) | 6 | (11.1%) |
| THE VIRUS/DISEASE IS A HUMAN BEING | 2 | (1.6%) | 8 | (14.8%) |
| THE VIRUS/DISEASE IS A NATURAL FORCE/DISASTER | 9 | (7.4%) | 3 | (5.5%) |
| THE VIRUS/DISEASE IS A PHYSICAL OBJECT | 30 | (24.6%) | 14 | (25.9%) |
| THE VIRUS/DISEASE IS A SUPERNATURAL ENTITY | -- | -- | 1 | (1.9%) |
| RESPONSE TO VIRUS/DISEASE IS WAR/CONFLICT | 69 | (56.6%) | 21 | (38.9%) |
| Total | 122 | 100% | 54 | 100% |

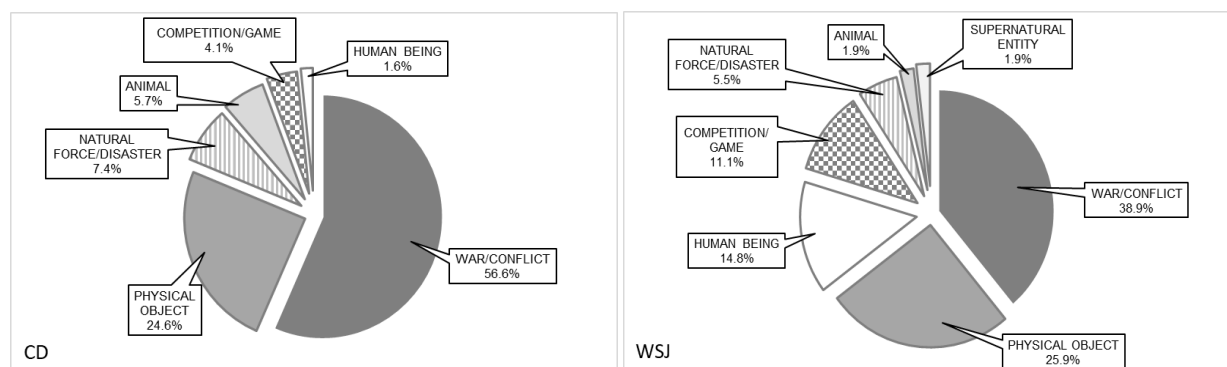


FIGURE 1. Incidence of source concepts in CD and WSJ

Metaphors based on the domain of WAR/CONFLICT are the most frequent in both corpora, and especially in CD, where they make up more than half of the total hits. The predominance of WAR/CONFLICT metaphors in CD is in line with the key cultural and historical notion of *people’s war*, originally linked to Mao Zedong’s military strategy. This is currently being revived by Xi Jinping as part of his rhetorical imagery (Gallelli, 2020); indeed, he officially declared a “people’s war” against the virus in the early stages of the outbreak in the Hubei province. Perhaps also as a consequence of this, WAR/CONFLICT metaphors were taken up globally as a leitmotif in public communication about the pandemic (e.g., Grandi & Piovan,

¹¹ The metaphors are almost exclusively based on a single source concept in the corpora. The only case of multiple mappings within the same sentence was found in a subheading from WSJ (Feb 8): “Already struggling companies might not be able to weather the impact”. The underlined words trigger WAR (“struggling”), NATURAL FORCE (“weather”), and PHYSICAL OBJECT scenarios (“impact”). In this case, PHYSICAL OBJECT was taken as the primary source concept (i.e., the one more directly relevant to the conceptualization of the virus), also due to the simultaneous presence of the nominalization ‘impact’, and was thus taken into account in computing the final figures.

2020; Rajandran, 2020; Sabucedo et al., 2020)¹². At the same time, convergence towards this kind of conceptualization may also have been favored by a tendency to represent disease in terms of war already present in the Western culture, which has been shown by several studies (notably Sontag, 1991), as well as by the parallels that were drawn, as the disease spread worldwide, between the current situation and the Second World War, also in terms of the exceptional measures taken. PHYSICAL OBJECT metaphors conceptualize the virus/disease as entities that can be seen, touched, and contained. These rank second in both corpora, with similar percentage values. The other source domains show a different distribution. In CD, NATURAL FORCE/DISASTER and ANIMAL are more frequent than COMPETITION/GAME and HUMAN BEING; in WSJ, by contrast, HUMAN BEING is the third most frequent source concept, followed by COMPETITION/GAME and NATURAL DISASTER, while ANIMAL and SUPERNATURAL ENTITY account for 1.9% each¹³.

