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Abstract

This paper adopts the notion of *metaphostruction* (Wiliński 2015), the conceptual theory of metaphor (Kövecses 2002) and the corpus-based method geared specifically for investigating the interaction between target domains and the source domain lexemes that occur in them. The method, referred to as *metaphostructional analysis* (Wiliński 2015), is used to determine the degree of association between the target domain of business and the source domain lexemes derived from military terminology. The results of the metaphostructional analysis reveal that there are indeed war terms that demonstrate strong or loose associations with the target domain of business, and that these instantiate different metaphorical mappings.

1. Introduction

Over the past fifteen years, corpus-based methods have established themselves as the main empirical paradigm in metaphor research. Originally, cognitive semantic investigations into metaphor were based on either introspective data or examples taken from dictionaries (e.g. Lakoff 1987; Gibbs 1994). Today, the emphasis has shifted towards authentic data and the empirical verification of the previous hypotheses concerning the nature of particular metaphorical mappings (Deignan 2005; Stefanowitsch 2006). This has brought analytical methods, based on observed data, to the focus (e.g. Stefanowitsch and Gries 2006; Steen et al. 2010). In the light of these advances, a number of research studies have been carried out across the field of cognitive linguistics in recent years, with particular emphasis on the investigation of the nature of particular metaphors (Semino 2006), the importance and systematicity of some frequently discussed mappings (Deignan 1999b; Koivisto-Alanko and Tissari 2006), structural properties of linguistic units instantiating particular metaphors (Deignan 1999a; Hanks 2004), textual and contextual properties of metaphors (Koller 2006; Partington 1997) and their cross-linguistic and diachronic differences (Stefanowitsch 2004; Tissari 2003).
The widespread availability of specialized corpora has also created perfect possibilities for the investigation of metaphors in business discourse, such as the discourse of finance (Charteris-Black 2004; Charteris-Black and Ennis 2001; Charteris-Black and Mussolff 2003), marketing (Koller 2008), organization (Oswick, Keenoy and Grant 2002), executives (Koller 2004a), mergers and acquisitions (Koller 2004b, 2005), or related to both general business discourse and more specialized samples (Skorczynska and Deignan 2006; Skorczynska 2012). In applying the framework of the Conceptual Theory of Metaphor and Critical Discourse Analysis to a large corpus of texts from business magazines, Koller (2004b), for example, demonstrated how metaphors of war, sports and evolutionary struggle are used to conceptualize business as a masculinized social domain. Skorczynska (2012), by contrast, compared how metaphors related to building, journey and nautical activities are used in general business discourse and its more specialized sample, project management discourse.

To date, however, little attention has been paid to the application of quantitative techniques and statistical methods to the exploration of business discourse and the verification of previous hypotheses about the nature of particular metaphorical mappings. In addition, no research has been found that focuses on a quantitative analysis of war terms occurring in business and on the identification of the most strongly entrenched military terms in this context. The primary aim of this paper, therefore, is to find out which source domain lexemes coming from the domain of war are strongly attracted to or repelled by the target domain of business (i.e. occur more frequently or less frequently than expected in business). On the basis of the study dealing with war metaphors, the paper seeks to show that there are source domain lexemes that are strongly associated with or repelled by the target domain of business, and that these instantiate different metaphors.

The paper is structured as follows: section 2 presents the theory and the methods; section 3 discusses the corpus, the data, and the tools applied in the analysis; the procedure is outlined in section 4; an overview of the function of war metaphors in business is provided in section 5; section 6 reports the results of the metafostruclational analysis, which are then interpreted linguistically and cognitively; section 7 evaluates the results and provides concluding remarks.

2. Theoretical and methodological background

The theoretical background of the paper is based on the notion of conceptual metaphor and the concept of metafostrucluction. The conceptual metaphor theory, developed by Lakoff and Johnson (1980) and also associated with Kövecses (2002), holds that metaphor is a cross-domain mapping in conceptual structure: that is, a set of fixed correspondences between the structure of the domain to be understood (e.g. business) and the structure of the domain in terms of which we
understand it (e.g. war). Metaphorical linguistic expressions used in business, by contrast, are lexical units or other linguistic expressions that come from the domain of war: that is, “the language or terminology of the more concrete domain” (Kövecses 2002, 4). The term *domain*, in turn, is usually defined as a relatively complex knowledge structure which relates to coherent aspects of experience (Evans 2007, 61).

