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越南語腹部詞之認知語意分析：以 *bụng*、*lòng* 與 *ruột* 為例

A cognitive semantic analysis of Vietnamese abdominal terms:

Bụng, lòng, and ruột

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Foreword

世界固三层 實形梦
 脬齠於层爻
 悉赭齠於层仁
 悌齠於层匹
 澄齠咖啡於层爻
 澄齠烟局莪於层匹
 棘心层爻
 情感层匹
 輪於层爻
 意於层匹
 霖辭求古劍蹟移空粘坦
 谢霽青辻至為輪麻停
 谢風波霽飒無情恨过
 脬馱枝幘脬馱合意
 桉齠悉
 思齠肫

Thế giới có ba tầng: Thực, hình, mộng. Lòng (ruột) nằm ở tầng một. Lòng đỏ trứng nằm ở tầng hai. Lòng (dạ) nằm ở tầng ba. Đắng của cà phê ở tầng một. Đắng cay của cuộc đời ở tầng ba. Quả tim ở tầng một. Tình cảm ở tầng ba. Thân ở tầng một. Ý ở tầng ba. Trăm năm cầu cổ kiếm, chân đi không chạm đất. Tạ mây xanh trên trời vì mình mà dừng. Tạ phong ba bão táp vô tình thổi qua. Có người che ô. Có người hợp ý. An trong lòng, tư trong tim.

(Vietnamese reading from *Chữ Nôm*)

The world has three layers: Reality, Form, and Dream. The abdomen lies in the first layer. The core of the egg (yolk) lies in the second layer. The ABDOMEN lies in the third layer. The bitterness of coffee is in the first layer. The bitterness of life is in the third layer. The physical heart is in the first layer. The emotional heart is in the third layer. The body is in the first layer. The mind is in the third layer. I've been seeking a treasure for eternity, my feet not touching the ground. Thank the clouds in the sky for stopping a while. Thank the storms for sweeping by. Someone held an umbrella for me. Someone shared my mind. I felt peace in my heart, thus thoughts came to my mind.

(English translation)

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摘要



本研究基於自建的語料庫，探討越南語中“bụng”（腹）、“lòng”（懷）及“ruột”（腸）這三個詞的多義性，並強調其在越南語「腹部中心論」（abdominocentrism）中的核心角色。這三個詞透過概念相關的轉喻（metonymy）和隱喻（metaphor）來形成連貫的語義網絡，而「原則多義性」理論（Principled polysemy theory）指導了意義分析和辨識過程。本研究方法與傳統依賴作者主觀解釋逐一系列意義的方法，如字典或先的研究，有明顯對比。作者將這三個詞的語義延伸分為三個層次：身體、空間和認知，並且利用認知語言學的三種工具——轉喻、圖像圖式（image schemas）和隱喻，研究揭示了這些多義意義之間的關聯。研究結果顯示，這三個詞的基本語義源自於「腹部概念」，以及 11 個延伸語義和一個語義群（semantic cluster），多義性源於這些詞所描述的身體部位重疊，使得它們可以互換使用。然而，由於每個詞指涉了身體的不同部位的義項，所以三個詞各別也保留了獨特的語義屬性。這種區別在“lòng”這個詞中特別明顯，“lòng”在越南語中被認為是身體的核心，涵蓋了最廣的範圍，包括了“bụng”和“ruột”。因此，“lòng”展現了最多樣的隱喻表達，成為越南語腹部中心論的核心概念。

關鍵詞：“bụng”（腹）、“lòng”（懷）、“ruột”（腸）、概念化、腹部中心論、越南語、隱喻、轉喻、圖像圖式

Abstract



This corpus-based study examines the polysemous meanings of the Vietnamese words *bụng* (belly), *lòng* (abdomen), and *ruột* (intestines), highlighting their central roles in the embodied concept of Vietnamese abdominocentrism. It demonstrates how these terms are interconnected through conceptually relevant metonymic and metaphoric associations within a coherent semantic network, with Principled Polysemy guiding the sense identification process. This theory-driven approach to lexical polysemy in Vietnamese contrasts with traditional methods that rely on the author's subjective interpretations to catalog these senses individually, as seen in dictionaries or previous studies. The study categorizes the sense extensions of these three terms into three levels: body, space, and cognition. Utilizing three tools of cognitive linguistics—metonymy, image schemas, and metaphor—at these levels, the study reveals how these polysemous senses interrelate. The findings identify three primary senses rooted in the BELLY concept, alongside 11 extended senses and one semantic cluster. The polysemy arises from the overlap in the body parts these words describe, allowing for their interchangeable use. Nevertheless, each term also retains unique semantic properties due to the distinct areas of the body they cover. This differentiation is particularly notable with *lòng*, which is regarded as the core of the body in the Vietnamese language, covering the most extensive area and including both *bụng* and *ruột*. As a result, *lòng* displays the most varied metaphorical expressions, positioning it as the central concept of Vietnamese abdominocentrism.

Keywords: *bụng*, *lòng*, *ruột*, conceptualization, abdominocentrism, Vietnamese, metaphor, metonymy, image schemas

Table of Contents



Foreword	i
Acknowledgements	ii
摘要	iii
Abstract	iv
Table of Contents.....	v
List of figures	viii
List of tables	x
List of abbreviations and coding conventions.....	xi
Chapter 1 Introduction	1
1.1 Preliminary.....	1
1.2 The language and its speakers.....	6
1.2.1 Vietnamese: An overview	6
1.2.2 Vietnamese monosyllabic structure.....	7
1.2.3 Vietnamese classifiers	9
1.2.4 Vietnamese writing system	10
1.2.5 Composition in Vietnamese	14
1.2.6 Reduplication in Vietnamese.....	15
1.3 Clarification of body part terminology and special cases	17
1.4 Dictionaries revisited.....	19
1.5 Research questions	24

1.6 Organization of the thesis	26
Chapter 2 Literature review	27
2.1 Embodiment theory	27
2.1.1 The mind across languages: abdominocentrism, cardiocentrism, and cerebrocentrism	28
2.1.2 Cultural models of Vietnamese abdominocentrism	32
2.2 Relevant studies on the semantic development of <i>bụng</i> , <i>lòng</i> , and <i>ruột</i> in Vietnamese ..	36
2.3 Principled Polysemy	38
2.3.1 The semantic map approach to polysemy	38
2.3.2 Model of Principled Polysemy	40
2.4 Mechanisms of cognitive linguistics : Image schema, metonymy and metaphor	48
2.4.1 Metonymy and metaphor.....	49
2.4.2 Image schema.....	58
Chapter 3 Methodology and theoretical framework.....	63
3.1 Corpora.....	63
3.2 Sense tagging.....	65
3.3 Sense distribution	77
Chapter 4: The polysemy of <i>bụng</i>, <i>lòng</i>, and <i>ruột</i> and their semantic networks	83
4.1 The proto-scene of <i>bụng</i> , <i>lòng</i> , and <i>ruột</i>	83
4.1.1 Prototypicality	83
4.1.2 Determining the proto-scene	85
4.1.3 BỤNG _{N1} : The BELLY sense.....	87
4.1.4 LÒNG _{N1} : The BELLY sense.....	89
4.1.5 RUỘT _{N1} : The BELLY sense	90
4.2 The distinct senses of <i>bụng</i>	93
4.2.1 BỤNG _{N2} : The PROTRUDING PART sense	93

4.2.2 BỤNG _{N3} : The COGNITION sense	95
4.3 The distinct senses of <i>lòng</i>.....	97
4.3.1 LÒNG _{N2} : The OFFAL sense	97
4.3.2 LÒNG _{N3} : The CENTRAL BOTTOM sense	99
4.3.3 LÒNG _{N4} : The CENTER sense	102
4.3.4 LÒNG _{N5} : The COGNITION sense:	104
4.4 The distinct senses of <i>ruột</i>	107
4.4.1 RUỘT _{N2} : The INTESTINES sense	107
4.4.2 RUỘT _{N3} : The INTERIOR sense	109
4.4.3 RUỘT _{N4} : The COGNITION sense.....	112
4.4.4 The Descendant cluster	117
Chapter 5 Discussion.....	123
5.1 Semantic networks of <i>bụng, lòng, and ruột</i>	123
5.1.1 The problems of synonyms: The body, space, and cognition level.	124
5.1.2 <i>Lòng</i> : The seat of cognition in the Vietnamese language.	129
5.2 Theoretical and practical contributions of the study	130
5.3 Limitations and future directions	132
5.3.1 Reinforcing compounds in the corpora	132
5.3.2 Reduplication compounds in the corpora.....	133
Appendices	139
References.....	145

List of figures



Figure 1.1 The image diagram of the central position of <i>bụng</i> in Vietnamese	3
Figure 1.2 The image diagram of the central position of <i>lòng</i> in Vietnamese	4
Figure 1.3 The image diagram of the central position of <i>ruột</i> in Vietnamese.....	4
Figure 1.4 The image diagram of <i>lòng mẹ</i> ‘mother’s embrace’ in Vietnamese	5
Figure 2.1 The Principled Polysemy approach to the semantic network of <i>time</i>	40
Figure 2.2 Basic elements of Principled Polysemy model	42
Figure 2.3 The Principled Polysemy approach to the semantic network of <i>over</i>	43
Figure 2.4 The CONTAINMENT schema.....	59
Figure 2.5 Different profile of expressions related to wheel.....	60
Figure 2.6 Image schemas for the two propositions <i>above</i> and <i>below</i>	61
Figure 3.1 Page from <i>Dictionarium Anamitico–Latinum</i> showing entries for <i>bụng</i>	70
Figure 4.1 The body part profiling of <i>bụng</i> in the BELLY sense.....	87
Figure 4.2 The body part profiling of <i>lòng</i> in the BELLY sense.....	89
Figure 4.3 The body part profiling of <i>ruột</i> in the BELLY sense	91
Figure 4.4 Image Schema of BỤNG _{N2} : The PROTRUDING PART sense	94
Figure 4.5 Illustration of the perception of an airplane’s underside derived from BỤNG _{N2} : The PROTRUDING PART sense.....	94
Figure 4.6 Metonymization for LÒNG _{N2} : The OFFAL sense.....	99
Figure 4.7 Image Schema of LÒNG _{N3} : The CENTRAL BOTTOM sense	101
Figure 4.8 Illustration of the lake bed perception derived from LÒNG _{N3} : The CENTRAL BOTTOM sense	101
Figure 4.9 Image schema transformation of LÒNG _{N4} : The CENTER sense	104
Figure 4.10 Metonymization for the INTESTINES sense	109

Figure 4.11 Image Schema of RUỘT _{N3} : The INTERIOR sense	111
Figure 4.12 Illustration of the perception of bread crumbs derived from RUỘT _{N3} : The INTERIOR sense.....	112
Figure 4.13 The internal concentration or Descendant cluster	118
Figure 4.14 Profiling of RUỘT _{A1} : The KINSHIP sense and RUỘT _{A2} : The CLOSENESS sense	119
Figure 5.1 The semantic networks of <i>bụng</i> , <i>lòng</i> , and <i>ruột</i>	124
Figure 5.2 The profiles of <i>bụng</i> , <i>lòng</i> , and <i>ruột</i> in the BELLY sense	125
Figure 5.3 The profiles of <i>bụng</i> , <i>lòng</i> , and <i>ruột</i> in the body conceptual space	126

List of tables



Table 1.1 Phonetic-Semantic composition of selected <i>Chữ Nôm</i> characters	13
Table 1.2 The English equivalents of Vietnamese body part terminologies related to <i>bụng</i> , <i>lòng</i> , and <i>ruột</i>	19
Table 1.3 Functions of <i>bụng</i> in DALL and VVD.....	21
Table 1.4 Functions of <i>lòng</i> in DALL and VVD.....	22
Table 1.5 Functions of <i>ruột</i> in DALL and VVD	23
Table 2.1 The conceptual metaphor framework denoting the metaphor LOVE IS A JOURNEY	53
Table 2.2 Similarities between food and ideas	55
Table 2.3 Mappings for IDEAS ARE FOOD metaphor	55
Table 3.1 Token numbers of <i>bụng</i> , <i>lòng</i> , and <i>ruột</i> across different sources	64
Table 3.2 Example of sense tagging for <i>bụng</i> in the novel corpus (Tokens 761-765).....	67
Table 3.3 Sense tagging of <i>bụng</i> in a subset of the dictionaries corpus	71
Table 3.4 Example of sense tagging for the COGNITION sense of <i>bụng</i> using MIP in the newspaper corpus.....	72
Table 3.5 Sense distribution of <i>bụng</i> across different sources	78
Table 3.6 Sense distribution of <i>lòng</i> across different sources	80
Table 3.7 Sense distribution of <i>ruột</i> across different sources.....	82
Table 4.1 The conceptual metaphor framework denoting the metaphor BỤNG _{N1} (BELLY) IS COGNITION.....	97
Table 4.2 The conceptual metaphor framework denoting the metaphor LÒNG _{N1} (BELLY) IS COGNITION.....	107
Table 4.3 The conceptual metaphor framework denoting the metaphor RUỘT _{N1} (INTESTINES) IS COGNITION	117

List of abbreviations and coding conventions



1	first person
2	second person
3	third person
ADV	adverb(bial)
AFF	affirmation
CLF	classifier
COM	comitative
COMP	complementizer
CONJ	conjunction
COP	copula
DEM	demonstrative
DET	determiner
DICTION 1	context extracted from the first dictionary in the dictionaries corpus
F	feminine
IMP	imperative
INDEF	indefinite
INF	infinitive
INTJ	interjection
LM	landmark
M	masculine
MDL	modal
NEG	negation, negative
NOVEL 1	context extracted from the first novel in the novel corpus
PASS	passive
PFV	perfective
PL	plural
POSS	possessive
PN	proper noun

PREP	preposition
PROG	progressive
PST	past
Q	question particle/ marker
RDP	reduplication
REFL	reflexive
REL	relative
RUỘT _{N1}	the first nominal sense of <i>ruột</i> in a series of distinct senses
RUỘT _{A1} :	The first adjectival sense of <i>ruột</i> in a series of distinct senses
SG	singular
TR	trajector



Chapter 1 Introduction



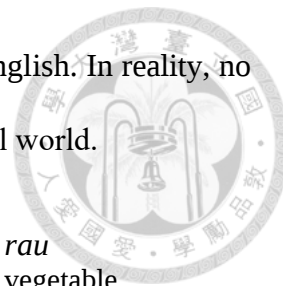
1.1 Preliminary

In Vietnamese, *bụng*, *lòng*, and *ruột* are common terms for body parts. For example, *ruột* generally translates to ‘intestines/bowels’. This meaning prevails over other entries in modern Vietnamese dictionaries. It is also the first answer that comes to mind when a native speaker is asked to translate *ruột* into English. Intestines are food in Vietnamese cuisine. *Mắm ruột* (sauce-intestine) ‘intestines sauce’ is a specialty of Phu Yen Province, my hometown. It is made by gutting fish and fermenting their intestines in spices until it turns into a black runny sauce. Even though the strong smell of it makes some people sick, it makes me homesick. The first kind of sickness occurs in the physical world, while the second kind of sickness occurs in the abstract world, functioned by metaphors. An occurrence of *ruột* with a corporeal form can be demonstrated in the title of a Google search as follows. In this context, *ruột* refers to pig intestines as used in the recipe for stewed coconut water. The sweet salty smell and brown color of the stewed pig intestines could make a hungry soul drool, and the saliva is proof that the experience exists and can be measured in the material realm.

- (1) *cách làm ruột heo khìa nước dừa thơm ngon*
way make intestine pig stew water coconut fragrant delicious
‘How to make fragrant and delicious pig intestine stew with coconut water’.
(GOOGLE)

Let’s take a look at a popular Vietnamese folk song below. The folk song describes a new bride who lives with her husband in his house. Being forced out of her home as a tradition has hurt her. Every afternoon when she goes to the back alley to do chores, she looks back to her mother’s house with an incommensurable pain. Her experience is compared to

her intestines being beaten, which translates to “one’s heart aches” in English. In reality, no violence has occurred. The lady’s sorrow merely exists in a metaphorical world.



(2) *Chiều-chiều* *ra* *ngõ* *hái* *rau*
afternoon~RDP go alley pick vegetable

Thương *cha* *nhớ* *mẹ* *ruột* *đau* *như* *dần*
love father miss mom intestine hurt like.ADV beat

‘Every afternoon, I go to the alley to pick vegetables. My intestines ache (my heart aches), as if being beaten, from missing my parents.’

How does an abdominal body part term, in this case, *ruột*, make the semantic leap from the physical realm to the metaphorical? Previous research has not answered this question, focusing instead on describing the literal and metaphorical meanings of *bụng*, *lòng*, and *ruột*. The pioneering research on the metaphorical meaning of *ruột* belongs to Vu (2007). He conducts a study on 198 Vietnamese lexical units related to body parts and their expressions of possible emotions and attitudes. Within this research, *ruột* is found to be associated with 13 lexical units denoting human mental and emotional state (p. 161). Nguyen (2009) undertakes an investigation on Vietnamese idioms featuring the word *ruột*, highlighting its metaphorical representation as a container symbolizing the feelings or emotions of individuals. Continuing the inquiry on body part metaphors, Dinh and Le (2016) explore the Vietnamese cultural conceptualizations of *bụng* (belly) and *lòng* (abdomen). Their study stands as the most comprehensive exploration of the metaphorical interpretations of Vietnamese internal organs from a semasiological perspective. Regardless, *ruột* is not covered in their inquiry. This omission may stem from their study’s focus on metaphors, as *bụng* (belly) and *lòng* (abdomen) are more commonly associated with metaphorical expressions related to human emotions and thoughts. In contrast, *ruột* is typically linked more with biological relationships and the physical structure of human intestines. This particular

usage may not have captured the interest of scholars focusing on metaphor research, although *ruột* does exhibit metaphorical capabilities similar to *bụng* and *lòng*, though in a more limited capacity.

Nong (2016) is the first to propose a cognitive approach to understanding *bụng*, *lòng*, and *ruột* in Vietnamese. Her research focused on the equivalent terms for the modern Chinese word 心 *xīn* (heart) in Vietnamese, thus encompassing explanations for these three abdominal terms. She provides insights into the roots of the conceptualization of these terms by introducing image diagrams of *bụng*, *lòng*, and *ruột*, accompanied by the following explanations: “*Bụng* is the protruding area in the central part of an object” (p. 33), “*Lòng* is the downward hollow part of an object” (p. 32), and “*Ruột* is the inside part of something” (p. 32).

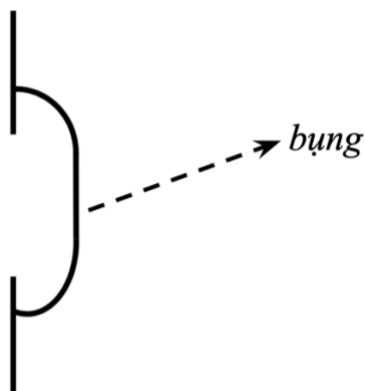


Figure 1.1 The image diagram of the central position of *bụng* in Vietnamese (replicated from Nong, 2016, p. 33)

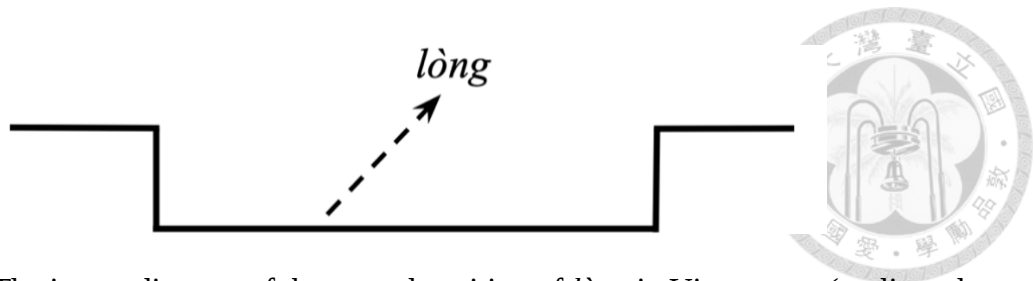


Figure 1.2 The image diagram of the central position of *lòng* in Vietnamese (replicated from Nong, 2016, p. 32)

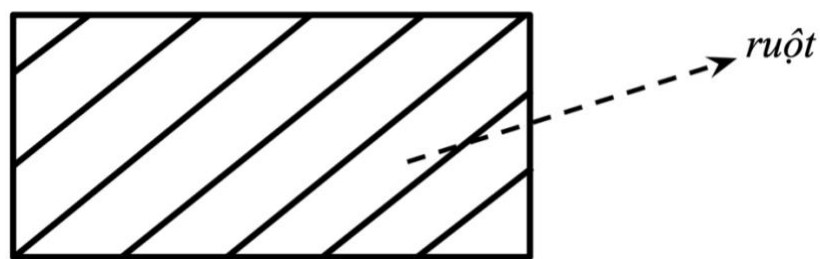


Figure 1.3 The image diagram of the central position of *ruột* in Vietnamese (replicated from Nong, 2016, p. 32)

Nong's research provides several examples containing *bụng*, *lòng*, and *ruột*. Examples for *ruột* include *ruột gối* (intestine-pillow) 'pillowcase', *ruột chăn* (intestine-blanket) 'blanket lining', *ruột bánh-mì* (intestine-bread) 'bread crumb', and *ruột ổi* (intestine-guava) 'guava flesh'. Examples for *bụng* are *bụng lò* (belly-oven) 'the protruding part of an oven (referring to a traditional Vietnamese clay oven)', *bụng chân* (belly-leg) 'bulge of a leg', and *bụng máy-bay* (belly-plane) 'underside of a plane'. Examples for *lòng* include *lòng sông* (abdomen-river) 'riverbed', *lòng đường* (abdomen-road) 'roadbed', and *lòng bàn-tay* (abdomen-hand) 'palm'. These examples demonstrate that Vietnamese speakers use abdominal terms to convey different parts of certain objects. The diagrams suggest that the spatial configuration of these terms in Vietnamese derives from the conceptualization of actual physical models, possibly the human body, although this is not explicitly stated in

Nong's paper. Nong suggests that human perception of the world is reflected through language. However, she focuses on the interesting linguistic outcomes of this phenomenon instead of discussing the process itself. Neither these examples nor the image diagrams are explored in detail. The framework behind these diagrams is not discussed at length, causing possible confusion regarding the elements inside. For example, it is unclear from her paper what the diagonal lines in the image diagram of *ruột* in **Figure 1.3** refer to.

Nevertheless, an important claim is made: "Humans are the center of the universe" (Nong, 2016, p. 34). Nong introduces a diagram relating to the human body, specifically *lòng mẹ* (abdomen-mother) 'mother's embrace' (p. 32). In the diagram, *lòng* refers to "the space outside the belly of a person when in a sitting position with legs drawn up or lying down." The original diagram is a simple linear structure curved into a space labeled as *lòng*. Based on my interpretation, the diagram represents an image schema of a sitting woman where the abdomen region and legs create a space to embrace a baby. For clarity, I have added labels for the surrounding body parts, resulting in **Figure 1.4** below.

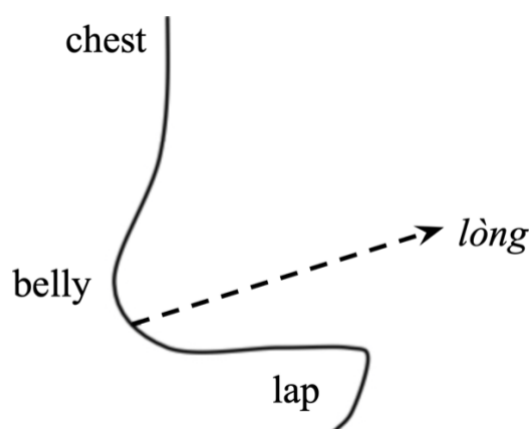
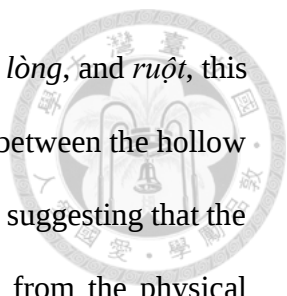


Figure 1.4 The image diagram of *lòng mẹ* 'mother's embrace' in Vietnamese (adapted from Nong, 2016, p. 32)



Given the limited and fragmented research on the semantics of *bụng*, *lòng*, and *ruột*, this diagram is an invaluable piece of information. It illustrates a correlation between the hollow space created by a person sitting down and the hollow space of an object, suggesting that the Vietnamese conceptualization of certain spatial configurations derives from the physical shape of abdominal organs. This aligns with the core argument of embodiment theory, which suggests that many aspects of cognition are shaped by the body, serving as an important guideline for the study. The research's goal is to propose a semantic map where the abdominal senses of *bụng*, *lòng*, and *ruột* serve as the prototype to which other senses associate. Pursuing this direction promises positive results, offering insights into the Vietnamese mind and helping to answer broader questions about human cognition. By uncovering suitable cognitive principles along the way, this approach reveals how the Vietnamese mind systematically links the meanings related to abdominal terms, providing cognitive explanations for seemingly unorthodox expressions related to these terms. Most importantly, it describes the complex conceptual pathway that *lòng* travels to become central to cognition – the heart in the Vietnamese language.

