A Corpus-based Metaphor Study of Annual Reports: Semantic Fields and Metaphors

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Abstract. Annual reports are documents that disclose a company's finances, operations, development, social responsibility and other important information. In order to maintain a positive image of the company and enhance investors' confidence, annual reports tend to adopt a stable discourse structure to express attitudes in indirect forms. Metaphorical analysis of corporate annual reports is a process that requires comprehensive consideration of external environment, professional knowledge and critical thinking. This paper uses the corpus platform Wmatrix 5.0 to analyze annual reports of BYD and Tesla in 2021 and 2022, which are from official websites respectively. This paper follows the detailed steps in the metaphorical identification procedure (MIP) to identify metaphors in each corpus, with METALUDE as the reference source. Accordingly, this study concludes that BYD tends to manipulate different human traits metaphors while Tesla tends to manipulate natural factors including weather and plants. In terms of content, BYD shows an economic recovery while Tesla shows a deep blow.

Keywords: annual report; semantic field; BYD; Tesla

1 Introduction

BYD (Build Your Dreams) was founded in February 1995, whose revenue and market value are more than 100 billion yuan. BYD unswervingly implements the core values of "pragmatism, competition, innovation and passion". It continuously commits itself to industrial reality, innovation and creation, and satisfies people's yearning for a better life with scientific and technological innovation. Based in Palo Alto, Tesla was founded on July 1, 2003 and owns a trillion-dollar market value. Tesla strives to provide every ordinary consumer with pure electric vehicles within their consumption range. Tesla's vision is to accelerate the global transition to sustainable energy.

Corporate managers, as information publishers, have natural information advantages, which makes them more prone to opportunistic behaviors in the process of information disclosure. As the most important information disclosure channel for enterprises, the annual report owns a large amount of text content, which exists lots of room for interpretation. So, it provides space for managers to manipulate the text information out of self-interest. For example, managers can increase the logical complexity

of texts, accounting terms and unfamiliar words, which consciously increases the difficulty of interpreting annual reports with the aim to strategically package the enterprises' information.

2 Literature Review

Through the search and collation of relevant literature published in domestic core and foreign language journals[1][2][3], the author finds that the current research on metaphors of annual reports can be divided into three categories. The first category explores the changes of metaphor in different historical development stages of the same language, that is, diachronic research. The second category compares metaphorical expressions in different languages. It makes a cross-lingual contrastive study of metaphor. The third category combines corpus data with critical discourse analysis to analyze metaphorical models and explore the discourse function of metaphor.

This paper selects two new energy vehicle enterprises with different company histories and establishment backgrounds, namely BYD and Tesla. This paper analyzes metaphorical features of the annual reports in 2021 and 2022 from the official websites, when the impact of the pandemic wanes. It is hoped that it can provide inspiration and suggestions for the research of business discourse, enterprises' external communication ability and the governance of listed companies.

3 Research Method

3.1 Research corpora

The research material of this paper is the annual reports of BYD and Tesla in 2021 and 2022, which comes from the official websites. The two small corpora built by the author are 93,041 and 129,611 words respectively.

3.2 Research design

First, Wmatrix 5.0 is used to process the corpus. USAS, its embedded tool, could automatically code the text semantics. The collated corporate annual report corpus is uploaded to Wmatrix 5.0 platform, which can complete the part of speech coding and semantic coding, and generate word frequency list and semantic domain frequency list.

Second, this paper uses the semantic domain collocation function. The critical value of log-likelihood ratio was set to 6.63 ($p < 0.01$)[4].

Thirdly, according to the metaphorical identification procedure (MIP), this paper further manually identifies and extracts the unrecognized words in the USAS system and checks the metaphor-bearing words in the generated vocabulary.

Finally, the source domain is determined according to the semantic domain in which the metaphorical bearer is located. Then the author constructs the mapping relationship between the target domain and the source domain in the metaphorical model. Study the three most common key semantic fields in each corpus to identify lexical words that

occur at least 20 times[5]. METALUDE (Metaphor at Lingnan University, Department of English) serves as the reference source.

4   Findings and Analysis

4.1   Semantic Fields in BYD

Analysis of BYD shows that the most frequent three key semantic fields are "Belonging to a group" (S5+), "Money and pay" (I1.1) and "Business: Generally" (I2.1). Table 1 lists the lexical words in these three fields with a frequency of at least 20.

