

VIETNAM NATIONAL UNIVERSITY, HANOI
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**MILITARY TERMINOLOGY USED IN ENGLISH AND
VIETNAMESE MILITARY DOCUMENTS – FROM BILINGUAL
TERMINOLOGY MANAGEMENT PERSPECTIVE**
(Thuật ngữ quân sự trong các tài liệu quân sự bằng tiếng Anh và tiếng
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Phản biện 2:

Phản biện 3:

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CHAPTER ONE: INTRODUCTION

Chapter One is divided into six sections: Statement of the problem, Research aim and questions, Scope of the study, Methods of the study, Contributions of the study, and Organization of the study.

1. Statement of the problem

Since Vietnam's first contribution of its military force to the United Nations (UN) peacekeeping operations, the task of ensuring successful communication in such multilingual scenarios as UN peacekeeping missions has always been of great significance and received enormous attention from leaders of the Vietnam Ministry of National Defence. There are a number of reasons for this priority. First of all, communicating successfully enables messages to be passed; therefore, plans, missions, policies are understood, followed and implemented effectively. In addition, misunderstood messages in military setting may cause severe consequences. Finally, being capable of understanding messages in such context allows participants to build up the bond among them, contributing to the better accomplishment of assigned tasks. Given such context, it is of great necessity to develop an approach to managing the system of peacekeeping terminology scientifically so as to enhance clarity and consistency in communication, provide access to terminological resource as well as develop the acquisition of military knowledge for peacekeepers, contributing to improving their overall task performance both at home and abroad.

2. Research aim and questions

The overarching aim of this study is to manage military peacekeeping terminology in such a way that enables users to access a wider variety of linguistic and conceptual information. In other words, a standardized list of alphabetically arranged concepts is transformed into a bilingual terminological knowledge base in which each concept appears within a hierarchy of conceptual categories and a semantic network.

The research aim is formulated into the following research questions:

1. What are fundamental semantic relations of English military peacekeeping terminology based on Frame-based Terminology management approach?
2. What are salient conceptual categories of English military peacekeeping terminology based on the semantic relations identified?

3. Scope of the study

The present study concentrates on determining conceptual categories and semantic relations among terms in the military setting. Due to the limitations of time and resources, the study focuses on English and Vietnamese peacekeeping terminology in military peacekeeping texts only.

4. Methods of the study

Frame-based Terminology is chosen for this study; therefore, its research methods include both qualitative and quantitative ones in which semantic analysis, thematic analysis, corpus analysis, focus group interview, and survey questionnaire are employed.

5. Contributions of the study

Theoretically, the thesis attempts to consolidate theoretical premises of Terminology in general, in which Frame-based Terminology is the highlight. Furthermore, the thesis reaffirms the relevance of cross-linguistics and cognitive linguistics to terminological research as well as translation studies. Methodologically, the study contributes to justifying the possibility of combining definition analysis and corpus analysis in studying and managing peacekeeping terminology. Practically, the findings and final products of the study provide Vietnamese peacekeepers in particular and terminologists in general a new approach to terminology management, from which terms are better organized, classified and utilized.

6. Organization of the thesis

The thesis consists of five main chapters: Chapter One – Introduction of the study; Chapter Two – Literature Review; Chapter Three – Research Methodology; Chapter Four – Findings and Discussion; and Chapter Five – Conclusion.

CHAPTER TWO: LITERATURE REVIEW

This chapter provides a comprehensive, systematic and critical review of the literature regarding the research topic of terminology management. Apart from a brief description of various theories within the

research area, the chapter also describes key concepts including terminology, terminology management, conceptual relation, terminographic definitions, translation and specialized language translation. In addition, previous international and domestic studies concerning terminology and terminology management are critically reviewed, contributing to forming a theoretical framework and highlighting the research gaps in which this study locates itself.

2.1. Terminology and terminology management

The term "terminology" has multiple meanings and can be looked at from three different angles: as a field of study, an activity, or a result of terminological activities (Sager, 1990, 2-3). Firstly, from the perspective of a field of study, terminology is an interdisciplinary area of research that focuses on the specialized words or terms used in particular domains of natural language (Cabr , 1999, 32). These terms are studied using a combination of computer science, information science, cognitive science, linguistics, and other communication studies. Terminology has its unique theory and objectives, which sets it apart from related fields such as lexicology.

The activity of terminology involves a set of practices and methods used to gather, describe, and present terms (Sager, 1990). These practices include analyzing the relationships between concepts, defining concepts, assigning terms to concepts, and storing the resulting terminological data. Scholars and practitioners refer to this approach to terminology as terminography, terminology work, and terminology management. Despite differences in terminology, these practical activities follow agreed-upon technical, formal, and procedural recommendations internationally (Cabr , 1999).

2.1.1. Terminology theories

General Terminology Theory

Terminology is a relatively recent area of study that emerged from the necessity of experts to unify language and concepts in specialized fields to facilitate communication and knowledge transfer (Cabr , 2000: 37). The origins of Terminology can be traced back to the 1930s when Eugen Wuster - often referred to as the father of Terminology - developed the first theoretical model, the General Terminology Theory (GTT).

It is not surprising that the GTT invested considerable effort to distinguish specialized language from general language, and in doing so, to differentiate terms from words. According to the GTT, while general language includes multiple meanings for words (polysemy) and different words with the same meaning (synonymy) (Montero, Faber, and Buendia 2011: 38), specialized language is characterized by using one term to refer to one concept and one concept only (univocity) (Temmerman 1997: 54-55) and one term designating only one concept (mono-referentiality) (Cabr  1993: 213). Essentially, the GTT proposed a concept of specialized communication based on the principles of univocity and mono-referentiality, which simplified and excluded different interpretations and variations (Cabr  1999b: 105).

In addition, the GTT (General Theory of Terminology) concentrated on specialized knowledge concepts to organize and describe terminological data. In this approach, concepts were viewed as separate entities from terms or their linguistic labels which simply denoted these concepts.

Socioterminology

Socioterminology (Gaudin 1993, 2003; Boulanger 1991, 1995; Gambier 1991, 1993) applied sociolinguistic frameworks to Terminology, examining how social and ethnic factors contribute to terminological variation (Boulanger 1995). This variation can result in different terms for the same concept, or multiple concepts for the same term (polysemy and synonymy), depending on the communication between experts and specialists. Despite the fact that Socioterminology does not acquire an independent theoretical status, it contributed to paving the way for other descriptive theories of Terminology, which also take social and communicative factors into consideration and base their theoretical premises on how terms are actually used in specialized discourse.

Communicative Terminology Theory

The convergence of Linguistics and Terminology gave rise to Communicative Terminology Theory (Cabr  1993, 1999, 2001a, 2001b), which is a more comprehensive approach aimed at understanding the intricate nature of specialized terms in actual communicative contexts. This theory transcends the scope of

Socioterminology. Cabré (2003) argues that specialized terms are multidimensional, comprising cognitive, linguistic, and socio-communicative components. She introduces the Theory of the Door which is a metaphor for comprehending the different ways of accessing, analyzing and grasping terminological units. According to this theory, terminological units possess three dimensions, namely a cognitive dimension, a linguistic dimension, and a communicative dimension. The cognitive dimension is useful in describing concepts and hierarchical/non-hierarchical relationships. The linguistic dimension, on the other hand, explains how specialized knowledge units are expressed in language. Finally, the communicative dimension describes how terminological units are utilized in various communicative circumstances.

Cognitive-based Terminology theories

Over the last 10 years, linguistics theory seems to be in the process of experiencing a cognitive shift (Evans and Green 2006), which is more focused on meaning and the conceptual network underlying language. Cognitive-based Terminology theories, although sharing the similarity with previous theories that concentrate on terms in texts and discourse, incorporate principles from Cognitive Linguistics and Psychology when describing concepts and category structure. The most representative contributions within this framework are Sociocognitive Terminology Theory (Temmerman 1997, 2000, 2006) and Frame-based Terminology (Faber, Marquez Linares, and Vega Expósito 2005; Faber et al. 2006, 2007; Faber and León Arauz 2010; Faber 2011).

2.1.2. Terminology Management

Faber (2012) explains that terminology management can be *descriptive*, *prescriptive*, or *normative*. *Descriptive* terminology management involves documenting how terms are used, whereas *prescriptive* terminology management documents preferred usage, and *normative* terminology management documents terms used in standard work or governmental regulation. *Prescriptive* and *normative* management are often seen as the same type because they strive for consistency through standardization. In contrast, *descriptive* terminology management helps users, such as translators, make informed choices but does not dictate their choices (Wright and Budin, 1997). It is designed to support learning (Riggs and Budin, 1997), and it recognizes and accounts for diversity and cross-cultural variations, as demonstrated through the analysis of terms in vivo (Dubuc, Lauriston, & Budin, 1997) in tools such as EcoLexicon.

The primary difference between *descriptive* and *prescriptive* terminology management is their objectives. *Descriptive* management aims to document the richness of language, while *prescriptive* management aims to ensure uniformity. While previous studies lie in the scope of *prescriptive* Terminology focusing on term standardization, this doctoral thesis identifies itself as *descriptive* since it has pedagogical and practical purposes, taking the best advantages of the researcher as an English linguist with previous experience in teaching, interpreting, and translating military and peacekeeping documents.

Bilingual Terminology Management

Bilingual terminology management is an approach of terminology management in which term sources are available and presented in two different languages. In this study, the word bilingual is understood and referred to as the subtask of generating Vietnamese translations for English military peacekeeping terminology in the proposed knowledge structures. This task involves extracting Vietnamese equivalences in correspondent peacekeeping texts and proposing Vietnamese equivalences of English peacekeeping terms in the glossary. However, as mentioned earlier, since military peacekeeping is a quite nascent field, the number of documents and texts translated or written into Vietnamese is still limited, making it difficult to extract. Therefore, within the scope of this study, the word bilingual mainly refers to the provision of Vietnamese equivalences of English peacekeeping terms based on the author's understanding of the contexts, semantic relations and conceptual categories.

2.2. Frame-based Terminology

Faber (2009, 2011, 2012) introduced an innovative cognitive approach to Terminology called Frame-based Terminology (FBT). The FBT shares several principles with the CTT and the STT, such as acknowledging the continuum between words and terms and the importance of analyzing specialized knowledge elements in authentic texts. The FBT blends specific features of Corpus Linguistics, the Lexical

Grammar Model (Faber and Mairal 1999), and Frame Semantics (Fillmore 1976, 1982, 1985; Fillmore and Atkins 1992) to organize specialized domains and create visual representations that go beyond language. The FBT method has three primary areas of emphasis. Firstly, it focuses on conceptual organization, which is reliant on frames or events. Secondly, it accounts for the multidimensional aspect of terminological units by taking into consideration both hierarchical and non-hierarchical relationships. Lastly, it extracts semantic and syntactic data from multilingual corpora and dictionaries.

FBT is a recent cognitive approach to terminology that seeks to directly connect specialized knowledge representation to cognitive linguistics and semantics (Faber 2012). It shares some features with Cabré's (1999) CTT and Temmerman's (2000) STT which also studies terms and their behavior in texts. What differentiates FBT from CTT and STT lies in the fact that FBT's methodology combines premises from 5 different theories. These include the Argument Structure, the Lexical Grammar Model (Faber & Mairal Usón, 1999; Mingorance & Lexicography, 1990), Role and Reference Grammar (Van Valin and Lapolla 1997; Van Valin 2005), Frame Semantics (Fillmore 1985), and the Generative Lexicon (Pustejovsky 1998).