1.2 The language and its speakers

1.2.1 Vietnamese: An overview

The thesis deals with Vietnamese, known to its native speakers as *tiếng Việt*, the national and official language of Vietnam. It is the mother tongue of the ethnic majority called *người Việt* or *người Kinh*. Vietnamese has evolved significantly over centuries, influenced by Chinese, French, and other languages due to historical interactions. An overview of the language can be found in Nguyen (2009). In terms of typology, most scholars now agree

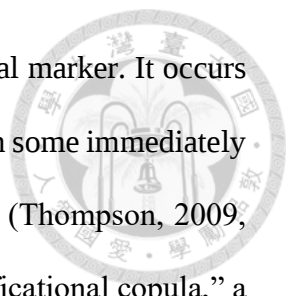


Vietnamese belongs to the Mon–Khmer stock, within the Austro-Asiatic family (Kirby 2011; Nguyen 2009), which includes several major language groups in the area running from Chota Nagpur eastward to Indochina. In terms of phonology, Vietnamese is distinctively characterized by its tonal nature, with each syllable pronounced using one of six inherent tones. These tones are crucial for distinguishing meaning, as the same syllable with different tones can signify entirely different words. A summary of the six tones can be found in Thompson (2009, p. 16): mid or high-mid trailing pitch (*ngang*), low trailing pitch (*huyền*), high rising pitch (*sắc*), low dropping pitch (*nặng*), mid-low dropping pitch (*hỏi*), and high rising pitch (*ngã*).

In terms of grammar, one notable scholar in the study of Vietnamese is Laurence C. Thompson. His work, *A Vietnamese Reference Grammar* (2009), set the foundation for grammatical studies in Vietnamese. Building on Thompson's and other scholars' contributions, the following sections will discuss several important aspects of the Vietnamese language: its monosyllabic structure, writing system, classifiers, reduplication, and composition.

1.2.2 Vietnamese monosyllabic structure

Thompson, along with other scholars, agree that Vietnamese can often be described as a “monosyllabic” language (Thompson, 2009, p. 106; Thompson, 1963, p. 39; Hannas, 1997, p. 76; Hwa-Froelich et al., 2002, p. 265) due to its predominance of morphemes composed of one-syllable-long allomorphs. Vietnamese uses simple morphological structures to convey meaning. A few structures that are frequently found in the examples of this study include: *là*, *đã*, *sẽ*, and *không*.

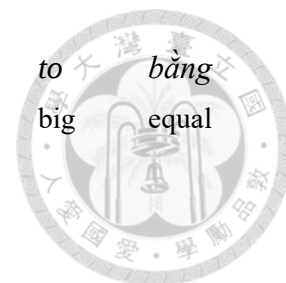


The word *là* ‘be, which is (are), that is, namely’ is an identificational marker. It occurs as a restrictive complement, signaling that its constituent is identified with some immediately preceding element. Such phrases are called “identificational predicates” (Thompson, 2009, p. 206). In Clark (1996, p. 325), *là* is referred to as an “equational/identificational copula,” a word that links the subject of a sentence to a subject complement for an identificational role. The words *đã* (anterior) and *sẽ* (subsequent) are described as “tense markers” (Thompson, 2009, p. 206). *Đã* (anterior) identifies “an action or state, at least the beginning of which precedes the basic time” (Thompson, 2009, p. 209), denoting that the event in the context has already happened. This is equivalent to the past tense in English. *Sẽ* (subsequent) identifies “an action or state which begins later than the basic time” (Thompson, 2009, p. 209), indicating that the event in the context will happen. This is equivalent to the future tense in English. *Không* is a negative, conveying a mild denial or negation in context. The grammatical functions of *là*, *đã*, *sẽ*, and *không* are marked with COP (copula), PST (past tense), will.MDL (modal), and NEG (negation, negative), respectively, following the conventions of the Leipzig Glossing Rules¹. Some examples of their usage are as follows:

- (3) *Đó là một người cha hết lòng thương yêu vợ con,*
 that.DEM COP one person father all.ADV LÒNG_{N5} love love wife kid
 ‘That is a father who loves his wife and children with all his heart.’ (NOVEL 58)

¹ The Leipzig Glossing Rules offer standardized conventions for interlinear morpheme-by-morpheme glosses, ensuring clear and consistent presentation of linguistic data. Developed by Bernard Comrie and Martin Haspelmath at the Max Planck Institute for Evolutionary Anthropology, and Balthasar Bickel at the Department of Linguistics, University of Leipzig, these rules are widely used in linguistic research. For more information, visit: <https://www.eva.mpg.de/lingua/resources/glossing-rules.php>

- (4) *Cô dâu về nhà chồng bụng đã to bằng cái thúng*
 young-lady.DET.F bride arrive house husband BỤNG_{N1} PST big equal
 inanimate.thing.CLF basket
 ‘The bride arrives at her husband’s house with a belly already as big as a basket.’
 (NOVEL 10)



- (5) *Lòng tin của mẹ sẽ bị tổn-thương...*
 LÒNG_{N5} trust of.PREP mother will.MDL PASS wound
 ‘Mother’s trust will be wounded...’ (NOVEL 31)

- (6) *Lấy được chưa? Không thấy giấu trong bụng áo?*
 get able-to.AUX yet NEG see hide in.PREP BỤNG_{N2} shirt
 ‘Got it yet? Didn’t see it hidden in the belly of the shirt (the shirtfront)?’ (NOVEL 34)

1.2.3 Vietnamese classifiers

One of the distinctive features of Vietnamese is its extensive use of classifiers, which are words used to categorize word classes based on attributes such as “shape, function, or animacy” (Pham & Kohnert, 2008, p. 61). These classifiers offer a unique perspective on how individuals categorize the world through language, involving universal semantic parameters like “humanness, animacy, sex, shape, form, consistency, and functional properties” (Aikhenvald, 2006, p. 463). Vietnamese has been reported to have as many as 200 classifiers (Nguyen, 1957), who considered all words that occur in the slot adjacent to the number in a noun phrase as classifiers. An example of classifier usage in Vietnamese is illustrated below. Example (7) demonstrates two classifiers: *bộ* (a set) and *chai* (a bottleful). As illustrated, *bộ lòng cá* (a-set.CLF-LÒNG_{N2}-fish) ‘a set of fish offals,’ corresponding to the second nominal sense of LÒNG, hereby marked as LÒNG_{N2}. Since the entrails of animals, in this case, fish, consist of different organs contributing to a larger intestinal system, *bộ* ‘set’

is an appropriate classifier. Similarly, in the context of *rượu* (alcohol), which is a liquid contained in a bottle, *chai* (a bottleful) is an appropriate classifier, forming the expression ‘chai rượu’ (a-bottleful.CLF-alcohol) ‘a bottle of alcohol.’ In this thesis, the glossing of classifiers follows Nguyen’s description, as it is one of the classic literatures on the topic.

- (7) *Tôi ăn hết bộ lòng cá và uống hết*
 I.1SG eat all.ADV a-set.CLF LÒNG_{N2} fish and.CONJ drink all.ADV
một phần ba chai rượu.
 one part three a-bottleful.CLF alcohol
 ‘I eat all the fish offal and drink (all) a third of a bottle of alcohol.’ (NOVEL 47)

1.2.4 Vietnamese writing system

A detailed overview of the Vietnamese writing system can be found in DeFrancis (1977) and Hannas (1997). According to Nguyen (2009, p. 678), there are three distinct writing systems: (1) Chinese characters, referred to as *chữ nho* ‘scholars’ script’ or *Chữ Hán* ‘Han script’; (2) the demotic characters called *Chữ Nôm* (from *nam* ‘south’) ‘southern script’; and finally (3) the Roman script called *Chữ Quốc-ngữ* ‘national script’.

Here, “Chinese characters” means Sino-Vietnamese², which is “Vietnamese usually applied to anything written in classical Chinese by a Vietnamese and pronounced, when read aloud, in the Vietnamese manner” (DeFrancis, 1977, p. 15). The pronunciation is rooted in Ancient Chinese, initially adopted through the spoken language of the rulers and

² To avoid confusion between Chinese characters read in the Vietnamese manner (Sino-Vietnamese) and Chinese characters read in the Chinese manner (Mandarin Chinese), the term “Sino-Vietnamese” will be used to refer to the former from this section onward.

subsequently through the scholarly works of Chinese philosophers and poets (Nguyen, 2009, p. 678).

Chữ Nôm is an ideographic writing system created by the Vietnamese to record their mother tongue using traditional Chinese characters as materials. The exact period of its first appearance is debatable; however, its first attestation in a literary document is commonly agreed to be in 1343 AD (Coulmas, 1989, p. 114). *Chữ Nôm* is a significant symbol of Vietnamese identity and nationality until the seventeenth century. There are multiple methods to form *Chữ Nôm*, but the most used principle was the composition of new complex, non-existing characters in Chinese called “semantic-phonetic compounds” (Hannas, 1997, p. 82). This was done by making use of standard formation procedures which had, however, not been exploited in Chinese. The phonetic-semantic combination is a largely used method; DeFrancis even took the idea further, calling *Chữ Nôm* a “phonetic-semantic script” (DeFrancis, 1977, p. 28).

Chữ Quốc Ngữ, the current Vietnamese writing system, was developed by Catholic missionaries during their preaching efforts. The script uses the Latin alphabet with diacritical marks for indicating tone, distinguishing vowel sounds, and providing phonetic clarity. Several alphabetic systems were used in Vietnam for scholarly purposes and by missionaries studying the language. Notably, Gaspar d’Amaral created a Vietnamese-Portuguese dictionary, and Antonio Barbosa compiled a Portuguese-Vietnamese dictionary. These two priests formed a group that produced a romanization system, which was further codified, regularized, and popularized by the Catholic missionary Alexandre de Rhodes, also known by his Vietnamese name Đắc Lộ. In 1651, Alexandre de Rhodes published what is considered the first work in romanized Vietnamese, the *Dictionarium Annamiticum Lusitanum et*

Latinum (“Annamese-Portuguese-Latin Dictionary”), in Rome. Romanized Vietnamese remained used within Catholic communities until 1838 when Fr. Jean-Louis Taberd published a second dictionary in romanized Vietnamese, based on revisions made by Monsignor Pigneau de Béhaine to de Rhodes’s system.



In this thesis, the complex system of Vietnamese writing is often related to the data from the Dictionaries Corpus, which includes a selection of 20 dictionaries dating back to as early as 1651. When dealing with this corpus, knowledge of Vietnamese orthography is necessary. Although Sino-Vietnamese and *Chữ Nôm* are no longer in use, their appearance provides insight into the lexical roots of *bụng*, *lòng*, and *ruột*. A table of selected *Chữ Nôm* characters is presented below. Examples 1-3 illustrate the semantic-phonetic compounding method of *Chữ Nôm* from previous literature, which is also the compounding pattern for the three abdominal terms in this research. The table provides background information for the discussion of the lexical roots of *bụng*, *lòng*, and *ruột* in Section 5.3.3.

Table 1.1 Phonetic-semantic composition of selected *Chữ Nôm* characters

No.	<i>Chữ Nôm</i> character	Pronunciation	Phonetic component	Semantic component	Meaning
1	𠂔	<i>ba</i>	巴 <i>ba</i> ³	三 ‘Three.’	Three
2	𠂔	<i>mà</i>	麻 ⁴ <i>ma</i>	而 ‘And, and yet, also, but, nevertheless, like, as.’	But, however
3	𠂔	<i>đến</i>	典 ⁵ <i>diễn</i>	至 ‘To reach; to arrive at. Very. The extreme. Greatest, best.’	To arrive (at)
4	𠂔	<i>bụng</i>	奉 <i>phụng</i>	月 ‘Flesh, meat, fleshy, the pulp of fruit, etc.’	Belly ⁶
5	𠂔	<i>lòng</i>	弄 <i>lộng</i>	心 ‘The heart. The moral nature, the mind, the affections. Intention.’	Heart; mind; will; intestines of animals ⁷
6	𠂔	<i>ruột</i>	聿 <i>duật</i>	月 ‘Flesh, meat, fleshy, the pulp of fruit, etc.’	Internal organs; the inner part of anything ⁸

Table 1.1 illustrates the phonetic-semantic composition, referred to in Vietnamese as *hài thanh* or *hình thanh* (image-sound) ‘logophonic,’ of a few *Chữ Nôm* characters. Examples from different sources are compiled in this table. Examples 1 and 2 are from Hannas (1997, p. 82), and Example 3 is from DeFrancis (1977, p. 25). Previous scholars choose Mandarin Chinese readings to illustrate the phonetic compounds of *Chữ Nôm*, while

³ 巴 is originally glossed in Hannas’ research (1997, p. 82) as the Mandarin sound *bā*.

⁴ 麻 is originally glossed in Hannas’ research (1997, p. 82) as the Mandarin sound *má*.

⁵ 典 is originally glossed in Hannas’ research (1997, p. 82) as the Mandarin sound *diǎn*.

⁶ Translated from the original description in Latin: *Venter*.

⁷ Translated from the original description in Latin: *Cor; animus; voluntas; intestina animalium* (The original entry shows “*vuluntas*”, which is a spelling mistake).

⁸ Translated from the original description in Latin: *Viscus; visceris; interior pars cujuscumque rei*.



the Sino-Vietnamese reading is actually the root of phonetics in *Nôm*. Therefore, the phonetic compounds and pronunciations are checked with the *Đại từ điển chữ Nôm* 大字典字喃 (The Great Dictionary of Nom Characters) by Vu (2005) for accuracy. The semantic glossing is from direct entries in the 1968 reprinted version of *Mathews' Chinese-English Dictionary with Revised English Index* by Mathews (1943). The meaning of each *Chữ Nôm* character in the table is taken from the context in their original sources. Specifically, Examples 1 and 2 are from Hannas' *Asia's Orthographic Dilemma*, and Example 3 is from DeFrancis's *Colonialism and Language Policy in Viet Nam*. The last three examples refer to the first appearances of *bụng*, *lòng*, and *ruột* in *Chữ Nôm* writing in our Dictionaries Corpus, specifically Jean-Louis Taberd's *Dictionarium Anamitico-Latinum* 南越洋合字彙 (Nam Việt-Dương Hiệp Tự vị).

1.2.5 Composition in Vietnamese

Nguyen defines composition in Vietnamese as “consisting of combining two or more lexical bases” (Nguyen, 2009, p. 690). Thompson (2009) phrases it differently: “a sequence of two or more free morphemes constitutes a sequence of two or more words,” and these are simply called “compounds” (p. 120). In his book (2009), Thompson also classifies compounds into idiom compounds and all other compounds. Other compounds include syntactic compounds (generalizing compounds and specializing compounds) and nonsyntactic compounds (reinforcing compounds and attributive compounds). The corpora in this thesis show that *bụng*, *lòng*, and *ruột* often form compounds belonging to the reinforcing compounds group, also often referred to as “synonym compounds” (p. 131). According to Thompson's classification criteria (2009, p. 130), reinforcing compounds are

nonsyntactic compounds containing two apparent heads; these components usually denote identical or very similar items of reality. Key characteristics of reinforcing compounds are:

- (a) The resulting forms often have a more figurative or abstract reference than either of their bases.
- (b) These compounds belong almost wholly to the written or formal spoken language, although a few occur in conversation with a special formalistic flavor.
- (c) Some compounds occur with their bases in reverse order.

The figurative or abstract meaning of many reinforcing compounds is notable. Examples of figurative or abstract compounds based on more concrete terms are illustrated in Thompson (2009) as follows:

- *Tấn tới* ‘make progress’ from the less abstract terms *tấn* ‘to advance’ and *tới* ‘to reach, attain’
- *Bền chặt* ‘to be lasting, enduring’ from the less abstract terms *bền* ‘to be durable, firm, solid’ and *chặt* ‘to be solid, secure, tight’

During the data analysis, the study encountered several composite forms that align with Thompson’s reinforcing compound criteria. These include *ruột gan*, *ruột thịt*, *bụng dạ*, and *lòng dạ*. Further discussion on these forms can be found in Section 5.3.2

1.2.6 Reduplication in Vietnamese

Reduplication is a linguistic phenomenon that involves repeating a word or its parts to intensify meaning, denote plurality, or create diminutive and affectionate tones. In Vietnamese, reduplication is considered to be “a very frequent derivational process, can be total or partial” (Nguyen, 2009, p. 690). The type of Vietnamese reduplicative compound

encountered in this study belongs to the disyllabic morphemes classification according to Thompson (1963). Reduplicative morphemes are categorized into perfect, consisting of two syllables that are phonemically identical, and partial. Partial reduplicative morphemes can be further divided into riming, where the syllables share the same nucleus, and alliterative, where the syllables share the same initial consonant or cluster. Many reduplicative morphemes have onomatopoeic meanings or belong to the expressive vocabulary, while many non-reduplicative morphemes are place names. Some examples introduced by Thompson (1963, p. 46) are as follows:

- Reduplicative: *cạc-cạc* ‘cry of a duck’ (perfect)
 thình-lình ‘be sudden’ (partial, riming)
 nán-ná ‘procrastinate’ (partial, alliterative)
- Non-reduplicative: *Sài-gòn* ‘Saigon’
 va-li ‘suitcase’ (French *valise*)

Further clarification on partial reduplication can be found in Nguyen and Ingram (2006, p. 187). Thompson’s partial riming reduplications and alliterative reduplications fall under Nguyen and Ingram’s first subcategory (same rhyme and tone but with alternate onset consonant) and third subcategory (same onset consonant but alternate tones and rhymes), respectively. Their second subcategory, same segmental composition but with alternate tones, can be illustrated by the example *đỏ đỏ* “to be reddish.” However, this class does not appear in our thesis. Therefore, Thompson’s classification is sufficient for the scope of this study. The types of reduplicative compounds encountered in this research belong to the riming and alliterative categories of partial reduplication. For illustration purposes, a few common compounds are listed as follows. For more detailed analysis, please refer to Section 5.3.3.

- 
- (a) *ruột rà* ‘to be biologically related or close like biological relatives’ D20 (partial, alliterative)
 - (b) *bụng thụng* ‘loose, of cloth, leather, etc.’ D2⁹ (partial, riming)
 - (c) *bụng xụng* ‘to be sloppily dressed (referring to a dress or garment that is worn poorly or improperly buttoned)’ D8¹⁰ (partial, riming)
 - (d) *bụng bực* ‘same as *bụng xụng*’ D8 (partial, alliterative)
 - (e) *bụng nhụng* ‘soft and mushy (usually referring to meat)’ D20 (partial, riming)
 - (f) *bụng bịu* ‘to be distended, loosened’ D14¹¹ (partial, alliterative)

1.3 Clarification of body part terminology and special cases

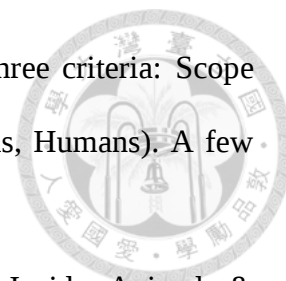
To prevent potential confusion in language usage, the English equivalents for each distinct sense denoting body parts of *bụng*, *lòng*, and *ruột* are presented in **Table 1.2**. The subscript number following each Vietnamese term corresponds to its respective senses and forms (nouns “N” or adjectives “A”) as described in Chapter 4. The definitions are derived from consulting the latest digital versions of the Oxford (Oxford University Press, 2024) and Cambridge (Cambridge University Press, 2024) dictionaries, and have been cross-checked with the most recent Vietnamese dictionary (Phe, 2021). Overall, all the Vietnamese body

⁹ For meaning that do not appear in the latest dictionary, its first entry in our Dictionaries corpus is used. For example, here D2 corresponds to Dictionary number 2. The English entry is translated from the original description in Latin: *laxus, de panno, corio, & c.*. For details of the dictionary please refer to **Appendix 1**.

¹⁰ Translated from the original description in French: *Débraillé, adj. (d’une robe, d’un habit mal mis ou mal boutonné)*

¹¹ Translated from the original description in French: *Distendu, lâché.*

part terms and their English equivalents can be differentiated using three criteria: Scope (Small, Medium, Large), Space (Inside, Outside), and Source (Animals, Humans). A few special cases should be noted as follows:



- LÔNG_{N1} is a hypernym of the English term “entrails” (Large, Inside, Animals & Humans) and “abdomen” (Large, Outside, Animals & Humans). Therefore, LÔNG_{N1} encompasses the body part from chest to abdomen, including the organs within (Large, Inside & Outside, Animals & Humans). More details can be found in Section 4.1.3.
- In terms of “entrails” (Large, Inside, Animals & Humans), Vietnamese does not have a corresponding term included in this study. A possible translation for clarity could be *nội tạng* inside-intestines ‘entrails’. *Nội tạng* originates from the Chinese 內臟 *nèizàng*, referring to the entrails of both humans and animals (Large, Inside, Animals & Humans).
- In cases where none of the terms *bụng*, *lòng*, and *ruột* correspond to the anatomical criteria of (Small, Inside, Animals or Humans), this section is marked as N/A (Not Applicable).

There are two important notes about this table. First, since the thesis only covers the Vietnamese terms *bụng*, *lòng*, and *ruột*, anatomical terminologies that do not intersect with these terms, such as *nội tạng*, are not included to avoid confusion. Second, please note that in other contexts, the English terms might encompass a larger or smaller anatomical area. However, in this thesis, the English body part terminologies strictly refer to the meanings listed in this table for consistency.

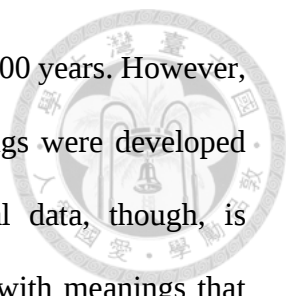
Table 1.2 The English equivalents of Vietnamese body part terminologies related to *bụng*, *lòng*, and *ruột*

Scope	Inside		Outside	
	Humans	Animals	Humans	Animals
Small	Intestines (RUỘT _{N2}): The tubular part of the digestive system, including the small intestine and large intestine.		N/A	
Medium	Belly (BỤNG _{N1}): The front part of the human and animal trunk below the ribs, containing the stomach, intestines, and, in pregnant women, the fetus.			
Large	Entrails (LÒNG _{N1}): A person or animal's internal organs	Offal (LÒNG _{N2}): The internal organs of a butchered animal.	Abdomen (LÒNG _{N1}): The part of the body between the chest and pelvis.	

1.4 Dictionaries revisited

As the current thesis aims to deal with polysemy/multifunctionality, first of all, we should examine the functions (meanings) incorporated in the dictionaries in advance. Two renowned dictionaries are looked up for the preliminary examination on their functions, that is, the *Dictionarium Annamiticum Lusitanum et Latinum* (henceforth, DALL), and *Từ điển tiếng Việt* Vietnamese-Vietnamese Dictionary (henceforth, VVD).

DALL is a trilingual Vietnamese-Portuguese-Latin dictionary written by the French Jesuit lexicographer Alexandre de Rhodes after spending 12 years living in Vietnam. Published by the Propaganda Fide in Rome in 1651, it is recognized as the earliest Vietnamese dictionary. To mitigate potential confusion arising from differences between the original recorded Vietnamese orthography and its contemporary equivalent, each entry is cross-referenced with the Vietnamese translation of Rhodes' work (*Tự điển Annam-Bồ-La*) from 1991. Vietnamese has changed significantly since 1651, which might raise questions



about the validity of linguistic associations and metaphors over the past 400 years. However, this research focuses on synchronic analysis, assuming that all meanings were developed simultaneously, and does not discuss diachronic changes. Historical data, though, is important for identifying prototypical senses and enriching the corpus with meanings that might not be easily found in popular literature. VVD, the latest update of the Vietnamese Dictionary, was compiled by the community of the prestigious Vietnamese Institute of Linguistics and led by the notable linguist Hoang Phe (2021). Word forms (noun/adjective) are identified by referencing the definitions and associated examples found in each dictionary. Since DALL lacks a comprehensive listing, which is understandable given it was composed by a single author under modest conditions in 17th century Vietnam, the entries in **Table 1.3-1.5** are assigned by the author using accompanying examples. Its updated meanings in VVD are listed accordingly by the author.

Table 1.3 Functions of *bụng* in DALL and VVD

<i>bụng</i>		
Source	Dictionarium Annamiticum Lusitanum et Latinum	Từ điển tiếng Việt Vietnamese- Vietnamese Dictionary
Function	1. [Noun] belly	1. [Noun] human or animal belly <i>đau bụng</i> painful-belly ‘stomachache’ 2. [Noun] the human belly, considered a symbol of thoughts and emotions <i>có gì nói ngay, không để bụng</i> exist- something-say-immediate-NEG-put- belly ‘express one’s thoughts frankly’ 3. [Noun] the protruding part <i>nước ngập tới bụng chân</i> water-flood- to.PREP-belly-leg ‘water flooding to the bulge of a leg’

In DALL, the entry for *bụng* is minimal, providing only immediate translations in Latin (*venter, tris*) and Portuguese (*barriga*), all meaning ‘belly.’ The situation improves in VVD, which provides three meanings for *bụng*. One of these is ‘belly,’ while metaphorical meanings also emerge, denoting it as a symbol of feelings. Additionally, it includes the meaning of a protruding part. However, for those who are not linguists, understanding the connection between these meanings and their association from one to another might be challenging.