With Figure 2, we move into the realm of positive and negative framing. This was determined by considering whether the metaphors co-textually triggered a positive, or optimistic, or rather a negative/pessimistic view on the situation. For example, “U.S. restricts entry to combat virus” (WSJ, headline, February 1) was analyzed as an instance of *positive* framing considering the active role assigned to the country against the virus (see also the ‘Theoretical underpinnings’ section above). Conversely, ‘Li calls for timely, forceful measures amid outbreak’ (CD, headline, January 23) was taken as an instance of *negative* framing, since the expression ‘amid outbreak’ (realizing a PHYSICAL OBJECT metaphor) suggests that the virus is already surrounding and ‘engulfing’ the Chinese society (for other textual examples, see the discussion below).

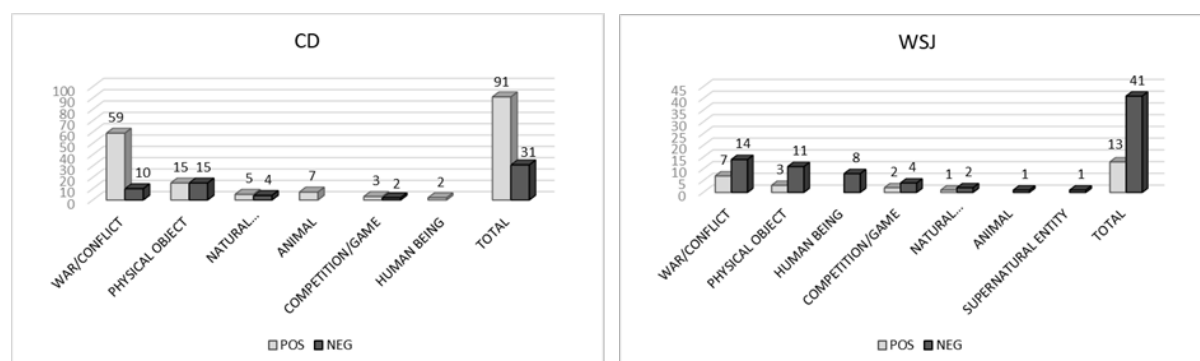


FIGURE 2. Positive and negative metaphors in CD and WSJ

In CD, Figure 2 highlights a predominance of positive metaphors, signalling an optimistic outlook on the circumstances and a positive evaluation of the people and entities involved, with 91 instances in total (74.6%), against the 31 occurrences of negative metaphors (25.4%). The figures for the single source domains show that positive framing is mostly achieved through WAR/CONFLICT metaphors, which alone account for 64.8% of the total positive metaphors. ANIMAL and HUMAN BEING metaphors also contribute to this kind of representation, being used exclusively in a positive sense, though with decidedly fewer occurrences. Differences in the number of positive and negative metaphors are less evident in the domains of COMPETITION/GAME, NATURAL FORCE/DISASTER, and also PHYSICAL OBJECT, where occurrences

¹² The widespread presence of metaphors based on the domain of WAR in COVID-19-related discourse has even led some scholars to set up forms of resistance against them, such as the #ReframeCovid initiative: see <https://sites.google.com/view/reframecovid/initiative> (accessed February 12, 2021).

¹³ On the culture-specific significance of ANIMAL and HUMAN BEING metaphors in Chinese and English, which cannot be further explored here for space reasons, see, e.g., Wang (2015). The higher number of HUMAN BEING metaphors in WSJ, as opposed to CD, is also thought-provoking as it is in line with the value system characterizing the U.S. culture, which places a high value on autonomy/individuality, in contrast to the collectivist approach in Chinese society.

are equally split between positive and negative. In no case do negative metaphors outnumber positive ones.

In WSJ, by contrast, we find a predominance of metaphors used in a negative sense: a total of 41 occurrences (75.9%) against the 13 instances of positive metaphors (24.1%). WAR/CONFLICT again plays a key role, but this time in construing the predominant negative framing, together with PHYSICAL OBJECT, where the divide between positive and negative is even wider. Furthermore, HUMAN BEING and ANIMAL metaphors, which were used in a positive sense in CD, are here exclusively negative. We'll look at these metaphorical categories in greater detail below.

