

Translation Methods for Metaphorical Terminology in the Field of Fire Extinguishers in English

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This study focuses on metaphorical terminology in scientific and technical texts, with reference to the English translation practice of a fire extinguisher product operation manual. The research demonstrates that the translation methods for metaphorical terminology in fire extinguisher product manuals are crucial for Chinese products to gain international recognition. The English translation process must adhere to scientificity, rigor, and readability as fundamental principles, while adopting “literal translation” and “substitution translation” as the primary translation methods. Only by doing so can we facilitate the deep integration of Chinese products into international trade and promote their globalization.

Keywords: metaphorical terminology in scientific and technical texts, fire extinguisher operation manual, translation strategies

Introduction

Language serves as a vital tool for conveying knowledge and expressing cognition. Among its various elements, terminology, as symbols combining specific forms with meanings, represents the crystallization of scientific knowledge and an indispensable outcome of human cognitive activities. Delving into the characteristics of terminology is crucial for ensuring the accurate translation, creation, and adaptation of terms. Among the numerous characteristics of terminology, metaphor plays a pivotal role. It is not only a common method for naming terms but also profoundly influences the generation and development of terminology. Therefore, the metaphorical translation of scientific and technical terminology has become an important research topic in the intersection of scientific terminology and translation studies, deserving our in-depth exploration.

Metaphor in Fire Extinguisher Scientific and Technical Terminology

Lakoff and Johnson (1980) first proposed that metaphor is not merely a decorative element of language, but a cognitive tool. Metaphor is a process based on similarity, where people project from a familiar and concrete cognitive domain to a relatively unfamiliar and abstract one, thereby aiding in the understanding of abstract and unfamiliar concepts through concrete and familiar objects.

Lakoff and Johnson (1980) classified conceptual metaphors into three types: orientational metaphors, structural metaphors, and ontological metaphors. The text of this translation project contains a large number of ontological metaphors. Ontological metaphors refer to the perception of invisible, abstract, and obscure concepts as tangible and concrete entities, or even the human body itself. Ontological metaphors encompass three categories: entity and substance metaphors, animal metaphors, and personification metaphors. People's experiences with natural objects provide the foundation for a wide variety of ontological metaphors, offering ways to view activities, events, ideas, emotions, and more as entities and substances, i.e., entity and substance metaphors. Animal metaphors use animals as the metaphorical vehicle, employing familiar, vivid, and distinctive animals from daily life to represent people or objects with similar characteristics. Personification metaphors refer to attributing human behaviors or characteristics to animals, objects, and abstract concepts, allowing people to understand the experiences of various non-human entities. Metaphors concisely represent the image and characteristics of objects, facilitating readers' understanding of abstract concepts and the use of product manuals.

Scientific and technical terminology in the field of fire extinguishers refers to the scientific and technical vocabulary used in this domain, with terminology that has distinct industry characteristics. A large number of metaphorical vocabulary with distinctive features have emerged, such as "plum blossom coupling," "butterfly valve," "inert gas," and so on. These metaphorical vocabulary terms have also driven the rapid development of the terminology system in the field of fire extinguisher technology.

Translation Methods for Metaphorical Terminology

Metaphor, as a linguistic rhetorical device, essentially involves borrowing a word or phrase to refer to another object or concept, cleverly conveying the similarities between the two. In the practice of Chinese-English metaphor translation, the core lies in deeply exploring and accurately conveying the underlying meanings behind the metaphors. This process not only tests the translator's language conversion ability but also requires a keen insight into metaphorical imagery and proficiency in diverse translation strategies to ensure precise and fluent Chinese-English metaphor translation, thereby overcoming cultural barriers and achieving effective international communication.

When dealing with metaphorical vocabulary, translators face the dual choice of retaining the original metaphorical vehicle or creating a new one. Specifically, translation strategies can be subdivided into two categories: one is to directly retain the original metaphorical vehicle by using literal translation to convey the original author's intention and emotional tone; the other is creative transformation, where a new metaphorical vehicle is reconceived and selected for translation according to the cultural background of the target language and the readers' acceptance habits, to achieve a more apt expression.

Literal Translation Method

Despite significant differences in logical thinking and language expression patterns between Chinese and English, both languages exhibit the metaphorical nature of language and often employ similar metaphorical vehicles to depict similarities between things. When translating metaphors from Chinese to English, translators need to keenly capture and effectively convert the common metaphorical images between the source and target languages.

In specific contexts, when the source and target languages share a metaphorical meaning and vehicle, literal translation becomes an ideal translation strategy. Through literal translation, translators can faithfully retain the metaphorical meaning and vehicle image of the original text, ensuring that the translation is close to the original while also conveying the cultural charm and imagery characteristics embodied in the original vehicle. This approach not only preserves the essence of the original text but also introduces new expressive elements into the target language, broadening readers' cognitive horizons and enhancing the acceptability and comprehensibility of the translation.

Example (1)

Original Text: 紧固保护区支管的接头。

Translation: Secure the joints of the branch pipes in the protected area.