Table 1.4 Functions of *lòng* in DALL and VVD

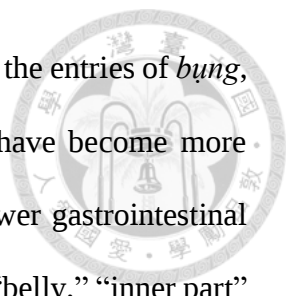
<i>lòng</i>		
Source	Dictionarium Annamiticum Lusitanum et Latinum	Từ điển tiếng Việt Vietnamese- Vietnamese Dictionary
Function	1. [Noun] will <i>dễ lòng</i> easy-will ‘gullible’ 2. [Noun] offal 3. [Noun] center <i>lòng đỏ trứng</i> center-red-egg ‘egg yolk’ <i>lòng trắng trứng</i> center-white-egg ‘eggwhite’	1. [Noun] offal <i>lòng lợn</i> intestines-pig ‘pig offal’ 2. [Noun] human belly <i>trẻ mới lọt lòng</i> baby-ADV.just-drop-belly ‘newborn baby’ 3. [Noun] the human belly, considered a symbol of emotions and spirit. <i>đau lòng</i> hurt-belly ‘heart-broken’ 4. [Noun] center <i>lòng suối</i> center-stream ‘stream bed’

Both dictionaries present the meaning of ‘offal’ as a separate entry, rather than grouping together the entrails of animals and humans. Additionally, both dictionaries include the meaning of ‘center,’ even though it does not accurately convey the meaning of *lòng*. In the case of DALL, *lòng đỏ trứng* center-red-egg ‘egg yolk’ expresses the yellow center of an egg, which makes sense. However, *lòng trắng trứng* center-white-egg ‘egg white’ offers some interesting insights into the conceptualization of *lòng*. Here, ‘the white center of an egg’ refers to the inside of the egg minus the yolk, making it partially the center, but not entirely. In VVD, *lòng suối* center-stream ‘stream bed’ also does not align with the English meaning of ‘center,’ as it refers to something deep down in the river, rather than the liquid entity itself. This introduces meanings that English cannot fully capture, suggesting that in Vietnamese, *lòng* actually has multiple meanings expressing the concept of ‘center.’

Table 1.5 Functions of *ruột* in DALL and VVD

<i>ruột</i>		
Source	Dictionarium Annamiticum Lusitanum et Latinum	Từ điển tiếng Việt Vietnamese- Vietnamese Dictionary
Function	1. [Noun] inner part <i>ruột trái</i> intestines-fruit ‘fruit flesh’ 2. [Noun] stomach <i>xót ruột</i> sting-intestines ‘hungry’ 3. [Adjective] to be blood-related <i>dì ruột</i> aunt-intestines ‘biological aunt’	1. [Noun] lower gastrointestinal tract <i>ruột già</i> intestines-old ‘large intestine’ 2. [Noun] inner part <i>ruột bánh-mì</i> intestines-bread ‘bread crumb’ 3. [Noun] container of emotions <i>xót ruột</i> sting-intestines ‘to suffer’ 4. [Adjective] to be blood-related. <i>dì ruột</i> aunt-intestines ‘biological aunt’

As shown in **Table 1.5**, in DALL, *ruột* as a noun has two functions: denoting the ‘inner part’ and the ‘stomach.’ In VVD, *ruột* is classified as a noun with three functions: ‘lower gastrointestinal tract,’ ‘inner part,’ and ‘container of emotions.’ According to the two dictionaries, the adjective *ruột* can denote blood-related relations, as in *dì ruột* aunt-intestines ‘biological aunt’. Based on these two dictionaries, while *ruột* shares a similar function as an adjective, its function as a noun has changed. Interestingly, its original meaning specifically referred to the ‘stomach,’ as originally written in Latin as “*ardor quidam in stomacho ex fame*,” which translates to ‘a certain burning sensation in the stomach due to hunger.’ However, this meaning of ‘stomach’ is no longer recorded in modern dictionaries. Two new meanings, ‘lower gastrointestinal tract’ and ‘container of emotions,’ have emerged. Notably, the meaning ‘inner part’ has been moved to the second position in VVD, indicating a change in the frequency of ‘*ruột*’s usage. This shift could cause confusion for those attempting to explain the development of *ruột*’s semantic map.



Overall, the two dictionaries offer a 370-year time gap to examine the entries of *bụng*, *lòng*, and *ruột*, revealing some insightful details. First, the meanings have become more specific (for example, *ruột*'s meaning of “stomach” has evolved to “lower gastrointestinal tract”). Second, there is some overlap in their meanings (“stomach” and “belly,” “inner part” and “center,” “will” and “container of emotions”). These overlapping areas can be categorized as follows: the first pertains to the physical body, the second to space, and the last to abstract human emotions. Given this perspective, their conceptualization is not simple but rather interconnected, revealing deeper connections that provide insights into the Vietnamese language. Further arrangement and analysis of the meanings of *bụng*, *lòng*, and *ruột* are necessary for a comprehensive reexamination. By examining how Vietnamese native speakers conceptualize these abdominal regions, we can begin to understand how a language situates the “mind” within the body. This exploration might be the first step in comprehending this intricate linguistic and cultural relationship.

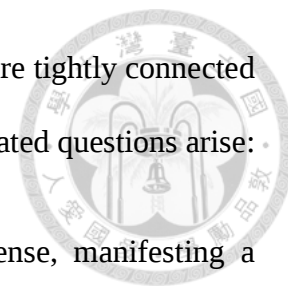
1.5 Research questions

This thesis will address one main research question along with eight related questions concerning the polysemy of *bụng*, *lòng*, and *ruột* in Vietnamese. To delineate the polysemous semantic networks of these words, we begin with the central question:

- (1) What are the primary senses and the distinct derived senses of *bụng*, *lòng*, and *ruột* in Vietnamese?

Following this primary question, the thesis will focus on three dimensions: the distribution of their polysemous senses, their cognitive associations, and the Vietnamese

conceptualization of abdominal organs. The related research questions are tightly connected to these dimensions. Regarding the polysemy of the three terms, five related questions arise:



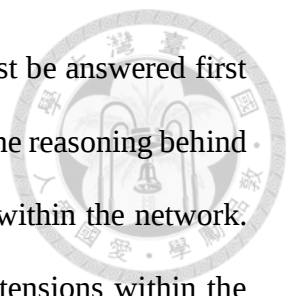
- (2) How are their derived senses motivated from the primary sense, manifesting a polysemous semantic network?
- (3) What are the overlapping senses of *bụng*, *lòng*, and *ruột*?
- (4) How do these three near-synonymous terms differ from each other in these overlapping senses?

Regarding the cognitive associations of *bụng*, *lòng*, and *ruột*, three specific questions are proposed:

- (5) What kind of cognitive mechanisms motivate the meaning extension of *bụng*, *lòng*, and *ruột* in Vietnamese?
- (6) How do these motivational mechanisms contribute to the conceptual variation pathways of *bụng*, *lòng*, and *ruột* in the semantic network?

Regarding the Vietnamese conceptualization of abdominal organs and its application within cognitive linguistics, three questions are raised:

- (7) Where is the “mind” (seat of cognition) in the Vietnamese language based on the analysis of *bụng*, *lòng*, and *ruột*?
- (8) How do Vietnamese people choose a specific term to represent the seat of cognition in the language?
- (9) What does the cultural view from the Vietnamese conceptualization of abdominal organs contribute to embodiment theory?



To investigate the polysemy of *bụng*, *lòng*, and *ruột*, Question 1 must be answered first to organize their polysemous semantic networks. Questions 2-4 provide the reasoning behind their network arrangement and distinguish the near-synonymous terms within the network. Questions 5-6 explore the cognitive motivation behind the semantic extensions within the network and for each specific case. These questions will be addressed in Chapter 4. Conversely, Chapter 5 will discuss Questions 7-9, providing a Vietnamese perspective on the topic of culture, body, and language. Understanding how Vietnamese conceptualize abdominal organs will offer insights into the integral role of the body in shaping the way we think, feel, and understand the world.

1.6 Organization of the thesis

The present thesis is organized as follows: Chapter 2 reviews previous studies on abminocentrism, the semantic development of *bụng*, *lòng*, and *ruột* in Vietnamese, and cognitive linguistics tools for addressing multifunctionality/polysemy and its distribution. Chapter 3 introduces the corpus methodology and the theoretical framework of principled polysemy used in this research. Chapter 4 provides a detailed examination of the various meanings of *bụng*, *lòng*, and *ruột* in contemporary Vietnamese, exploring both descriptive and cognitive aspects of their polysemy, as well as the underlying mechanisms driving this linguistic phenomenon. Finally, Chapter 5 discusses the semantic network analyzed in the previous chapter at three levels, summarizes the research's implications and contributions, and proposes possible

Chapter 2 Literature review



2.1 Embodiment theory

The observation that the human body is a crucial source of meaning aligns with the broader concept of embodied cognition, which is foundational to cognitive linguistic thinking. As Foolen (2008) points out, this perspective has been supported by numerous empirical studies within cognitive linguistics over the past two decades. The idea of embodiment, while central to cognitive linguistic research, echoes earlier twentieth-century notions within philosophy and cultural studies, often referred to as the “corporeal turn.” This turn emphasized the importance of grounding linguistic categories in extralinguistic reality. In cognitive linguistics, the “corporeal turn” was driven by the need to link language to conceptualization processes, marking the beginning of the cognitive enterprise in the 1980s. It soon became evident that cognition is inherently embodied, reinforcing the idea that our bodily experiences fundamentally shape our linguistic and cognitive processes. Embodiment theory posits that the human body and associated experiences significantly shape conceptualization, an idea supported by Johnson (1987) and Lakoff and Johnson (1999). This theory suggests that our bodily experiences mediate cognition and that more abstract, intangible concepts are often expressed in terms of the more concrete (Sweetser, 1990). The human body, being the most concrete and familiar object in our personal universe, frequently serves as a metaphorical source domain across various languages (Kövecses, 2002).

One of the central themes in cognitive linguistics is the uniquely human development of higher cognitive functions, often referred to as the “mind,” and the intertwining of body and mind, which has come to be known as embodiment (e.g., Gibbs, 2006; Johnson, 1987; Lakoff, 1987; Lakoff & Johnson, 1999). The embodiment thesis, in general terms, views

cognition as mediated by our bodily experiences, a notion that has been acknowledged since Thomas Aquinas' time ("*Nihil in intellectu quod non fuerat in sensu*" [There is nothing in the mind that was not previously in the senses]). It also posits that the more abstract target domains of cognition, such as thought, emotion, and language, are based on concrete source domains like the human body and conceptualizations of internal body parts.

In his book *Embodiment and Cognitive Science*, Gibbs (2006, p. 9) elaborates on the "embodiment premise":

People's subjective, felt experiences of their bodies in action provide part of the fundamental grounding for language and thought. Cognition is what occurs when the body engages the physical, cultural world and must be studied in terms of the dynamical interactions between people and the environment. Human language and thought emerge from recurring patterns of embodied activity that constrain ongoing intelligent behavior. We must not assume cognition to be purely internal, symbolic, computational, and disembodied, but seek out the gross and detailed ways that language and thought are inextricably shaped by embodied action.

Thus, embodiment theory emphasizes that cognition is deeply rooted in our physical interactions with the world, and these interactions fundamentally shape language and thought. The body's role in this process highlights its importance as a source domain for metaphorical thinking, influencing how abstract concepts are understood and expressed across languages.

2.1.1 The mind across languages: abdominocentrism, cardiocentrism, and cerebrocentrism

The conceptualization of internal experiences through body part terms varies significantly across cultures, despite the constancy of the human physical form. Researchers like Kövecses (1995) emphasize universal patterns in how internal experiences are

conceptualized in terms of the body. In contrast, others, such as Enfield and Wierzbicka (2002), Kövecses (2002), and Yu (2002), highlight the cultural and cognitive forces that shape the interpretation of physiological and internal experiences. Hupka et al. (1996) argue that although the genetic and physiological bases of emotions may be similar across all humans, the way emotions are discussed varies due to cultural scripting. For example, Ameka (2002) explores the cultural construction of emotion within the Ewe linguistic community, while Sharifian (2003) describes how cultural conceptualizations arise from cultural interactions and become internalized by members of that cultural group.

Given these perspectives, it is evident that the conceptualization of the mind and its relationship with the body varies significantly across cultures and languages. This variation is extensively explored in the book *Culture, Body, and Language: Conceptualization of Internal Body Organs Across Cultures and Languages*, edited by Farzad Sharifian, René Dirven, Ning Yu, and Susanne Niemeier (2008b). The book explains how internal body organs, such as the heart, are used in different languages to express human experiences like emotions and thoughts. A comprehensive summary of the investigation into the “locus of the mind” across languages is provided in the opening chapter, *Culture and Language: Looking for the “Mind” Inside the Body* (Sharifian et al., 2008a). Three major loci are presented: the abdomen region (abdominocentrism), the heart region (cardiocentrism), and the head region (cerebrocentrism). This classification shows that different cultures provide different and sometimes contrasting conceptual models. For example, as an abdominocentric language, Malay and Indonesian conceptualize *hati* ‘liver’ as the seat of both emotional and mental activities, while the cardiocentric Japanese conceptualize *こころ* *kokoro* ‘heart’ as the center. Some other examples of languages and their central cognition are as follows:

Abdominocentrism: Basque, Indonesian

Cardiocentrism: Japanese, Korean, Chinese

Cerebrocentrism: English, Persian (dualistic heart/head-centering conceptualization)

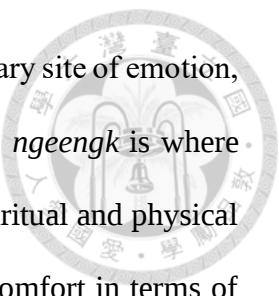


By employing cultural models, the authors analyze the similarities and differences in these conceptualizations across cultures, thereby contributing to our understanding of embodied cognition and cultural cognition. In the Greek-based West Asian, European, and North African cultures, there is a prevalent dualism between mind and matter, including the body, and between the head/brain (as the seat of intellect) and the heart (as the seat of emotions). This form of dualism highlights the distinct roles attributed to different body parts in the conceptualization of cognitive and emotional experiences.

In Chinese culture, 心 *xīn* 'heart' is adopted as the central faculty of cognition. Traditional Chinese medicine, influenced by the *yin-yang* theory and the five elements, has adopted a cardiocentric approach, viewing the heart as the center of the mind. This perspective is deeply rooted in ancient philosophical and medical thought and has remained consistent and stable throughout Chinese history (Yu, 2008).

In Indonesian abdominocentrism, the conceptualization of *hati* 'liver' as the seat of emotional and mental activities is not arbitrary but reflects a cultural model common among Indonesian people. Its origin can be found in the ancient Indonesian ritual of liver divination and ancient Indonesian cultural beliefs (Siahaan, 2008).

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In Kuuk Thaayorre, the *ngeengk* ‘belly’ is conceptualized as the primary site of emotion, spirit, and life force. This conceptualization stems from the fact that the *ngeengk* is where food is digested, and food plays a significant role in determining both spiritual and physical health. Unlike many ethnomedical systems that explain disease and discomfort in terms of internal forces (e.g., the European “four humours” or Chinese *qi*), the Thaayorre attribute most illnesses to supernatural agents, which involves the proscription of particular foods. These food taboos are anthropomorphic, drawing analogies between particular foods and the human body parts they might harm. For example, pregnant women and young parents are expected to avoid specific foods considered dangerous to the fetus/infant (Gaby, 2008).

The debate over the literal or figurative status of linguistic expressions codifying these conceptualizations is significant. Ameka (2002) argues that body part terms used in the description of emotion in Ewe should be taken literally, whereas Enfield (2002) contends that many Lao body part terms are polysemous, involving non-physical senses such as the “locus of intellect” or “locus of emotion.” Regardless of which perspective is correct, it is undeniable that linguistic expressions related to body part terms, whether used literally or figuratively, vary across cultures. The relationship between culture and conceptual metaphors is a critical question in cognitive anthropology. Cultural models, as defined by Holland and Quinn (1987), are presupposed, taken-for-granted models of the world that are widely shared by members of a society. These models play a significant role in understanding the world and behavior within it. The embodiment of cognition in Vietnamese reflects these cultural models, where body parts like *bụng*, *lòng*, and *ruột* are deeply intertwined with conceptualizations of intellect, emotion, and vitality.

2.1.2 Cultural models of Vietnamese abdominocentrism

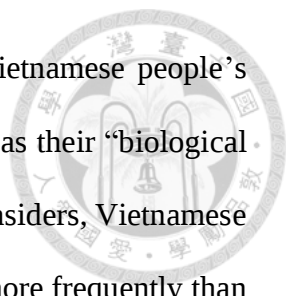
2.1.2.1 Summary of the abdominocentric nature of the Vietnamese language



Vietnamese is an abdominocentric language, a view supported by Tran (2012) and Dinh & Le (2016). Dinh & Le (2016) provide the most extensive explanation of why the Vietnamese central faculty of cognition is located in the abdominal region. Their arguments are threefold: the agriculture-based and historical context of Vietnam, the ethnomedical beliefs and practices, and Vietnamese philosophical beliefs. The first and third views are dissected in the following section, while the second view is discussed at length in 2.1.3.2, with an emphasis on Vietnamese traditional medicine.

As noted by Dinh & Le (2016), the sociocultural, agricultural, and historical contexts of Vietnam greatly influence the emphasis on the abdomen as the locus of thoughts and emotions. Vietnam's frequent natural disasters and prolonged history of conflict make basic survival a constant struggle. The reliance on wet-rice agriculture heightens concerns about food production, with the threat of famine from crop failure being a major fear. Consequently, the Vietnamese worldview is closely associated with food and nourishment, with hunger and an empty stomach being significant concerns. Moreover, both natural calamities, such as floods, and human-induced events, such as invasions, reinforce the need to keep the stomach full for survival and resistance. The focus on food and eating arises from the necessity to withstand annual disasters and adversaries, as captured by the proverb *có thực mới vực được đạo* 'without food, we can barely conquer the religious journey.' Thus, the ability to endure, sustain, and thrive in Vietnam is deeply connected to food.

Additionally, Dinh and Le (2016) highlight a Vietnamese philosophical conception of the heart, developed under the influence of Chinese culture (Ly, 2011). However, as Ly notes,

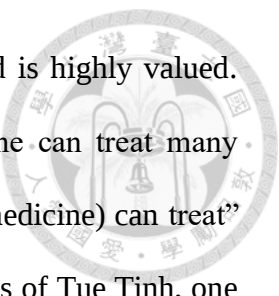


the Chinese' heart (*tâm* or *tim*) is metaphorically referred to as the Vietnamese people's "adopted child" (adopted concept), while the abdomen (*lòng*) is viewed as their "biological child" (original concept). According to Dinh and Le (2016), as cultural insiders, Vietnamese people tend to use *bụng* 'belly' and *lòng* 'abdomen' expressions much more frequently than the Chinese' heart (*tâm* or *tim*) to refer to their emotions and thoughts in everyday life. This view is reinforced by Tran (2012), who states, "[T]im không được coi là bộ phận cơ thể chứa đựng tình cảm, cảm xúc trong quan niệm của người Việt" ("The heart is not considered a body part that contains feelings and emotions in Vietnamese concept," p. 34). Expressions using *bụng* and *lòng* often draw on metaphorical meanings, unlike those using *tim*. For instance, Dinh and Le explain that if we say *đau tim* (pain-heart), it means that our heart is literally in pain (heart attack) or we are taken aback. In contrast, the expression for heartbroken as an emotional state is *đau lòng* (pain-abdomen).

2.1.2.2 The abdominocentric perspective from Vietnamese traditional medicine

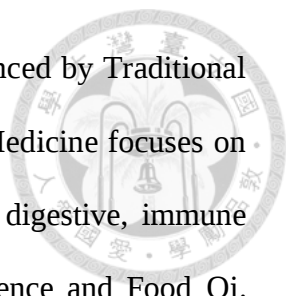
Vietnamese can draw parallels with the abdominocentric perspective of the Kuuk Thaayorre language (Gaby, 2008, p. 38). "The *ngeengk* 'belly' is where food is digested – the point at which foods become a part of the body. Where foods play such a significant role in determining both spiritual and physical health, then, it is not surprising that the *ngeengk* 'belly' is also viewed as connected to spiritual and emotional health."

Similarly, the importance of food in Vietnamese culture is highlighted in the previous section. However, this thesis also adds a contributory view to the matter by examining the practices of *Thuốc Nam*, or Southern medicine (known to its native speakers simply as *Thuốc Ta*, 'our medicine'). Southern medicine is the traditional medicine developed by Vietnamese people and founded by Tue Tinh (Dung & Bodeker, 2001). Southern medicine is an



indigenous medical system developed by native Vietnamese people and is highly valued. President Ho Chi Minh emphasizes its significance: “Western medicine can treat many illnesses, but there are some illnesses that only our medicine (Southern medicine) can treat” (Hoang, 2012, in Wahlberg, 2014). This recognition aligns with the views of Tue Tinh, one of the earliest figures in traditional Vietnamese medicine. Unlike previous generations who prioritize the five-element concept of metal, wood, water, fire, and earth rooted in Chinese traditional medicine, Tue Tinh focuses on plants. Following Southern medicine treatment, for more severe, chronic conditions, patients are often treated with home-prepared herbal Southern medicine teas/soups prescribed by Southern medicine doctors. To maintain health, Vietnamese also consume raw, dried, and fresh herbs thought to have health protection qualities, as well as health tonic products that are mostly herbal, manufactured and packaged, and are claimed to improve general health (Nguyen et al., 2016). During a time when Chinese medicine and pharmacology are dominant, he advocates that Vietnamese people are most likely to benefit from the products of their own environment, such as local plants and animals. While mastering and promoting traditional Chinese medical theory, his treatment philosophy is encapsulated in the phrase *Nam dược trị Nam nhân* “Southern drugs cure southern people.” This approach is rooted in using indigenous materia medica and is expressed through his writings in *Chữ Nôm* script, rather than classical Chinese (Dung & Bodeker, 2001).

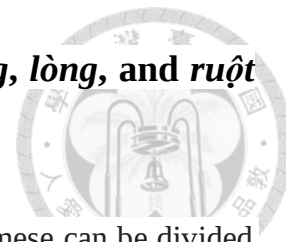
This perspective on Vietnamese traditional medicine aligns with Dinh and Le’s (2016) argument regarding ethnomedical beliefs and practices. However, they focus on *Đông Y* ‘Eastern Medicine’, which encompasses both the Vietnamese adaptation of Traditional Chinese Medicine, known as *Thuốc Bắc* ‘Northern Medicine’, and the traditional Southern medicine developed by Vietnamese people and founded by Tue Tinh, as discussed above.



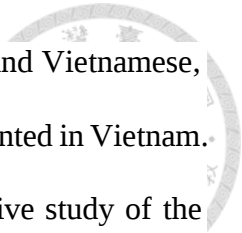
According to Dinh and Le (2016), although Eastern Medicine is influenced by Traditional Chinese Medicine, it has developed its own unique practices. Eastern Medicine focuses on the effects of Qi (energy), which manifests in various forms such as digestive, immune system, and mental state, all connected to the original Source or Essence and Food Qi. Dietetics plays a crucial role in Eastern Medicine, with food categorized into hot and cool/cold types based on their impact on health. The choice of diet and medication for patients depends on the type and amount of food consumed (Manderson & Mathews, 1981a, 1981b; Mathews & Manderson, 1981). The emphasis on the abdomen, particularly the stomach and intestines, in relation to cognitive and affective functions in TVM is supported by recent scientific research. Studies by Gershon et al. (1993), Gershon (1999), and Mayer (2011) demonstrate that the intestines can be considered the ‘second brain,’ with nerve cells in the gut functioning like a brain. This scientific basis supports the Vietnamese cultural conceptualizations of the abdomen as the center of emotions and thoughts.

Overall, this section summarizes previous scholars’ explanations regarding the focus on the abdomen as the center of thoughts and emotions in Vietnamese culture. This focus is motivated by the country’s sociocultural and historical context as a wet-rice agriculture-based society, the emphasis on dietetics in Eastern Medicine, and Vietnamese philosophical beliefs. Additionally, the emphasis on the use of Southern medicine highlights how herbal remedies, in terms of food, play an important role in physical health, which, in turn, explains the abdomen’s central role in spiritual and emotional well-being.

2.2 Relevant studies on the semantic development of *bụng*, *lòng*, and *ruột* in Vietnamese



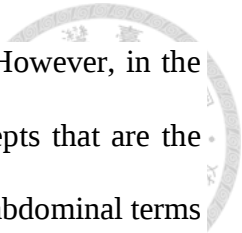
Cognitive linguistic research on internal body organs in Vietnamese can be divided into two main perspectives: onomasiology and semasiology. Onomasiology examines the naming of concepts and ideas in language, whereas semasiology investigates the meanings and their changes in words or expressions. In the realm of onomasiology, three notable publications stand out. Vu (2007) conducts a study on 198 Vietnamese lexical units related to body parts and their expressions of possible emotions and attitudes. In this research, *bụng*, *lòng*, and *ruột* are listed among thirty-two body parts expressing eighteen states of emotions and attitudes in Vietnamese. They rank 2nd, 4th, and 8th respectively in terms of the number of lexical units these body part terms form to express emotions in Vietnamese. The most popular body part is *mặt* (face) with 38 lexical units. *Bụng* is associated with 6 lexical units, *lòng* with 32 lexical units, and *ruột* with 13 lexical units. Tran (2018) provides an extensive analysis of the conceptual structures of Vietnamese emotions, which encompasses various uses of internal organs and fluids, including *ruột* and *bụng*. In the chapter examining the conceptualizations of the internal organ *ruột* ('intestines') and the body part *bụng* ('belly'), these are described as containers of most emotions, thoughts, and cultural values in Vietnamese. However, *lòng* is not included in this chapter. This omission might be due to the general nature of *lòng*, as it cannot easily be classified as a specific organ or body part. Nonetheless, later in this thesis, we will discuss how this generality plays an important role in its designation as the locus of the mind in the Vietnamese language. Ly (2015) includes *bụng*, *lòng*, and *ruột* in an analysis of the heart in Russian culture and language. His analysis highlights cultural and cognitive differences between 'Western' and 'Oriental' languages,



comparing linguistic data from Russian, French, and English with Chinese and Vietnamese, as well as some languages from families and groups in Southeast Asia represented in Vietnam. However, the appearance of *bụng*, *lòng*, and *ruột* is brief in this comparative study of the Russian proverb *С глаз долой, из сердца вон* ‘Out of sight, out of mind’, serving only as examples in the search for Vietnamese equivalents.