Finally, Figure 3 provides details about the main sub-systems of Attitude emerging from analysis.

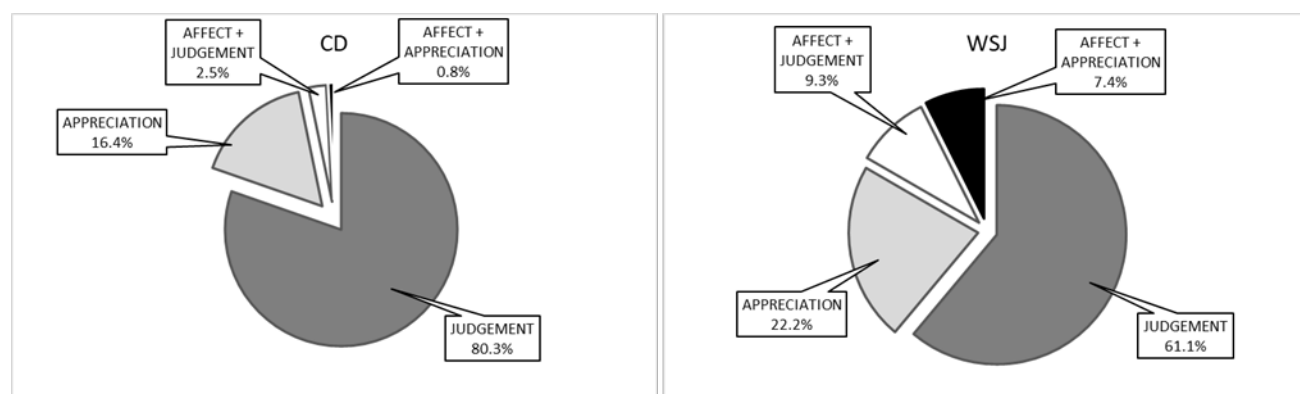


FIGURE 3. Distribution of Attitude sub-systems as enacted by metaphors and nominalizations in CD and WSJ

Implied Judgement is the sub-system most frequently enacted by metaphors and nominalizations in both corpora, followed by implied Appreciation. An example of implied Judgement can be found in the headline “China allying itself with WHO, other countries” (CD, January 23, WAR/CONFLICT metaphor), which entails that China is acting in an appropriate and responsible manner by collaborating at the international level, although approval is not explicitly expressed. An example of implied Appreciation, by contrast, is ‘Fringe laboratory leak theory debunked’ (CD, headline, February 3, PHYSICAL OBJECT metaphor): the theory according to which the virus escaped from a Wuhan laboratory implicitly emerges as unreliable. Affect is never instantiated in its own right, but rather overlaps with either Judgement or Appreciation. An example of Affect overlapping with Appreciation can be found in the headline “Residents battle fear and boredom” (WSJ, January 30, another WAR/CONFLICT metaphor), where the nominalizations ‘fear’ and ‘boredom’ enact Affect (emotive sphere), but the main evaluative thread concerns positive Judgement of the behavior of residents, implicitly defined as resilient and brave. Such overlaps take place more frequently in WSJ, amounting to 16.7% occurrences in total, against the 3.3% in CD. This breakdown is in line with the tendency to resort to emotion-based metaphors in the discourse of economics and finance (cf., e.g., MARKET TRADING IS A STATE OF MENTAL HEALTH in Charteris-Black, 2004), which plays a more central role in *The Wall Street Journal* than in *China Daily*.

WAR/CONFLICT

From the viewpoint of Attitude, the metaphors in this category are linked to Judgement. Let us consider each of the corpora in turn.

In CD, positive metaphors enact implied positive Judgement of the nation (including its representatives: leaders, authorities, divisions such as the People’s Liberation Army), medical staff, and citizens as strong, brave, and ultimately capable of defeating the metaphorical ‘enemy’. The following headline (eg. 1) is an example of this pattern:

- (1) In its *fight* against the coronavirus, China *is fighting* for the world [CD, February 5]

Nominalization and metaphor here work synergistically to build up the positive Judgement of China, implying that the country is behaving ethically by taking action against the virus for the benefit of the entire world. The nominalization strengthens the positive evaluation by introducing a presupposition whereby China’s ‘fight’ is presented as taken-for-granted background information (on nominalizations and presuppositions, see also Simon-Vandenberg et al., 2007).