The notion of metaphostruction, as proposed by Wiliński (2015), is used to denote a metaphorical construction, a conventional pairing of meaning/function and form, where both meaning and form are interpreted very broadly. The former encompasses cognitive factors, discourse-functional properties, and social and cultural parameters of use. In other words, it should be best examined from a semiotic, psychological and socio-cultural perspective (cf. Gonzálvez-García, Peña-Cervel and Pérez Hernández 2013). The latter is subject to no constraints upon the number, types, distance, and flexibility of the constituents on the condition that the form constitutes one linguistic unit and includes at least one lexical item from the source domain. As for the frequency of occurrence, it may be argued that the greater the frequency of a particular metaphorical expression in a business context, the more entrenched this expression is likely to become in business and thus the faster it acquires the status of metaphostruction (a conventionalized metaphorical linguistic unit). This view is associated with Langacker’s (1987) notion of entrenchment (cf. Divjak and Caldwell-Harris 2015).

The methodological background is provided by an extension of *collostructional analysis* (Stefanowitsch and Gries 2003; 2005; Gries and Stefanowitsch 2004ab) specifically designed to capture in quantitative terms the mutual attraction between source domain lexemes and a particular target domain. The method, referred to as *metaphostructional analysis* (Wiliński 2015), begins with a particular metaphor (e.g. business is war) and investigates which source domain lexemes are strongly attracted to or repelled by a particular target domain (i.e. occur more frequently or less frequently than expected). Although several association measures are possible to gauge the degree of attraction in two-by-two contingency tables, the p-value of a statistical test known as Fisher exact can be chosen as a default. Two reasons are usually given for its application: first, this technique retains precision even with small frequencies; second, it fits the distributional reality of linguistic data (cf. Stefanowitsch and Gries 2003).

Appealing and interesting though the technique may seem, it is fraught with potential pitfalls. While discussing these drawbacks is beyond the scope of the present paper (see Kilgarriff 2005; Schmid and Küchenhoff 2013 for a more detailed critique), some problems for its unbiased applications must be mentioned here. According to Schmid and Küchenhoff (2013, 547), the p-value of the Fisher exact test may cause problems for interpretability. High total frequencies of lexemes outside the pattern influence p-values. Larger frequencies reduce p-values in the comparison with smaller frequencies with the same internal distribution. Despite
these shortcomings, the Fisher exact test seems to be the most appropriate significance test for two-by-two tables, since this makes no distributional assumptions, is not a linear function of the observed frequencies, and can successfully compute low and skewed frequencies better than MI or chi-squared (see Gries 2015, 519 for more arguments in favour of its application).

The corpus-based method applied in the current study entails the following steps: a) to retrieve all occurrences of metaphors under investigation from a corpus by means of a software tool (AntConc); b) to manually extract and calculate all instances of metaphors under study; c) to generate frequency lists of particular metaphorical expressions occurring in a business context; d) to determine the frequency of each military term in business and to create co-occurrence tables; e) to calculate the rest of the 2-by-2 table and expected frequencies by means of Microsoft Excel spreadsheets; f) to evaluate the table by means of statistical techniques; g) to calculate association strengths by means of an on-line Fisher’s exact test calculator for two-by-two contingency tables; h) to arrange the results manually according to the direction of association and the strength of association; i) to interpret the results qualitatively and subjectively by grouping metaphors into different types on the basis of introspective judgments. The first five of these steps are concerned with data retrieval, and will be dealt with in section 4. The last step is concerned with how the results can be interpreted meaningfully; it will be covered in section 6.

3. Corpora, data and tools

The data to be examined in this study were retrieved from the magazine sub-corpus of the well-balanced Corpus of Contemporary American English (COCA), covering the years between 1990 and 2012. This sub-corpus is composed of approximately 86 million words from nearly 100 different popular magazines, coming from a range of domains such as health, news, home and gardening, religion, women’s, financial, business and sports.