Turning to the semasiology approach, notable papers include those by Nguyen (2009), Tran (2012), and Dinh & Le (2016). Nguyen (2009) investigates Vietnamese idioms featuring the word *ruột*, highlighting its metaphorical representation as a container symbolizing feelings or emotions. Dinh & Le (2016) research the Vietnamese cultural conceptualization of *bụng* and *lòng* using the conceptual metaphor framework, an aspect overlooked by other scholars. Tran (2012) compares the use of *bụng*, *lòng*, *ruột*, and *dạ* (stomach) with their equivalents in other languages. Through an analysis of literary works, she emphasizes the importance of these terms in Vietnamese for expressing emotions, contrasting them with heart-centered languages like Japanese and Chinese. She also indicates that among these words, *lòng* occupies the most central position in expressing emotion in Vietnamese. However, these studies stop at pointing out Vietnamese abdominocentrism, using linguistic examples that encompass *bụng*, *lòng*, and *ruột*. They do not explain the reasoning behind Vietnamese abdominocentrism or why *lòng* is prominent in relation to emotion expression in Vietnamese. In other words, they do not address why *lòng* is considered the mind in the Vietnamese language.

Overall, research on *bụng*, *lòng*, and *ruột* has taken two directions. First, they have been mentioned in the onomasiology approach to Vietnamese conceptualizations of the mind or emotions. Second, they have provided insight into Vietnamese views on

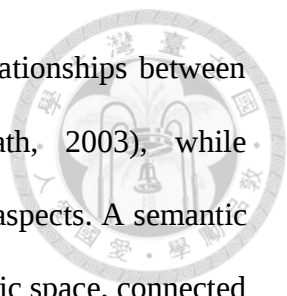


abdominocentrism and have been the focus in the semasiology approach. However, in the first approach, *bụng*, *lòng*, and *ruột* play an attributional role to the concepts that are the primary focus of the study. In the second approach, the analysis of the three abdominal terms is limited to listing their metaphorical usages in comparison with other languages, highlighting Vietnamese abdominocentrism. Other non-metaphorical or metonymic senses are not covered in these semasiology studies. This thesis aims to fill this gap by proposing a semantic map approach, systematically presenting all the senses that *bụng*, *lòng*, and *ruột* cover. This approach will not only provide a comprehensive list of the senses these terms encompass but also explain how they are arranged and connected. With this systematic semantic map, it becomes possible to shed light on why Vietnamese has such an interesting linguistic view regarding abdominal organs.

2.3 Principled Polysemy

2.3.1 The semantic map approach to polysemy

The present thesis exploits the semantic map as a concise tool for conducting an intra-linguistic comparison of the polysemous semantic networks associated with the terms *bụng*, *lòng*, and *ruột* in Vietnamese. Polysemy is the linguistic phenomenon whereby a single word or phrase has multiple meanings or senses. It is prevalent in natural languages, enriching vocabulary usage while posing a recurring challenge in linguistic analysis. This phenomenon impacts all significant elements of language, including content words, function words (such as prepositions and auxiliaries), and affixal categories (such as tense and case). There are various approaches to polysemy, including the semantic-map method, the list method, and the general-meaning method. The semantic-map method is particularly appealing to



typologists as it offers a convenient graphical representation of the relationships between meanings or functions in cross-linguistic comparison (Haspelmath, 2003), while simultaneously distinguishing between universal and language-specific aspects. A semantic map is a visual representation of functions within a conceptual or semantic space, connected by lines to form a network. The term “semantic map” is used by various linguists, including Kemmer (1993), Stassen (1997), and Auwera & Plungian (1988), while Croft (2001) refers to it as “conceptual space.” Other terms include “mental map” (Anderson, 1986) and “cognitive map” (Kortmann, 1997). However, “semantic map” is chosen here for its clarity and relevance to the study’s scope.

Initially developed to describe patterns of polysemy in grammatical categories, the semantic map model has demonstrated its versatility by extending to lexical items and constructions, suggesting its potential for intra-linguistic comparison within the lexical domain (François, 2008; Haspelmath, 2003; Huang, 2007). Additionally, the Principled Polysemy approach has been applied not only to prepositions but also to abstract nouns, such as “time” (Evans, 2004, 2005). **Figure 3.2** illustrates a semantic network for *time*, as analyzed by Evans (2005) using Principled Polysemy. In these networks, a prototypical or Sanctioning Sense is central, surrounded by peripheral senses. Evans identified eight distinct senses of *time*, with the DURATION sense serving as the proto-scene. He considers the Duration Sense as the Sanctioning Sense by employing five criteria to designate the primary sense. This proto-scene acts as the focal point around which the other distinct senses are organized into two sense clusters. Using two criteria for distinguishing distinct senses, he identified seven additional senses. This structured approach helps understand how terms develop multiple related meanings through cognitive principles such as metaphor and metonymy. Details

about the Principled Polysemy approach and its application to the evolving senses of *bụng*, *lòng*, and *ruột* will be introduced in the following section.

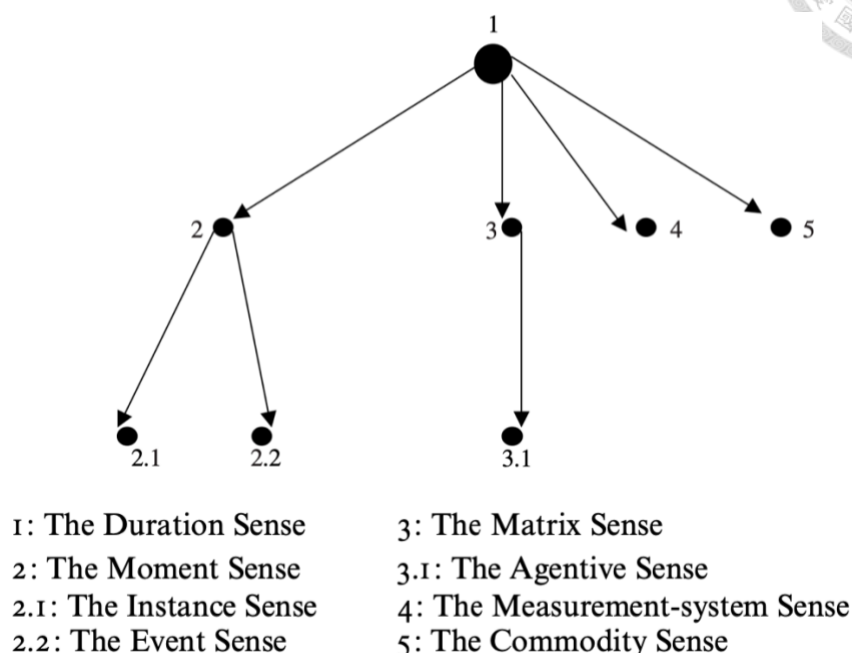
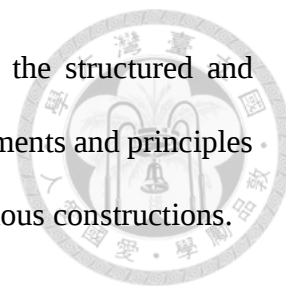


Figure 2.1 The Principled Polysemy approach to the semantic network of *time* (replicated from Evans, 2005, p. 52)

2.3.2 Model of Principled Polysemy

The present study follows the model of Principled Polysemy proposed by Vyvyan Evans and Andrea Tyler (Evans, 2004, 2005; Tyler & Evans 2001, 2003) to categorize the distinct senses of the newly emerging polysemy in *bụng*, *lòng*, and *ruột*. The Principled Polysemy approach, developed by them, is a framework in cognitive linguistics used to analyze how a single word can have multiple related meanings (polysemy). Unlike traditional approaches that might treat different meanings as separate entries, the Principled Polysemy approach views them as systematically related through cognitive principles. It identifies a primary sense and examines how other senses extend from this primary sense through

processes like metaphor, metonymy, and generalization, emphasizing the structured and motivated nature of semantic extensions. This section introduces the elements and principles of the Principled Polysemy approach in analyzing the senses of polysemous constructions.



2.3.2.1 Elements of Principled Polysemy

The Principled Polysemy Model represents a radial-like structure forming a word's semantic network, with various distinct senses centered around a sanctioning sense or proto-scene (i.e., the prototypical sense at the core of the semantic network). A proto-scene is the prototype within the semantic network, representing the most basic sense from which other distinct senses derive. This concept is based on the idea of a “highly abstract and schematized representation,” from which other senses are systematically derived (Tyler & Evans, 2004, p. 264). The notion of prototypicality is used to determine this primary sense, yet determining the most basic sense remains a challenge. Tyler and Evans acknowledge this issue, stating, “we have the problem of establishing what a prototype is or should be” (Tyler & Evans, 2003, p. 46). Therefore, the linguistic evidence includes the four criteria used to define the proto-scene, which are further discussed in Section 2.3.2.2. In this model, distinct senses often arise from reanalyzing specific aspects of a recurring complex conceptualization. Essentially, the original complex conceptualization from which a distinct sense emerges is derivable from the proto-scene, linking the resultant sense to the proto-scene in a structured manner. When multiple senses arise from a complex conceptualization, they form a cluster of senses, represented by an open circle in the semantic network. In contrast, a single distinct sense is shown as a shaded sphere. **Figure 2.2** shows the proto-scene labeled as “1” connected to both individual senses (labeled “2,” “3,” and “4”) and a sense cluster. Methods for determining distinct senses and the primary sense will be clarified in the following sections.

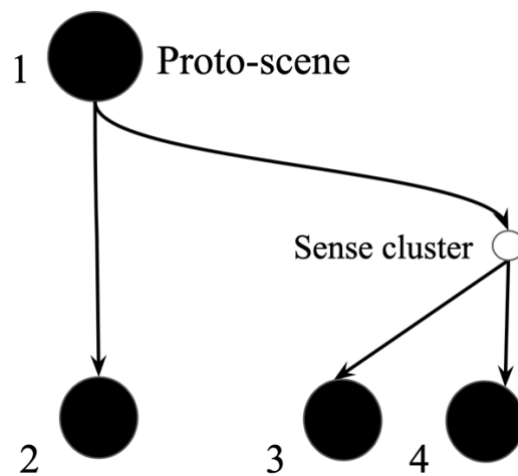


Figure 2.2 Basic elements of Principled Polysemy model (interpretation from Tyler & Evans 2001, 2003)

Figure 2.3 illustrates the polysemy of the preposition “over” as analyzed by Tyler & Evans (2001, 2003). The directional arrows in the map indicate an upper-level to lower-level progression within the constructional taxonomy, often paralleling the shift from hypernymy to hyponymy. Each sense is connected to the proto-scene, forming a structured and motivated network of meanings. Clusters of senses, such as the A-B-C Trajectory Cluster and the Up Cluster, are represented by open circles, while individual distinct senses are shown as shaded spheres. This visual representation highlights how different senses are systematically related through cognitive principles, demonstrating extensions from the primary sense.

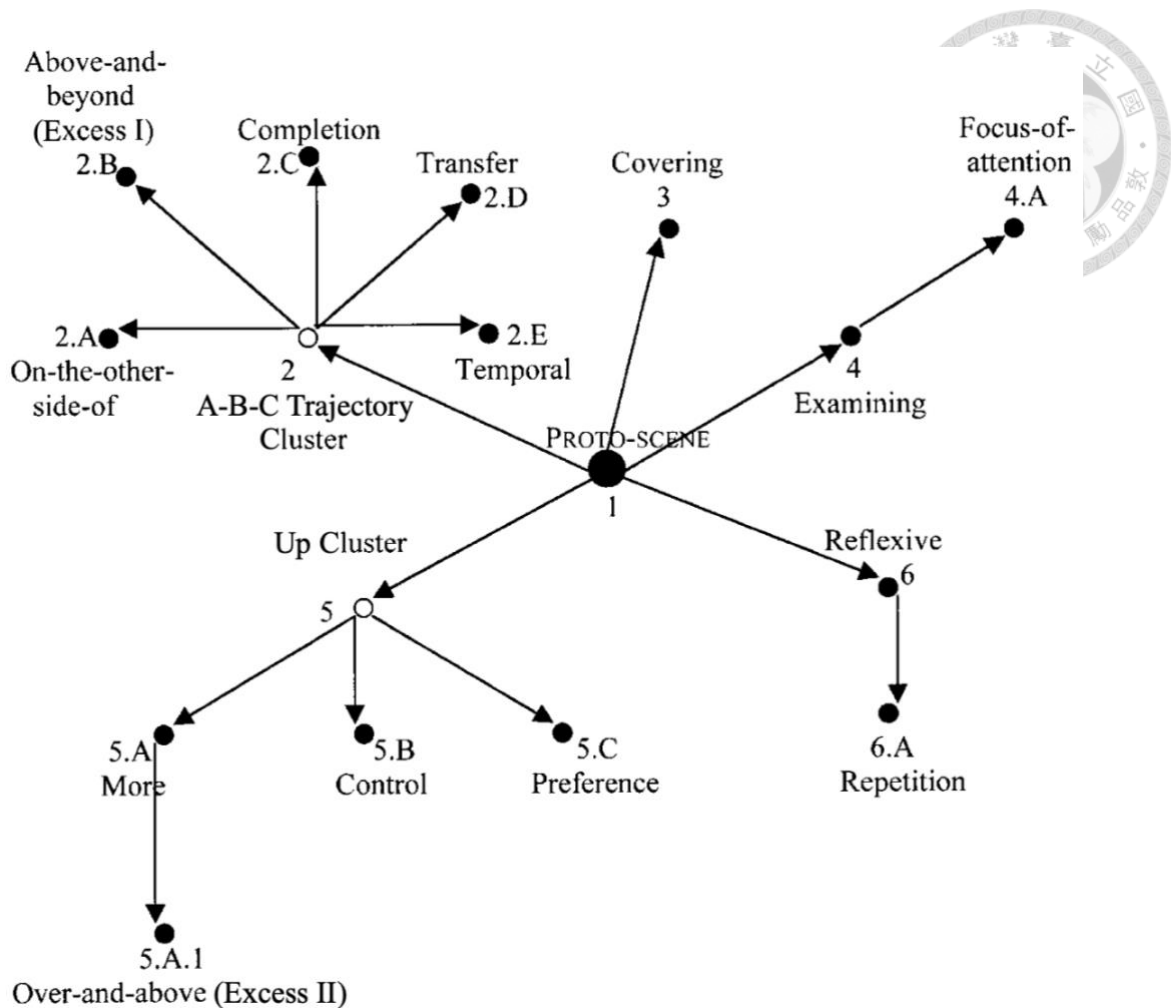
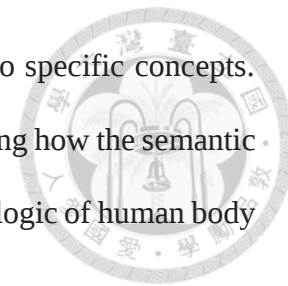


Figure 2.3 The Principled Polysemy approach to the semantic network of *over* (replicated from Tyler & Evans, 2003, p. 80)

The selection of the Principled Polysemy model for this study is particularly appropriate due to its diachronic focus. Tyler and Evans initially developed their model in the context of English prepositions like “over,” which are established as fully functional grammatical items. However, their approach did not emphasize diachronic analysis or historical data examination. This aspect of their model aligns well with the synchronic nature of this study, which proposes hypothetical rather than empirically evidenced semantic connections of *bụng*, *lòng*, and *ruột*. In the Principled Polysemy framework, the directional flow from a conceptually general to a conceptually specific understanding mirrors our

comprehension of the human body, as we also progress from general to specific concepts. Therefore, the Principled Polysemy framework is well-suited for analyzing how the semantic extensions of *bụng*, *lòng*, and *ruột* evolve in alignment with the inherent logic of human body conceptualization.

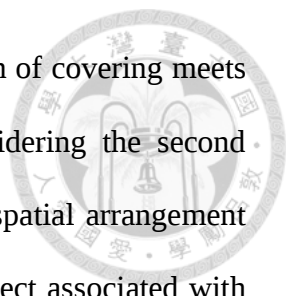


2.3.2.2 Determining distinct senses

According to Tyler & Evans (2001, 2003), two criteria are proposed to determine distinct senses: (1) it must contain additional meaning not apparent in any other senses associated with a particular form, and (2) there must be instances of the sense that are context independent (Tyler & Evans, 2003, p.42-43). The first criteria means a distinct sense should have “non-spatial meaning” or “different TR-LM configuration” with respect to the proto-scene at the core of the semantic network. The second criteria means a distinct sense should not rely solely on the context to be understood; it should be clear and unambiguous even without additional contextual information. To illustrate, let’s examine the following examples provided in Tyler and Evans’ analysis for clarification:

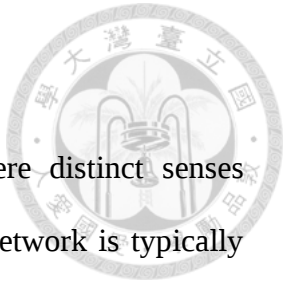
- (a) The hummingbird hovered over the flower
- (b) Joan nailed a board over the hole in the ceiling

In sentence (a), *over* describes a relationship between a trajector (TR), *the hummingbird*, and a landmark (LM), *the flower*. The spatial arrangement entails the TR being positioned higher than the LM, regardless of their metric properties. Contrarily, in sentence (b), the TR and LM are arranged vertically concerning the vantage point, and the TR (*the board*) is positioned adjacent to the LM (*the wall*). Here, *over* seems to imply covering the hole and thereby concealing it from view. This connotation of covering and concealing adds an extra



layer of meaning not found in sentence (a). This additional interpretation of covering meets the first criterion for identifying a distinct sense. Furthermore, considering the second criterion, assuming that the primary sense of over involves a specific spatial arrangement where the TR is higher than the LM, it's unclear how the covering aspect associated with over in sentence (b) could be inferred from context alone. Typically, the spatial relation described in (b) would be conveyed using *below* (i.e., *the board is below the hole in the ceiling*) rather than *over*. Without prior knowledge of the covering meaning of *over*, there is no obvious contextual cue to derive this sense in sentences like (b). This fulfills the second criterion, suggesting that the covering meaning of *over* in (b) constitutes a distinct sense. Tyler and Evans are concerned that their two criteria may need adjustments in future research. While they recognize the rigorous nature of these criteria, they acknowledge the potential for future empirical studies to reveal instances where legitimate senses might be overlooked. However, they refrain from preemptively dismissing future findings and suggest that their methodology already accounts for many observed results. They argue that their approach provides a reasonable way to distinguish between distinct senses stored in semantic memory and contextual inferences formed for immediate understanding. Moreover, given the ongoing lack of consensus on the granularity of polysemy networks in the field, their methodology represents a significant advancement. Its appeal lies in its rigorous and relatively consistent nature, enabling judgments on the distinctiveness of senses across various contexts. In summary, Tyler and Evans assert that their criteria remain the most effective method for determining distinct senses within polysemy. Consequently, we will also rely on their criteria to identify different distinct senses of *bụng*, *lòng*, and *ruột* in this research.

2.3.2.3 Determining the proto-scene

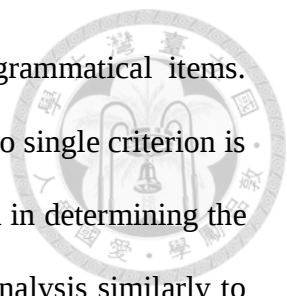


Principled Polysemy propose a radial semantic network where distinct senses revolving around the proto-scene. The core sense within a polysemy network is typically understood as the prototype, representing the most general and overarching meaning among the various polysemous senses. The term *prototypes* refers to the best examples within categories, yet difficulties arise in determining what qualifies as the “best.” Categories are mentally represented in terms of these prototypes, with other entities’ degrees of category membership determined by how similar they are to the prototype. This is known as the Prototype = Representation Interpretation (Lakoff, 2007) . There are two main variations of this interpretation: one where the prototype is seen as an abstraction, like a schema or a bundle of features, and another where it’s viewed as an exemplar, a specific example. This thesis adopts the first variation, considering the prototype as the abstraction representing the most general and overarching meaning among various senses within polysemy. The core sense in our network represents the most general and overarching meaning among the various polysemous senses. This core sense, often referred to as the “sanctioning” sense by Langacker (1987, p. 157), serves as the foundation from which other senses may have been extended. This approach aligns with Lakoff’s (1987) perspective, who suggested that lexical categories and polysemy networks are structured around prototypical meanings.

Following the criteria proposed by Tyler & Evans (2001, 2003), there are five criteria suggested for identifying the primary sense or the proto-scene: (1) earliest attested meaning, (2) predominance in the semantic network, (3) use in composite forms (Langacker, 1987), (4) relations to other spatial particles, and (5) grammatical predictions (Langacker, 1987). A detailed explanation of these criteria follows:

- 
- **Earliest attested meaning:** The primary sense should be the earliest historically documented meaning.
 - **Predominance in the semantic network:** This refers to the unique spatial configuration that is present in the majority of distinct senses within the network. For example, in Tyler and Evans's analysis, out of fifteen distinct senses of the particle *over*, eight involve the TR being located higher than the LM, suggesting that the primary sense for *over* involves this spatial relation.
 - **Use in composite forms:** Spatial particles are involved in various composite lexical units, such as compound forms (e.g., “overcoat”) and verb particle forms (e.g., “look over”). While this criterion is less critical compared to others, failure to participate in composite forms can suggest that a particular sense is not primary in the network.
 - **Relations to other spatial particles:** Certain clusters of spatial particles form contrast sets that divide various spatial dimensions, such as “over-under” and “above-below.” The sense that distinguishes a particle from others in its contrast set is likely a primary sense. For example, the sense of *over* that contrasts with *above*, *under* and *below* involves the TR being located higher than but potentially within reach of the LM.
 - **Grammatical predictions:** The choice of a primary sense should lead to testable grammatical predictions. For instance, if distinct senses were derived from a pre-existing sense and became part of the semantic network through routinization and entrenchment of meaning, a number of senses should be directly derivable from the primary sense.

Tyler and Evans' criteria offer a starting point for developing a methodological approach aimed at achieving replicable findings in an inter-subjective manner. However, these criteria are primarily designed to identify the primary sense for individual spatial



particles, whereas our study focuses on content words rather than grammatical items. Therefore, while we use these criteria as a reference, we recognize that no single criterion is definitive. Instead, it is the cumulative weight of evidence that is crucial in determining the core meaning. Following this line of thought, we aim to structure our analysis similarly to Lakoff's model, where the prototypical sense occupies a central position within a radiating lattice structure, while other senses are depicted as more peripheral. The primary sense of *bụng*, *lòng*, and *ruột* will be further examined in their proto-scene sections of Chapter 4.

2.4 Mechanisms of cognitive linguistics : Image schema, metonymy and metaphor

Principled Polysemy demonstrates how different senses are systematically related through cognitive principles within a semantic network, showing extensions from the primary sense. This thesis applies the cognitive principles of metonymy, image schema, and metaphor to explore the mechanisms driving the semantic connections of *bụng*, *lòng*, and *ruột*. The following section provides a concise overview of each concept and the chosen framework for each, accompanied by relevant examples. These three mechanisms represent different layers of human cognition: metonymy connects deeply with bodily experiences in the physical world, image schemas reflect our sensory and spatial experiences, and metaphors are tightly linked with abstract concepts and ideas. These layers mirror the semantic extensions that *bụng*, *lòng*, and *ruột* undergo in Vietnamese, which is why they are implemented in this paper. Since metonymy and metaphor are often confused, they will be introduced together for better differentiation in the section below, followed by the section on image schemas.

2.4.1 Metonymy and metaphor



Metonymy and metaphor are both cognitive tools used to understand and describe concepts, but they function differently. Metaphors are based on similarity, mapping one domain onto another. For example, “time is money” allows us to understand the abstract concept of time through the concrete concept of money (Lakoff & Johnson, 1980). In contrast, metonymy is based on contiguity, mapping within a single domain. An example is using “the White House” to refer to the U.S. President or administration, relying on actual closeness in context (Lakoff, 1987). Jakobson’s (1956) dichotomy of contiguity vs. similarity further informs this distinction, as he proposed that metaphor relies on similarity or resemblance, whereas metonymy operates on the basis of contiguity. However, metonymy motivates the core of some conventional metaphor in which ANGER AS HEAT is a notable example, as an angry person subjectively feels hot. Although human experiences can be subjective but there are basic experiences, for instance, experiences of the physiological body are found similar across languages. The metonymy BODY HEAT STANDS FOR ANGER found in different languages (Kövecses 2000, 2002) serves as evidence for a universal aspect of the anger emotion. Goossens (1990) names *Metaphtonymy* as the type of interaction between metonymy and metaphor where examples such as *My lips are sealed strive*. In this case, both metaphor and metonymy contribute to the figurative meaning. Since this research focuses on two basic human emotions which are anger and sadness, the blur line between metaphors and metonymy is unavoidable.