In 20 out of the 59 occurrences of positive WAR/CONFLICT metaphors (33.9%), explicit evaluative lexis is included in the linguistic structure. This usually happens within the same sentence; however, sometimes the metaphor is located in the headline, while the explicit lexical items are located in the accompanying subheading. An example can be found in the following headline-subheading pair, which are complementary in this respect (eg. 2):

- (2) Nation’s *fight* against virus gets *backing*
Global financial institutions express *confidence* in resilient Chinese economy
[CD, January 31]

Positive Judgement of the nation is implied in the headline, where ‘fight’, again, functions both as a metaphor and a presupposition trigger. Then, it is explicitly reinforced in the subheading by the pre-modifier ‘resilient’, which activates direct positive evaluation (in this case, Appreciation) of Chinese economy. In addition, the description of Chinese economy as ‘resilient’ is entrusted to the external, authoritative voice of global financial institutions through heteroglossic endorsement¹⁴. In other cases, the possibility of pre-modifying nominalized elements is deployed (e.g., ‘resolute fight’, ‘serious battle’, ‘real impact on front line’). Also noteworthy is the presence of the lexeme ‘hero’ (3 hits), used with reference to doctors and nurses.

Implied positive Judgement of the nation, which in turn results in an overall positive and optimistic framing, is also enacted by presenting the virus/disease as passively undergoing the actions taken against them, reserving the active role to authorities, doctors and citizens. In 29 out of the total 69 occurrences of WAR/CONFLICT metaphors in CD (42%), the linguistic structure construes the virus/disease as passive participants: examples (1) – (2) above illustrate this pattern, with ‘China’ and ‘the nation’ being (implicitly) positively evaluated, in terms of Judgement, for actively fighting the virus, as every country should and is expected to do. The opposite configuration, with the virus/disease as active, can be found in only 8 occurrences out of 69 (11.6%), invariably associated with negative framing. In the remaining 32 occurrences (46.4%) there is no explicit active/passive opposition, as in “On the front line, with no time to spare” (CD, headline, February 3).

¹⁴ Heteroglossic endorsement is the phenomenon whereby “propositions sourced to external sources are construed by the authorial voice as correct, valid, undeniable or otherwise maximally warrantable” (Martin & White, 2005:126); as such, it too represents a form of presupposition. Heteroglossic endorsement is dealt with under the system of Engagement in the appraisal framework (see the ‘Theoretical underpinnings’ section); thus, it falls beyond the scope of this work. Still, it is worth noting that this resource is deployed in other cases in CD: mostly within WAR/CONFLICT (5 instances in total, including example (2) above), but also within PHYSICAL OBJECT (2 instances) and COMPETITION/GAME metaphors (1 instance), always with the effect of strengthening the overall positive framing. Only 1 instance of this phenomenon was found in WSJ.

As for the metaphors providing a negative outlook, these almost exclusively enact implied negative Judgement of the virus and disease as aggressive, ruthless entities; co-occurring explicit evaluative language figures in a minority of cases (3 out of 10). However, while positive framing, as we saw above, is generally unreserved, total, more than half of the negative metaphors found in CD (6 out of 10) exhibit overlapping levels of evaluation: the negative perspective is present, but it is ultimately counterbalanced or weakened by an overlapping positive perspective. For instance (eg. 3):

- (3) China stresses *backing* for exporters hit by epidemic [CD, February 7]

On the one hand, the epidemic is given the active role of hitting, thus also implicitly acknowledging its negative effects (hence the classification as an instance of negative framing); on the other, a secondary, positive evaluative thread can be identified, enacting implied positive Judgement of China in its willingness to support exporters in need.

Conversely, in WSJ, wholly negative Judgement of the virus and disease as aggressive is the predominant pattern. Indeed, the virus and disease are given active roles, with governments and economies occupying the weaker position, more frequently than in CD: this happens in 8 of the 21 occurrences of WAR/CONFLICT metaphors in WSJ (38.1%), e.g. (eg. 4):

- (4) Coronavirus hits *travel* stocks [WSJ, January 28]

Furthermore, 8 of the 14 negative metaphors (57.1%) contain explicit attitudinal lexis, which either stresses the dangerous nature of the virus (e.g., ‘deadly coronavirus’), or introduces additional negative Affect, as in the following headline (eg. 5):

- (5) China *fears* spur emerging-markets retreat [WSJ, January 31]

In WAR/CONFLICT metaphors, negative Affect is always enacted by nominalized processes of emotion, such as ‘fears’ above: one of the recurring nominalizations in WSJ, as seen above. In (5), the ‘fears’ are explicitly linked to China through pre-modification; they also take on the agentive role in the causative construction set up by the verb ‘spur’, adding to the overall gloomy outlook.