The Argument Structure

During the first half of the 20th century, the majority of linguistic theories focused on the syntactic perspective when envisioning the combinatorial potential or subcategorization of verbs. Structuralism and Generative Grammar had a similar viewpoint that the study of sentence and word meanings had to be delayed, and sentences needed to be analyzed first based on their purely syntactic structures. Over time, the role of semantics has become increasingly significant, to the extent that many current linguistic theories agree on the idea that there is a direct link between syntax, semantics, and pragmatics. As a result, syntax is no longer seen as separate from meaning and context. Nowadays, sentence composition is typically explored by considering both the meaning of individual words in the sentence and the situational context. Consequently, various linguistic approaches have emerged to investigate argument structure, which can be classified under three main categories: i) formal linguistics approaches, ii) functional linguistics approaches, and iii) functional-cognitive linguistics approaches.

Lexical Grammar Model

The Lexical Grammar Model (LGM), also known as the Functional Lexematic Model, was first introduced in the 1980s by Martin-Mingorance and was later expanded upon by Faber and Mairal (1999). It was one of the most influential functional models of its time. Dik's Functional Grammar (Dik 1978a, 1978b, 1989, 1997a, 1997b), along with Coseriu's Lexematic Theory (1981), are included in the LGM to organize the lexicon semantically into hierarchies, creating lexical domains and sub-domains. Unlike other linguistic models, the LGM does not represent each individual lexical unit but instead serves as a syntactic representation derived from a structured lexicon through onomasiological organization.

Role and Reference Grammar

Role and Reference Grammar (Van Valin and Lapolla 1997; Van Valin 2005), known as RRG, is a functional linguistic model that aims to describe how syntax, semantics, and pragmatics interact in various grammatical systems (Van Valin 2005: 1). According to this theory, grammar is not independent but is greatly influenced by semantics and pragmatics. RRG considers pragmatics and semantics as powerful components of language that regulate syntax as well.

Function, meaning, and language use are the primary concerns of RRG. The model places great importance on function, as it is a determinant of form in the language. Likewise, meaning is stressed since RRG posits that grammar is structured by conceptual and semantic content. Lastly, language use is emphasized as the study of language is not separated from its communicative function.

Frame Semantics

Frame Semantics is a method used for analyzing lexical meaning that arose from Fillmore's work (Fillmore 1977, 1982, 1985; Fillmore and Atkins 1992). The concept of Frame Semantics was an elaboration on Fillmore's Theory of Case Grammar (Fillmore 1968), which postulated that syntactic deep structures were more usefully expressed as a collection of 'deep cases.' These deep cases were assigned general semantic-role labels like AGENT, ACTION, PATIENT, RESULT, and so forth.

The central principle of Frame Semantics is that word meanings ought to be delineated within the context of conceptual scenarios, known as frames. From a linguistic standpoint, frames, as described by Fillmore (1977), are "any group of linguistic options - the simplest being word collections, but also comprising selections of grammatical rules or linguistic categories - that can associate with prototypical instances of scenes." As the theory shifted towards a more cognitive orientation, the notion of frame also evolved accordingly.

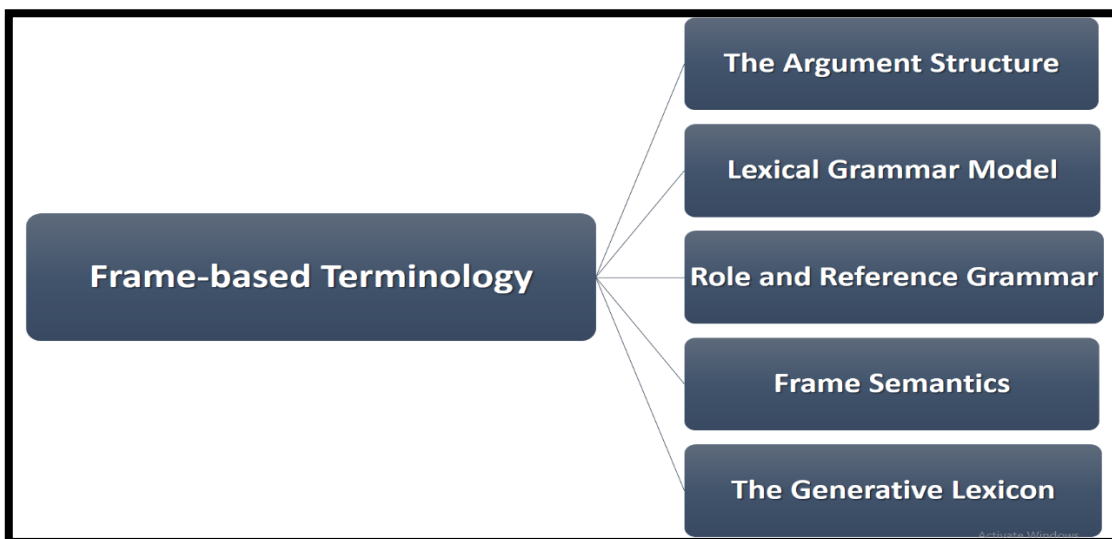
The Generative Lexicon

The Generative Lexicon is a theory that explains linguistic semantics and how it relates to the distributed nature of compositionality in natural language. According to this theory, the semantic burden is distributed among all components of a sentence (Pustejovsky 1995; Busa et al. 2001; Pustejovsky et al. 2006; Rumshinsky et al. 2006). Despite Cognitive Linguistics' typical opposition to generative models, it is difficult to provide a semantic definition without some form of decompositional analysis. There are four levels of representations in the Generative Lexicon: (i) Argument Structure; (ii) Event Structure; (iii) Qualia Structure; (iv) Lexical Inheritance Structure. The reason the author has used qualia to illustrate specialized knowledge units is that this form of description provides distinct classifications for concepts and their relationships, which aligns with the study's objectives.

To sum up, Frame-based Terminology is the recent approach to terminology management which is based on various existing linguistics and cognitive theories. Its theoretical premises can be generalized through the following figure:

Figure 1

Theoretical premises of Frame-based Terminology



2.3. Conceptual relations

Faber (2012) argues that a greater array of conceptual relations than traditional generic-specific and part-whole ones can provide terminological knowledge bases with greater coherence and dynamism. In the peacekeeping knowledge base, each concept is associated with others through a set of conceptual relations, including some domain-specific ones. This set of conceptual relations has made the knowledge in the term-base more coherent and dynamic. In terms of semantic relations, as shown in Table 1, the inventory of semantic relations consists of 13 types as highlighted by Faber (2012).

Table 1

Semantic relations (Faber 2012)

1. <i>type_of</i>	a term is a subclass of its parent	2. <i>part_of</i>	a term is a part of a concept
3. <i>phase_of</i>	a type of <i>part_of</i> relation, but applied to a process	4. <i>made_of</i>	links objects to the material that they are made of

5. <i>takes_place_in</i>	describes the context of events that have spatial, temporal dimensions	6. <i>located_at</i>	relevant when the site of an object is an essential feature for its description
7. <i>attribute_of</i>	useful for concepts described by specialized adjectives	8. <i>has_function</i>	made for a specific function or done with a specific purpose. Domain-specific sub-types: <i>measures, studies, represents</i>
9. <i>affects</i>	encodes the changes experienced by one conceptual entity because of an event initiated by another	10. <i>effected_by</i>	only used for instruments that participate in an event or which are used to create a new entity
11. <i>delimited_by</i>	connected to the <i>part_of</i> relation, mainly geographic entities	12. <i>result_of</i>	relevant to events that are derived from other events and to entities that are created by other events
13. <i>causes</i>	links entities and event, is the inverse of <i>result_of</i>		

2.4. Terminographic definitions

A terminology is made up of all the terms belonging to a specific field and represents an actual definitional system, reflecting the coordinated structure of a distinct domain. Terms are organized into a structured system that mirrors their conceptual organization. Defining terminologies, whether it be terminological or terminographical, necessitates a conceptual analysis. Both terminologists and terminographers view defining as the act of describing, defining and distinguishing concepts. Sager (1983) asserts that their definitions establish classifications, hierarchies, and structures.

Strehlow (1993), also asserts that using definition statements alone to represent concepts is not sufficient for certain specialized terms. He highlights that the representation of a definition structure mirrors a conceptual representation and thus, reveals elements such as genus (referring to the domain or higher-level category to which the concept belongs), species (pertaining to sub-domains), differentiae (describing essential characteristics that distinguish the concept from others within the same category), and accident (portraying non-prototypical characteristics of the concept).

Table 2

Military operation definitional hierarchy

military operation	1. A sequence of tactical actions [GENUS] with a common purpose or unifying theme. (JP 1) 2. A military action or the carrying out of a strategic, operational, tactical, service, training, or administrative military mission [GENUS]. (JP 3-0)
amphibious operation	A military operation [GENUS] launched from the sea by an amphibious force to conduct landing force operations within the littorals. Also called PHIBOP. See also amphibious force; landing force; mission; operation. (JP 3-02)
amphibious withdrawal	An amphibious operation [GENUS] involving the extraction of forces by sea in ships or craft from a hostile or potentially hostile shore. See also amphibious operation. (JP 3-02)

As can be seen in Table 2, the hierarchical relation *type_of* (traditionally known as *is_a*) can be derived from the genus of each definition. The genus indicates that AMPHIBIOUS OPERATION is a type of MILITARY OPERATION and AMPHIBIOUS WITHDRAWAL is defined according the superordinate concept AMPHIBIOUS OPERATION. Regarding MILITARY OPERATION, it is defined as a military

action or the execution of a strategic, operational, tactical, service, training, or administrative military mission. In other words, MILITARY OPERATION is the sub-type of a MILITARY MISSION and it can be either strategic, operational, tactical, service, training, or administrative.

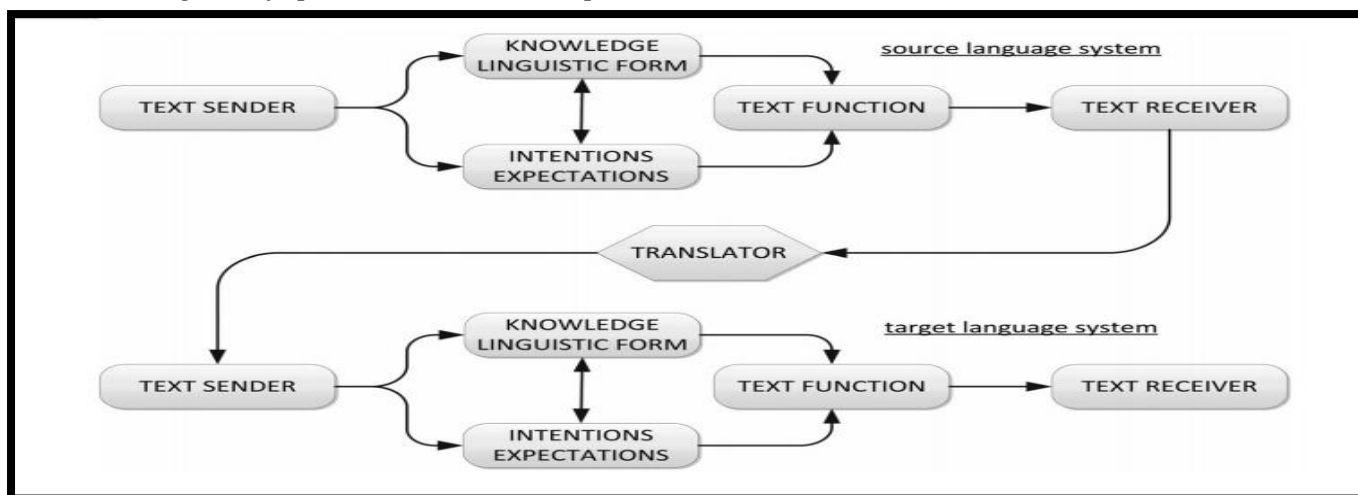
2.5. Translation and specialized language translation

The fundamental objective of any translation process is to produce texts in the target language that convey the same message as those in the source language. In the context of specialized language translation, this entails comprehending, organizing, and specifying correspondences between specialized knowledge units, represented as words or phrases, across different languages. Discussions of translation, whether in general language or specialized language, are primarily concerned with establishing correspondence or equivalence. This objective of equivalence, based on shared conceptual meaning expressed as interlinguistic and intertextual correspondence, serves as the ultimate goal that translators aim to achieve in their professional activities.