Since metaphorical expressions always contain lexical items from their source domains, the first step was to search for whole sets of lexical items from the war domain. The choice of lexical items was based on both a priori decisions and existing lists of military terminology. Source domain lexemes were retrieved from the corpus by means of a concordance software, AntConc. This concordance was used to search through the corpus for all the occurrences of the lexical items coming from the war domain and the immediate context in which each individual lexical item occurred. Each concordance line was then manually inspected to identify the target domain in which these items occurred and, thus, the metaphorical mappings in which they participate. The software allowed for the possibility of the advanced search of the corpus, which relied on the application
of context words (common business terms) and horizons adjusted for size. This alternative query was employed to extract the most frequent lexical items.

The concordance lines were then read one by one and all false hits were excluded from a further analysis. The observed frequencies of the remaining instances of the source domain lexemes in the business context were calculated manually. The rest of the frequencies and expected values were computed by means of Microsoft Excel spreadsheets. The resulting frequency lists then provided the input to the metaphostructional analysis.

All the frequencies necessary for the computation of the association strengths between the target domain of business and source domain lexemes were entered in the 2-by-2 table and submitted to the Fisher exact test. The measure chosen to quantify the degree of attraction was the p-value resulting from this test. In technical terms, given a particular set of observed frequencies of lexical items in the corpus, the p-value measures the likelihood that the distribution actually observed, or a more extreme one, occurs if there is no attraction between the source domain lexeme and the target domain of business. In other words, the smaller the p-value, the higher the probability that the observed distribution is not due to chance and the higher the strength of the association between a military term and the domain of business. This statistical test was performed by means of an on-line Fisher’s exact test calculator for two-by-two contingency tables.

In addition to the Fisher exact test, the Odds Ratio measure (OR) was employed to gauge the reciprocal interaction between source domain lexemes and the target domain of business. The notion of Odds Ratio relates the probability which rests on the observed frequencies to the probability based on what “could also have happened given the full set of possibilities” (Schmid and Küchenhoff 2013, 553). As a measure of effect size, the OR calculates the ratio of the odds of the co-occurrence of lexemes and constructions (Küchenhoff and Schmid 2015). In the case of this analysis, it will be used to measure the ratio of the odds of the occurrence of source domain lexemes and target domains. On the basis of Table 1 above, it can be computed as \( \frac{a}{b} \div \frac{c}{d} \) or \( \frac{a}{c} \times \frac{d}{b} \). According to Schmid and Küchenhoff (2013, 555), there is a correlation between Odds Ratio scores and p-values provided by the Fisher exact test: in both cases, an Odds Ratio of 1 is consistent with the null hypothesis that there is no attraction. Thus, small p-values of the Fisher exact test correspond to high Odds Ratio scores, as exemplified in Table 3 below, while low Odds Ratio scores are in line with high p-values, as shown in Table 4.

4. Procedure

The procedure adopted to retrieve and calculate the data from the corpus can be illustrated by means of the military term strategy from the war domain. The
actual frequencies essential for the metaphostructional analysis of this lexeme in the business context are displayed in Table 1 below. The values in italics are drawn from the corpus while the other figures result from addition and subtraction.

Table 1. Cooccurrence table for a metaphostructional analysis

<table>
<thead>
<tr>
<th></th>
<th>Strategy</th>
<th>All other military terms</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Military term in business</td>
<td>(a: ) Frequency of term (strategy) in business</td>
<td>(b: ) Frequency of all other military terms in business</td>
<td>(x: ) Total frequency of military terms in business</td>
</tr>
<tr>
<td>Military term in other domains</td>
<td>(c: ) Frequency of term (strategy) in all other domains</td>
<td>(d: ) Frequency of all other military terms in all other domains</td>
<td>(y: ) Total frequency of military terms in all other domains</td>
</tr>
<tr>
<td>Total</td>
<td>(e: ) Total frequency of military term (strategy)</td>
<td>(f: ) Total frequency of all other military terms</td>
<td>(z: ) Total frequency of all military terms</td>
</tr>
</tbody>
</table>

The initial step entailed searching for lexical items from the source domain of war and extracting all their occurrences in the corpus. In each set of concordance lines, the business context in which the terms occur was then identified, and all the frequencies were calculated manually. The observed frequencies were computed in the following order. First, all the occurrences of the term (strategy) in business were extracted from the corpus: 1501. Second, the total frequency of the military term (strategy) was determined: 9691. Third, after calculating the frequency of each military term in business, the total frequency of all military terms in business was identified: 19759. Finally, the total frequency of all military terms was estimated: 492243. These four values were obtained from the corpus directly while the remaining ones (that is, the frequency of all other military terms in business: 18258; the frequency of the expression (strategy) in all other domains: 8190; the frequency of all other military terms in all other domains: 464294; the total frequency of all other sports terms: 492243) were the outcome of addition and subtraction. All these frequencies required to compute the direction of association (attracted or repelled) and the strength of association between the military term strategy and the domain of business are shown in Table 2. For illustrative purposes, the expected frequency for this item is also given in parentheses.