2.4.1.1 Metonymy

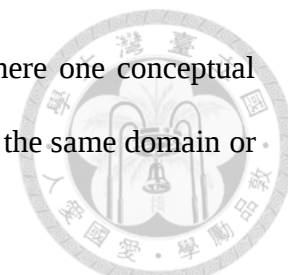


The basis of metonymy lies in the notion of contiguity, as discussed by Kövecses and Radden (1998) and Peirsman and Geeraerts (2006). Contiguity refers to the close association or proximity between concepts within a specific context. For example, “The White House” is used to represent the President or the administration (spatial contiguity, as the White House is the location of the President’s office), and “Crown” is used to represent a monarchy or king (causal contiguity, as the crown is a symbol worn by the king). In these instances, the concepts are not linked by resemblance but by their close association within a particular context. When metonymy occurs, there is a “shift in profile,” meaning attention shifts from one element to another within the same domain (Langacker, 2008). This shift highlights a specific feature or part, making it the new profile while the rest remains in the background. The “figure” is the focal element, and the “ground” provides context. Originating from Gestalt psychology, these concepts are similar to the “profile” and “conceptual base” in image schemas. Understanding metonymy involves recognizing this shift and how relationships of contiguity, figure and ground, and profiling convey meaning efficiently. To facilitate this, the roles of Idealized Cognitive Models (ICMs) are introduced in the following section.

2.4.1.2 Metonymy and Idealized Cognitive Models (ICMs)

Lakoff, Johnson, and Turner (Lakoff & Johnson, 1980; Lakoff, 1987; Lakoff & Turner, 1989), along with Croft (1993), argue that traditional notions of “contiguity” or “proximity” in metonymy can be explained through knowledge structures defined by “domains” or “idealized cognitive models” (ICMs). Using a theory of knowledge structure as defined by

domains or ICMs helps explain the traditional view of metonymy, where one conceptual entity (the vehicle) provides mental access to another (the target) within the same domain or ICM (Lakoff, 1987).



ICMs are a fundamental concept in cognitive linguistics, introduced by Lakoff (1987). They are structured mental representations that humans use to organize their experiences, simplifying complex realities into manageable concepts. Each ICM is a complex whole, or gestalt, that structures mental spaces. For example, the category MOTHER is structured by a cluster model of several converging ICMs, like the birth model and genetic model (Lakoff, 1987). Kövecses and Radden (1998) applied ICMs to specify various metonymic types within different ICMs. Given that knowledge is organized by structured ICMs perceived as wholes with parts, the types of metonymy-producing relationships can be subsumed under two general configurations: (a) Whole ICM and its parts and (b) Parts of an ICM. The first configuration leads to metonymies accessing a part via its whole or vice versa. The second configuration leads to metonymies accessing a part via another part of the same ICM, implying the whole ICM is present in the background. The first configuration applies to various ICMs, including thing-and-part, scale, constitution, complex event, category-and-member, and category-and-property ICMs. The second configuration applies to parts of ICMs such as action, perception, causation, production, control, possession, containment, indeterminate relationships, and sign and reference ICMs.

For example, according to Kövecses and Radden (1998), the Thing-and-part ICM leads to two metonymic variants: WHOLE THING FOR A PART OF THE THING (e.g., “America” for the United States) and PART OF THE THING FOR THE WHOLE THING (e.g., “England” for Great Britain). Additionally, there are Scale ICMs (e.g., “How old are you?”), Constitution ICMs (e.g.,

“wood” for “the forest” in the MATERIAL CONSTITUTING AN OBJECT FOR THE OBJECT variant), Complex Event ICMs (e.g., “Mary speaks Spanish” in the CO-PRESENT SUBEVENTS FOR COMPLEX EVENT variant), Category-and-member ICMs (e.g., “the pill” for “birth control pill” in the CATEGORY FOR A MEMBER variant), and Category-and-property ICMs (e.g., “blacks” for “black people” in the DEFINING PROPERTY FOR CATEGORY variant).

Since the relationship between a whole and its parts typically applies to things, it correlates with the embodiment subject of this study in explaining body-related semantic associations. For example, the PART OF THE THING FOR THE WHOLE THING metonymic variant explains the semantic connections of LÔNG_{N2}: The OFFAL sense and RUỘT_{N2}: The INTESTINES sense. These two are pure metonymy analyses, as shown in their noun forms.

2.4.1.3 Metaphor

The term *metaphor* in this paper refers to the *Conceptual metaphor theory* (CMT) Lakoff and Johnson proposed (1980). Conceptual metaphor theory, revolutionized the understanding of how metaphors shape human thought and language. According to this theory, metaphors are not merely linguistic expressions but are fundamental to our cognition, allowing us to understand abstract concepts through more concrete experiences. CMT operates using a set of metaphorical mappings between a source domain and a target domain. The source domain is usually concrete and familiar, since it relates to tangible and corporeal experiences. The target domain is more abstract, since it relates to ideas and concepts. The source domain is the conceptual domain in which mapping relations are structured. For instance, the metaphor LOVE IS A JOURNEY can be observed in **Table 2.1**. As metaphor borrows structuring ideas from the domain of a journey and applies them to love, we are able to make

expressions such as: *We've come a long way together, We've decided to go our separate ways.*

Table 2.1 The conceptual metaphor framework denoting the metaphor LOVE IS A JOURNEY
(adapted from Lakoff, 1993)

Source domain: JOURNEY		Target domain: LOVE
travelers	⇒	lovers
vehicle	⇒	relationship
journey destination	⇒	life goal
crossroad	⇒	turning point in a relationship
advancement in place	⇒	progress in a relationship
impediments	⇒	problems in a relationship
taking different road	⇒	splitting up
ending of a journey	⇒	ending of a relationship

2.4.1.4 Grounding conceptual metaphors in experience

Let us now examine the major ways in which conceptual metaphors are grounded in experience, whether perceptual, biological, or cultural. This grounding, often referred to as the experiential basis or motivation of a metaphor, can be observed in correlations in our experiences. A wide range of these correlations can be found in Kövecses (2010), *Metaphor: A Practical Introduction* (2nd ed.). To name a few: For instance, the conceptual metaphor MORE IS UP stems from the correlation between adding fluid to a container and the fluid level rising, linking quantity with verticality. Expressions like “prices going up” are thus well-motivated. Not all metaphors have such direct grounding; for example, LIFE IS A JOURNEY

derives from the broader metaphor PURPOSES ARE DESTINATIONS. Additionally, some metaphors, like ANGER IS HEAT, are based on bodily experiences, correlating the experience of anger with body heat, expressed through metaphors like ANGER IS A HOT FLUID and ANGER IS FIRE.

In some cases, the perception of structural similarity may be created by what Kövecses (2010, p. 38) calls “ontological metaphors.” These metaphors provide much less cognitive structuring for target concepts compared to “structural metaphors” (Kövecses, 2010, p. 37), where the source domain offers a relatively rich knowledge structure for the target concept. Ontological metaphors are extremely basic, as they give shape or status to entities and events that are not physical objects, substances, or containers. When two concepts (one abstract, the other concrete) share this basic shape or status, it can create the perception of certain structural similarities between them. A form of this is called “personification” (Kövecses, 2010, p. 39), where we use one of the best source domains we have—ourselves—to metaphorically describe nonhuman entities and events. For example, consider the conceptual metaphor IDEAS ARE FOOD. This metaphor helps us perceive structural similarities between the abstract concept of ideas and the more concrete concept of food. These similarities can be mapped as follows:

Table 2.2 Similarities between food and ideas (adapted from Kövecses, 2010, p. 83)

Food	Ideas
we cook it	we think about them
we swallow it or refuse to eat it	we accept them or reject them
we chew it	we consider them
the body digests it	the mind understands them
digested food provides nourishment	understanding provides mental well-being

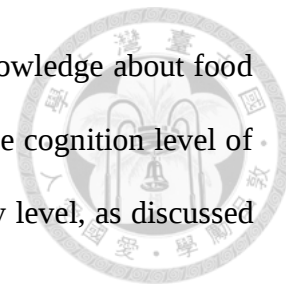
These perceived structural similarities are illustrated through the following mappings that show the correspondence between the concept of ideas and the concept of food, as exemplified by expressions like “I can’t swallow that claim.”

Table 2.3 Mappings for IDEAS ARE FOOD metaphor (adapted from Kövecses, 2010, p. 83)

Source domain: FOOD		Target domain: Ideas
cooking	⇒	thinking
swallowing	⇒	accepting
chewing	⇒	considering
digesting	⇒	understanding
nourishment	⇒	mental well-being

This perception is facilitated by basic ideas about the mind: THE MIND IS A CONTAINER, IDEAS ARE ENTITIES, and COMMUNICATION IS SENDING IDEAS FROM ONE MIND-CONTAINER TO ANOTHER, known as the “conduit” metaphor. These ontological metaphors for the mind arise from assumptions about the human body: THE BODY IS A CONTAINER, FOOD CONSISTS OF OBJECTS, and WE RECEIVE FOOD FROM OUTSIDE THE BODY. These assumptions and metaphors allow us to

conceptualize ideas and the mind in ways that reflect our structured knowledge about food and the body. This framework also clarifies the sense associations at the cognition level of *bụng*, *lòng*, and *ruột*, stemming from the Proto-scene BELLY at the body level, as discussed in Chapter 4.



2.4.1.5 Metaphor identification procedure

In Chapter 3, we proceed with sense tagging. During this procedure, each keyword is extracted along with its context, and the corresponding sense is identified. The group of senses in this process includes the primary sense and distinct senses, identified using guidelines from Principled Polysemy. The total count for each sense is calculated and presented in Section 3.1.3. The COGNITION sense of each keyword is actually metaphorical, where the body part is used to convey cognitive abilities rather than bodily experiences. To distinguish linguistic metaphors from literal expressions, we employ the metaphor identification procedure (MIP) designed by the Pragglejaz Group. The MIP involves the following steps (Pragglejaz Group, 2007, p. 3):

1. Read the entire text-discourse to establish a general understanding of the meaning.
2. Determine the lexical units in the text-discourse:
3. (a) For each lexical unit in the text, establish its meaning in context, that is, how it applies to an entity, relation, or attribute in the situation evoked by the text (contextual meaning). Take into account what comes before and after the lexical unit. (b) For each lexical unit, determine if it has a more basic contemporary meaning in other contexts than the one in the given context. For our purposes, basic meanings tend to be:



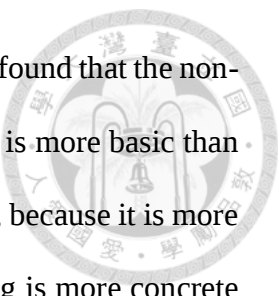
- More concrete (what they evoke is easier to imagine, see, hear, feel, smell, and taste) ;
- Related to bodily action ;
- More precise (as opposed to vague) ;
- Historically older. Basic meanings are not necessarily the most frequent meanings of the lexical unit.

(c) If the lexical unit has a more basic current-contemporary meaning in other contexts than the given context, decide whether the contextual meaning contrasts with the basic meaning but can be understood in comparison with it.

4. If yes, mark the lexical unit as metaphorical.

To see how it works, let's refer to an example in Kövecses's classic *Metaphor: A Practical Introduction* (2010, p. 5): "*He's without direction in life.*"

- At step 1, after reading the whole text, we assume the sentence is part of a larger discourse about someone's life.
- At step 2, the lexical units in the sentence are identified as follows, with slashes indicating the boundaries between lexical units: He/ is/ without/ direction/ in/ life.
- At step 3a, examining the contextual meanings of these lexical units, it is found that: "He" refers to a previously mentioned male person, "is" means "exist", "without" denotes "not having something", "direction" indicates the person's general attitude or behavior; "in" expresses a state; and "life" is a state of being alive.
- At step 3b, two of these words have more basic meanings than their contextual meanings: "direction" and "in."

- 
- At step 3c, comparing the contextual meaning and basic meaning, it is found that the non-contextual meaning of “direction,” which is the way an entity moves, is more basic than its contextual meaning, the manner in which someone acts or behaves, because it is more concrete. The same applies to “in,” where the non-contextual meaning is more concrete than the contextual one. Since the two contextual meanings contrast with their non-contextual meanings but can be understood in comparison with them, we can identify the two words as being metaphorically used in our imagined discourse.
 - At step 4, the final decision that the two units “direction” and “in” are used metaphorically is reported.

Not all cases of metaphor identification are as straightforward as these two words, as the founders of the procedure, some of the most notable researchers in the field of metaphors, state themselves: “The nine of us also disagreed over certain cases, and sometimes had different reasons for supporting the same judgments as to whether a specific word should be judged as metaphorical” (Pragglejaz Group, 2007, p. 13). However, the procedure still serves as a useful guideline in many instances of identifying linguistic metaphors in a text and allows scholars to pinpoint the locus of their disagreements as to why, or why not, a word is presumed to convey metaphorical meaning in context. In this thesis, since the focus of our study is *bụng*, *lòng*, and *ruột*, we only consider the contextual meaning and the basic meaning of these keywords and all lexical items in the discourse.

2.4.2 Image schema

In linguistics, an image schema is a recurring, dynamic pattern of our perceptual interactions and motor programs that provides a foundational structure for conceptual understanding. Johnson (1987, p. 29) defines image schemas as “recurring, dynamic pattern(s)

of our perceptual interactions and motor programs that gives coherence and structure to our experience.” These schemas emerge from bodily experiences and serve as fundamental building blocks for cognition and language. They help us understand abstract concepts by mapping them onto more concrete, physical experiences. For example, the CONTAINMENT schema (something is inside something else), shown in **Figure 2.4**, derives from our experience with physical containers and can be applied to understand abstract ideas like “being in love” or “falling into depression” (Johnson, 1987; Lakoff, 1987). Image schemas are vital for understanding how language and thought are grounded in sensory and motor experiences (Mandler, 1992). By linking bodily experiences with linguistic expressions, image schemas facilitate the comprehension and communication of complex ideas through more accessible, embodied metaphors. In this thesis, image schema is used to illustrate the semantic associations that give rise to the distinct senses BỤNG_{N2}: The PROTRUDING PART sense, LÒNG_{N3}: The CENTRAL BOTTOM sense, and RUỘT_{N3}: The INTERIOR sense at the space level in the semantic network. The basic elements of image-schema involve profiling, conceptual content (base), and the trajectory/landmark alignment.

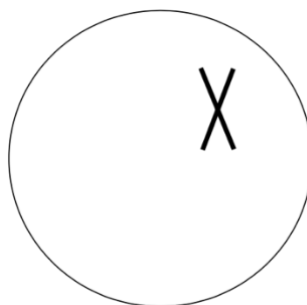


Figure 2.4 The CONTAINMENT schema (replicated from Johnson, 1987, p. 23)

2.3.1.1 Profiling and trajector/landmark alignment

In this thesis, we use image schemas to describe the process of semantic connection motivated by profiling and trajector/landmark alignment. The method of illustration is based on Langacker's Cognitive Grammar (Langacker, 2008). According to Langacker, profiling involves focusing attention on a particular aspect of a conceptual content (base). Within this conceptual base, attention is directed to a specific substructure, called the profile, which stands out as the specific focus of attention within its immediate scope. Expressions differ in meaning and therefore present different profiles, which are highlighted with heavy lines to indicate the focus of attention and the concept conveyed by the expression. For example, as shown in **Figure 2.5**, the concept of a wheel functions as the base for “hub,” “spoke,” and “rim,” which contrast semantically because they designate different parts of the wheel. “Wheel” profiles the whole, while the individual terms profile its specific components. The term “hub” designates and profiles the center of the wheel, highlighted with heavy lines, while the term “rim” profiles the outer circular part of the wheel, also illustrated with heavy lines.

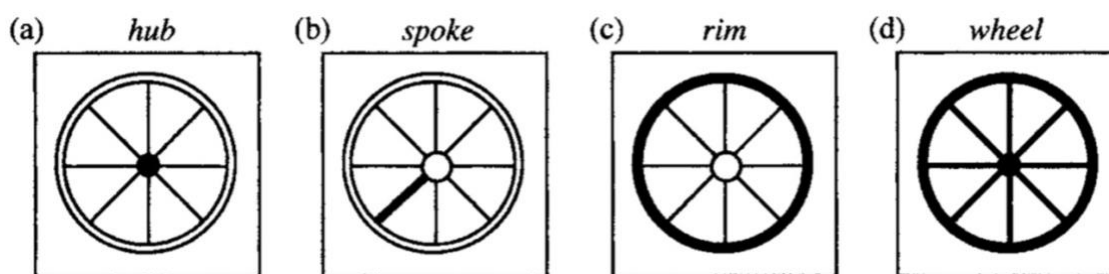


Figure 2.5 Different profile of expressions related to wheel (replicated from Langacker, 2008, p. 67)

Another important concept is the trajector/landmark alignment. An expression can profile either a thing or a relationship. When a relationship is profiled, the most prominent participant, which serves as the primary focus within the relationship, is called the trajector (tr), while the secondary focus is called the landmark (lm). Expressions can have the same content and profile the same relationship, but differ in meaning based on their choices of trajector and landmark. The prepositions *above* and *below* exemplify this difference. As illustrated in **Figure 2.6**, both prepositions indicate the relative spatial location of two things with respect to the vertical axis. However, the difference in their choice of trajector and landmark is solely responsible for the distinct meanings of *above* and *below*.

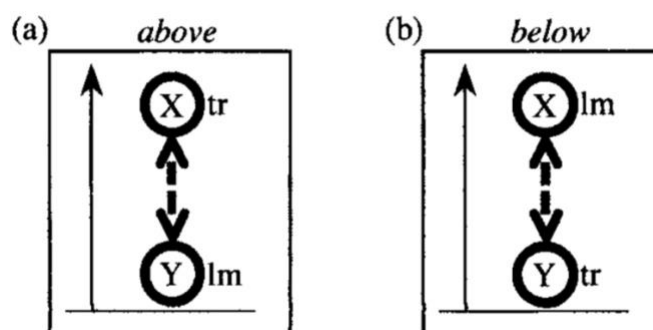


Figure 2.6 Image Schemas for the two prepositions *above* and *below* (replicated from Langacker, 2008, p. 71)

2.3.1.2 Image schema transformations

Image schemas do not exist as isolated entities but are often interconnected, forming natural relationships through various image schema transformations. Image schema transformations involve processes that map or convert one schema into another. These transformations play a crucial role in linking perception and reasoning. Lakoff (1987)

introduced some of the most important image schema transformations, later summarized by Gibbs and Colston (1995, pp. 350-351), as follows:

- (a) Path-focus to end-point focus: Imagine the path of a moving object and then focus on the point where it comes to rest or where it will come to rest.
- (b) Multiplex to mass: Visualize a group of several objects. Mentally move away from the group until the cluster of individuals appears as a single homogeneous mass. Then, move back until the mass once again becomes a distinct cluster.
- (c) Following a trajectory: As we perceive a continuously moving object, we can mentally trace the path it has traversed or the trajectory it is about to follow.
- (d) Superimposition: Imagine a large sphere and a small cube. Increase the size of the cube until the sphere can fit inside it. Then, reduce the size of the cube and place it within the sphere.

In this thesis, image schema transformation is used to illustrate the semantic associations that give rise to the distinct sense $L\grave{O}NG_{N4}$: The $CENTER$ sense at the space level in the semantic network.

Chapter 3 Methodology and theoretical framework



Chapter 3 introduces the methodology and theoretical framework of the present thesis. Firstly, we introduce how we gather the corpora from different sources. Secondly, we provide an overview of how the sense tagging is done, with guidelines from MIP for the cognition sense. Thirdly, we introduce the special sense tagging method used for the dictionaries corpus.

3.1 Corpora

For this analysis, extensive corpora are assembled, incorporating a range of Vietnamese dictionaries, proverbs, newspapers, Google searches, and novels to examine the varied meanings of *bụng*, *lòng*, and *ruột*. The dictionaries corpus includes 20 dictionaries, spanning from 1651 to 2021, with details listed in **Appendix 1**. Proverbs are extracted from Nguyen Xuan Kinh's *Kho tàng tục ngữ người Việt* ("Treasure of Vietnamese Proverbs," 2002). Additionally, the corpora include 59 Vietnamese novels, covering a period from 1925 to 2022, with details listed in **Appendix 2**. To further enhance the data, a supplementary corpus is created using Google searches with the keyword for each case. The advanced search settings are configured as follows: language set to Vietnamese, region set to Vietnam, with no time span limit. Finally, instances are added from the digital archives of *Thanh Niên*, a prominent Vietnamese newspaper, by extracting all articles that featured the keyword. **Table 3.1** presents the frequency counts of *bụng*, *lòng*, and *ruột* across the aforementioned sources. *Lòng* generally exhibits the highest frequency across most sources, particularly in dictionaries and novels, indicating its widespread use in both formal and literary contexts. This aligns with previous studies by Vu (2007) and Tran (2012), highlighting its prominence in Vietnamese expressions of emotions. One interesting observation is that the count of *lòng*

is relatively low in newspapers, likely because this source primarily features its sense as “animal intestines,” which is less relevant in news contexts. *Bụng* also shows substantial counts across all sources, with notable prominence in newspapers and Google searches, suggesting its relevance in both everyday and media language. *Ruột* has relatively lower counts compared to *lòng* and *bụng*, likely due to its primary usage in describing intestines and its limited combinations to express emotions compared to *bụng* and *lòng*.

Table 3.1 Token numbers of *bụng*, *lòng*, and *ruột* across different sources

<i>Sources</i>	<i>Keyword</i> <i>Tokens</i>	<i>Bụng</i>	<i>Lòng</i>	<i>Ruột</i>
Dictionaries	N/A	366	1,059	485
Google	780,939	4,516	5,160	3,238
Newspaper	2,299,960	4,959	1,717	2,445
Novels	5,204,818	1,593	6,924	1,258
Proverbs	516,253	265	527	133
Total	8,801,970	11,699	15,387	7,559

Recognizing that the nuanced meanings of *bụng*, *lòng*, and *ruột* are highly contingent on context, we employed AntConc¹² to access the linguistic context of each token and establish their respective meanings. AntConc is a software tool used in the field of corpus linguistics and semantics to analyze large collections of text (corpora). Developed by Laurence Anthony, AntConc is widely used for various linguistic analyses, including word frequency, collocation, concordance, and keyword analysis. It helps researchers identify patterns, trends, and relationships in textual data, making it a valuable tool for semantic studies.

¹² AntConc can be downloaded from Laurence Anthony’s website at: <https://www.laurenceanthony.net/software/antconcl/>.



3.2 Sense tagging

3.2.1 Sense verification and tagging process

Since the senses of *bụng*, *lòng*, and *ruột* depend highly on context, each sense is verified manually. First, 20 words, including the token (*bụng/lòng/ruột*), are extracted from each corpus in a table format. These 20 words help define the linguistic context to determine the most suitable sense understood in that context. If 20 words are insufficient for verification, the original text is consulted. The listed senses for tagging *bụng*, *lòng*, and *ruột* are drawn from the analysis in Chapter 4.

Table 3.2 below provides an example of how the tagging is done for tokens 761-765 in the nxovel corpus for *bụng*. These tokens were chosen because they gather diverse clusters of situations that usually appear in the tagging process. The keyword *bụng* is highlighted in bold for better detection. The corresponding senses are BỤNG_{N1}: The BELLY sense, BỤNG_{N2}: The PROTRUDING sense, and BỤNG_{N3}: The COGNITION sense (hence “BELLY,” “PROTRUDING,” “COGNITION”). The asterisk column (*) represents cases where a token requires further discussion and is excluded from the total sense count. The “Notes” column leaves remarks on these special cases. The actual process of sense tagging is done using Excel software, which allows for organizing and analyzing data in a detailed manner. The working window in Excel is more complex than what **Table 3.2** shows. However, **Table 3.2** reflects the basics of the process for the sake of demonstration. The sense tagging process for these 5 tokens is as follows: Token 761 features *Bụng* as a personal name, *Ông Bụng* “Mr. Bụng,” therefore it is not tagged and is marked separately.

- In the case of token 762, the BELLY sense is detected quickly because its collocate is *đau* ‘hurt’. This pain is purely physical as the context included, *chưa lẫn xuống đất*,

mụ đã kêu đau bụng (NEG-roll-PREP.down-ground-3SG.F-yell-hurt-BỤNG_{N1}), explains that the protagonist is fussing about her painful belly, although it has not even been impacted by her falling to the ground.

- Tokens 763 and 764 express the COGNITION sense for *bụng* because it is followed by the collocates *tốt* ‘good’ and *yên* ‘safe’. Token 763 describes a person who is *tốt bụng* good-belly, meaning ‘kind,’ which is why they are *thương* ‘loved’ by other people, as revealed by the pre-context. In token 764, *yên trong bụng* (safe-PREP.in-belly) describes a feeling. The context reveals a situation where *không tốn tiền thì không yên trong bụng* (NEG-spend-money-NEG-safe-PREP-in-BỤNG_{N3}), meaning that the protagonist is in some sort of trouble, and their heart will not rest at peace if they don’t spend some money to arrange it. The sentence before it strengthens this meaning, *phải cũng lo* (ADV.indeed-ADV.also-worry), indicating the situation is indeed worrying. This linguistic context relates to the mental state of a person, so the token cannot be understood as the other two senses, which are related to more concrete structures.
- Token 765, *cẩn thận bỏ vào trong bụng áo* (careful-RDP-put-PREP.to-PREP-in-BỤNG_{N2}-shirt), describes the action of carefully putting an object inside the ‘belly of the shirt,’ which is the front hem. This is a physical space capable of storage, so it cannot be interpreted as the other two senses and is marked “1” under the PROTRUDING column accordingly.