When the translation process is involved in this diagram, translators find themselves in the double role of text receiver (in the source language) and text sender (in the target language).

Figure 2

Schematic diagram of specialized translation process (Faber, 2012)



In specialized translation, there are two parties involved - the source language text sender and the target language text sender (the translator). The former are usually experts in their own fields and have a deep understanding of the terminology used in their field, and they tailor their language to the group of target-language text receivers. On the other hand, the translator serves as the target-text receiver who fully relies on their skills and knowledge to understand the meaning of the original text, which is not primarily written for them. Figure 2 gives an illustration of this process.

2.6. Previous studies and research gaps

There are only a few studies on the terminology and terminology management in Vietnam, and no FBT study has been conducted for military peacekeeping management so far.

CHAPTER THREE: METHODOLOGY

This chapter describes the research methodology adopted in this study. First of all, the description of philosophical views is provided and the rationales for the author's choice of research paradigm are justified. This chapter then provides the justification for the selection of research methods with detailed explanation of why and how they are employed. In addition, the chapter also offers a comprehensive description of the data sources and elucidates how the data is collected and analyzed. Finally, the analytical framework is clarified with thorough description.

3.1. Research design

Based on the research aim mentioned in the Introduction, the researcher locates his study in the Embedded Design (Creswell and Clark, 2011).

3.2. Research methods

The approach employed in this study is considered to be the mixed-method one since it consists of the following techniques and data collection instruments:

- + Semantic analysis (qualitative): Semantic relations are extracted from the definitions of all terms.
- + Corpus analysis (quantitative): Semantic relations are also extracted from concordances of key terms in the corpus.
- + Thematic analysis (qualitative): The domains and sub-domains of the term in question are determined via the identification of GENUS and DIFFERENTIAE from the term's definition.
- + Focus group interview (qualitative): Data about the views and opinions of participants on the identified semantic relations and conceptual categories is collected, through which findings from the semantic analysis, corpus analysis and thematic analysis, and proposed knowledge structures are validated.
- + Survey Questionnaire (quantitative): Numerical data from the survey questionnaire is analyzed.

3.3. Data collection

This section describes how data is collected for the study. Data used for this study include the glossary, definitions of concepts listed in the glossary, authentic UN documents and a military peacekeeping English corpus built on Sketch Engine, and interviews and a survey questionnaire.

- A glossary: 1441 terms collected by peacekeepers during task performance
- The dictionaries: Two dictionaries were used: The DOD Dictionary (2021) and The AAP-06 (2021)
- The Peacekeeping Corpus: Compiled from a total of 280 documents of various length and types. The corpus contains 3,590,079 tokens or 101,633 sentences, making an almost 3-million-word corpus (2,996,900 words to be precise).
- Focus group interview: Conducted on 04 peacekeeping experts with considerable experience working in the field.
- Questionnaire: A 28-question survey questionnaire conducted on 91 participants who are peacekeepers working in various missions overseas.

3.4. Data analysis procedure

- Step 1: Semantic relations were extracted from the analysis of terms' definitions and the corpus concordances.
- Step 2: The definitions of all terms were then further analyzed for the identification of genus and differentia. While the genus highlighted the conceptual categories of terms, the differentia provided the referencing data of semantic relations for Step 1.
- Step 3: The findings and results from Step 1 and Step 2 were utilized to construct knowledge structures, which were taken for the consultation of experts in the fields via focus group interview and questionnaire afterward.
- Step 4: The analysis of the results from the focus group interview and questionnaire serve as the final findings of the study.

3.5. Data analysis

Analysis of Corpus Concordances

The information obtained from the corpus is analyzed and semantically classified to ensure that concepts are situated within the knowledge-domain event's underlying conceptual framework (Faber et al. 2006; Faber et al. 2007). For instance, the concordances drawn from texts in the corpus describe "EXERCISE" with respect to the following conceptual relationships:

Figure 3

The type_of relation from concordances of EXERCISE

Details	Left context	KWIC	Right context
1 doc#9 v of the justice system and any previous mapping and assessment		EXERCISE	; methodology, including information sources; findings, including ke
2 doc#99 4 * Fact-finding and mapping exercises Fact-finding and mapping		EXERCISE	aim to document gross violations of human rights and serious viol
3 doc#15 ed helicopters during the year.=/s=/s-Details of weapons training		EXERCISE	, including the quantity and types of ammunition allocated per pilot
4 doc#17 is provided to United Nations HQ for the same technical clearance		EXERCISE	, at least three months before their deployment in the field.=/s=/s-
5 doc#17 VD, DfS made a decision to undertake a centralized procurement		EXERCISE	for PPE for all peacekeeping and political missions.=/s=/s-In plan
6 doc#16 anel with regard to the settlement of claims, the modalities for the		EXERCISE	of civil and criminal jurisdiction over military and civilian mission re
7 doc#21 Affairs Handbook Civil affairs conducts an analysis and planning		EXERCISE	in Kinshasa, DRC Chapter 6 Analysis and planning Chapter 6 A/
8 doc#21 and advocacy strategies.=/s=/s-Photograph of an actor-mapping		EXERCISE	carried out by civil affairs in Liberia, 2011 Step 5 → Identify points i
9 doc#21 ars components, or the team or individual conducting the planning		EXERCISE	, could potentially impact on the situation.=/s=/s-What are the poli
10 doc#21 or instance, in DRC, civil affairs undertook a countrywide mapping		EXERCISE	of civil society organizations and, based on this, promoted and fac
11 doc#21 School for Financial Administration.=/s=/s-This capacity-building		EXERCISE	significantly improved the ability of Municipal Councils to develop e
12 doc#23 neglected during and after conflict.=/s=/s-In past demobilization		EXERCISE	, female combatants have found their needs either partially or com

It can be clearly seen from Figure 3.1 that military exercises in peacekeeping sub-field can be classified into various types including mapping and assessment exercise, technical clearance exercise, actor-mapping exercise, capacity building exercise or demobilization exercise. It is noted that most of the *type_of* relations are represented in the forms of either adjective or noun pre-modifiers.

Figure 4
Conceptual relations extracted from concordances of EXERCISE



According to Figure 4, peacekeeping exercises can be conducted on land, at sea or such locations as mining sites. The *located_at* relations are usually represented by such typical lexical markers as pre-modifier at-sea or prepositional phrases like on air, at sea, or for mining sites.

The concordances in Figure 3.2 also tell us that exercises are implemented for numerous purposes or functions. The most popular lexical marker for this *has_function* relation is to as found in concordances 6, 11, 14 and 19.

Analysis of Term Definitions

All glossary entries underwent analysis using the method outlined in the previous section. They were then classified into a list of fundamental categories, which include ENTITIES, ACTIONS, SITUATIONS, MEASUREMENT, and ATTRIBUTES. ENTITIES were further divided into ANIMATE_ENTITY and INANIMATE_ENTITY, which were then classified as CONCRETE and ABSTRACT. ACTIONS category mainly include COMBAT.

It can be seen from the table that the dictionaries consulted provide similar definitions for EXERCISE; however, they are not exactly the same. What is notable is that the definitions resemble each other in the basis type of information contained: GENUS (conceptual category membership) and the DIFFERENTIAE which demonstrate typical roles participating in military events (AGENT, ACTION, PATIENT, RESULT, OBJECTIVE etc) as well as semantic relations (*type_of*, *has_function*, *affects*, *result_of*, *causes*, etc).

Table 3
Conceptual relations extracted from the definitions of EXERCISE

Term	Dictionary	Definition
EXERCISE	The DOD Dictionary	A military maneuver (AGENT/ <i>type_of</i>) or simulated wartime operation (AGENT/ <i>type_of</i>) involving planning, preparation, and execution (PATIENT/ <i>consist_of</i>) that is carried out for the purpose of training and evaluation (OBJECTIVE/ <i>has_function</i>).
	The APP-06	A military manoeuvre (AGENT/ <i>type_of</i>) or simulated wartime operation (AGENT/ <i>type_of</i>) involving planning, preparation, and execution (PATIENT/ <i>consist_of</i>). It is carried out for the purpose of training and evaluation (OBJECTIVE/ <i>has_function</i>). It may be a combined, joint, or single service exercise (AGENT/ <i>attribute_of</i>), depending on participating organizations.

Table 3 shows that both definitions of EXERCISE have a generic term indicating membership in a conceptual category, along with other semantic relations. For instance, one definition describes exercise as a military manoeuvre or simulated wartime operation. However, these definitions alone do not provide all the necessary information and may not ensure systematic definitions for specific exercises. Nonetheless, analyzing these definitions enables us to extract the most relevant conceptual information and create a schema or frame for EXERCISE. This schema contains four types of relations including *type_of*, *consist_of*, *has_function*, and *has_attribute*.

CHAPTER FOUR: FINDINGS AND DISCUSSION

This chapter illustrates the research findings by answering the two research questions. First of all, from the analysis of term definitions as well as corpus concordances, fundamental semantic relations of peacekeeping terms were extracted and discussed in significant details. In addition, term definitions were again analyzed to identify GENUS, based on which concepts were classified into categories. Findings from the first two steps were utilized to construct knowledge structures of various events. These knowledge structures, represented in the form of semantic networks, were then distributed to experts for evaluation. Findings of the questionnaire and focus group interview were also debated.

4.1. Fundamental semantic relations of English military peacekeeping terms

In EcoLexicon, Faber (2012) proposed an inventory of 13 fundamental semantic relations in the discourse of environment (Table 1). However, the findings from the analysis showed that a total of 22 semantic relations were identified. As can be seen from Table 4.1, while the *made_of* relation was eliminated from the list, 10 more semantic relations were added so as to describe relations found in the data source. These include: *subordinate_to*, *takes_place_before/during/after*, *by_means_of*, *consists_of*, *for_reason_of*, *excludes*, *conducted_by*, *method_of*, *coordinates*, and *involves*.