The next step was to compute the expected frequency of the term strategy in the domain of business. This arithmetical calculation was performed in a straightforward fashion. For this lexical unit, its column total was multiplied by its row total, and the result was divided by the overall table total. For example, for the top left cell in Table 2 — the one containing the figure 1501, the column total (9691)
Table 2. The distribution of *strategy* in the *business* domain

<table>
<thead>
<tr>
<th></th>
<th>Strategy</th>
<th>All other military terms</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Military term in business</td>
<td>1501 (389) a</td>
<td>18258 b</td>
<td>19759</td>
</tr>
<tr>
<td>Military term in other domains</td>
<td>8190 c</td>
<td>464294 d</td>
<td>472484</td>
</tr>
<tr>
<td>Total</td>
<td>9691</td>
<td>482552</td>
<td>492243</td>
</tr>
</tbody>
</table>

was multiplied by the row total (19759), providing a rather large figure (191484469). This result was then divided by the table total (492243), giving the result (389). In the case of this analysis, these computations were carried out in Microsoft Excel. If the observed frequency of the term *strategy* in the domain of business is significantly higher or lower than expected, the relation between the term and the target domain is one of attraction or repulsion (the lexical item is then considered to be significantly attracted or repelled *metaphostruction* of the domain of business).

The third step required the calculation of the association strength of the term *strategy* and the domain of business. In order to do this, the following four frequencies were used: a) the frequency of the term (*strategy*) in business; b) the frequency of all other military terms in business; c) the frequency of the expression (*strategy*) in all other domains; d) the frequency of all other military terms in all other domains. These were entered in a two-by-two table and examined by means of the Fisher exact test. The p-value resulting from the computation of the Fisher exact test for this distribution is exceptionally small: 0 (i.e. infinite likelihood). This shows that the term *strategy* is highly significantly attracted to the domain of business, but it can only be determined by comparing the observed frequency of the term *strategy* with its expected frequency. As this comparison indicates, *strategy* occurs more frequently than expected in the domain of business. In other words, *strategy* is a highly significant, very strongly attracted metaphostruction of this target domain. The outcomes of this test are relevant and valid on the condition that the procedure is applied to every single military term in the business context. In the next step, the terms were sorted in Microsoft Excel according to their association strength. In the final step, the data were interpreted qualitatively and subjectively. In particular, the military terms that are strongly attracted to the target domain can be grouped into various types of metaphors on the basis of introspective judgments.

5. Business is war

The use of metaphors related to the source domain of war when writing about business is a well-established and long-standing convention. Business English textbooks, commentators, newspapers and business magazines utilize military
metaphors as an effective means for enhancing the readers’ understanding of the business world. Our understanding of companies and markets is largely structured by the metaphor BUSINESS IS WAR. The cognitive function of this metaphor is to allow readers to understand business by means of a relatively rich knowledge structure pertaining to war. This understanding is achieved by observing a set of systematic correspondences or mappings between elements of the two domains: business competition is a fight or a battle, events and actions in business competition are events and actions during a military campaign, a market is a battlefield, companies are armies, business leaders are war leaders, business strategies are military strategies, the outcome of business is the outcome of war. The following examples, extracted from the corpus, can be provided to illustrate this phenomenon:

(1) In 1988 he lost a takeover battle for Britain’s Rowntree to Nestle, but the wily Jacobs came out $300 million ahead.

(2) Finally, after a marketing campaign, it would test for customer perceptions that the company provided superior service.

(3) Then the company was threatened as competitors attacked on numerous fronts.

(4) (…) the new medicine’s entrepreneurs have turned health care into a corporate battlefield increasingly governed by the promise of stock market wealth, (…)

(5) Some construction companies recruit workers from Central and South America.