Table 1. Top Three Key Semantic Fields and Lexical Words in BYD

Semantic field	Lexical words	Frequency(log-likelihood)
Belonging to a group S5+	group, joint, corporate, bonds, units, public, association, members, unit, assembly, contingent, chain, together	1,726(+929.27)
Money and pay I 1.1	assets, profit, tax, income, capital, credit, shareholders, investment, payments, payment, investments, remuneration, dividend, cash flow, investors, dividends, taxable, investor, investee, proceeds, funds, earnings, profits, shareholder	2,418(+300.65)
Business: Generally I 2.1	company, business, audit, auditor, stock exchange, enterprise, co., economy, enterprises	1,571(+264.58)

In BYD, the high log-likelihood value for "Belonging to a group" shows that BYD attaches importance to integrating its industrial and value chains, such *as assembly, joint, corporate and chain*. The annual reports of BYD concern a few major topics: the business performance of different departments, diversified countries, and corporate responsibility. The first topic about business performance of different departments covers power battery, automotive lighting, automotive electronics, automotive powertrain and automotive mold. Since December 2019, BYD has set up Fodi electric Cell, Fodi Vision, Fodi Seiko and other Fodi companies, which are respectively responsible for the R&D and manufacture of various parts. They basically cover all links of self-research, self-production and self-marketing of key parts. The second topic about various countries includes Germany, Japan, France, Brazil, Australia. By 2022, BYD's overseas sales have exceeded 200,000 vehicles. The third topic about corporate responsibility is manifested by carbon neutrality and carbon emissions. In the ESG information report, BYD said that it has built China's first zero-carbon park headquarters.

In BYD, the second key semantic field "Money and pay" comprises terms related to profit, such as *shareholder, tax, income, capital and investment*. The verbs co-occurring with profit tend to carry a positive sense, as in rise, ascend, climb, ramp up and uplift.

This suggests that the economic situation in 2021 and 2022 has a positive recovery for BYD.

The third key semantic field is "Business: Generally" which tends to be associated with words, such as *value, significant, values, major, key, significantly and important.* BYD intends to enhance the authoritativeness and credibility, aiming to increase customer confidence and enhance the organizational image and value.

4.2   Semantic Fields in Tesla

Compared with BYD, Tesla has different key semantic fields, the most frequent three being "Entire; maximum" (N5.1+), "Giving" (A9-) and "Comparing: Similar" (A6.1+). Table 2 lists the lexical words in these three fields with frequencies of at least 20. In Tesla, "Entire; maximum" comprises 2,765 lexical words.

Table 2. Top Three Key Semantic Fields and Lexical Words in Tesla

Semantic field	Lexical words	Frequency(log-likelihood)
Entire; maximum N5.1+	aggregate, gross	2,765(+935.53)
Giving A9-	borrower, lender, issuing, lenders, borrowing, provide, provided, issued, assigned, issuance, offer, provision, given, giving, give, supply	2,663(+645.69)
Comparing: Similar A6.1+	agreement, agreements, similar, compliance, agreed, agrees, associated	810(+197.23)

Lexical words in the second key semantic field "Giving" are more related to the activity of dedication. Tesla's corporate culture emphasizes teamwork, excellence and dedication. It's not just a slogan, but a manifesto for continuous innovation, quality, transparent communication and a sustainable future.

In the third key semantic field "Comparing: Similar" is mostly related to words describing activities of social responsibility, including carbon emission, self-worth, respect, high salary and treatment.

5   Findings and Analysis

5.1   Metaphors in BYD

The source domains in "General Actions/Making" are various, namely, BUILDING, WAR, JOURNEY, WEATHER, FORCE, HEALTH, HEAT, HUMAN, WATER, LEVEL, MACHINE, PLANT and WIND. (Table 3)

In the source PLANT, the image of the plant is generally achieved through the derivation of grow, as *in the positive growth and rapidly grown into a leading manufacturer*. However, in the financial discourse, the metaphor grow is often used to indicate the increase, so it seems to serve a function of filling lexical gaps rather than decoration.