Table 4

Inventory of semantic relations of peacekeeping terms

No	Semantic relations	Description
1	<i>type_of</i>	a term is a subclass of its parent
2	<i>part_of</i>	a term is a part of a concept
3	<i>phase_of</i>	a type of <i>part_of</i> relation, but applied to a process
4	<i>subordinate_of</i>	a term, usually a person, is a personnel of lower rank or authority
5	<i>takes_place_in</i>	describes the context of events that have spatial dimensions
6	<i>takes_place_before/during/after</i>	describes the temporal dimensions of an event.
7	<i>located_at</i>	relevant when the site of an object is an essential feature for its description
8	<i>attribute_of</i>	useful for concepts described by specialized adjectives
9	<i>has_function</i>	made for a specific function or done with a specific purpose. Domain-specific sub-types: <i>measures</i> , <i>studies</i> , <i>represents</i> , <i>manages</i> , <i>etc</i>
10	<i>affects</i>	only used for instruments that participate in an event or which are used to create a new entity
11	<i>effected_by</i>	encodes the changes experienced by one conceptual entity because of an event initiated by another
12	<i>delimited_by</i>	connected to the <i>part_of</i> relation, mainly geographic entities
13	<i>result_of</i>	relevant to events that are derived from other events and to entities that are created by other events
14	<i>causes</i>	links entities and event, is the inverse of <i>result_of</i>
15	<i>by_means_of</i>	describes the means that something is done
16	<i>consists_of</i>	describes members, processes, and components that are linked to and belong to a term
17	<i>involves</i>	describes other terms that are linked to a concept
18	<i>for_reason_of</i>	describes the reason behind an action or its ultimate goal

19	<i>excludes</i>	other terms that are not related or linked, opposite to <i>part_of</i>
20	<i>conducted_by</i>	describes actions/events that are carried out by a particular individual.
21	<i>method_of</i>	refers to a term which is defined as a means of doing/conducting something
22	<i>coordinates</i>	refers to the cooperative relations between terms

The following table briefly represent how popular each relation is in the data sources via the number of occurrences.

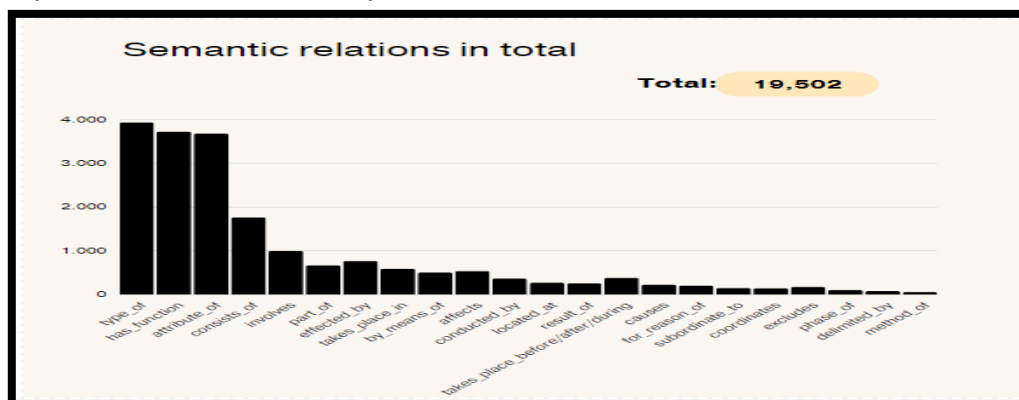
Table 5

Semantic relations in order of popularity

No	Semantic relations	No of occurrences in definitional analysis	No of occurrences in corpus analysis	Total
1	<i>type_of</i>	1,019	2,911	3,930
2	<i>has_function</i>	612	3,112	3,724
3	<i>attribute_of</i>	439	3,238	3,677
4	<i>consists_of</i>	380	1,380	1,760
5	<i>involves</i>	270	724	994
6	<i>effected_by</i>	108	657	765
7	<i>part_of</i>	132	532	664
8	<i>takes_place_in</i>	90	496	586
9	<i>affects</i>	67	465	532
10	<i>by_means_of</i>	87	415	502
11	<i>takes_place_before/during/after</i>	7/17/8 (32)	345	377
12	<i>conducted_by</i>	44	318	362
13	<i>located_at</i>	39	228	267
14	<i>result_of</i>	34	218	252
15	<i>causes</i>	31	192	223
16	<i>for_reason_of</i>	25	179	204
17	<i>excludes</i>	12	156	168
18	<i>subordinate_to</i>	20	123	143
19	<i>coordinates</i>	15	124	139
20	<i>phase_of</i>	7	94	101
21	<i>delimited_by</i>	6	72	78
22	<i>method_of</i>	6	48	54
	TOTAL	3,475	16,027	19,502

Figure 5

Total number of semantic relations identified



In conclusion, there were 19,502 relations of all kinds including 3,475 relations from the definitional analysis and 16,027 relations from the corpus analysis. A sum of 22 fundamental semantic relations were identified, among which *type_of*, *has_function* and *attribute_of* were the three most popular ones, ranking first, second and third with 3,930, 3,724 and 3,677 instances respectively. Ranging from 101 to 994 instances were 17 relations of the middle group including such relations as *involves*, *effected_by*, *part_of*, *takes_place_in*, *affects*, *takes_place_before/during/after*, *conducted_by*, *located_at*, *result_of*, *causes*, *for_reason_of*, *excludes*, *subordinate_to*, *coordinates*, and *phase_of*. *Delimited_by* and *method_of* were the two least frequently appeared relations with the frequency of only 78 and 54 in turn.

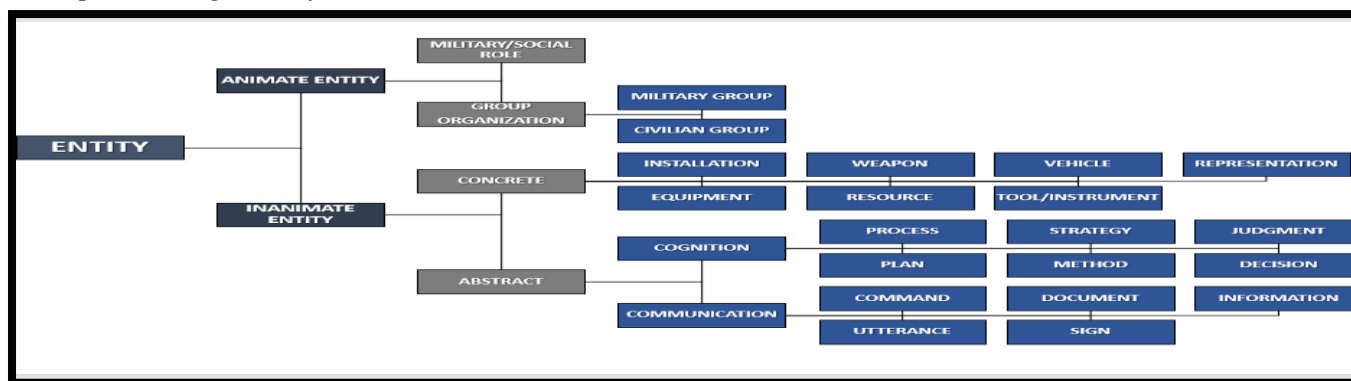
4.2. Conceptual categorization of English military peacekeeping terms

Faber (2019), in her work on building knowledge resources for the Spanish Armed Forces based on the Spanish military terminology, classified terms into such basic categories as ENTITY, ACTION, SITUATION, MEASUREMENT, and ATTRIBUTE. In this study, the classification of terms was first based on Faber’s work. Following this, on the basis of data analysis, amendments and additions were to be made if there were any. Details are presented in the following paragraphs.

As a consequence, in the peacekeeping domain, all of the glossary entries were classified in an inventory of five basic categories namely: ENTITY, ACTION, SITUATION, MEASUREMENT and ATTRIBUTE. ENTITY was then divided into ANIMATE ENTITY and INANIMATE ENTITY. INANIMATE ENTITY was then subdivided into CONCRETE ENTITY and ABSTRACT ENTITY. There were also general categories for ACTION, SITUATION, MEASUREMENT and ATTRIBUTE.

Figure 6

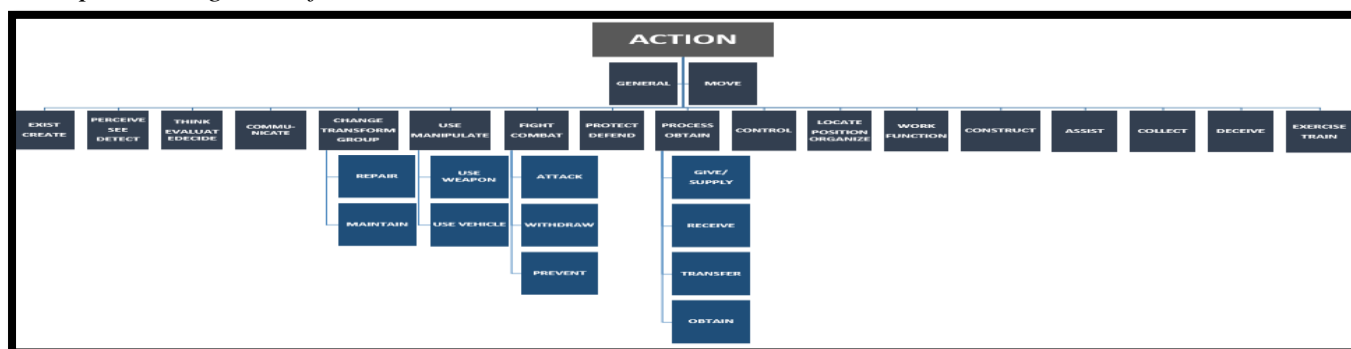
Conceptual categories of ENTITY



What can be seen from Figure 6 is that ENTITY was comprised of ANIMATE and INANIMATE ENTITIES. The main categories within ANIMATE_ENTITY were MILITARY/SOCIAL ROLE and GROUP/ORGANIZATION, which was further divided into MILITARY GROUP and CIVILIAN GROUP. INANIMATE_ENTITY, on the other hand, included 2 sub categories namely: CONCRETE INANIMATE ENTITY and ABSTRACT INANIMATE ENTITY.

Figure 7

Conceptual categories of ACTION



The main ACTION category was divided into 19 sub-categories, representing 19 main activity aspects of the peacekeeping domain. SITUATION was classified into CONDITION, STATE and SPACE, whereas MEASUREMENT was categorized into 6 distinct groups.

Figure 8

Conceptual categories of SITUATION

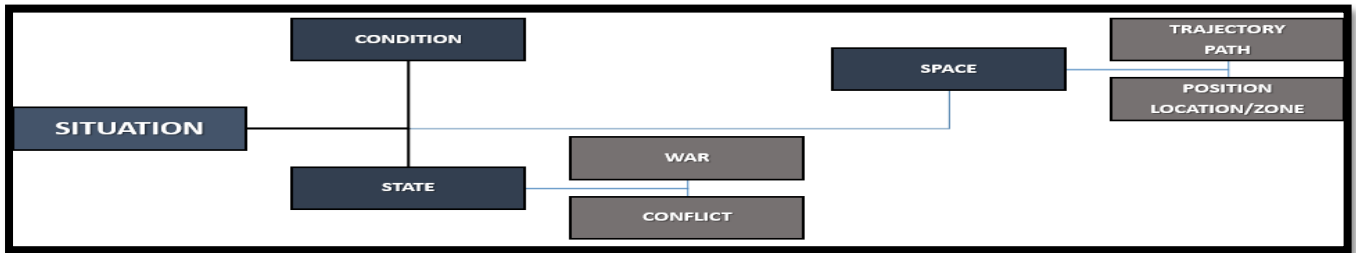
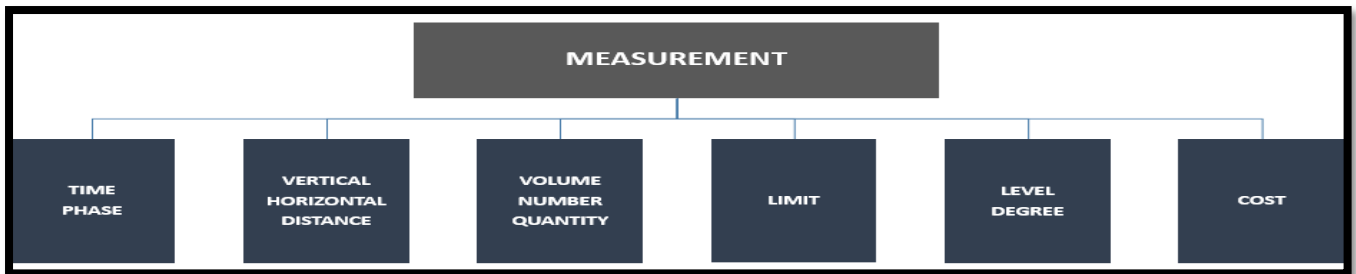