(6) But by Tuesday morning, it was fair to question what industry standard-bearers would find them desirable employers.

(7) Rarely are they thinking about building an entire marketing strategy around educating customers.

(8) (...) lead some to foresee a correction that will bring fiber-optic firms’ valuations back down to earth as companies succumb to technological defeat (…)

Business and war have many elements in common and share many attributes, as shown by a number of studies (cf. Liendo 2001; Herrera and White 2000; Prelipceanu 2008; Grygiel 2015, to mention a few). Both are forms of competitive activities involving two or more opponents endeavouring to gain an advantage or clinch a victory. In order to achieve success, companies implement long-term or short-term strategies that can determine the outcome of the competition. In war, armies fight battles in territories, while in business, companies compete for market share. Companies that capture or lose market are like armies that win or lose a war. Armies strive to control occupied territories, whereas companies are interested in controlling multiple market segments. Both business and war deal with important logistic issues that require the management of people and resources. In war, military leaders attempt to predict their opponents’ next move; in business, managers seek to estimate their competitors’ move.
Since the idea of business as war is reflected in a large number of linguistic expressions, the corpus-based investigation of military terms in the business context may confirm pre-set explanations and assumptions concerning metaphorical mappings and support our intuitive knowledge of the metaphor \textit{business is war}. Given the widespread use of military metaphors in business language, we can expect that there are some military terms that occur more frequently than expected in business as opposed to other domains, and that these linguistic expressions instantiate specific metaphorical correspondences. It can be expected that military terms frequently used in the context of an armed conflict, such as \textit{war}, \textit{battle}, \textit{battlefield}, \textit{attack}, \textit{kill}, \textit{combat}, \textit{defeat}, \textit{enemy} and many others, will be also strongly associated with the domain of business. The metahostructional analysis allows us to test and verify such pre-set assumptions and expectations. This may be done by means of identifying military terms that are highly significantly attracted to the domain of business.

\textbf{6. Results and discussion}

The data turned out to contain 190 types of metaphorical expressions derived from military terminology. This section, however, will report the results for the most strongly attracted and repelled metahostructions of the target domain, as it is impossible to present and evaluate the findings for all these military terms in the space here allotted. Table 3 displays the frequencies essential for the computation of the direction of association (attracted or repelled) and the strength of association between source domain lexemes and the target domain of business. It also gives the expected frequencies: (a), the Odds Ratio scores, as well as the outcomes of the metahostructional analysis ($P_{\text{Fisher exact}}$) for the 20 most strongly attracted metahostructions of the target domain. The figures (a, e, x, z) were extracted from the corpus directly, while the other figures (b, c, d, f, y) result from addition and subtraction.

The findings are consistent with the assumption that there are lexical items or expressions strongly associated with, or repelled by, the target domain of business (that is, military terms that are more entrenched in business than others), and that some metaphorical correspondences play a more important role in understanding business than others. For this domain, we find that the ten most strongly associated lexemes are \textit{strategy}, \textit{campaign}, \textit{operation}, \textit{threat}, \textit{chief}, \textit{launch}, \textit{target}, \textit{lose}, \textit{officer} and \textit{strategic}, which instantiate different metaphorical mappings. The p-values resulting from the calculation of Fisher exact for these lexemes are exceptionally small (0, 3.89E-263, 1.66E-208, 1.96E-205, 3.09E-185, and so on), while the Odds Ratio scores are high (4.66, 3.17, 3.13, 13.20, 2.85, etc.). In addition, a comparison of the observed and the expected frequencies of lexical items indicates that these expressions occur more frequently than expected in the domain...
Table 3. The results of the metaphostructional analysis for the twenty most strongly attracted metaphostructions