Table 3.2 Example of sense tagging for *bụng* in the novel corpus (Tokens 761-765)

No.	Pre-context	Keyword	Post-context	BELLY	PROTRUDING	COGNITION *	Notes
761	<i>niên thành bán.</i> <i>Chắc do đó mà tên</i> <i>ông là</i>	Bụng.	<i>Ông Bụng,</i> <i>người làng</i> <i>Hòa Mỹ, làm</i> <i>nghề bút</i>				x personal name
762	<i>cất tai. Chưa lần</i> <i>xuống đất, mụ đã kêu</i> <i>đau</i>	bụng	<i>Ông chồng</i> <i>chẳng nói</i> <i>chẳng rằng</i> <i>vào buồn xúc</i>	1			
763	<i>Nhưng ai hiểu thì</i> <i>thương nó lắm, vì nó</i> <i>tốt</i>	bụng	<i>Ông giáo nói</i> <i>vuốt đuôi cho</i> <i>xong: - Vâng,</i> <i>tốt.</i>			1	
764	<i>Phải cũng lo. Không</i> <i>tồn tiền thì không yên</i> <i>trong</i>	bụng	<i>Ông phải làm</i> <i>sao cho mấy</i> <i>ông quan</i> <i>đùng...</i>			1	
765	<i>của Quỳnh, cuộn</i> <i>tròn lại, cẩn thận bỏ</i> <i>vào trong</i>	bụng	<i>áo, cầm đầu</i> <i>chạy một mạch</i> <i>từ Tiền chiến.</i>		1		

3.2.2 Sense tagging in the dictionaries corpus

The method of tagging in the dictionaries corpus is different because it consists of entries and short sentences rather than complete texts that contain 20 words. Furthermore, the dictionaries corpus includes 20 dictionaries with various scripts, ranging from *Chữ Nôm*, French, Latin, and Portuguese to *Chữ Quốc Ngữ*. Therefore, a special method is required to handle this corpus. For the dictionaries corpus, the entries and examples are counted, but not the descriptive text, even if it contains the keywords. The number of senses tagged for each

token is counted first, and then that number is incorporated into the file containing the 20 dictionaries. Details of this process are shown in **Figure 3.1** and **Table 3.3**.

Figure 3.1 shows the entry for *bụng* in the *Dictionarium Anamitico–Latinum* by Jean-Louis Taberd (1838), which is the fifth entry on the left side. The word is written in *Chữ Nôm*, followed by the corresponding *Chữ Quốc-ngữ* and then the Latin description. *Chữ Nôm* should be read from right to left, and the long dash represents the entry word. For example, the first dash in the second row on the left represents the 糲 *bún* similago ‘fine flour (vecimmille)’ entry in the first row. **Table 3.3** shows the corresponding sense tagging. This is the second dictionary in our dictionaries corpus in chronological order, hence “D2.”

Bụng’s first and only entry in the *Dictionarium Anamitico–Latinum* is “臍 *bụng*, *venter*”. Since *bụng* and *venter* both translate to “belly” in *Chữ Quốc Ngữ* and Latin respectively, this entry is counted as one tagging for the BELLY sense. The examples provided under this entry are:

膺臍 *ung bụng* (agree-BỤNG_{N3}) “to be pleased” (gratus et acceptus)

几固臍 *kẻ có bụng* (3SG-have-BỤNG_{N1}) “to be pregnant” (prægnans)

丑臍 *xấu bụng* (bad-BỤNG_{N3}) “envious, greedy” (invidus, avarus)

臍銃 *bụng thụng* (BỤNG_{A1~RDP}) “loose, of cloth, leather, etc.” (laxus, de panno, corio, & c.)

臍臍臍 *bụng bụng má* (BỤNG_{N2~RDP}-cheek) “to puff out the cheeks” (frons caperata)

臍濫臍召 *bụng làm dạ chịu* (BỤNG_{N3}-do-stomach-be.responsible) “to be responsible for one’s own wrongdoings” (tu te hæc intulisti, tibi omne est exedendum)

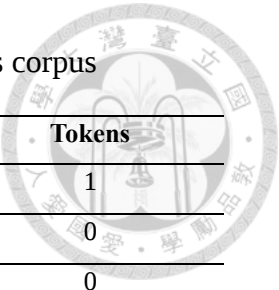
This results in two tokens for BUNGN₁: The BELLY sense, one token for BUNGN₂: The PROTRUDING sense, one token for BUNGA₁: SAGGY sense, and three tokens for BUNGN₃: The COGNITION sense. Notably, even though *bụng* in 捧捧腮 *bụng bụng má* (BUNGN₂~RDP -cheek) “to puff out the cheeks” functions as a verb, it is marked as a noun (N2) due to its unique context within this sense (as explained in Section 4.2.1). Overall, these special cases provide valuable insights into the data analysis, highlighting the significance of this sense tagging process.

BÚN		35		BŨN	
〔糲〕	Bún, similago.	〔膝〕	Búng, ictericus.	一 脰	da —, pellis ictERICI.
一 如嚙	mềm như —, mollissimum.	〔糲〕	— mặt, ad omnia ineptus.	一 豹	— beo, ictericus.
〔埴〕	Bùn, cœnum, lutum.	一 列	— rết, arquato morbo valdè laborans.	一 柳	tre —, arundo fragilis.
淋 —	— lăm, id.	〔縶〕	Buộc, ligare.	一 欄	— tran, quoddam ferculum in quo alii idolum, alii alia superstitiosa collocant.
〔本〕	Bủn.	一 縶	— trói, vincere.	〔𩚑〕	Buôi.
敦 —	— rủn, despondere animum.	一 待	đai —, ore tenùs; malâ fide esse.	一 鮒	cá —, mullus, i.
一 坦	đất —, terra mobilis et non compacta.	〔貝〕	Buổi, tempus.	一 幣	— chợ, temporis spatium quo vendunt in foro.
〔鐵〕	Bung.	一 學	— học, tempus studii.	一 侯	— hầu, tempus assistendi regi.
一 丐	cái —, olla magna.	一 臚	— trừa, tempus circa meridiem.	一 朝	— chiều, tempus serotinum.
一 垸	nôi —, id.	一 朝	— cày, temporis spatium quo arant manè et à meridie.	〔帆〕	Buồm, velum.
〔膝〕	Bụng, venter.	一 鸛	— cánh én, velum triangulare.	一 𩚑	chạy —, vela facere.
一 膺	ưng —, gratus et acceptus.	一 吹	xuôi —, id.	一 蘭	— lan, velum.
一 固凡	kẻ có —, prægñans.	一 蘭	— gấm, id.		
一 丑	xấu —, invidus; avarus.				
一 銃	— thụng, laxus, de panno, corio, &c.				
一 騰	— — má, frons caperata.				
一 脰	— làm dạ chiụ, tu te hęc intulisti, tibi				
一 召濫	— omne est exedendum.				
〔棒〕	Búng, talitrum.				
一 諾	nước, —, aqua reses.				
一 鴈	— má, inflare buccas.				
一 簞	— rau, tantùm olerum quantùm indicem inter et pollicem contineri potest.				
〔震〕	Bùng.				
一 震	bão —, sæva procella.				
一 透	lùng —, fragor tonitruì, tormenti bellici, &c.				

Figure 3.1 Page from *Dictionarium Anamitico-Latinum* (Taberd, 1838, p. 35) showing

entries for *bụng*

Table 3.3 Sense tagging of *bụng* in a subset of the dictionaries corpus



Dictionaries	Notes	<i>bụng</i>	Tokens
D1		BELLY:	1
D1		PROTRUDING:	0
D1		SAGGY:	0
D1		COGNITION:	0
D2		BELLY:	2
D2		PROTRUDING:	1
D2		SAGGY:	1
D2	<i>bụng thụng</i> (not counted, 1 token)	COGNITION:	3
D3		BELLY:	1
D3		PROTRUDING:	0
D3		SAGGY:	0
D3		COGNITION:	3

Note: This table shows data from only 3 dictionaries (D1, D2, and D3) out of the 20 dictionaries in the entire corpus.

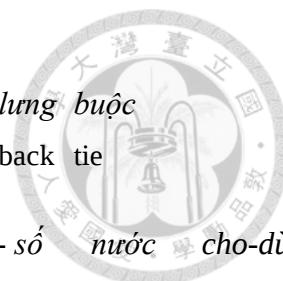
3.2.3 Sense tagging with MIP

The table below illustrates tokens 4909, 4928, 4934, 4942, and 4951 of *bụng* from the newspaper corpus. A filter function is applied in Excel to present only the tokens marked with the COGNITION sense, excluding those with the BELLY and PROTRUDING senses. Consequently, in **Table 3.4**, the token numbers appear in a non-consecutive manner. The glossing of these tokens is presented below to explain how the decision to mark them as carrying metaphorical meaning is made.

Table 3.4 Example of sense tagging for the COGNITION sense of *bụng* using MIP in the newspaper corpus

No.	Pre-context	Keyword	Post-context	BELLY PROTRUDING COGNITION *	Notes
4909	<i>gian tồn tại nhiều điều đàm tiếu, lắm kẻ xấu</i>	bụng,	<i>xấu miệng và xấu vô số bộ phận bảo</i>	1	
4928	<i>Tính năng này có 4 mục, bao gồm: Thân Thiện, Tốt</i>	Bụng,	<i>Đồng Đội và Đối Thủ Đáng Kính. Thế nhưng</i>	1	
4934	<i>quýt, tắc...” Bình luận (0) Có nơi phải thất lưng buộc</i>	bụng	<i>đón Tết nhưng cũng tại một số nước cho</i>	1	
4942	<i>lần bình thường. Người đi thuê có khi phải bấm</i>	bụng	<i>đề nghị trả trước 6 tháng tiền nhà hoặc trả</i>	1	
4951	<i>chú ơi! Cháu sắp mất đi người bạn thân tốt</i>	bụng	<i>ấy vì bạn cháu đang bị một căn bệnh</i>	1	

- (8) *gian tồn-tại nhiều điều đàm-tiểu, lắm kẻ xấu bụng,*
 world exist PL thing gossip PL person.CLF ugly BỤNG_{N3}
xấu miệng và xấu vô-số bộ-phận bảo
 ugly mouth and.CONJ ugly countless part say
 ‘[...] many gossips exist in this world, numerous people with bad intentions, bad mouths, and countless other bad traits have said [...]’ (NEWSPAPER)
- (9) *Tính-năng này có 4 mục, bao- gồm: Thân- Thiện, Tốt Bụng,*
 function this.DEM side four section include friendly~RDP good BỤNG_{N3}
Đồng-Đội và Đối-Thủ Đáng-Kính. Thế-nhưng
 teammate~RDP and.CONJ opponent respectable however.ADV
 ‘[...]This function has four sections, including: Friendly, Good-hearted, Teammate, and Respectable Opponent. However [...]’ (NEWSPAPER)



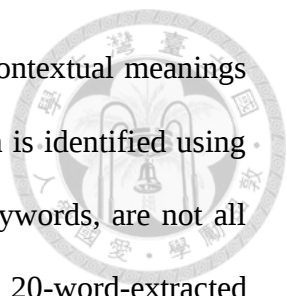
- (10) *quýt, tắc... Bình-luận (0) Có nơi phải thắt lưng buộc*
 tangerine kumquat comment zero exist place must.MDL tie back tie
bụng đón Tết nhưng cũng tại một số nước cho-dù
 BỤNG_{N3} celebrate Tet however.ADV also.ADV at.PREP some.DET country despite.PREP
 ‘[...] tangerines, kumquats... Comment (0): There are places where people must tighten their
 belts to celebrate Tet, but also in some countries, despite [...]’ (NEWSPAPER)

- (11) *lần bình-thường. Người đi thuê có-khi phải bấm bụng*
 time normal person go rent sometimes.ADV must.DML press BỤNG_{N3}
đề-nghị trả trước 6 tháng tiền nhà hoặc trả
 propose pay upfront.ADV six month money house or.CONJ pay
 ‘[...]times (than) normal. Renters sometimes must bite the bullet and propose paying 6 months’
 rent upfront, or pay [...]’ (NEWSPAPER)

- (12) *chú ơi! Cháu sắp mất đi người bạn thân tốt bụng*
 uncle hey.INTJ I.1SG almost.ADV lose go.PFV person.DET friend close good BỤNG_{N3}
ấy vì bạn cháu đang bị một căn bệnh
 that.DET because.CONJ friend my.POSS PROG PASS one sickness.CLF disease
 ‘[...]Uncle! I am about to lose that good-hearted close friend because my friend is suffering
 from a disease [...]’ (NEWSPAPER)

Let’s examine the five examples above along with their selected discourse. The ellipsis
 ‘[...]’ pre and post every example indicates the text is taken from a larger discourse, which is
 the newspaper corpus. For example, “or pay [...]” in (4) describes the following context where
 more conditions to the renting policy that one must endure as renters are specified. However,
 the most important part, enduring an unpleasant situation that is necessary for the MIP in our
 chosen discourse, is already clear.

The bold letters are lexical items connected with the keyword *bụng*. The sense assigned
 to all five examples is BỤNG_{N3}: The COGNITION sense, resulting from the conceptual metaphor



BỤNG_{N1}(BELLY) IS COGNITION, further discussed in Section 4.2.2. The contextual meanings that follow are inserted in brackets. The metaphorical use of each token is identified using MIP, as introduced in Section 2.3.2.5. Twenty words, including the keywords, are not all necessary for the metaphor identification process. Most of the time, the 20-word-extracted discourse provides more than what we need. For example, “tangerines, kumquats...” in (3) isn’t necessarily included in the context for our MIP. However, we understand it still belongs to the general holiday-themed discourse, as tangerines and kumquats are popular items in Tet celebration. Also in (3), the additional “Comment (0)” following “tangerines, kumquats...” isn’t necessary for MIP, as it is just the numbered comment where the chosen text resides.

(1) *Many gossips exist in this world, numerous people with **bad bellies** (bad intentions), bad mouths, and countless other bad traits*

- *xấu bụng* ugly-belly ‘bad intention’

(a) *contextual meaning*: In this context, the lexical item I indicates intention, as in “people with bad intentions.” These are people with a bad mouth and other bad traits, spreading gossips.

(b) *basic meaning*: The most basic meaning of *bụng* is the abdominal body part that contains the stomach and fetus, including the protruding part when one has a full belly or is pregnant, as discussed in Section 4.1.2.

(c) *contextual meaning versus basic meaning*: The contextual meaning contrasts with the basic meaning and can be understood by comparison: We can understand *belly* as a container for cognitive abilities, and the entailment of ill-intended as a container being filled with bad intentions.

(d) *Metaphorically used?* Yes.

(2) This function has four sections, including: Friendly, **Good-bellied** (Good-hearted), Teammate, and Respectable Opponent.

- *tốt bụng* good-belly ‘good-hearted’

(a) *contextual meaning*: In this context, the lexical item *bụng* indicates human character as “good-hearted,” along with other characters such as “friendly” in a gaming setting.

(b) *basic meaning*: The most basic meaning of *bụng* is the abdominal body part that contains the stomach and fetus, including the protruding part when one has a full belly or is pregnant, as discussed in Section 4.1.2.

(c) *contextual meaning versus basic meaning*: The contextual meaning contrasts with the basic meaning and can be understood by comparison: We can understand *belly* as a container for cognitive abilities, and the entailment of good-heartedness as a container being filled with good character.

(d) *Metaphorically used?* Yes.

(3) Renters sometimes must **press their bellies** (*bite the bullet*) and propose paying 6 months’ rent upfront.

- *bấm bụng* press-belly ‘bite the bullet’

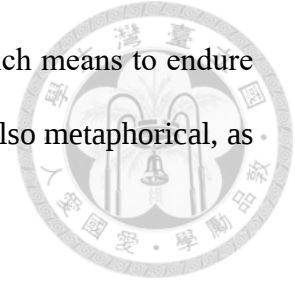
(a) *contextual meaning*: The lexical item *bụng* indicates human desire.

(b) *basic meaning*: The most basic meaning of *bụng* is the abdominal body part that contains the stomach and fetus, including the protruding part when one has a full belly or is pregnant, as discussed in Section 4.1.2.

(c) *contextual meaning versus basic meaning*: The contextual meaning contrasts with the basic meaning and can be understood by comparison: We can understand *belly* as a container for cognitive abilities, and here it is filled with desire. Therefore, the action of pressing down the container conveys the meaning of lowering your desire,



translated to the equivalent term ‘bite the bullet’ in English, which means to endure an unpleasant situation. Interestingly, the English expression is also metaphorical, as the phrase doesn’t refer to biting actual bullets.



(d) *Metaphorically used?* Yes.

(4) *There are places where people must **tie their backs and bellies (tighten their belts)** to celebrate Tet.*

- *thắt lưng buộc bụng* tie-back-tie-belly ‘tighten one’s belt’

(a) *contextual meaning*: The lexical item *bụng* indicates human desire. Tet, the Vietnamese celebration of the Lunar New Year, is just around the corner. Therefore, families must tighten their spending to have enough money for the occasion.

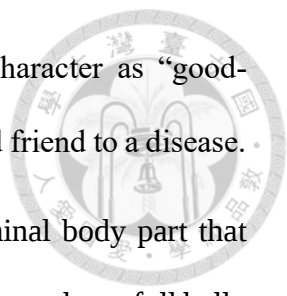
(b) *basic meaning*: The most basic meaning of *bụng* is the abdominal body part that contains the stomach and fetus, including the protruding part when one has a full belly or is pregnant, as discussed in Section 4.1.2

(c) *contextual meaning versus basic meaning*: The contextual meaning contrasts with the basic meaning and can be understood by comparison: We can understand *belly* as a container for cognitive abilities, and here it is filled with desire. Therefore, the action of tying the container conveys the meaning of lowering your desire (to spend money), translated to the equivalent term ‘tighten one’s belt’ in English, which means to reduce spending. Interestingly, the English expression is also metaphorical, as the phrase doesn’t refer to tightening an actual belt.

(d) *Metaphorically used?* Yes.

(5) *I am about to lose that **good-bellied** (good-hearted) close friend.*

- *tốt bụng* good-belly ‘good-hearted’

- 
- (a) *contextual meaning*: The lexical item *bụng* indicates human character as “good-hearted,” in the context of showing regret over about to lose a kind friend to a disease.
- (b) *basic meaning*: The most basic meaning of *bụng* is the abdominal body part that contains the stomach and fetus, including the protruding part when one has a full belly or is pregnant, as discussed in Section 4.1.2
- (c) *contextual meaning versus basic meaning*: The contextual meaning contrasts with the basic meaning and can be understood by comparison: We can understand *belly* as a container for cognitive abilities, and here it is filled with good character or kindness. Therefore, the entailment of a good belly translates to a person with good character, as translated to the equivalent term ‘kind-hearted’ in English. The English expression is also metaphorical, as the phrase doesn’t refer to the actual heart.
- (d) *Metaphorically used?* Yes.

3.3 Sense distribution

3.3.1 *Bụng*

Here are the statistics for the sense distribution of *bụng* across our corpus. The distribution of the sense of *bụng* varies across different sources, but in general, BỤNG_{N1}: The BELLY sense prevails across all corpora. This aligns with its prominent entries in dictionaries. There are a few things to note about these results: First, except for the newspaper corpus, a few tokens are excluded from the sense tagging for reasons. In total, 153 tokens¹³

¹³ In the dictionaries corpus, 35 tokens were excluded, including 1 terminology of a tree name (*bụng bàng*) and five types of reduplication (*bụng thụng*: 10 tokens, *bụng xụng*: 8 tokens, *bụng bực*: 2 tokens, *bụng nhụng*: 12 tokens, *bụng bịu*: 2 tokens)

are excluded from the sense tagging for being in a composite or reduplicative compound form or for appearing as a personal name. It is important to note that for the dictionaries corpus, *bụng dạ* is included in the total counts because it is listed under the *bụng* entry. The dictionaries corpus serves as a guideline for other corpora, so we decided to keep it that way. However, in other corpora, the compound *bụng dạ* is excluded because it should receive separate analysis, which is beyond the scope of this study. Further discussion about the excluded compound can be found in Chapter 5.

Table 3.5 Sense distribution of *bụng* across different sources

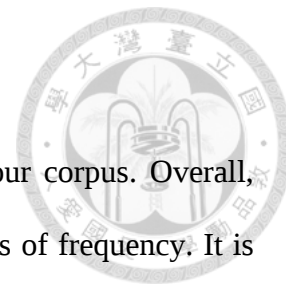
<i>Sources</i>	<i>Sense</i>	BELLY	PROTRUDING PART	COGNITION	Total
Dictionaries		169	21	141	331 (90.44%)
Google		4,496	4	12	4,512 (99.91%)
Newspaper		4,730	8	221	4,959 (100%)
Novels		894	30	559	1,483 (93.09%)
Proverbs		159	2	100	261 (98.49%)
Total		10,448	65	1,033	11,546

In the Google corpus, 4 tokens were excluded because they appear either as an entry in a search engine or as a keyword with no pre-coded meaning yet.

In the proverbs corpus, 4 tokens were excluded because they included the compound form *bụng dạ*.

In the novel corpus, 110 tokens were excluded for various reasons: personal names (25 tokens), phonetic reduplication (*lụng bụng*: 1 token), and the compound form *bụng dạ* (84 tokens).

3.3.2 Lòng



Here are the statistics for the sense distribution of *lòng* across our corpus. Overall, LÒNG_{N5}: The COGNITION sense predominates over other senses in terms of frequency. It is the most frequently recorded sense in all corpora, except for the Google corpus. This difference is because most tokens in the Google corpus are related to food. Given that animal intestines are a very popular dish in Vietnamese cuisine, LÒNG_{N2}: The OFFAL sense is commonly found in restaurant recommendations, recipes, restaurant reviews, and food advice, which are common on the Google platform.

In total, 376 tokens¹⁴ are excluded from the sense tagging due to being in a composite or reduplicative compound form, appearing as a personal name, or being in an ambiguous

¹⁴ In the dictionaries corpus, 84 composite or reduplicative compound of *lòng* are excluded.

In the Google corpus, 97 tokens are excluded: 74 tokens for personal names, 16 unclassified tokens (belonging to the first entry in an online dictionary or search engine without an assigned meaning), 6 tokens from the compound form *lòng vòng*, and 1 token from the compound form *lòng dạ*.

In the newspaper corpus, 19 tokens are excluded: 13 tokens from the compound form *lòng vòng*, 4 tokens for personal names, and 2 tokens for the compound form *lòng dạ*.

In the novel corpus, 145 tokens are excluded. This includes 92 tokens for the compound form *lòng dạ*, 43 tokens for the reduplicative forms (*lòng thông*: 26 tokens, *lòng vòng*: 10 tokens, *lòng không*: 5 tokens, *lòng dòng*: 1 token, *lòng ròng*: 1 token), 6 tokens for personal names, and 4 tokens for the compound form *lòng ruột*.

In the proverbs corpus, 31 tokens are excluded. This includes 23 tokens for the compound form *lòng dạ*, 2 misspelled items, 2 tokens for the reduplicative forms (*lòng thông*: 1 token, *lòng vòng*: 1 token), 1 token for the compound form *lòng ruột*, 1 token that is ambiguous due to lack of context, 1 token for a personal name, and 1 unclassified token (due to it being referred to as a word in an explanation with no meaning assigned yet).

context. Of the excluded tokens, 148 instances of *lòng* fall into composite or reduplicative compound forms. These forms are further discussed in Chapter 5.



Table 3.6 Sense distribution of *lòng* across different sources

<i>Sense</i>						
<i>Sources</i>	BELLY	OFFAL	CENTRAL BOTTOM	CENTER	COGNITION	Total
Dictionaries	57	42	119	39	718	975 (92.07%)
Google	8	4,258	108	48	641	5,063 (98.12%)
Newspaper	8	5	399	29	1,257	1,698 (98.89%)
Novels	212	68	326	46	6,127	6,779 (97.91%)
Proverbs	27	20	14	2	433	496 (94.12%)
Total	312	4,393	966	164	9,176	15,011

3.3.3 Ruột

Here are the statistics for the sense distribution of *ruột* across our corpus. Overall, RUỘT_{N2}: The INTESTINE sense is the most prominent, aligning with the entry in the latest updated dictionary (Phe, 2021). The second most prominent sense is RUỘT_{A1}: The KINSHIP sense, which also aligns with the dictionary entry. RUỘT_{N1}: The BELLY sense and RUỘT_{A2}: The CLOSENESS sense are the least frequent and unsurprisingly do not appear in the latest Vietnamese dictionary. However, their usage still lingers, as evidenced in our corpus. 270 tokens¹⁵ are excluded due to being in composite or reduplicative compound forms, phonetic duplication, being a personal name, or ambiguity. It is important to note that the dictionaries corpus is treated differently because dictionaries serve as a foundational reference for understanding the meanings and uses of words. In the dictionaries corpus, all the compound forms are counted under their respective entries. This approach ensures that the dictionaries corpus remains comprehensive and aligns with its role as a primary source for defining word

¹⁵ In the newspaper corpus, a total of 22 tokens have been excluded. This includes a tree name, *chùm ruột* (11 tokens); one case of reduplication, *ruột rà* (3 tokens); and two types of compound forms, *ruột thịt* (7 tokens) and *gan ruột* (1 token).

In the novel corpus, 224 tokens have been excluded. This includes five compound forms: *ruột gan* (102 tokens), *ruột thịt* (73 tokens), *gan ruột* (32 tokens), *lòng ruột* (2 tokens), and one new expression *cật ruột* (1 token). Additionally, there is one reduplication, *ruột rà* (13 tokens), and one case of ambiguity, *nổ ruột* (1 token).

In the proverbs corpus, 23 tokens have been excluded. This includes the compound forms *ruột thịt* (13 tokens), *lòng ruột* (4 tokens), and *ruột gan* (1 token), as well as one reduplicative form, *ruột rà* (5 tokens).