In positive metaphors, implied positive Judgement mainly addresses the U.S. or parts of the country (e.g., single states, American pharma companies working on a vaccine), which are presented as actively opposing the virus and disease. The headline already seen above, “U.S. restricts *entry* to combat virus”, illustrates this pattern.

PHYSICAL OBJECT

PHYSICAL OBJECT metaphors enact Appreciation or Judgement.

In CD, most positive metaphors (11 out of 15, 73.3%) are based on the notion of ‘containment’: the virus/disease are passively represented as entities whose movements can be physically limited, through the verb ‘contain’ itself, the nominalized form ‘containment’, or synonyms such as ‘check’. As a consequence, the active participants that ‘contain’ the virus/disease (mostly ‘China’, but also, e.g., ‘Europe’, or the entire ‘world’) are implicitly evaluated in a positive way. Furthermore, approximately half of the occurrences of positive metaphors (7 out of 15, 46.7%) feature explicit evaluative lexis that reinforces the positive evaluation. For instance, in the following headline (eg.6), the ‘efforts’ are explicitly described

as ‘pioneering’. Notice that the country making those efforts (China) is not explicitly construed, as the reader is expected to supply this piece of information readily.

(6) Pioneering *efforts* to contain virus *outbreak* [CD, February 3]

As with ‘fight’ in example (1) above, the nominalization in (6) opens up the possibility of pre-modification (‘pioneering efforts’) and construes the fact that the country is trying to limit the outbreak as taken-for-granted and non-negotiable. ‘Efforts’ – the second most frequent nominalization in CD – recurs 5 times in this sub-set, with the same effects.

Negative metaphors tend to emphasize the disruptive potential inherent in the virus and disease, represented as physical objects, and thus generally enact implied negative Appreciation of the virus and disease themselves. However, as with WAR/CONFLICT metaphors, in most cases (13 out of 15 – 86.7%) such negative evaluation is mitigated by an overlapping, implicit evaluative thread with positive value: e.g., negative Appreciation of the virus and disease impacting on the economy entails positive Judgement of authorities calling for adequate measures. One noteworthy exception to this trend is represented by the following headline (eg. 7), enacting deeply negative Judgement of the U.S.:

(7) U.S. ‘spreading fear’ over outbreak [CD, February 4]

This is also one of the few examples of Affect overlapping with Judgement in CD, enacted by the same nominalized process of emotion seen in (5), ‘fear’. The two nominalizations ‘fear’ and ‘outbreak’, with their objectifying effect, work synergistically with the verb ‘spread’ in setting up the physical scenario, which has among its effects that of construing the consequences of the U.S. conduct as ‘visible’, or ‘tangible’.

In WSJ, by contrast, implied negative Appreciation of the virus and disease prevails; the ‘containment’ schema is almost totally absent. As a result, the perceptible presence of the virus and disease in society, and their negative effects on markets and the economy as a whole, are underlined. In the following headline (eg. 8), the ‘outbreak’ is given the active role:

(8) Viral *outbreak* squeezes manufacturers [WSJ, February 6]

As with WAR/CONFLICT metaphors, several instances of overlapping Affect, realized by nominalized processes of emotion, add to the negative framing, presupposing the existence of ‘worries’ and ‘fears’ spreading. Once again, we find headlines explicitly assigning responsibility to China, implying negative Judgement of the country, as in, e.g., “A made-in-China contagion” (WSJ, January 28).

ANIMAL AND HUMAN BEING

As we have seen (cf. Figures 1 and 2), the two corpora show opposite patterns as far as these categories are concerned: in CD, ANIMAL metaphors are more numerous, and exclusively positive; in WSJ, HUMAN BEING metaphors are more numerous, and exclusively negative.