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>x</th>
<th>e</th>
<th>z</th>
<th>b</th>
<th>c</th>
<th>y</th>
<th>f</th>
<th>d</th>
<th>(a)</th>
<th>Pfisher exact</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>strategy</td>
<td>1501</td>
<td>19759</td>
<td>9691</td>
<td>492243</td>
<td>18258</td>
<td>8190</td>
<td>472484</td>
<td>482552</td>
<td>464294</td>
<td>389.00</td>
<td>0</td>
<td>4.66</td>
</tr>
<tr>
<td>campaign</td>
<td>1413</td>
<td>19759</td>
<td>12623</td>
<td>492243</td>
<td>18346</td>
<td>11210</td>
<td>472484</td>
<td>479620</td>
<td>461274</td>
<td>506.70</td>
<td>3.89E-263</td>
<td>3.17</td>
</tr>
<tr>
<td>operation</td>
<td>1128</td>
<td>19759</td>
<td>10088</td>
<td>492243</td>
<td>18631</td>
<td>8960</td>
<td>472484</td>
<td>482155</td>
<td>463524</td>
<td>404.94</td>
<td>1.66E-208</td>
<td>3.13</td>
</tr>
<tr>
<td>threat</td>
<td>299</td>
<td>6953</td>
<td>1946</td>
<td>492243</td>
<td>6654</td>
<td>1647</td>
<td>485290</td>
<td>490297</td>
<td>483643</td>
<td>27.49</td>
<td>1.96E-205</td>
<td>13.20</td>
</tr>
<tr>
<td>chief</td>
<td>1160</td>
<td>19759</td>
<td>11286</td>
<td>492243</td>
<td>18599</td>
<td>10126</td>
<td>472484</td>
<td>480957</td>
<td>462358</td>
<td>435.03</td>
<td>3.09E-185</td>
<td>2.85</td>
</tr>
<tr>
<td>launch</td>
<td>963</td>
<td>19759</td>
<td>9603</td>
<td>492243</td>
<td>18796</td>
<td>8640</td>
<td>472484</td>
<td>482640</td>
<td>463844</td>
<td>385.47</td>
<td>1.88E-246</td>
<td>2.75</td>
</tr>
<tr>
<td>target</td>
<td>1031</td>
<td>19759</td>
<td>11023</td>
<td>492243</td>
<td>18728</td>
<td>9992</td>
<td>472484</td>
<td>481220</td>
<td>462492</td>
<td>442.47</td>
<td>6.84E-137</td>
<td>2.55</td>
</tr>
<tr>
<td>lose</td>
<td>2206</td>
<td>19759</td>
<td>33793</td>
<td>492243</td>
<td>17553</td>
<td>31587</td>
<td>472484</td>
<td>458450</td>
<td>440897</td>
<td>1356.48</td>
<td>3.21E-113</td>
<td>1.75</td>
</tr>
<tr>
<td>officer</td>
<td>835</td>
<td>19759</td>
<td>8935</td>
<td>492243</td>
<td>18924</td>
<td>8100</td>
<td>472484</td>
<td>483308</td>
<td>464384</td>
<td>358.66</td>
<td>1.95E-110</td>
<td>2.53</td>
</tr>
<tr>
<td>strategic</td>
<td>378</td>
<td>19759</td>
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- **a** = Observed frequency of term (strategy) in business; **b** = Frequency of all other military terms in business; **c** = Frequency of expression (strategy) in all other domains; **d** = Frequency of all other military terms in all other domains; **e** = Total frequency of military term (strategy); **f** = Total frequency of all other military terms; **x** = Total frequency of military terms in business; **y** = Total frequency of military terms in all other domains; **z** = Total frequency of all military terms; **P_{Fisher exact}** = index of the strength of association; **Odds Ratio** = the results of Odds Ratio measures.
of business. In other words, they are highly significant, very strongly attracted to this domain. Note also that strategy is the most strongly associated lexeme of this domain, since its p-value is exceptionally small: 0 (i.e. an infinitely small p-value). The comparison of the observed frequency and the expected frequency indicates that this metaphostruction occurs more frequently than expected in the domain of business.

Strategy and strategic instantiate the metaphorical correspondence BUSINESS STRATEGIES ARE WAR STRATEGIES, while the second-ranked campaign, the third-ranked operation and the sixth-ranked launch reflect the mapping THE EVENTS AND ACTIONS IN THE BUSINESS COMPETITION ARE THE EVENTS AND ACTIONS DURING THE MILITARY CAMPAIGN. More specifically, the term campaign denotes a series of actions in business that resemble a planned group of military activities. Operation is an activity in which business is involved, and this activity is analogous to a piece of organized activity involving members of the armed forces. Launch is used to refer to an occasion when a company begins selling new products or services to the public, i.e. an event that is compared to the start of a major military attack. The nouns chief and officer, which are manifestations of the correspondence THE BUSINESS LEADERS ARE THE WAR LEADERS, are also among the strongly attracted terms, occupying ranks 5 and 9, respectively. The former denotes the person with the highest rank in an organization, while the latter means a holder of a post in a company. The verb lose, which appears at rank 8, instantiates the analogy THE OUTCOME OF BUSINESS IS THE OUTCOME OF WAR. In the case of the fourth-ranked threat, the possibility of trouble or ruin in business corresponds to the possibility of danger or defeat in war. As regards target, close parallels can be drawn between an object of attention in business and the aim of an attack.