In the dictionaries corpus, only one token, *ruột óc*, is excluded due to ambiguity from its description in French.

meanings. Unlike other corpora, which focus on contextual usage and might exclude certain cases for clarity, the dictionaries corpus aims to provide a complete and definitive account of each entry. This comprehensive approach in the dictionaries corpus allows for a more thorough understanding of the different senses and usages of *ruôt* as documented by reliable sources.

Table 3.7 Sense distribution of *ruôt* across different sources

<i>Keyword</i>							
<i>Sources</i>	BELLY	INTESTINES	INTERIOR	COGNITION	KINSHIP	CLOSENESS	Total
Dictionaries	30	100	64	192	85	13	484 (99.79%)
Google	0	2892	251	3	92	0	3238 (100.00%)
Newspaper	0	1104	72	72	1113	15	2423 (99.10%)
Novels	13	67	27	674	249	4	1034 (82.19%)
Proverbs	3	18	9	72	8	0	110 (82.71%)
Total	46	4181	423	1060	1547	32	7289

Chapter 4: The polysemy of *bụng*, *lòng*, and *ruột* and their semantic networks



Based on the provided criteria for distinguishing distinct senses, 12 distinct senses of *bụng*, *lòng*, and *ruột* have been confirmed. Furthermore, by combining the proposed criteria for designating the primary sense and the principles of Embodiment Theory, the BELLY is selected as the proto-scene for *bụng*, *lòng*, and *ruột*. The discussions leading to these choices are detailed in the following sections.

4.1 The proto-scene of *bụng*, *lòng*, and *ruột*

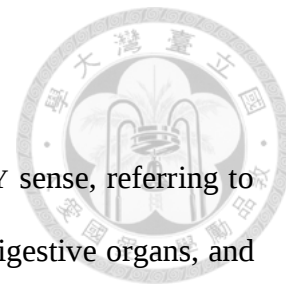
4.1.1 Prototypicality

Determining the primary sense within a polysemy network poses a significant challenge. Historically, scholars have often disagreed on which sense should be considered primary or central. Often, these determinations have been asserted rather than thoroughly argued for, with a reliance on the notion of prototypicality. The precise definition of prototypicality in linguistics presents certain challenges. This confusion is inevitable, as prototypicality is itself, in the words of Posner (1986), a prototypical concept. Nonetheless, we will initially focus on providing a concise overview of the current state of prototype theory in linguistics. The theory originated in the mid 1970s with Eleanor Rosch's research into the internal structure of categories. (More comprehensive overviews can be found in Rosch, 1978, 1988, and Mervis & Rosch, 1981). Prototype theory has had a steadily growing success in linguistics since the early 1980s, evidenced by various monographs and collective volumes exploring its cognitive extensions (Wierzbicka, 1985; Lakoff, 1987; Langacker, 1987; Craig,

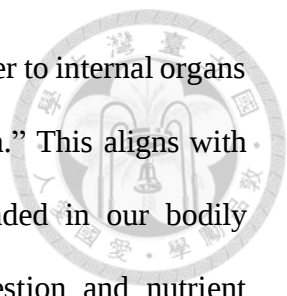
1986; Holland & Quinn, 1987; Rudzka-Ostyn, 1988; Lehmann, 1988; Hüllen & Schulze, 1988; Tsohatzidis, 1989; Taylor, 1989).

Prototype theory differs from the componential model of semantic analysis prevalent in transformational grammar, as exemplified by Katz and Fodor's analysis of "bachelor" (1963), which Fillmore (1975) termed the "checklist theory." The rejection of this featural approach by prototypists has led to the misconception that prototypical theories dismiss any form of componential analysis. However, semantic description inherently requires some form of decompositional analysis. Geeraerts (2016) summarizes the resultant confusion surrounding prototypicality, noting that more straightforwardly prototypical approaches often coexist with hybrid theories combining "classical discreteness" and "prototypical phenomena" (p. 14). This complexity is evident in the following, where we explore the determination of the proto-scene, understanding the prototype as an abstraction or bundle of features, while also considering the five criteria proposed by Tyler and Evans (2003) as essential for decompositional analysis.

4.1.2 Determining the proto-scene



The proto-scene of *bụng*, *lòng*, and *ruột* is identified as the BELLY sense, referring to the body part in humans and animals that contains the stomach, other digestive organs, and the uterus in case of females. This determination is based on Embodiment theory rather than the criteria of Principled Polysemy for a critical reason: the Criteria of Principled Polysemy are designed for grammatical items, whereas *bụng*, *lòng*, and *ruột* are not grammaticalized, so the theory does not apply directly. Tyler and Evans use five criteria to define the proto-scene of the well-developed preposition “over”, but *bụng*, *lòng*, and *ruột* do not exhibit any grammatical development. Therefore, criteria meant for grammatical items are not applicable to address the BELLY sense of these terms. Furthermore, Tyler and Evans’ approach is not a checklist theory like the naive compositional approach to semantics; instead, it relies on the notion of prototypicality. In their label “proto-scene,” “proto” captures the idealized aspect of the conceptual/mental relation, while “scene” emphasizes the spatio-physical and perceptual (e.g., visual) awareness of a spatial scene. They describe a proto-scene as an “idealized mental representation across the recurring spatial scenes associated with a particular spatial particle; hence it is an abstraction across many similar spatial scenes” (2003, p. 52). In this sense, The BELLY sense of *bụng*, *lòng*, and *ruột* fulfills the requirement, becoming the most basic meaning from which other polysemous senses derive. What could be more fundamental than our experience with our bodies interacting with the world? Using embodiment theory, which posits that our cognitive processes are deeply rooted in our physical and sensory experiences, we can argue that the BELLY sense should be chosen as the primary sense for *bụng*, *lòng*, and *ruột*. The belly houses the digestive organs, including the intestines and the central abdominal area, making it a natural conceptual anchor for these



terms. In everyday language, the belly is often used metonymically to refer to internal organs and emotional states, such as in phrases like “butterflies in the stomach.” This aligns with embodiment theory’s assertion that metonymic extensions are grounded in our bodily experiences. The belly is central to vital bodily functions like digestion and nutrient absorption, highlighting the core functional and experiential aspects that are foundational to human life. Culturally, the belly is linked to emotions and instinctual reactions, and in Vietnamese, *bụng*, *lòng*, and *ruột* are used to express inner feelings and emotional states. This connection is deeply rooted in physical sensations, making the belly an appropriate representation. Furthermore, concepts tied to physical experiences are more cognitively accessible, and the belly provides a clear and accessible image for understanding these terms. By using the belly as the primary sense, we create a unified conceptual framework that ties together the physical, emotional, and cultural dimensions of *bụng*, *lòng*, and *ruột*, enriching their conceptual and cultural understanding in a way that is deeply grounded in human experience.

Bụng, *lòng*, and *ruột* all share the BELLY sense as their proto-scene. This sense is the prominent sense of *bụng*, listed as the first entry in the most recent dictionary by Phe (2021) as described in **Table 1.1** Functions of *bụng* in DALL and VVD: “*Bộ phận cơ thể người hoặc động vật, trong có chứa ruột, dạ dày, v.v.,*” which translates to “Part of the human or animal body that contains the intestines, stomach, etc.” Since they all share the definition above, it appears that the BELLY sense of *bụng*, *lòng*, and *ruột* can sometimes be used interchangeably. So, what distinguishes these senses? The section below aims to answer this question. We use image schemas with different profiling to show that, although *bụng*, *lòng*, and *ruột* overlap, each has distinct semantic properties. Specifically, *bụng* denotes the body part that includes

the stomach, which contains and digests food, and the protruding body part corresponding to it. *Lòng* includes all digestive properties of *bụng* but also extends to the chest area, equivalent to “bosom” in English. The BELLY sense of *ruột* does not differ from *bụng* in a synchronic view. However, from a diachronic perspective, the BELLY sense of *ruột* is no longer in common use and only appears in proverbs and novels. The image schemas are replicated from Bernd Heine’s analysis of spatial orientation in his work *Cognitive Foundations of Grammar* (1997). Please note that these figures below, even though they resemble human figures, apply to both animal and human figures.

4.1.3 BỤNG_{N1}: The BELLY sense

In Vietnamese, *bụng* can describe both animal and human bellies. It refers to the abdominal body part that contains the stomach and fetus, including the protruding part when one has a full belly or is pregnant, as illustrated by the profiling in the schema below.

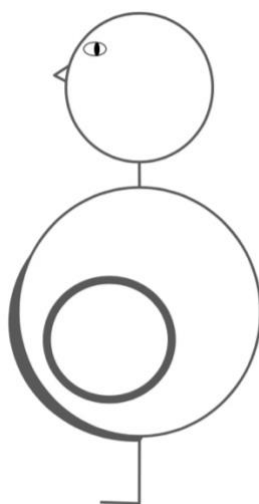


Figure 4.1 The body part profiling of *bụng* in the BELLY sense (adapted from Heine, 1997)

Examples of this sense can be seen in Example (13) and (14). Example (13) is extracted from the Google search corpus, from a medical article. It describes the belly as a significant body part, noting that when *bụng*'s lower left pain corresponds to abdominal pain, it highlights a distinct sense of the term. Example (14) is from a dictionary, describing a fish with a *bụng* full of eggs. The part of the fish that contains the eggs corresponds to the “belly,” indicating the distinct sense BELLY of the term.

- (13) *Đau* *bụng* *dưới* *bên* *trái* *là* *bị* *làm* *sao?*
hurt BỤNG_{N1} low side left COP PASS do Q
‘What causes lower left abdominal pain?’ (GOOGLE)

- (14) *Cá* *đầy* *một* *bụng* *trứng.*
fish full one BỤNG_{N1} egg
‘Fish with a belly full of eggs.’ (DICT 20)

4.1.4 LÒNG_{N1}: The BELLY sense

It can be seen from the figure that *lòng* denotes the largest area of the body among the three terms, covering both the belly and the chest area, a semantic association that *bụng* and *ruột* do not perform. This term encompasses both the abdominal and bosom areas in English. As mentioned by Nong (2016), *lòng* refers to the space outside the belly of a person when in a sitting position with legs drawn up or lying down. This is why expressions such as *ôm con vào lòng* hug-baby-in.PREP- LÒNG_{N1} (hug the baby into the abdomen) or *lòng mẹ* LÒNG_{N1}-mother (mother's embrace) can only be associated with *lòng* and not the other two words in the belly sense. This extensive area is the reason why it is an overarching term that covers all internal organs and later associates with the internal organs of dead animals.

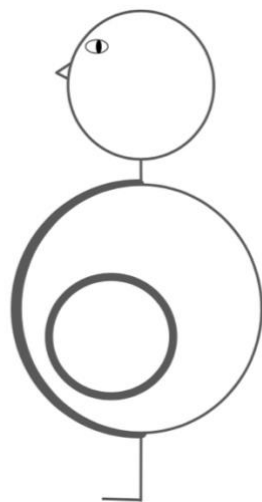
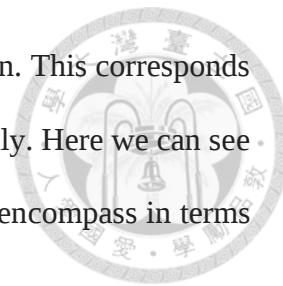


Figure 4.2 The body part profiling of *lòng* in the BELLY sense (adapted from Heine, 1997)

In the case of *lòng*, the BELLY sense can be found in combination with food, as in Example (15), or in combination with the birthing experience, as in Example (16). Example (16) defines a newborn as a baby who just fell out of the mother's *lòng*, corresponding to the belly, the body part capable of holding a fetus. Example (17) describes a hollow space created

between the chest and lap area when sitting down, for Reu (a kid) to sit in. This corresponds to the outer space of the belly, since one cannot literally sit inside the belly. Here we can see that *lòng* demonstrates an area larger than the scope that *bụng* and *ruột* encompass in terms of the BELLY sense.



- (15) *Ấm* *cật* *no* *lòng*
warm kidney full LÒNG_{N1}
‘Belly full, belly happy (proverb).’ (DICT 20)
- (16) *Trẻ* *mới* *lọt* *lòng* (*vừa* *mới* *sinh*).
baby just.PREP fall LÒNG_{N1} just.PREP new born
‘Newborn baby.’ (DICT 20)
- (17) *Rêu* *được* *ngồi* *trong* *lòng* *ông*
Reu.PN be.PASS sit in.PREP LÒNG_{N1} grandpa
‘Reu was seated in Grandpa’s lap (the space created by Grandpa’s chest and belly).’ (NOVEL 54)

4.1.5 RUỘT_{N1}: The BELLY sense

Bụng and *ruột* do not differ in their BELLY sense, as shown by the image schema in **Figure 4.3**. Both terms denote the protruding part of the body and the internal part that contains food and the fetus. In this synchronic study, we assume all senses developed simultaneously and are used with equal frequency. Vietnamese speakers typically differentiate *bụng* as “belly” and *ruột* as “intestines.” However, the “belly” sense of *ruột* is rare, appearing mostly in proverbs or novels and not in modern dictionaries, indicating its evolution along a distinct semantic pathway focused on the body’s interior. *Ruột* has developed specific patterns related to kinship and intimacy, which are novel in modern Vietnamese. Notably, *ruột* is the only term among the three that has a variety of adjectival forms.

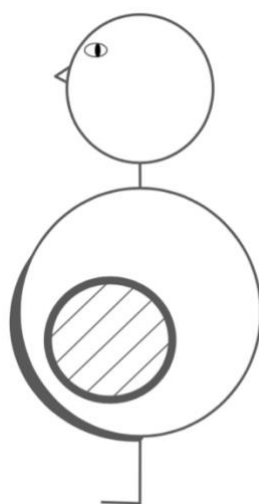


Figure 4.3 The body part profiling of *ruột* in the BELLY sense (adapted from Heine, 1997)

In the examples below, the BELLY sense of *ruột* can be inferred from its collocates *ễnh ra* or *trương ra*, meaning “bloat out,” as in Examples (18) and (19). The sentences describe a bloated belly, a visible sign of pregnancy. This conceptual elaboration indicates that the BELLY sense is distinct from other senses. The BELLY sense of *ruột* was first recorded in Rhodes’s early Vietnamese dictionary (1651, p. 663) within the phrase *xót ruột* (sting-belly) ‘to be hungry.’ This implies that hunger was perceived as a stinging sensation in the stomach, using *ruột* instead of the more modern and common expressions like *xót bụng* (sting-belly) ‘to be hungry’ or *đói bụng* (hungry-belly) ‘to be hungry.’ Although this sense has disappeared in the latest edition of the Vietnamese dictionary by Phe (2021), traces of it still linger in proverbs. For instance, in Example (20), *ruột* metaphorically refers to food so appetizing it seems to bypass the lips and directly enter the stomach. Example (21) depicts the act of vomiting or the sensation of nausea in the stomach. The use of *ruột* is further exemplified in Example (22), particularly with the associated term *đói* (“hungry”), reinforcing its connection to the stomach.

- (18) *Không* *khéo* *đến* *ngày* *cưới* *thì*
NEG doubt at.PREP date wed COP



ễnh *ruột* *ra* *mất-rồi!*
bloat RUỘT_{N1} out.PREP PST

‘There’s no doubt that she may already be bloating her belly out (being pregnant) by the wedding day’ (NOVEL 10)

- (19) *Bà* *chỉ* *mới* *thấy* *người-ta* *đồn* *con* *Mịch*
you.2SG.F just.ADV just. PREP see they.3PL gossip human.CLF Mich.PN

bờm-xòm *với* *với* *tại* *con* *giai* *làng* *Thượng*
flirt~RDP with.COM with.COM the.DET human.CLF man village Thuong.PN

thôi, *chứ-mà* *tôi* *thì* *tôi* *lại* *thấy* *chứ-mà*
only.ADV but.CONJ I.1SG COP I.1SG COP see but.CONJ

con *bé* *ấy* *trương* *ruột* *ra* *rồi.*
human.CLF girl DEM bloat RUỘT_{N1} out.PREP PST

‘You only hear rumors about Miss Mich flirting with guys from Thuong Village, but I’ve already seen her showing a belly (a sign of being pregnant).’ (NOVEL 10)

- (20) *Chưa* *để* *vào* *môi* *đã* *trôi* *vào* *ruột*
NEG put to.PREP lip PST flow to.PREP RUỘT_{N1}

‘Food so delicious that get devoured so quickly.’ (PROVERB)

- (21) *Kiên* *nhảy* *xuống* *đất.* *Lảo-đảo* *chạy* *đi.*
Kien.PN jump down.PREP ground bend~RDP run away.PREP

Ruột *còn* *lên.* *Ợc* *khan*
RUỘT_{N1} squeeze up.PREP heave dry

‘Kien jumps down to the ground, running away shakingly. His stomach contracts and he retches’. (NOVEL 44)

- (22) *Đói* *trong* *ruột* *không- ai* *thấy,* *rách* *ngoài* *váy*
hungry in.PREP RUỘT_{N1} INDF see tear out.PREP skirt

nhieu *người* *hay.*
PL person know

‘Nobody cares that you’re starving, but many pay attention to your shabby appearance’. (PROVERB)



4.2 The distinct senses of *bụng*

4.2.1 BỤNG_{N2}: The PROTRUDING PART sense

The second sense of *bụng* is the PROTRUDING PART sense, as illustrated in examples (12) and (13). When *bụng* is combined with *chân* ‘leg’ in (12), the resulting meaning is the bulge of the leg. When *bụng* is combined with *máy-bay* ‘plane’ in (13), the resulting meaning is the “underside” of the plane, which can be vulnerable to gunfire or attacks due to limited protection. The PROTRUDING PART sense appears to be a pre-coded lexical sense, as the real “belly” of a leg would not make sense in this context. Vietnamese speakers must have a semantically pre-defined notion of the PROTRUDING PART for examples (23) and (24) to be comprehended as “the bulge” and “the underside (of a plane)” respectively. The image of the underside of the plane is illustrated in **Figure 4.5**.

- (23) *Nước ngập tới bụng chân.*
water flood to.PREP BỤNG_{N2} leg
‘Water flooding to the bulge of a leg.’ (DICT 20)

- (24) *Chiếc máy bay phơi bụng trước tầm súng.*
CLF machine fly open BỤNG_{N2} before.PREP range gun
‘The airplane exposed its underside to the gunfire.’ (DICT 16)

Image schemas are used to describe the semantic relationship between BỤNG_{N1}: The BELLY sense and BỤNG_{N2}: The PROTRUDING PART sense. The PROTRUDING PART sense derives from the BELLY sense through the profiling of the protruding aspect of a container. This conceptualization originates from the human body and extends to a conceptual space mapping different parts of the belly. Within this conceptual base, various anatomical parts are simplified into substructures. *Bụng* represents the protruding part in this vertical structure among body parts like *lòng* and *ruột*, further explored in sections 4.3.3 and 4.4.2, respectively.

BỤNG_{N2}: The PROTRUDING PART sense emerges when focus is directed to the protruding substructure in the image schema of the human belly, depicted with heavy lines.

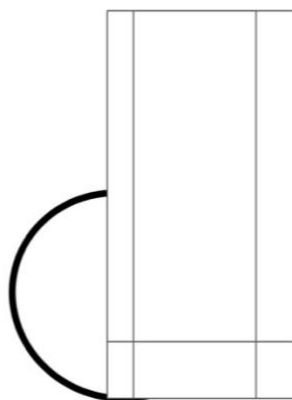
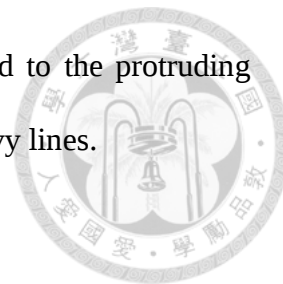


Figure 4.4 Image Schema of BỤNG_{N2}: The PROTRUDING PART sense

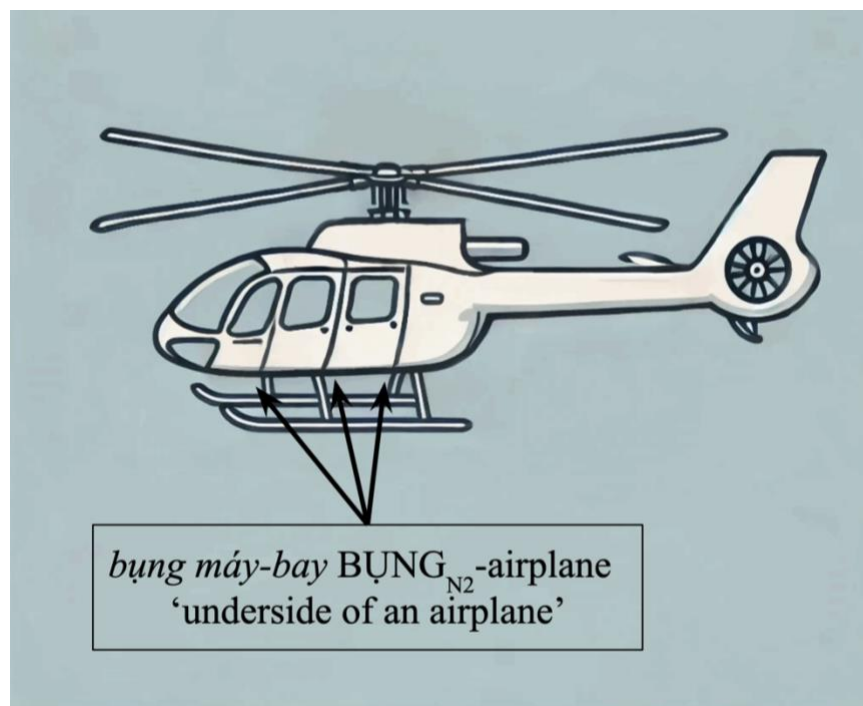


Figure 4.5 Illustration of the perception of an airplane's underside derived from BỤNG_{N2}:

The PROTRUDING PART sense



4.2.2 BỤNG_{N3}: The COGNITION sense

In Vietnamese, *bụng* adapts a metaphorical meaning to denote human emotions and thoughts, coded as The COGNITION sense. *Bụng* as the seat of affective and cognitive abilities is often understood metaphorically as a container. This usage is demonstrated in examples (25) to (29). Here, *bụng* functions as holding both negative and positive emotions. In (25), the specific emotion is not mentioned, but it is understood to be negative, and the “people in the apartment” chose to brush it off instead of “putting” it in their *bụng*. In (26), *ung* ‘please’ follows *bụng* to describe the feeling of being pleased or content. Examples (27) to (28) illustrate the use of *bụng* as a carrier of thoughts, aligning with the notion mentioned by Dirven et al. (2008) as the seat of intellect. *Bụng* is combined with lexical items related to thinking capacity, such as *suy* ‘anticipate’ and *thắc-mắc* wonder~RDP ‘wonder’, in examples (27) and (28) respectively. In example (29), *bụng* is understood as a container for thoughts, implying that one can choose to speak their mind instead of holding their thoughts inside. Thus, the English equivalent in this context is “mind.” Here, *bụng* performs a sense distinct from the other senses we have identified. This metaphorical sense is pre-coded and distinct from the other senses we have analyzed, as the belly is no longer viewed literally as the body part that digests and contains food or a fetus.

(25) *Người trong chung-cư cười xóa, chẳng ai để bụng.*
 person in.PREP apartment laugh ADV NEG 3SG put BỤNG_{N3}
 ‘The people in the apartment laughed it off; no one held a grudge.’ (NOVEL 46)

(26) *Mẹ đã ung cái bụng chưa?*
 you.2SG PST please CLF BỤNG_{N3} Q
 ‘Are you pleased?’ (NOVEL 34)



- (27) *Suy* *bụng* *ta* *ra* *bụng* *người*
anticipate BỤNG_{N3} we.1PL to.PREP BỤNG_{N4} person
'To anticipate someone else's belly from our own belly. (Judge others by ourselves)
(Proverb) (DICT 20)'

- (28) *Em* *đứng* *sững*, *há* *hốc* *miệng* *nhìn*, *bụng* *thắc-mắc*.
1SG stand shocked open wide mouth look BỤNG_{N4} wonder~RDP
'She stood there stunned, looking with her mouth agape, wondering.'
(NOVEL 34)

- (29) *Có* *gì* *nói* *ngay*, *không* *để* *bụng*.
have something say immediate NEG put BỤNG_{N4}
'Express one's thoughts frankly instead of keeping them in the mind.' (DICT 20)

Examples (25-28) illustrate the conceptualization of the belly as a container for cognitive abilities. The belly contains dislike (25), affection (26), thoughts (27, 29), and curiosity (28). Since the belly is a storage space for food in the source domain, the expression “put (in) the belly” in the target domain means that the thing being put is either dislike (25) or thoughts (27). In example (25), people can metaphorically put their emotions, specifically negative emotions, into the belly just as they put food into it. Similarly, in example (18), thoughts are confided within the belly instead of being expressed, conceptualizing the belly as a container for inner thoughts. In example (27), you can anticipate another person's thoughts by metaphorically anticipating their belly. Using the structure of the conceptual metaphor, we can create a metaphorical mapping between BỤNG_{N1} (BELLY) and COGNITION. Here's how the mapping would look:

Table 4.1 The conceptual metaphor framework denoting the metaphor BỤNG_{N1} (BELLY) IS COGNITION (Examples 25-29)

Source domain: BELLY		Target domain: COGNITION
Putting food into the belly	⇒	holding emotions (25)
Storing food	⇒	Storing affection (26)
Storing food	⇒	Storing thoughts (27,29)
Storing food	⇒	Storing curiosity (28)

4.3 The distinct senses of *lòng*

4.3.1 LÒNG_{N2}: The OFFAL sense

Examples (30-31) illustrate the LÒNG_{N2}: The OFFAL sense. In these sentences, *lòng* clearly does not mean *belly*; instead, it refers to the entrails and internal organs of an animal used as food. Example (30) is a common Vietnamese proverb meaning that the quality of something on the outside often reflects what is inside. Here, a fat pig usually promises delicious offal for a banquet. In example (31), *lòng* appears with the collocate *ăn* ‘to eat’, and in this context, it must have the OFFAL sense to be correctly understood, preventing confusion with human entrails. Moreover, it is a prominent entry in Vietnamese dictionaries, as both the DALL and VVD recorded this meaning.