Figure 9

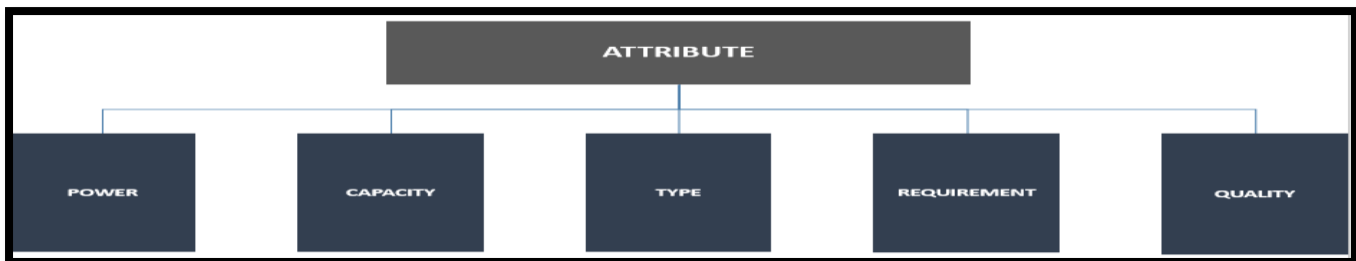
Conceptual categories of MEASUREMENT



Finally, ATTRIBUTE category was organized into 5 smaller categories namely: POWER, CAPACITY, TYPE, REQUIREMENT and QUALITY.

Figure 10

Conceptual categories of ATTRIBUTE



The following table illustrates how the categories were coded and how popular they were in the database.

Table 6

Coding and popularity of categories of military peacekeeping terms

Categories	Subcategories 1	Subcategories 2	Coding	Degree of popularity
ENTITY (1055 terms)	Animate Entity	Military/Social Role	A11	84
		Group/Organization	A12	124
	Inanimate Entity	Concrete Inanimate Entity	A21	389
		Abstract Inanimate Entity	A22	458
ACTION (200 terms)	General		B1	05
	Exist/Create		B2	01
	Perceive/See/Detect		B3	04

	Think/Evaluate / Decide		B4	27
	Communicate		B5	04
	Change/Transform / Group		B6	11
	Move		B7	19
	Use/Manipulate		B8	07
	Fight/Combat		B9	25
	Protect/Defend		B10	17
	Process/Obtain		B11	14
	Control		B12	28
	Locate/Position/ Organize		B13	03
	Work/Function		B14	03
	Construct		B15	02
	Assist		B16	15
	Collect		B17	09
	Deceive		B18	03
	Exercise/Train		B19	04
SITUATION (53 terms)	Condition		C1	26
	State		C2	20
	Space		C3	07
MEASUREMENT (55 terms)	Time/Phase		D1	11
	Vertical/Horizontal/ Distance		D2	06
	Volume/Number/ Quantity		D3	24
	Limit		D4	02
	Level/Degree		D5	10
	Cost		D6	02
ATTRIBUTE (78 terms)	Power		E1	15
	Capacity		E2	23
	Type		E3	13
	Requirement		E4	04
	Quality		E5	23

In short, within the scope of this study, 1441 terms were conceptually analyzed classified into five main categories namely ENTITY, ACTION, SITUATION, MEASUREMENT and ATTRIBUTE. Among these, ENTITY was the biggest group, consisting more than a thousand concepts. ACTION was the second largest group with about 200 concepts. ATTRIBUTE, MEASUREMENT and SITUATION ranked third, fourth and fifth with the total number of concepts being 78,55, and 53.

4.3. Peacekeeping knowledge structures

4.3.1. Filling in conceptual gaps

From all of the entries in the glossary, a first set was selected and queried in the corpus based on the multiword terms that contained a common head. In this way, conceptual gaps in the glossary were easily identified and new concepts were rapidly accommodated in the conceptual structure derived from the glossary. For example, there are terms that contain EVACUATION as their head such as AEROMEDICAL EVACUATION. Nevertheless, not all of the compounds reflected in the corpus were included in the

glossary, including CASUALTY EVACUATION, IN-MISSION EVACUATION, OUT-OF-MISSION EVACUATION and EVACUATION FACILITIES.

Figure 11

Concordances of EVACUATION in Sketch Engine

	Left context	KWIC	Right context
1	story only facility 90 6.	Dental only facility 91 7.	Aero-medical evacuation module 92 6.
2	tion with MSS, conduct medical assessments of potential regional medical	evacuations	centres. MSD and MSS shall also periodically assess existing region
3	ely approval of critical, time-sensitive medical operations, including medical	evacuations	(MEDEVAC), the Medical Services Section shall report directly to the Direct
4	level, including the operational status of TCC/PCC medical units and force	evacuations	assets. (b) Assists the FMO to audit TCC/PCC medical units, ensuri
5	he above should be supported by a responsive combination of land and air	evacuation	capabilities involving fully equipped road worthy ambulances, military or civi
6	(c) Road and rail network: state and suitability of land transport system for	evacuation	by land. (d) Airports: location and suitability of airports and helicopte
7	Airports: location and suitability of airports and helicopter landing zones for	evacuation	by air and maintenance of medical supply chain. (e) Seaports and ri
8	(e) Seaports and rivers: location and suitability of seaports and/or rivers for	evacuation	deployment of hospital ships and maintenance of medical supply chain. /s
9	tion of local, TCC or UNCE medical facilities; and air and ground in-mission	evacuation	capabilities. For PKOs facing foreseeable risk of accident or violent t
10	through establishing medical facilities within the mission, with land and air	evacuation	services to bridge the different levels of medical care. A tiered, multi
11	uation times by land, rotary and fixed-wing platforms, availability of suitable	evacuation	routes, landing zones and air-fields, evacuation by night and in bad weather
12	ms, availability of suitable evacuation routes, landing zones and air-fields,	evacuation	by night and in bad weather conditions, requirements for cross-border flight
13	Field demonstration: Field demonstration of casualty	evacuation	is a good way to assess the emergency medical treatment and casualty eva
14	able to treat casualties suffering serious trauma injuries and carry out the	evacuation	of stabilized trauma patients as well as patients suffering from acute life thr
15	required medical personnel and equipment, and patient transportation and	evacuation	facilities for road and aeromedical evacuation. Through the FGS anc
16	the point of injury, the emphasis is on resuscitation and stabilization prior to	evacuation	to the appropriate level of care. In serious injuries, definitive treatme
17	he support of the mission administration. Decision for out-of-theatre	evacuation	must be coordinated with MSD for approval. MSS provides guidance
18	thin one hour of injury. 2. Medical evacuation MEDEVAC entails the	evacuation	of a casualty between two medical facilities; either within the mission area (i
19	time of available medical resources within the mission area, including air	evacuation	assets and local infrastructure, engineering resources, warehousing, cold st
20	ents, advanced life support, trauma management, minor surgery, casualty	evacuation	and preventive medicine matters. The clinics have 5 beds and can n

In addition, based on the concordances of EVACUATION, which can be re-utilized as contexts in the knowledge base, numerous other types of information can be extracted. For instance, such information as the locations (SEAPORTS, RIVERS, THEATERS OF OPERATION) where EVACUATION is conducted were also available in the corpus or transport means (HELICOPTERS or MILITARY VEHICLES) which are employed. This is true as regards to other frames.

In addition, apart from definitions and corpus information, language structure of compound terms can also be used to extract important information about semantic relations. It also is the head of many multi-word expressions (MWEs), which are a frequent way to condense and concentrate domain-specific knowledge (Sager et al. 1980; Štekauer et al. 2012; Fernández-Domínguez 2016).

4.3.2. Constructing knowledge structures

From the data collected from the analysis of terms' definitions and corpus analysis, the researcher them constructed knowledge structures of terms and events. Within the scope of this study as well as due to the limitations of time and efforts, for this study only, the knowledge structures of 05 typical events of the peacekeeping domain were built including:

- + EVACUATION (Figure 4.38)
- + ASSAULT (Figure 4.39)
- + OPERATION (Figure 4.40)
- + MINE (Figure 4.41)
- + SEARCH AND RESCUE (Figure 4.42)