ANIMAL metaphors in CD are realized by the verb ‘curb’ (6 hits), replaced in just one case by ‘rein in’, with the virus and disease (or, more frequently, their ‘spread’, with a nominalization) undergoing the process; thus, the ‘containment’ pattern already identified in PHYSICAL OBJECT metaphors comes again to the fore. These metaphors invariably enact implied

positive Judgement of the active participants – Chinese authorities and citizens – as in example (9) below, where the ‘efforts’ are explicitly qualified as ‘all-out’:

- (9) All-out *efforts* ordered to curb *spread* of virus
President calls containing *outbreak* urgent task during Chinese New Year holiday
[CD, January 21]

This is another illustration of the complementarity between headlines and subheadings: the agent (also the person who is evaluated) is omitted in the headline through the passive voice, and made explicit in the subheading (‘President’); the subheading also includes a PHYSICAL OBJECT metaphor re-proposing the ‘containment’ leitmotif.

HUMAN BEING metaphors in WSJ were only found in headlines, where they enact implied negative Judgement of the virus and disease; there are no relevant instances of explicit evaluative lexis in this case. These metaphors share traits with the ANIMAL domain, but here the target concept is explicitly attributed human qualities, and/or represented as *consciously* or *intentionally* acting against economic activities (hence the appraisal analysis in terms of Judgement). The following headline (eg. 10) provides a particularly interesting example:

- (10) A communist coronavirus [WSJ, January 30]

First of all, the coronavirus is immediately, if implicitly, linked to China through the pre-modifier ‘communist’ (cf. the ‘China fears’ in example no. (5) above). The association triggers a two-fold negative evaluation: of the coronavirus, and of the political idea itself. This can only be inferentially reconstructed by taking into account, firstly, the larger historical context of U.S. anti-communism, and then the specific context in which the article was published – a moment of political and trade tensions between China and the U.S. – as well as the body copy, where the author negatively evaluates both Chinese communism and American isolationism. This complex example shows how the virus itself may in turn become a metaphorical vehicle for other, more abstract concepts.

NATURAL FORCE/DISASTER, COMPETITION/GAME, SUPERNATURAL ENTITY

The main patterns seen so far are basically re-proposed in these categories.

In CD, negative NATURAL FORCE/DISASTER metaphors enact negative Appreciation of the virus and disease, emphasizing their destructive power through a specific mapping with EARTHQUAKE activated by the lexical unit ‘epicenter’. However, in line with a tendency already noted, negative framing ultimately serves the purpose of implying positive Judgement of Chinese authorities and citizens, who are presented as enduring the adversities, as in example (11) below:

- (11) Life goes on in Wuhan, virus epicenter [CD, January 31]

Positive metaphors, instead, focus on measures actively taken or strongly advised to counter the virus and protect the economy, implying positive Judgement of the Chinese authorities involved.

In WSJ, 2 of the 3 NATURAL FORCE/DISASTER metaphors are used as negative framing markers, enacting implied negative Appreciation of the virus and disease, as in the following headline (eg. 12):

- (12) Honeywell *outlook* clouded by virus, MAX grounding [WSJ, February 1]

The only instance of SUPERNATURAL ENTITY (WSJ, subheading, January 28) is along the same lines, again with overlapping Affect (fear) triggered by the verb ‘spook’ (eg. 13):

- (13) Dow drops to 454 points and crude oil slumps as spreading disease spooks investors

Similar considerations can be made with reference to COMPETITION/GAME metaphors, which were only found in headlines, in both CD and WSJ. In CD, the difference between positive and negative framing is again linked to the active/passive distinction. Positive metaphors enact implied positive Judgement of Chinese authorities and citizens, who play an active role in the competition against the virus and disease. In the following headline (eg. 14), the nominalizations ‘response’ and ‘capacity’ again activate presuppositions, strengthening the positive evaluation by presenting the country’s actions and governing skills as facts:

- (14) *Response* shows country’s governing *capacity* facing up to the test [CD, January 29]

In the remaining 2 cases, the virus and disease are explicitly construed as losing through the expression ‘stay ahead of (pneumonia/outbreak)’. In the 2 occurrences of negative metaphor, by contrast, the active role is assigned to the virus and disease as the entities challenging the country, implying negative Judgement of their conduct. This evaluative thread is predominant in WSJ, where the virus and disease take on the active role of ‘testers’ in all the 4 occurrences of negative metaphors, mainly against entities explicitly linked to China (‘China’s *defenses*’, ‘China’s scientific *ambitions*’, ‘Beijing’s censors’) construed as passive opponents, as in (eg. 15):

- (15) Virus tests China's scientific *ambitions* [WSJ, January 25].