Analysis: The metaphor in Example (1) uses “tree branches” (an entity in nature) as the vehicle to vividly depict how “tree branches” extend from the trunk, gradually narrowing and spreading to wider areas. The corresponding ontology is the “pipeline section connecting the main pipe and equipment,” which has a smaller diameter and shorter form compared to the main pipeline, primarily functioning to connect the main pipe and equipment. Structurally, both exhibit a branching form extending from the trunk (whether it's a tree trunk or a main pipeline); functionally, both tree branches and branch pipes expand their contact area through branching structures—tree branches aim to increase the leaf surface area exposed to sunlight, while branch pipes aim to improve fluid transmission efficiency.

By linking the abstract concept of auxiliary equipment or tools with unique shapes to the concrete and intuitive imagery of “tree branches,” we can more easily understand their external forms and internal functions. Notably, in both Chinese and English, the vehicle “tree branches” is endowed with the same metaphorical meaning, i.e., “branch.” Therefore, during translation, translators tend to adopt a literal translation strategy, presenting the originally abstract and difficult-to-understand appearance features in an intuitive manner. Additionally, the vehicle “branch” is extremely familiar to target readers, which not only facilitates smoother reading and understanding of relevant information by product users but also provides convenience when they use fire extinguishers and other products.

Example (2)

Original Text: 使用惰性气体（如氩气）作为保护气体，可以有效防止焊缝氧化，确保焊接质量。

Translation: Using inert gases, such as argon, as shielding gases can effectively prevent weld oxidation and ensure welding quality.

Analysis: In Example (2), “inert gas” is an anthropomorphic metaphor. Here, “inert” is endowed with human personality traits, typically depicting a state of unwillingness to change and lack of vitality, serving as an anthropomorphic vehicle. The ontology is “chemically stable gases,” which exhibit extremely high stability in nature and are not prone to chemical reactions with other substances, with helium being a typical example. The chemical inertia of these gases resonates essentially with the inactive state conveyed by the word “inert.” Through anthropomorphic metaphor, the originally abstract chemical properties are transformed into easily understandable human psychological states, thereby helping non-professional readers intuitively grasp the characteristics of these gases.

However, when translating such metaphorical terminology, translators face complex issues such as whether to retain the metaphorical approach and whether adjustments to the vehicle are needed in a cross-cultural context, which are also difficulties in this translation practice. Notably, the metaphorical construction of the term “inert gas” actually uses animals (although not directly mentioned, “laziness” is often regarded as a manifestation of animal nature) as the vehicle, connecting human lazy personality traits with the inactivity of chemical gases, vividly revealing the connotation of the term.

Fortunately, in both Chinese and English, the anthropomorphic vehicle “inert” (lazy) is widely accepted and well-known. Therefore, during translation, translators can retain the original vehicle and directly translate “惰性气体” as “inert gas.” Similarly, “fuel-oil inert gas generator” should also be translated as “fuel-oil inert gas generator,” with such translations retaining the charm of the original metaphor while facilitating the understanding and use of related equipment by product users.

Literal Translation Method

In the process of translating metaphors, literal translation is not a panacea when confronted with the challenges posed by cultural differences. When literal translation fails to ensure the precise transmission of metaphorical imagery, substitution becomes an effective translation strategy aimed at enhancing the accuracy and readability of the translated text. When applying the substitution method, the primary and core principle is fidelity to the original text’s true intent. This requires the translator to not only deeply understand the essence of the original text but also to be proficient in the target language and its terminology and linguistic style within the relevant field.

Given the significant differences in thinking between high-context and low-context cultures, it is particularly important to flexibly adjust the metaphorical vehicle during translation, ensuring that it aligns more closely with the cognitive habits and familiar imagery of the target language audience, without compromising the core meaning of the metaphor. This process is not only a recreation of the original text but also a clever transcendence of cultural differences, ensuring that the translated text retains the metaphorical charm of the original while being smoothly understood and accepted by the target readers.

Example (3)

Original text: Use a plum blossom coupling to connect the two rotating shafts.

Translation: Utilize a plum-blossom-shaped coupling to join the two rotating shafts.

Analysis: In Example (3), “plum blossom coupling” uses “plum blossom” as a metaphorical vehicle to vividly refer to a coupling entity with a unique structure. This coupling features a curved (concave) claw design, consisting of two metal claw disks and an elastic body. The claw disks are connected through the elastic body, allowing for clockwise and counterclockwise rotation. The unique structure of this coupling shares commonalities with the appearance of a plum blossom, especially the symmetric and aesthetic design of the elastic body at the center of the coupling, which is inspired by the form of a plum blossom. By using the metaphorical term “plum blossom coupling,” the originally abstract appearance is personified into an everyday plant image, aiding readers in intuitively understanding the product manual and correctly operating and using the relevant components.

Conclusion

The construction of metaphors is based on the principle of similarity, which can be divided into metaphors based on direct similarity and metaphors based on creative similarity. Metaphors are a result of semiotic hierarchical activity, promoting the expansion of signified meaning. Analyzing how metaphorical vocabulary in petroleum science and technology terms is semiotized from a semiotic perspective can open a new window of observation for readers. However, the above analysis is only a preliminary exploration.

The metaphorical characteristics of linguistic signs permeate various levels of speech activities. Behind these semiotic activities lies a metaphorical structure reflecting the human cognitive system, a means through which humans perceive the world and establish order. As the dynamic functions of signs continue to deepen, human cognition expands, and knowledge accumulates. In this process, humans not only continuously symbolize and give meaning to the world but also profoundly shape themselves.

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