Figure 12

Knowledge structure of EVACUATION

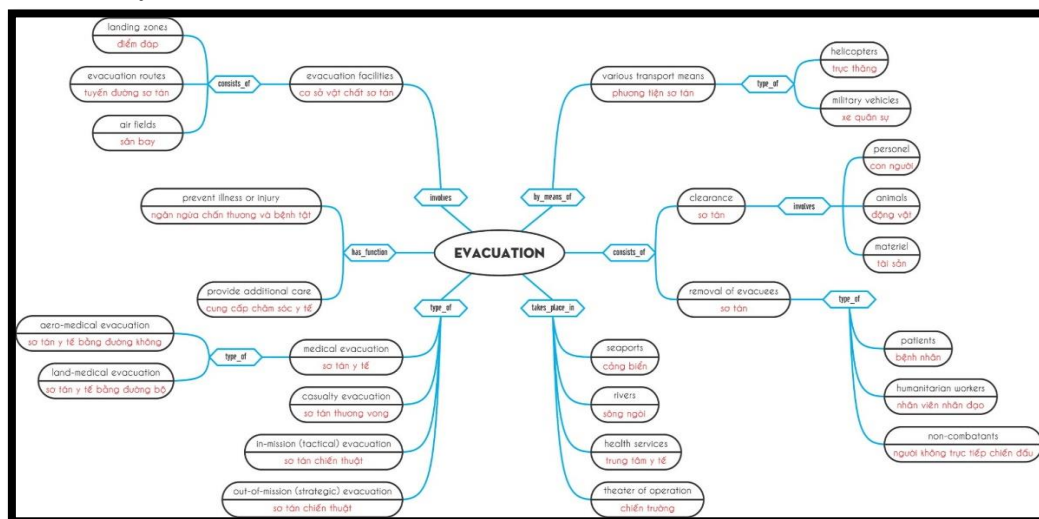


Figure 13
Knowledge structure of ASSAULT

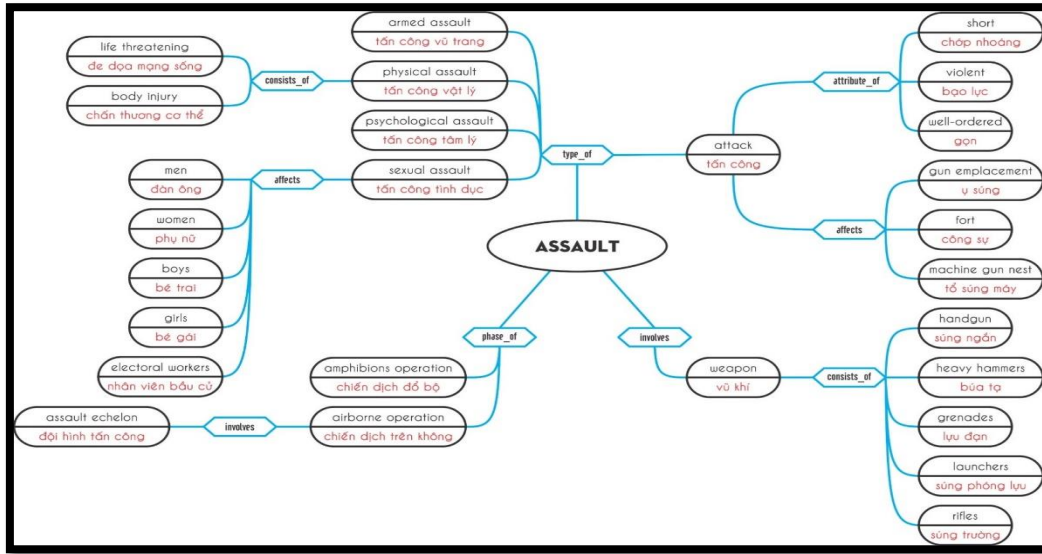


Figure 14
Knowledge structure of OPERATION

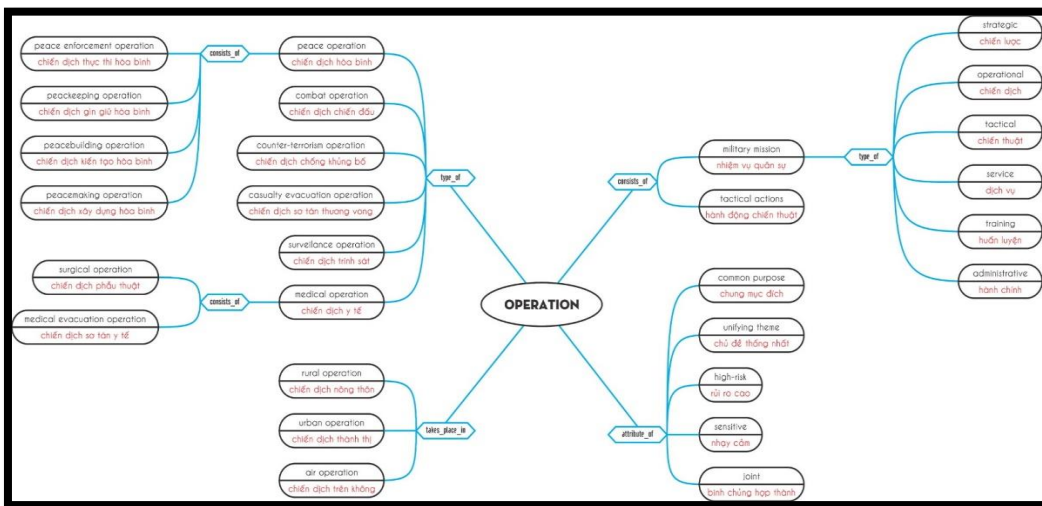


Figure 15
Knowledge structure of MINE

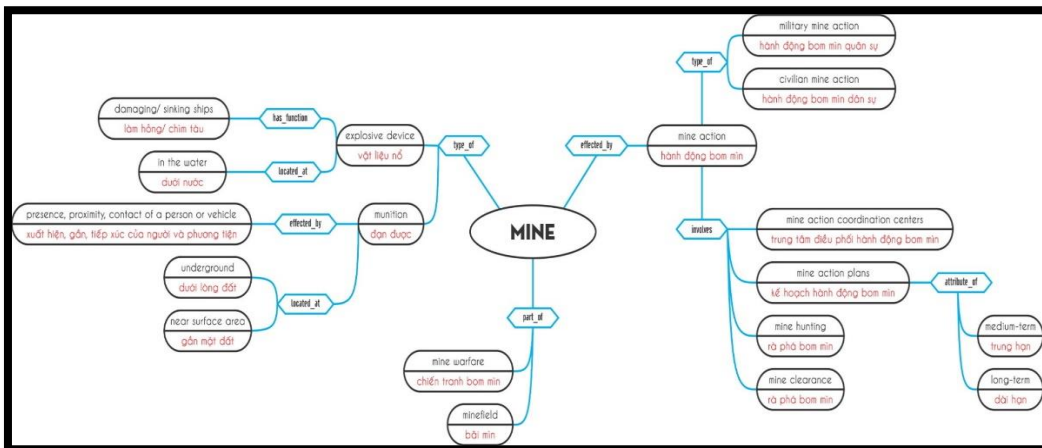
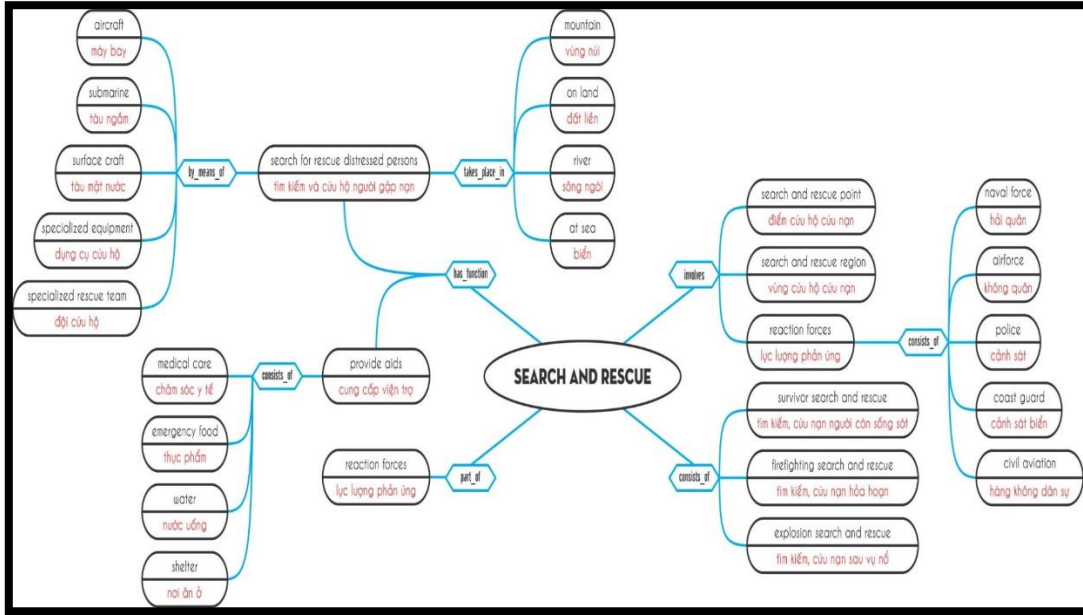


Figure 16

Knowledge structure of SEARCH AND RESCUE



4.4. Perception of experts of the findings

4.4.1. Findings from the focus group interview

Phase I

In this phase, respondents’ perception of the finding of semantic relations were requested. When asked about their general opinion of the discovered inventory of 22 semantic relations, four respondents shared different impressions. Respondent 1 was quite excited since previously he thought terms existed separately. Knowing that terms are connected interested him. Respondent 2, on the other hand, noted that he “often note down terms individually”, trying to memorize them. While Respondent 4 was quite impressed by the findings, Respondent 3 believed that the discovery “will make learning way easier for (...) non English major peacekeepers”.

When inquired to comment on the relations, Respondent 1 thought the inventory of 22 semantic relations was “quite reasonable” since after reading the analysis and evidences he could understand “why terms are connected and how they are connected”. Moreover, he added that it is real that there are such semantic relations in peacekeeping discourse. Respondent 2 looked at the finding from a different angle. He noted “semantic relations in the corpus is more diverse than in the definitions”. The reason for this was that, he believed, “peace keeping documents (...) describing real event or reporting”, whereas definitions are fixed. This was agreed by Respondent 1 when he gave an example of attribute_of which is more in number in corpus analysis compared to type_of. Respondent 3 was aware of the fact that the relations were identified on the basis of the contexts and the words appearing before and after terms. He gave an instance of consists_of which could be found by words like including, containing etc. Respondent 2, partly agreeing with Respondent 3, stated that some relations were discovered “only by contextualizing” such as the relation involves. He added “only by understanding the context can we understand the parties that are involved in the event”. This idea was agreed by Respondent 4 who also found that the identification of these semantic relations was “practical” and that the relations “really do exist in the field of peacekeeping”. He also complemented that more examples of the functions should be provided as it was a “covering” or “umbrella” relation.

As far as how useful the relations are to users is concerned, whilst Respondent 3 said they helped him understand the context more, Respondent 4 reckoned that more attention is paid to the relations while he was doing tasks including translation and reading documents. For Respondent 1, the findings were of great significance, adding that these semantic relations could be more helpful for non English major peacekeepers when presented in knowledge structures. Respondent 2, on the other hand, claimed that he

could know how to use context to understanding what was being said or written. He further commented “when you know there are other terms related to, you like have a...picture of the context in your mind”. Regarding whether there are other semantic relations other than these 22, Respondent 3 stated that there would be a possibility of discovering more relations in case the corpus expands. Respondent 1, while being certain that the “findings cover all semantic relations”, was in agreement with Respondent 3 as long as the data was bigger. This idea was also shared by Respondent 4.

When interrogated if the findings should be included in the education and training of peacekeepers or not, all respondents held a common view. Respondent 1 believed that as long as learners were “aware of the connection between terms”, they would develop a better approach to learning, in which they would “learn terms as a group, not individually”. Respondent 4 supported the employment of the semantic relations in training since he believed that “they activate the structure of the whole event”. Respondent 2 and 3 shared a common view that the findings had great “educational implications”, claiming that they were beneficial for both language training and military knowledge training.

In summary, it can be concluded that all respondents shared a common perspective that the identification of 22 semantic relations was practical and beneficial to peacekeepers, especially non-English majors. Although they also asserted that these semantic relations are existent in the peacekeeping domain, they added that there could be more once the size of the database was enlarged. Additionally, it was agreed by all that the relations are significantly applicable in education and training as regards both language and military knowledge. Therefore, it is obvious that the findings from this section contributes to further validating what have been stated by the researcher in Section 4.1.

Phase II

This phase focuses on generating information regarding the respondents’ views on the conceptual classification of terms. Despite facing difficulty in understanding at first, Respondent 1 and 2 found this categorization was necessary since they believed that it would be easier for terms, like common words, to be managed when classified into groups. They noted that “it is not the part of speech that decides what kind of concept a term belongs to but the its definition and its role in context”. Respondent 1 added that the five categories identified in this study highlighted the classed of terms and how they were related. Respondent 3 shared his thought that the five categories covered all concepts in the glossary because each terms, when looked in details, had “the features that meet each category”. Respondent 2 additionally stressed the reasonable way of subdivision of ACTION category. He believed that since peacekeeping forces are tasked to complete various mission and 19 ACTION sub-categories could cover all tasks and activities in the domain. He highlighted that “grouping is a great way of managing and memorizing”. Respondent 1, on the other hand, based on his practical experience to claim that “terms are mostly ENTITY, either they are animate or inanimate”. This is similar to the findings in Section 4.2, in which the author confirmed that ENTITY was the largest group with more than one thousand terms.

What questioned whether to introduce the conceptual categories into training, Respondent 4 thought that the conceptual categorization “allows learners to (...) recognize the classification of concepts that belong to a group”. Respondent 1 believed that learning terms when categorized in groups not only activated the domain and context in which the terms exist, but also “accelerate their thinking, processing and reasoning (...) when translating and interpreting (...) and in communicating”. Respondent 3 also agreed that this approach helped learners “understand more about terms and context”. Memorizing was another benefit of applying term categorization in training which was highlighted by Respondent 2.