Table 3. Metaphors in "Belonging to a group" in BYD

Source domains	Examples of metaphors (underlined)
BUILDING	a solid _foundation_ for its
WAR	_demolishing_ and removing lease assets;
JOURNEY	the Group is constantly expanding new _paths_
WEATHER	_hot_ sales of "Han"
FORCE	being in _force_ for the benefit of
HEALTH	with its _strong_ technology accumulations; gradually recovered month by month
HEAT	achieved _explosive_ growth
HUMAN	sustainable and _healthy_ development; _positive_ in value; _strong_ financial support; economic _recovery_ slowed down
WATER	the _wave_ of autonomous driving
LEVEL	from the _rebounding_ industry boom;
MACHINE	old economic _engines_ to new has accelerated
PLANT	the positive _growth_; rapidly _grown_ into a leading manufacturer
WIND	positive growth against the _headwind_

Human traits are also used for conceptualizations as the aspects of health and motion are projected onto the concepts of financial market and business activities. As for the field of health, the human being can be physically strong or weak and sick or healthy. Annual reports tend to use a person's physical state to describe the performance of business activities. For instance, the metaphor healthy (HUMAN) describes that BYD has improved in profits over the past two years. It enriches the description of economic activities. As for the aspect of health, a human being can be physically strong or weak and get sick or well. In this case, it implies that the enterprise runs smoothly. The adjective *positive* is to utilize to describe the growth prospects of profits whereas the *strong* is to describe the strength of financial backing.

5.2   Metaphors in Tesla

The patterns of use and function of metaphors in Tesla are discussed in the following (Table 4).

Table 4. Metaphors in "Entire; maximum" in Tesla

Source domains	Examples of metaphors (underlined)
WEATHER	severe winter _storms_ in the first quarter of 2021
WAR	be subject to external _attacks_; assemblies and _die_ banks
FORCE	the _driver_ is ultimately responsible for

HEALTH	the extent of such _recovery_
HEAT	a safety issue or _fire_ related to the cells
HUMAN	have _strong_ creditworthiness at loan origination
HITTING	_impediments_ to administrative activities; may hinder the path and timeline
EXPANSION	our _expanding_ product roadmap
PLANT	_grow_ our customer-facing infrastructure;

In this part, metaphor WEATHER is frequently used, like "severe winter storms". Currently, the worldwide automotive industry is highly competitive and will continue to be so. Increased competition could result in lower sales, lower price, lower revenue, loss of customer and market share, which certainly damage Tesla's customer loyalty, financial condition and business performance.

The HEALTH and HUMAN metaphor appear in the annual reports of Tesla, too. Recover, which refers to the health condition of a person, conceptualizes the revival of Tesla. Human traits metaphors are used to evaluate the positive or negative performance of business activities and industrial or manufacturing production. The metaphor HITTING is used to describe the losses that Tesla suffered in two years, which conceptualizes the huge effort that Tesla made to solve problems caused by COVID-19 pandemic. In two years, Tesla has shut down dozens of factories and brought all its German-based employees who were building factories in Germany back to the United States.

5.3 Comparative Analysis

As the top new energy automobile enterprises in China and the United States, there exist certain similarities and differences in the use of metaphors in corporate annual reports.

In the terms of similarities, both companies manipulate different source domains with the aim to concretize and animate business activities in local and overseas markets, namely BUILDING, FORCE, HEALTH, HEAT, HUMAN, EXPANSION and PLANT. Though different nationalities have different linguistic expression structure systems, they share the same cognitive structure, which results in the overlapping of metaphors in different cultures. Accordingly, the same metaphorical structure appears, which is also one of the important reasons for the identical metaphors in Chinese and American enterprises. The universality of conceptual metaphors stem from fact that human beings live in the same external environments, resulting in the essentially same structure and function of the body.

In the term of differences, BYD's corporate annual report tends to use different aspects of human characteristics to present its corporate identity. Living organism metaphors permeate financial language, given the similarity between business cycle (expansion, recession, contraction, and revival) and life cycle phases (birth, development, zenith, decline, and death). In contrast, Tesla shows more of its social responsibility, dedication and losses. What's more, Tesla tends to manipulate natural factors including weather and plants. Tesla has been exposed to many scandals. As a result, Tesla wants to convey more corporate social responsibility to consumers.

6   Conclusion

This corpus-based, comparative study has examined the genre of annual reports in 2021 and 2022 during the COVID-19 pandemic, from two enterprises with different corporate history and establishment backgrounds.

Using the corpus platform W matrix 5.0, the study concludes that BYD tends to manipulate different human traits metaphors while Tesla tends to manipulate natural factors including weather and plants. In terms of content, BYD showed an economic recovery while Tesla showed a deep blow.

Due to the time pressure and the lack of the author's ability, there exist some deficiencies in this paper, such as the presentation and accuracy of data from Wmatrix 5.0 and the insufficiency of corpus. Further research in this field can be carried out by expanding the number of texts or analyzing the similarities and differences from the perspectives of cognitive theory and culturology.

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