CONCLUSION

This paper has tried to shed light on the complementary roles played by metaphor, nominalization, and appraisal patterns in framing the coronavirus outbreak and the actions taken against it in two sets of headlines and subheadings published by *China Daily* and *The Wall Street Journal* in January-February 2020.

This work may contribute to fields such as metaphor studies (particularly CMT) and critical discourse analysis by (1) proposing a methodology to integrate metaphor with nominalization and appraisal analysis; (2) providing real textual examples of linguistic realizations of different metaphor categories, which can ultimately feed back into the theory, strengthening it (on the importance of identifying instantiations of conceptual metaphors in naturally occurring language, thus also supporting the underlying theory, see, e.g., Deignan, 2005); (3) showing how metaphors, nominalizations and evaluative language were concretely used by two key media outlets at a very delicate moment (the outbreak of a global pandemic) to convey different perspectives on the same event.

More specifically, in methodological terms, the main contribution of this study lies in the threefold approach proposed, which merges CMT, the SFL nominalization framework and appraisal theory. Firstly, the analysis highlights the advantages of integrating nominalization into metaphor analysis, considering that the two phenomena often work synergistically to implicitly convey the writer’s evaluation, and that presuppositions triggered by nominalizations play key roles in terms of framing as well. Secondly, the appraisal framework emerges as a valid instrument to distinguish between positive and negative metaphorical

framing, providing a comprehensive view of the evaluative mechanisms enacted in text in terms of Affect, Judgement and Appreciation, thus also bringing systematicity to an area that is notoriously slippery and subject to bias.

A potential limitation to this study is the limited size of the corpora: we are indeed dealing with a very specific text-type – newspaper headlines and subheadings – within a circumscribed time span. Yet, following, e.g., Koester (2010), I would argue that small corpora have several advantages (e.g., they have a strong text-context connection, they are generally tailored to suit specific research needs, they lend themselves very well to qualitative analysis), obviously depending on the research questions they aim to answer. As stated at the beginning, my aim in this work was to investigate the media representation of the virus and of the actions against it in two specific countries, China and the U.S., at a very specific moment in time: the onset of the coronavirus emergency. In fact, the idea behind this research was born on the fly, as the situation was still unfolding. Therefore, while I am aware that the size of the corpora make it impossible to draw very general conclusions, I would still argue that the findings can be considered meaningful in the specific context of this research; they can, of course, also represent a useful starting point for other similar comparative studies.

Going back to the research goals described at the beginning, analytical findings show similarities between the data sets in the use of nominalization and in the source domains used to metaphorically conceptualize the virus and disease, but also key differences in terms of framing.

In CD, metaphors and nominalizations mainly enact implied positive Judgement of China: the country as a whole, but also its constituents, e.g., the government, citizens and doctors; these are almost invariably given praiseworthy agentive roles and presented as in control of the situation. This kind of representation must be considered against the ‘mission’ of *China Daily* – which, as noted above, is to provide an international window on China’s policies from a pro-regime perspective – but also against the wider socio-cultural context of China’s public life, in particular the recent move towards performance measurement and a result-oriented government (Jing et al., 2015). Positive framing in ‘visible’ headlines and subheadings supports Xi’s rhetoric of a national success against the virus, which would be further strengthened in the following months, also to contrast accusations of disinformation about the epidemic subsequently made against China, notably by Donald Trump’s administration.

In WSJ, metaphors and nominalizations mainly focus on implied negative Appreciation or implied negative Judgement of the virus and disease as active, dangerous and aggressive, with negative Judgement also occasionally extending to China. Emotional lexis enacting overlapping Affect contributes to the pessimistic picture. This breakdown is probably motivated by the economic and financial focus in *The Wall Street Journal*, with pessimism emerging from consideration of the negative market trends and mirroring a fundamental conflict with the political and economic views heralded by *China Daily*. At the same time, the overall pessimistic outlook and the occasional incursions into negative Judgement of China emerging from the data intertextually highlight an interesting dichotomy between the newspaper and the public stance on the virus taken by the U.S. government in February, when Trump was still minimizing the risks for American citizens and basically praising China’s handling of the emergency (Bump, 2020). From this viewpoint, the headlines and subheadings from WSJ seem to anticipate the ‘anti-China’ turn subsequently taken by the then American President in his official declarations.

In both cases, it is important to stress how event construal is made more effective, and persuasive, by the fact that both nominalization and metaphor synergistically require readers to activate inferential and associative processes.

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