To sum up, from the analysis of the transcript, it is clear that the respondents were agreeingly valued the conceptual categorization of the terms, underscoring that the classification not only was suitable and covered all the terms, but also was advantageous and constructive when used in real-time task performance and training.

Phase III

In Phase III, respondents were inquired to evaluate the five proposed knowledge structures and suggested Vietnamese equivalences of terms. Respondent 1 and 3 found the resources “useful” and “effective” for they could understand more about connected terms within one particular situation (event). Respondent 4

brought up the task of translation and emphasized that the resources were of great assistance in a way that he could look up related terms, which could save him a considerable amount of time. He, furthermore, stressed the use of colours in representing the knowledge structures. Respondent 2, while highlighting the comprehensiveness of the semantic network, claimed that it helped him “gain a deeper understanding of the concepts”. With respect to the Vietnamese translations, all respondents shared a common view that the terminological information was “precise” “accurate” and “mission-relevant”. They also agreed on the naturalness, precision and comprehensibility of the Vietnamese equivalences.

In addition, Respondent 2 pointed out that fact that the proposed knowledge structures “contain more terms than there are actually in the glossary”. In fact, there were terms which were present in the structures but not in the glossary. This outcome was further elaborated on by Respondent 1 stating that “through building knowledge structures, you can actually add more knowledge to the event and supplement terms that are missing”. This was in accordance with the findings of the researcher when he discovered that more terms were activated and thus added to the termbase. This actually contributed to the identification of conceptual gaps when constructing knowledge structures and the enrichment of the termbase.

Phase IV

When asked about the limitations of the proposed terminological resource, Respondent 2 pointed out that one biggest problem was the limited number of terms involved in the study. There should be more rather than just 1441 terms in the glossary, because he asserted that the more terms were included, the more generalized the results were. Meanwhile, Respondent 3 reckoned that the terminological resource did not include phonemic transcription of terms since he believed pronunciation was another great challenge apart from listening comprehension. Respondent 1 highlighted the graphic aspect of the terminological resource and focused on the lack of illustrative images or pictures. This is because he perceived that “having illustrations would help users understand more and faster”. Finally, similar to Respondent 2, Respondent 4 held a view that the resource needed expanding in terms of term coverage. He opined that the current resource mainly deals with general peacekeeping terms and “does not delve into specific narrow specialties”, while Vietnamese peacekeepers performing tasks overseas often include medical officers, engineers/sappers, observers and staff officers.

Respondent 3 then added a further comment, mentioning the 2D representation of the knowledge structures. This was actually supported by all respondents. In fact, they claimed that the representation of terminological resource should be digitalized. In other words, they noted “the 3D representation will be much more user-friendly”. The rationale behind this suggestion was that a digitalized resource integrated into mobile devices like a smart phone as an app could make it more approachable and user-friendly and could reach a broad population of users.

To conclude, all respondents acknowledged the importance of peacekeeping terminology knowledge towards successful task performance. While the main challenges for most peacekeepers remained limited listening comprehension skills and lack of peacekeeping terminology, the proposed terminological knowledge with Vietnamese equivalences played a significant role in their performing assigned task as it helped ease their understanding, boost their translation and improve their efficiency. However, limited to 2D form only, the participants suggested that the proposed terminological knowledge should be digitalized and transformed into an interactive 3D form with more additional features such as illustrative images.

4.4.2. Findings from the survey questionnaire

The survey questionnaire is composed of 28 questions categorized into 4 distinct parts. In Part 1 (General Information), the questions aim to generate information about participants’ previous knowledge of peacekeeping terminology and experience. Findings from this part, which have been discussed in Chapter 3, have contributed to providing more information about the 91 participants as regards their working experience, English language training, military English training and language use during their task performance.

Part 2 (Role and Availability of Terminological Resources to Peacekeepers) consists of 15 questions (Q) from Q6 to Q20, focusing on participants’ views on the role of terminological knowledge resources in performing peacekeeping tasks and on how accessible terminological knowledge resources to peacekeepers.

The findings of this Part was discussed in details in Section 1.1, Chapter 1, serving as a substantial evidence addition to the rationale of this study.

Part 3 (Evaluation of Proposed Terminological Resources), on the other hand, gathers data about how participants evaluate the terminological knowledge resources proposed by this study.

Table 8

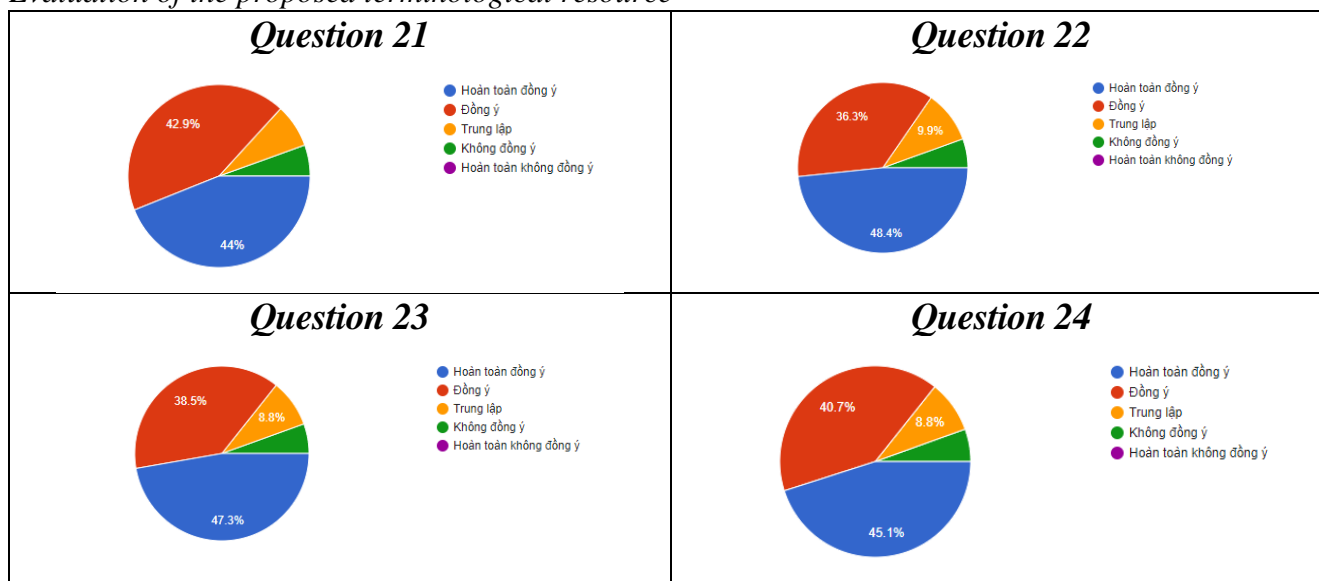
The evaluation of proposed terminological knowledge base

QUESTION	MEAN	SD
<i>Q21. In your opinion, the proposed terminological resource is organized scientifically, logically and understandably.</i>	4.25	0.82
<i>Q22. In your opinion, the proposed terminological resource is more approachable compared to other resources.</i>	4.27	0.86
<i>Q23. In your opinion, the proposed terminological resource organized in a way that terms are semantically related facilitates rapid and precise knowledge acquisition.</i>	4.27	0.84
<i>Q24. In your opinion, the proposed terminological resource provides more assistance to you while communicating, translating and interpreting.</i>	4.25	0.83
<i>Q25. Terms, organized in their semantic relations with other, help you learn more about the peacekeeping domain.</i>	4.26	0.84

It is clear from Figure 17 that, most of the responses (more than 80%) agreed that the proposed terminological resource is not only understandable and usable, but also more approachable compared to other resources (mainly military English dictionaries and glossaries) (Q21 and Q22). This group also expressed their consent that the proposed knowledge structure facilitates rapid and precise knowledge acquisition and provides more assistance to peacekeepers while performing such tasks as communication, translation and interpretation (Q23 and Q24). Lastly, Q25 highlights that more information about the peacekeeping domain is made available through this terminological resource (85.8%).

Figure 17

Evaluation of the proposed terminological resource



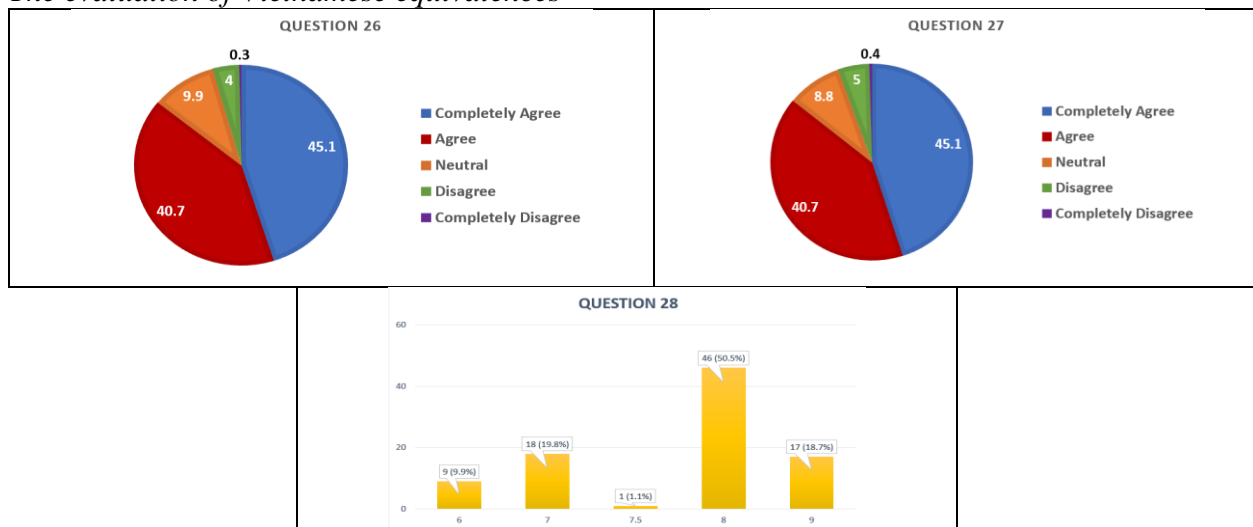
These findings bear a striking similarity with the result from the focus group in which the respondents shared a view that the proposed resource was “useful” and “effective” since it helps them understand more about connected terms within one particular situation (event). This, accordingly, speeds up and enhances the process of acquiring knowledge and offers greater support to peacekeepers.

Finally, Part 4 (Evaluation of Vietnamese Equivalences) digs further into participants’ opinion about the accuracy and comprehensiveness of the proposed Vietnamese equivalences of the terms in question.

Table 9*The evaluation of Vietnamese equivalences*

QUESTION	MEAN	SD
26. Providing Vietnamese equivalences of peacekeeping terms support your knowledge acquisition.	4.26	0.81
27. The Vietnamese equivalences are represented scientifically, appropriately, and accurately	4.25	0.83
28. How do you rate (out of 10) the accuracy of the Vietnamese equivalences?	7.79	0.86

As can be seen from Figure 18, 85.8% of the participants are consented that the Vietnamese equivalences of peacekeeping terms provided in the terminological resource made great contribution to acquiring military knowledge (M=4.26, SD=0.81). Likewise, around 85% shared their views that the Vietnamese equivalences are represented scientifically, appropriately and accurately (M=4.25, SD=0.83). When asked to rate the Vietnamese equivalences out of ten regarding their accuracy, 69.2% of the partakers gave the rate of 8 and 9, whereas 20,9% rated 7 and 7.5 out of 10. Only 9.9% rated 6 out of ten (M=7.79, SD=0.86).