Headquarter occupies the highest position among the next ten strongly attracted terms, since its p-value is exceptionally small (1.99E-94) and the odds ratio measure is high (3.87). This lexical item denotes the place from which business or military action is controlled. The next group in the ranking is constituted by a range of specific terms referring to recruitment: that is, to the process of finding people to join the armed forces or a company. Its leading lexeme, recruit in rank 12, is accompanied by recruitment and recruiter in ranks 13 and 19. Their indices of metaphostructional strength are 5.78E-49, 1.09E-40, and 1.00E-16, respectively. Recruit is someone who is enrolled as a worker in an organization or somebody who is enlisted in the armed forces. Recruiter, in turn, is somebody who enrolls people as employees or a person who enlists people as soldiers in the armed forces.

The group associated with recruitment is preceded by position and retrench in ranks 14 and 15. Position denotes a job in a company or a place where part of a military force is posted. Retrench describes a situation in which a company withdraws from certain markets and cuts expenses. This sense seems to be a metaphorical extension of the basic meaning of the word retrench that originally meant ‘to retreat to an interior work that cuts off a part of a fortification from the rest’.
Another lexeme in the ranking list is *wipe out*. This term denotes ‘to destroy profits, market gains, business, etc.’ or ‘to completely destroy people or buildings during the war’. Further two strongly attracted lexemes are *alliance* and *war chest*. The former is used to refer to a union between companies or to a union between two countries. The latter, derived from the sense ‘an amount of money used to pay for a war’, relates to a sum of money used in business. The last position in the ranking list is held by the lexeme *struggle*. This term, coming from the military sense ‘to engage in conflict’, carries the sense ‘to strive to achieve something in business’. If we take all the significant terms into consideration, it turns out that this term is, in fact, a notable exception among the most strongly attracted lexemes, since the top of the list comprises lexical items that are rather loosely related to combat and war.

In the context of investigating the relationship between source domain words and the target domain of business, it may also be worth considering expressions that are not significantly attracted to this domain. The results of the metaphostructional analysis for the 20 most strongly repelled terms in the domain of business are rendered in Table 4. Interestingly, despite their great frequency in the domain of business and other domains, these terms are strongly repelled, since their p-values resulting from the calculation of Fisher exact are very high. Furthermore, the Odds Ratio scores are extremely low as compared to the scores achieved by the most strongly attracted lexemes. A direct comparison of the observed and the expected frequencies for each term also confirms that they occur less frequently than expected in business. Hence, they are strongly repelled lexemes of this domain.

As Table 4 shows, the terms *victory, defeat, war, enemy, attack, fight, invasion, combat, kill, force* and *army* are among the most strongly repelled lexemes in business. *Victory* and *defeat* instantiate the metaphorical correspondence THE OUTCOME OF BUSINESS IS THE OUTCOME OF WAR, whereas *fight* and *combat* evoke the mapping THE BUSINESS COMPETITION IS THE FIGHT OR THE BATTLE. *Invasion* and *kill* are manifestations of the general correspondence THE EVENTS AND ACTIONS IN THE BUSINESS COMPETITION ARE THE EVENTS AND ACTIONS DURING THE MILITARY CAMPAIGN. With regard to *enemy* and *army*, both lexemes activate the mapping THE COMPANIES ARE THE ARMIES OR ENEMY FORCES. These findings are not in line with the hypothesis that predicts the military terms closely associated with war and combat in the majority of the top ranks of the list. One possible reason for this is that a vast majority of these lexemes occur less frequently in business than in other target domains. For example, the term *war*, which directly instantiates the metaphor BUSINESS IS WAR, only occurs 129 times in business as compared to 36649 occurrences in other domains. By contrast, the most strongly attracted term, *strategy*, occurs 1501 times in business in the comparison with 8190 occurrences in other domains. It may suggest that *strategy* is more deeply rooted and more firmly entrenched in business than the term *war*, or at least that it occurs more frequently in the magazine subcorpus of the *COCA*.
Table 4. The results of the metaphostructional analysis for the twenty most strongly repelled terms

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<th>c</th>
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7. Concluding remarks

The results of this investigation reveal that there are indeed source domain lexemes significantly attracted to or repelled by the target domain of business, and that these instantiate a wide variety of conceptual mappings. It was found that the military terms that are not closely associated with combat, such as strategy, strategic, campaign, operation, recruitment and headquarter, constitute the majority of the most strongly attracted lexemes in the ranking list. By contrast, it is surprising that the military terms directly related to war and fighting, e.g. kill, defeat, attack and combat, are strongly repelled source domain lexemes.

As mentioned above, one possible explanation for this lies in their high raw frequencies in the corpus. The lexemes such as combat or fight occur less frequently than expected in business discourse as compared to their common use in the remaining contexts. Fight, for example, occurs 459 times in business and 19125 times in other domains, which may mean that this term is less entrenched in business than in other contexts. By comparison, the terms strategy, campaign or recruitment appear to be more deeply rooted in the context of business, thus playing a more pivotal role in understanding business issues than combat and fight. These strongly attracted terms can also be treated as dead metaphors, words and phrases that lost their force and imaginative effectiveness due to extensive, repetitive, and popular usage in business.

Another explanation may be that business is competition, not combat or fighting. Business is a highly competitive activity that involves competing for the market place. It is a competition between companies to find out which one is more profitable and better at selling, promoting, developing and launching new products into the market.

Although business shares many attributes with war and the two have many elements in common, business is not war in the conventional sense of combat, weapons, and killing. Business is not destructive or barbaric. Business is usually fair and adheres to rules. It focuses more on opportunities and less on hazards. Companies create value for customers and contribute to the community. They concentrate on an effective collaboration with customers, suppliers and even competitors to build and popularize the company’s vision. Business competition results in success or failure but both companies operate to compete again. Wars lead to defeat or victory, triumph and domination as well as destruction and casualties.

Though business is not war, there is no escaping the fact that business competition is conceptualized in terms of war. Business is the greatest competition in the world. Not only does it require planning and strategy, but it uses military metaphors to motivate employees, to lift their spirits or “rally the troops” towards success and victory. Military metaphors are used to excite and arouse interest in competition, to inspire a collective labour force, to issue a challenge, to praise
good performance, to impose discipline, to reinforce hierarchy, and to hold and keep power.

Business is also construed as military conflict by the press, where everything should be appealing, extraordinary, shocking and sensational. Thus, the primary function of military metaphors in magazines might be to interpret facts in a way that attracts the readers’ attention. Journalists aim to stimulate interest and generate excitement among readers, without creating difficulties in understanding. In order to do so, they evoke the simplicity and straightforwardness of military actions and events. This way of enriching understanding is used to make business easily comprehensible to the average reader and to enhance its attractiveness by giving examples of metaphors that build action and suspense as well as provide power and aggressiveness to the commentary.

Another reason why military metaphors are so pervasive in the business context may be that their use provides a more coherent description of activities and events in business by establishing metaphorical correspondences between business and war. As discussed earlier, metaphors are employed to order, structure and understand abstract concepts. Figurative expressions, therefore, appear to be indispensable tools used to establish connections between actions that would otherwise be difficult to link.

The method adopted in this study may be applied to other target domains. Further research might explore the productivity of particular metaphorical correspondences, cross-cultural and cross-linguistic similarities and differences in the metaphorical conceptualization of abstract concepts, and the importance of particular metaphorical mappings for given target domains. It would be also interesting to compare and contrast the military metaphors found in English and their counterparts in Polish or German or to compare the use of military metaphors in two different target domains, e.g. in politics and business. Given that the current study was restricted to the magazine sub-corpus of COCA, it is recommended that a comparative study of metaphors in the magazine sub-corpus and the spoken sub-corpus be undertaken, in view of the possible existence of linguistic variation in these corpora.

References