Figure 18*The evaluation of Vietnamese equivalences*

In brief, a majority of 91 participants in the survey questionnaire gave a dramatically positive evaluation of the proposed knowledge structure or resource. Not only did they highlight the importance of pre-mission military language training, but also valued access to a bilingual terminological resources instead of military dictionaries. Moreover, with regards to the proposed terminological resource, most of the partakers emphasized its considerable contribution to users' translating of texts, understanding of messages and acquiring more specialized knowledge. Finally, most peacekeepers taking part in this survey questionnaire welcomed the provision of the Vietnamese equivalences, stating that they supported their knowledge acquisition and task performance.

CHAPTER FIVE: CONCLUSION

This chapter reviews the researcher's journey by providing the summary of the study, drawing out implications, and pointing out the contributions of the study to the field. The limitations during the course of the study will also be acknowledged. Moreover, recommendations will finally be proposed to draw out potential directions for future research.

5.1. Recapitulation of the study

The last five years have witnessed endless efforts as well as time devotion of the novel researcher to the completion of this scientific project. The current research project was strongly grounded on the practical issues that

have existed for some time in the implementation of tasks at the VNDPO. Its main aim was to manage military peacekeeping terminology in a way that allows users to access a wider variety of linguistic and conceptual information. In other words, its main task involves transforming an alphabetically arranged list of terms into a bilingual terminological knowledge base. In order to achieve this aim, the researcher sought to find answers to the following research questions: “1. What are fundamental semantic relations of English military peacekeeping terminology based on Frame-based Terminology management approach?” and “2. What are salient conceptual categories of English military peacekeeping terminology based on the semantic relations identified?”

5.1.1. Fundamental semantic relations of English military peacekeeping terminology

In order to extract semantic relations from the data base, first of all, semantic analysis was employed with terminological definitions taken from 02 military dictionaries namely DOD Dictionary (edition 2021) and AAP-06 (edition 2021). In addition to this, the comprehensive analysis of the corpus was conducted with the main focus laid on term concordances. The results revealed that 22 fundamental relations were identified with the total number of 19,502 relations, of which 3,475 relations were taken from the definitional analysis and 16,027 relations were taken from the corpus analysis. These relations were *type_of*, *has_function*, *attribute_of*, *involves*, *effected_by*, *part_of*, *takes_place_in*, *affects*, *takes_place_before/during/after*, *conducted_by*, *located_at*, *result_of*, *causes*, *for_reason_of*, *excludes*, *subordinate_to*, *coordinates*, *phase_of*, *delimited_by* and *method_of*. Among these semantic relations, three most popular ones were *type_of*, *has_function* and *attribute_of*, taking the first, second and third place with 3,930, 3,724 and 3,677 instances in turn. With the total number of occurrences ranging from 101 to 994, the middle group included 17 relations including *involves*, *effected_by*, *part_of*, *takes_place_in*, *affects*, *takes_place_before/during/after*, *conducted_by*, *located_at*, *result_of*, *causes*, *for_reason_of*, *excludes*, *subordinate_to*, *coordinates*, and *phase_of*. *Delimited_by* and *method_of* were identified as the two least frequently appeared relations with the frequency of only 78 and 54 respectively.

5.1.2. Conceptual categories of English military peacekeeping terminology

1441 concepts in the data base were categorized by the method of thematic analysis. More specifically, the terminographic definitions of all terms were analyzed, in which the superordinate term (GENUS) in each definition was first used as a guideline for assigning each concept a general category. Following that, semantic relations extracted from the definitions’ DIFFERENTIAE were utilized to relate categories in a general frame-like structure and concepts in semantic networks.

All concepts were classified into five main categories: ENTITY, ACTION, SITUATION, MEASUREMENT and ATTRIBUTE. While ENTITY consisted of two sub-categories, ACTION was divided into 19 sub-categories. SITUATION, MEASUREMENT and ATTRIBUTE were also categorized into three, six and five correspondingly sub-groups. Among these categories, ENTITY was the biggest, containing more than one thousand concepts. This was followed by ACTION with some 200 member concepts. ATTRIBUTE, MEASUREMENT and SITUATION came next with the total number of concepts being 78,55, and 53 respectively.

5.2. Contributions of the study

5.2.1. Theoretical contribution

First of all, this study adds more empirical evidence to the applicability of cognitive-based terminology theories in general and Frame-based Terminology in particular into terminology management. Although this study is not the first terminology research that employs cognitive-based terminology theories as its theoretical premises, it is its application of Frame-based Terminology and cross-linguistics that makes it the first in Vietnam. While Frame-based Terminology was actually applied to identify semantic relations and conceptual categories of military peacekeeping terms, the thesis’ cross-linguistic nature was boldly represented through the introduction of Vietnamese equivalences in the proposed knowledge structures.

In this study, apart from the term relations borrowed from Faber (2012) for the development of the Analytical Framework, 10 more semantic relations were additionally identified to describe relations found in the data source. These consists of *subordinate_to*, *takes_place_before/during/after*, *by_means_of*, *consists_of*, *for_reason_of*, *excludes*, *conducted_by*, *method_of*, *coordinates*, and *involves*. This addition serves as a supplementation of semantic relations when it comes to terminology management in other domains.

5.2.2. Methodological contribution

The methodological contribution of the study lies in the adoption of a mixed method in association with the embedded design of Creswell and Clark (2011). Particularly, the study employed a combination of a semantic analysis, thematic analysis, and corpus analysis to extract information needed to answer the two research questions. Findings were then validated by consulting peacekeepers and experts in the field via applying a focus group interview and a survey questionnaire.

5.2.3. Practical contribution

This study's findings suggest practical ideas for other sub-fields in the military domain such as military medical care, military engineer, military intelligence etc. The research findings supply peacekeepers, sappers, translators, military observers serving both at home and overseas a powerful practical tool. Additionally, this resource, from the point of view of an English language instructor, serves as an effective reference material and could be used in classroom for peacekeepers during their pre-mission language and military knowledge training.

5.3. Implications of the study

5.3.1. Implications for theory

The theoretical implications drawn from the findings of this study concern the applicability of cognitive-based terminology theories in general and Frame-based Terminology in particular for the management of terminology of various domains. As a matter of fact, Frame-based Terminology can be effectively employed for terminology research and management. It facilitates the mental representation of terminological units and their relations with other units in the same domain, which is key to build terminological resources.

The identification of more relations in the peacekeeping domain suggests that it is the nature of the discourse and domain that determines what semantic relations are there. This also implies that pieces of new semantic relations can be potentially discovered in further research in other domains. Likewise, the conceptual categorization of peacekeeping terms also paves the way for further work in other domains, in which other categories can be potentially discovered, all of which in return contributes to the theoretical and practical aspects of Terminology Management as a whole.

5.3.2. Implications for research

Firstly, from its findings, this study echoes the need of conducting research on semantic relations and conceptual categorization of terms in peacekeeping sub-fields including peacekeeping medical care, peacekeeping engineer, peacekeeping staff and command etc. This study, in fact, only covered general peacekeeping terms without dealing with other sub-fields.

Secondly, although the adoption of various data sources and research methods is recommended in generating information sufficient to answer the two research questions, the number of studies employing such methodology remains limited. Also, in order for the findings to be validated, such methods as semantic analysis, thematic analysis and corpus analysis were utilized in association with the survey questionnaire and focus group interview with peacekeepers and experts. Therefore, this study adds more empirical evidence to the effectiveness of such combination.

5.3.3. Implications for practice

Terminology serves various practical applications, including specialized dictionary creation, specialized translation, document indexing, classification, knowledge modeling, language planning, and standardization. Consequently, Terminology endeavors to address the questions posed by these applications. While a lexicologist can analyze words without the immediate goal of compiling a dictionary, a terminologist engages with terminological data with at least one of the aforementioned applications in mind (L'Homme, 2019). Regardless of whether Terminology adopts a descriptive or prescriptive approach, it is invariably linked to the production of terminology resources tailored for specific term users. The outcomes of this research will be beneficial to peacekeepers, spanning a range of English language proficiency levels, enabling them to communicate more effectively. The proposed resource facilitates easier access to terms and enhances comprehension of their context, thus promoting improved communication. Furthermore, as a

bilingual terminological resource, the study's final output can serve not only as a reference for translators and interpreters during their translation and interpretation work but also as a valuable tool in peacekeeping training courses, offering language and knowledge support to peacekeepers before their deployment.

Additionally, terms, when presented in relations with each other, can provide disciplinary and linguistic knowledge to users. As a matter of fact, those who have limited exposure to peacekeeping environment can benefit from this study as they can access broader knowledge of the context in which the term in question belongs to.

Furthermore, with the aid of computer science, in which tags as well as different forms of diagrams and mind maps link one term to others systematically, the multidimensionality of terms relations can be presented in computer environment to enrich information for the convenience of term users. The terminological resource will be undeniably beneficial to the peacekeeping academic population including peacekeeper, experts, as well as teachers and students in the English - Vietnamese bilingual academic environment.

5.4. Limitations and suggestions for further research

Firstly, the findings were mainly based on the analysis of the database rather than specialized knowledge expertise. Despite his making full advantages of knowledge in English linguistics and military experiences, it was impossible for the researcher to develop a comprehensive term resource right from the beginning like specialist experts. Therefore, it would be more efficient to start the project with the participation of other co-researchers such as linguistic and specialist experts.

Secondly, since not all peacekeepers are English fluent, the terminological resource with terms represented in relation with others and Vietnamese equivalences are still insufficient for some to fully understand and acquire disciplinary knowledge. In such cases, such additional information as images could possibly be beneficial. It is argued that the conceptual representation provided by images schemas can activate linguistics information in the form of specialized knowledge units. Frame-based Terminology supports a multimodal description of specialized concepts in which the information contained in terminographic definitions meshes with the visual information in images for a better understanding of complex and dynamic concept systems (Faber et al. 2007). Mayer and Gallini (1990) also highlighted the role of graphical information in specialized texts and that images are non-linguistics resources for the representation and transmission of specialized knowledge which enhance the understand of a scientific system. In this regard, it is evident that images, as a type of communicative sign, need to be analyzed in greater depth.

Thirdly, pronunciation is mentioned as one of the biggest challenges for peacekeepers, especially those who are not majored in English language. However, such information as phonemic transcription of terms (as in military dictionaries) was not included in the knowledge structure. As a result, it is highly recommended that the terminological resource include phonemic transcription of terms. This is believed to benefit peacekeepers' pronunciation and listening comprehension.

In previous studies, terminological resources were significantly more useful and approachable when they were presented in interactive 3D interface. However, the limited ability in using computer aided programs prevented the researcher from presenting and recommending more sophisticated and knowledge-compacted term systems. And IT engineer could have aided to present term system and sub-systems more attractively and in a user-friendly way.

It is incomplete not to mention the fact that due to limitations of time and resources, the researcher did not manage to construct knowledge structure of all events available in the discourse, but only five typical ones (EVACUATION, ASSAULT, OPERATION, MINE, and SEARCH AND RESCUE). In fact, the findings from the interviews and questionnaire could have been more representative if knowledge structures of all events had been included.

Despite the aforementioned shortcomings, the resulting term products bring significant assistance to term users in general and peacekeepers in particular. This approach can be applied in other specialized disciplines other than military peacekeeping: beginning with semantic relation extraction from terminological definitions and corpus, concept categorization and translation, and consultation with peacekeeping experts and term users. It is recommended that further research be conducted in this direction to develop useful term resources to satisfy the needs for term users in other domains as well.