- (30) *Con lợn có béo cỗ lòng mới ngon*
 animal.CLF pig must.MDL fat banquet LÒNG_{N2} then.ADV delicious
 ‘The pig must be fat for a delicious intestines banquet.’ (proverb meaning “appearance is a good indicator of quality”) (DICT 18)

- (31) Ông Ninh nhấn mạnh, để đảm bảo an toàn cho sức khỏe
 Mr. Ninh press strong to.PREP ensure safety for.PREP health
 chỉ nên ăn lòng 1-2 lần/ tháng.
 only.ADV should.MDL eat LÒNG_{N2} 1-2 time.CLF month
 ‘Mr. Ninh emphasized that to ensure health safety, one should only eat egg yolks 1-2 times a month.’ (GOOGLE)



In the case of the OFFAL sense, this sense extends from LÒNG_{N1}: The BELLY sense through metonymization, specifically the metonymy PART OF THE THING FOR THE WHOLE THING, as described by Kövecses & Radden (1998, p. 50). The essence of metonymy lies in contiguity. Initially, when people use the word *lòng* with the BELLY sense, the profiled and highlighted area is the abdomen and chest of both humans and animals (i.e., HAB). This large belly area in human and animal anatomy contains several parts (i.e., P₁, P₂, P_x), including the intestines (i.e., I). In the second phase, within the context of the animal belly (i.e., AB), the focus shifts, and *lòng* acquires a new meaning to refer particularly to animal intestines due to the contiguity between the belly and its intestines, as illustrated in **Figure 4.6**.

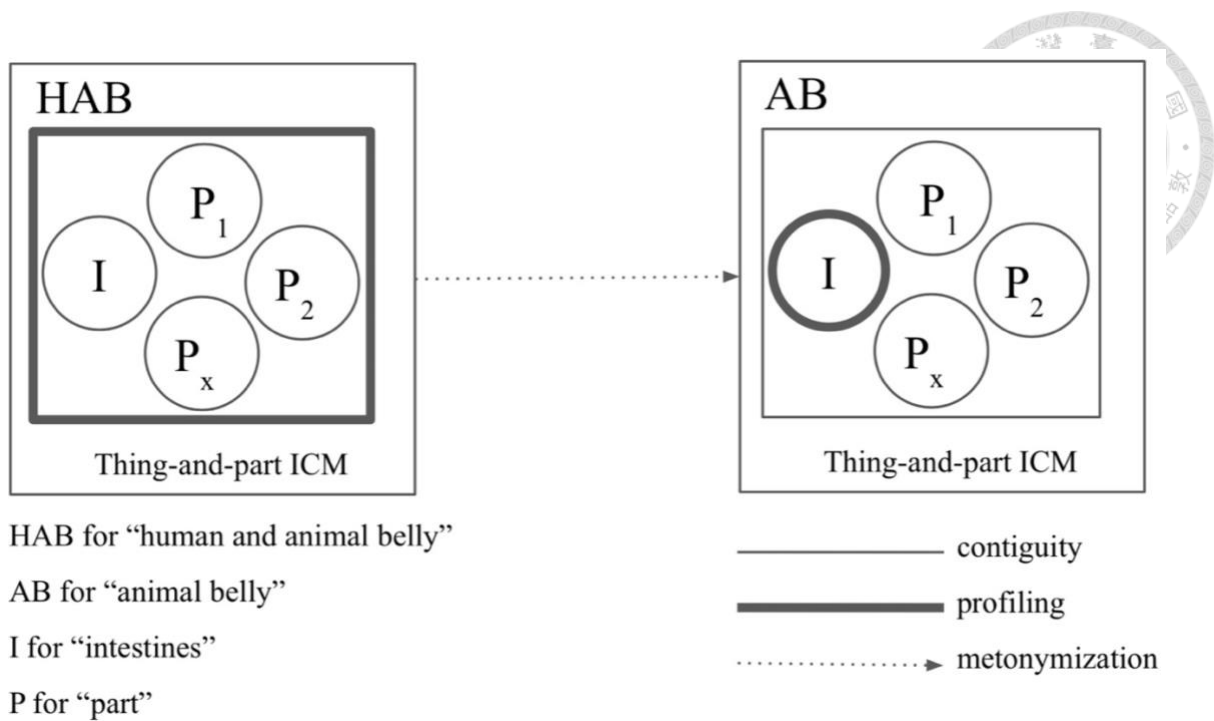


Figure 4.6 Metonymization for LÔNG_{N2}: The OFFAL sense

4.3.2 LÔNG_{N3}: The CENTRAL BOTTOM sense

When combined with certain physical objects, *lòng* conveys the CENTRAL BOTTOM sense. This sense describes the position at the lower center of these objects. For example, in (32), *lòng* is followed by *đất* ‘earth’ to denote the spatial notion of being at the bottom or having an underground. This spatial notion no longer relates to the human or animal body but rather to the corresponding space of objects. Thus, the CENTRAL BOTTOM sense is distinguished from all other senses of *lòng*. Another example is (33), where *lòng* is combined with *hồ* ‘lake.’ *Lòng* itself carries the notion of central bottom, so in this context, a Vietnamese speaker would understand it as referring to the lake bed, such as when a car plunges into the lake bed. The perception of the lake bed derived from LÔNG_{N3}: The CENTRAL BOTTOM sense in (33) is illustrated in **Figure 4.8**.

- (32) *Đào sâu vào lòng đất.*
 dig deep to.PREP LÔNG_{N3} earth
 ‘Digging deep into the earth.’ (DICT 20)

- (33) *Xe-tải mất lái lao xuống lòng hồ Khe Bó*
 truck lose control plunge down.PREP LÔNG_{N3} lake Khe-Bo.PN
 ‘A truck lost control and plunged into *Khe Bo* lake.’ (NEWSPAPER)



Image schemas are used to describe the semantic relationship between LÔNG_{N1}: The BELLY sense and LÔNG_{N3}: The CENTRAL BOTTOM sense. LÔNG_{N3}: The CENTRAL BOTTOM sense derives from LÔNG_{N1}: The BELLY sense by profiling the central bottom aspect of a container. This conceptualization originates from the human body and extends to a conceptual space mapping different parts of the belly. Within this conceptual base of the belly, various anatomical parts are simplified into substructures in a container space. These substructures include a protruding part, an interior, and a bottom. *Lòng* represents the central bottom in this vertical structure among body parts like *bụng*, which takes the protruding profile (discussed in Section 4.2.1), and *ruột*, which takes the interior profile (further explored in Section 4.4.2). LÔNG_{N3}: The CENTRAL BOTTOM sense emerges when focus is directed to the central bottom substructure in the container image schema of the belly, depicted with heavy lines. In this context, the “center” is where important things are collected and kept safe, while the “bottom” is where things naturally settle due to gravity. *Lòng* maps to the “central bottom” structure for two reasons: importance and weight. First, *lòng* occupies the largest area in human anatomy compared to *bụng* and *ruột* in the BELLY sense described in Section 4.1. This encompasses the abdominal and bosom regions, including all collective abdominal organs responsible for storing and keeping important things like food (in the stomach) or a fetus (in the uterus). These properties of the belly are the source of the “center” notion, which gives rise to meanings such as LÔNG_{N4}: The CENTER sense and the

conceptualization of *lòng* as the seat of cognition in the Vietnamese language. Second, the belly is where important objects such as food and the fetus naturally “sink” to the bottom. Food moves through the vertical pathway during digestion, and the fetus is positioned at the bottom due to its weight.

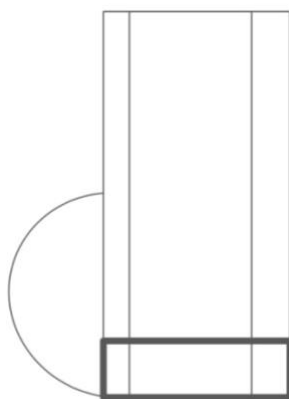


Figure 4.7 Image Schema of LÒNG_{N3}: The CENTRAL BOTTOM sense

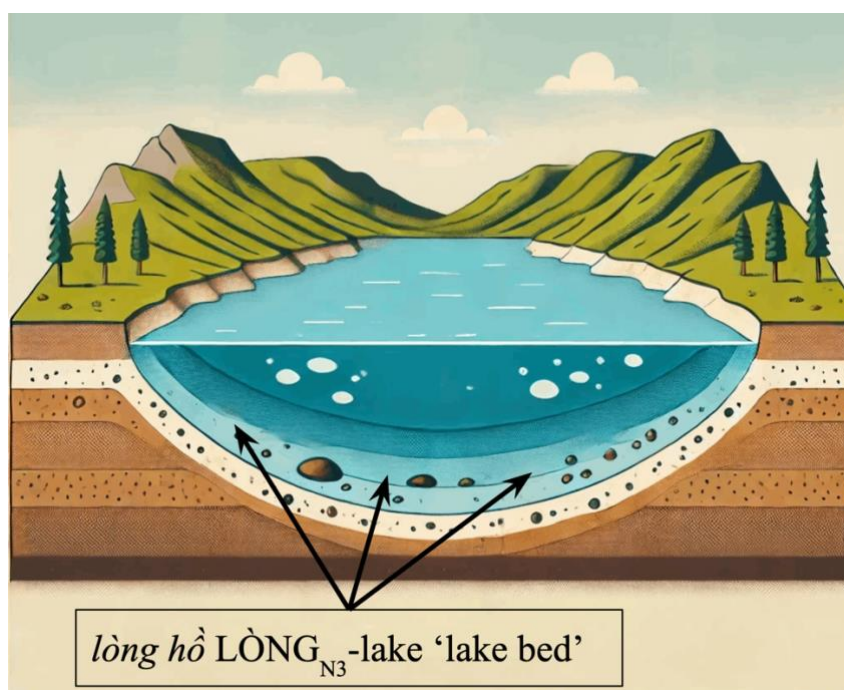
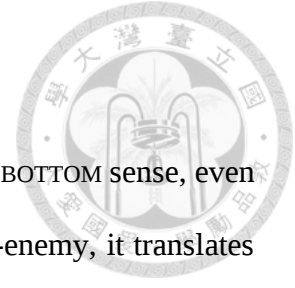


Figure 4.8 Illustration of the lake bed perception derived from LÒNG_{N3}: The CENTRAL
BOTTOM sense



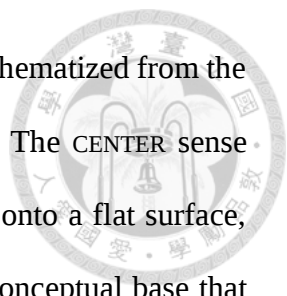
4.3.3 LÒNG_{N4}: The CENTER sense

Here in (34), we can see that *lòng* no longer expresses the CENTRAL BOTTOM sense, even though it is quite similar. In the phrase *trong lòng địch* in.PREP-LÒNG_{N4}-enemy, it translates to “inside the enemy force.” Here, *lòng* expresses the notion of “center,” but rather metaphorically, because “force” does not have a corporeal form. Similarly, in (35), the context is about life in a city occupied by the enemy. *Lòng* is paired with *thành-phố* ‘city’. The English equivalent of this case would be “the heart of the city,” expressing a notion of the center, as we don’t draw lines in the city area to divide center and suburban. It is just a notion of an important and crowded area of a city, which is not entirely physical. That is why it is distinct from the senses that we already know.

- (34) Anh ấy hoạt động bí mật trong lòng địch
 2SG that.DEM operate secret in.PREP LÒNG_{N4} enemy
 hàng ngày cận-kề bên cái chết.
 every.DET day near~RDP beside.PREP CLF death
 ‘He operates secretly in the enemy force every day, close to death.’ (NOVEL 54)

- (35) Ai đoán được cuộc-sống sắp-đến trong lòng thành-phố
 who.Q guess able-to.AUX life upcoming in.PREP LÒNG_{N4} city
 giặc chiếm sẽ lành dữ sao đây?
 enemy occupy will.MDL good bad how.Q then.ADV
 ‘Who can predict how good or bad life will be in the city occupied by the enemy?’
 (NOVEL 34)

LÒNG_{N4}: The CENTER sense derives from LÒNG_{N3}: The CENTRAL BOTTOM sense through superimposition within image schema transformation, as detailed in Section 4.3.5. Initially, LÒNG_{N3}: The CENTRAL BOTTOM sense undergoes a spatial manipulation where its central



bottom space is resized and reoriented relative to the vertical container schematized from the human body, reducing the central bottom to a small sphere. LÒNG_{N4}: The CENTER sense becomes distinct when this sphere within the container, is repositioned onto a flat surface, transforming into a dot at the center, as illustrated in **Figure 4.9**. This conceptual base that contains the resized central bottom space is metaphorical, allowing LÒNG_{N4}: The CENTER sense to depict central meanings of non-physical objects, which partially correlates with Nong's (2016) analysis of the center-oriented metaphorical meanings of 心 *xīn* in modern Chinese. In her study, Nong drew similar image schemas, akin to those in **Figure 4.9**, to describe how the Vietnamese equivalent of 心 *xīn* often appears as *lòng* due to their shared denotation of Center Direction. This similarity is evident in translations from her study, such as 掌心 *zhǎngxīn* palm-center $\Rightarrow$ *lòng bàn-tay* LÒNG_{N3}-palm 'center (or hollow) of the palm', 江心 *jiāngxīn* river-center $\Rightarrow$ *lòng sông* LÒNG_{N3}-river 'riverbed', and 心土 *xīntǔ* earth-center $\Rightarrow$ *lòng đất* LÒNG_{N3}-earth 'substratum'. These examples demonstrate how *lòng* in Vietnamese and 心 *xīn* in Chinese denote central or core aspects of various objects. However, Nong's analysis did not differentiate between the physical and metaphorical configurations of 心 *xīn*. Thus, the examples above depict the center notion of LÒNG_{N3}: The CENTRAL BOTTOM sense, only mapping to objects with a corporeal form. The superimposition of *lòng* continues, evolving into LÒNG_{N4}: The CENTER sense. This process of intensifying the central notion continues within the metaphorical realm, leading to a new distinct sense denoting the seat of human cognition, which is LÒNG_{N5}: The COGNITION sense.

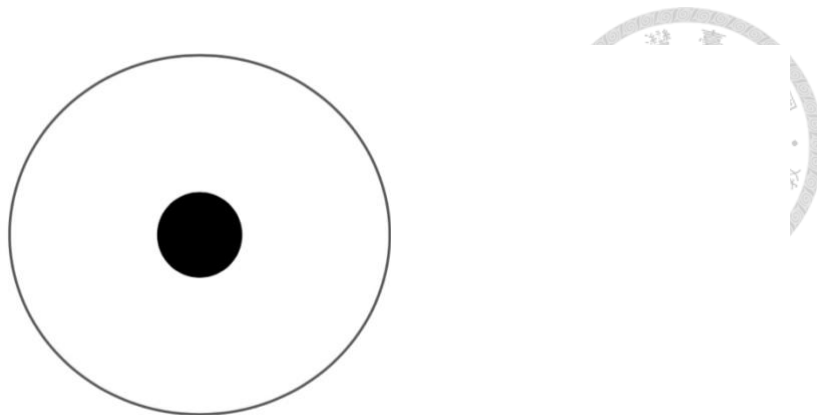
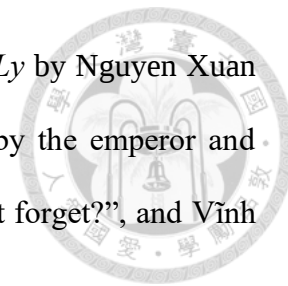


Figure 4.9 Image schema transformation of LÒNG_{N4}: The CENTER sense

4.3.4 LÒNG_{N5}: The COGNITION sense:

The final sense showcased by *lòng* is the COGNITION sense, where *lòng* adopts a metaphorical meaning to denote human emotions and thoughts. This sense aligns with the concept of abdominocentrism, where the “mind” within the body encompasses ways of knowing, thinking, and feeling, as discussed by Sharifian et al. (2008). Hence, LÒNG_{N5} can be interpreted as “mind.” A major conceptual metaphor identified in the data is LÒNG_{N5} as a carrier or container of cognitive abilities. The following examples illustrate that the abdomen is considered to store emotions and thoughts. In terms of emotions, “losing someone’s abdomen” (36) translates to losing someone’s positive feelings towards you. Similar to English, where the heart can be hurt (37), or the heart’s characteristics can be sincere (38). In terms of thoughts, we have “abdomen full of doubts” (39) and “wonder in abdomen” (40). In (41), even without a preposition specifying the location, we understand the cognitive ability to hum a song is in the abdomen, similar to the English expression “hum a song in one’s head.” In (42), the English equivalent of “speak straightforwardly from one’s abdomen” would be “speak one’s mind.” In (43), “what one’s abdomen is thinking” conveys the sense of unspoken thoughts being contained in the abdomen. *Lòng* is also where

memories are stored. Example (44) is a scene from the novel *Hồ Quý Ly* by Nguyen Xuan Khanh where Vĩnh asked the protagonist about a banquet bestowed by the emperor and whether he remembered it. The protagonist rhetorically asked, “I didn’t forget?”, and Vĩnh replied that he had written the memory deeply in his abdomen.



- (36) *Có khi gặp lời-mời từ người không quá thân-thiết,*
 exist time meet invitation from.PREP person NEG very.ADV close~RDP

Đ. vẫn tham-gia vì sợ không đi sẽ mất
 D.PN still.ADV participate because.CONJ afraid NEG go will.MDL lose

lòng người mời.
 LÒNG_{N5} person invite

‘Sometimes, when receiving an invitation from someone not very close, Đ. still participates because he is afraid that not going will offend the inviter.’
 (NEWSPAPER)

- (37) *Britney Spears đau lòng khi bị bịa chuyện nghiện*
 Britney Spears.PN hurt LÒNG_{N5} when.CONJ PASS fabricate story addict

ma-túy.
 drug

‘Britney Spears is heartbroken over rumors about her being addicted to drugs.’
 (NEWSPAPER)

- (38) *Trăn-trở mãi, chàng-trai cũng tìm được*
 contemplate~RDP continuously.ADV 3SG.M finally.ADV find able-to.AUX

nguyên-do, cô ấy giận vì nghĩ mình không thật
 reason 3SG.F that.DET angry finally.ADV think 3SG.M NEG true

lòng, yêu-đương cho vui chứ không nghiêm-túc trong
 LÒNG_{N5} love for.PREP fun but.CONJ NEG serious in.PREP

mối quan hệ.
 CLF true

‘After much contemplation, the young man finally found the reason: She was angry because she thought he was not sincere, loving just for fun and not serious in the relationship.’ (NEWSPAPER)

- (39) *Lòng đầy nghi hoặc, tôi quay đầu nhìn đảo-dắc.*
 LÒNG_{N6} full doubt 1SG turn head look anxiously~RDP
 ‘With a heart full of doubt, I turned my head and looked around anxiously.’
 (NOVEL 56)

- (40) *Huệ băn-khoăn trong lòng, muốn được một mình.*
 Hue.PN wonder~RDP in.PREP LÒNG_{N6} want able-to.AUX one person.CLF

suy-nghĩ những gì Nhạc vừa nói, nên đáp: - Dạ
 think PL thing Nhạc.PN just.PREP say so.CONJ reply yes.ADV

nhớ.
 remember

‘Hue, wondering inside her mind and wanting to be alone to think over what Nhạc had just said, responded: “Yes, I remember”.’ (NOVEL 39)

- (41) *Hắn đạp xe trên đường phố Hồng Bàng hun hút,*
 3SG.M ride bike on.PREP road street Hong Bang winding~RDP

lòng ngâm-nga bài “Con thuyền không bến”.
 LÒNG_{N6} hum~RDP song ‘The Boat Without a Pier’.PN

‘He rode his bike on the winding streets of Hong Bang, humming the song “The Boat Without a Pier” in his mind.’ (NOVEL 49)

- (42) *Tại-sao lại nghĩ vì nhút-nhát mà anh ấy*
 why.Q do.AUX think because.CON shy~RDP that.REL 3SG.M that.DET
 J

không dám nói thẳng lòng mình!
 not.NEG dare speak straight LÒNG_{N6} his.POSS

‘Why would you think he didn’t dare to speak his mind because he is shy!’
 (NOVEL 39)

- (43) *Khó ai biết nổi lòng chàng đang nghĩ gì.*
 hard 3SG.INDF know able-to.AUX LÒNG_{N6} 3SG.M PROG think what.Q
 ‘It’s hard for anyone to know what he is thinking in his mind.’ (NOVEL 50)

- (44) *“Tôi không quên?” - “Cả tôi cũng ghi sâu trong lòng?”*
 1SG NEG think even.ADV 1SG also.ADV write deep in.PREP LÒNG_{N6}

Chúng- tôi cầm tay nhau cười lên ha-ha.

1PL hold hand REFL laugh up.PREP heartily.ADV

“I didn’t forget?” - “Even I deeply remember in my heart?” We held each other’s hands and laughed heartily.’ (NOVEL 50)

Examples (36-44) illustrate the conceptualization of the belly as a container for cognitive abilities. The belly contains affection (36), sincerity (38), doubts (39), worries (40), thoughts (41, 43), and memories (44). Various characteristics of the physical belly are used to describe abstract concepts. It can be full, as in “belly full of doubts” (39). It has space, as in “wonder in the belly” (40), and depth, as in “deep in the belly” (44). “Losing someone’s belly” (36) can be linked to offending someone, as the belly contains positive feelings towards a person. In this mapping, the loss of the belly corresponds to the loss of affection. In example (37), physical pain conflicting with the belly translates to emotional pain. Using the structure of the conceptual metaphor, we can create a metaphorical mapping between LÔNG_{N1} (BELLY) and COGNITION. Here’s how the mapping would look:

Table 4.2 The conceptual metaphor framework denoting the metaphor LÔNG_{N1}(BELLY) IS COGNITION (Examples 36-44)

Source domain: BELLY		Target domain: COGNITION
Full belly	⇒	Full of doubts (39)
Space in the belly	⇒	Wonder in the belly (40)
Depth of the belly	⇒	Deep memories (44)
Losing the belly	⇒	Losing affection (36)
Physical pain in the belly	⇒	Emotional pain (37)

4.4 The distinct senses of *ruột*

4.4.1 RUỘT_{N2}: The INTESTINES sense

RUỘT_{N2}: The INTESTINES sense is illustrated by (45-47). This has become the prominent sense of *ruột* in contemporary usage, where if you mention *ruột* to a native

Vietnamese speaker, they will immediately associate it with the intestines rather than general interior parts. *Ruột* encompasses the concept of intestines as a whole, but when combined with modifiers such as *thừa* “extra” (45), *già* “old” (47), and *non* “young” (47), it specifies different segments of the intestines, namely the appendix (*ruột thừa*), large intestines (*ruột già*), and small intestines (*ruột non*) respectively. In (45), *ruột* is paired with the modifier *thừa* to denote the appendix in the context of surgery, specifically an appendectomy. In (46), *ruột* is used in the context of intestinal diseases. In both instances, *ruột* demonstrates a distinct and newly developed sense compared to its other meanings.

- (45) *mổ ruột thừa là phẫu-thuật đơn-giản*
 operate RUỘT_{N2} extra COP surgery simple
 ‘Appendicectomy is a simple operation.’ (NOVEL 47)

- (46) *Bệnh viêm đường ruột có-thể gặp ở mọi lứa tuổi*
 disease inflame path RUỘT_{N2} possible encounter at.PREP INDF CLF age
 ‘Inflammatory bowel disease can occur at any age.’ (GOOGLE)

- (47) *Ruột non và ruột già nằm giữa thực-quản và*
 RUỘT_{N2} young and.CONJ RUỘT_{N2} old lie middle.P esophagus and.CONJ
 REP
 ‘Inflammatory bowel disease can occur at any age.’ (GOOGLE)

hậu-môn, nằm gọn. bên-trong khoang bụng của cơ-thể người.
 anus lie neat inside.PREP cavity belly of.PREP body human
 ‘The small intestine and large intestine are located between the esophagus and anus, nestled inside the abdominal cavity of the human body.’ (GOOGLE)

RUỘT_{N2}: The INTESTINES sense extends from RUỘT_{N1}: The BELLY sense through metonymization, or more precisely, the metonymy PART OF THE THING FOR THE WHOLE THING, as summarized by Kövecses & Radden (1998, p. 50). Metonymy involves an attention shift from one element to another within the same domain. Initially, when people use the word *ruột* with the BELLY sense, the focal point is the abdomen and chest of both humans and

animals, as highlighted in **Figure 4.10**. Considered within the same domain of the body, the human and animal belly (i.e., HAB) comprises many parts (i.e., P_1 , P_2 , P_x), including the intestines (i.e., I). In the second phase, due to the contiguity between the belly and its intestines, the attention shifts from HAB to I , and people tend to use *ruột* to specifically refer to the intestines.

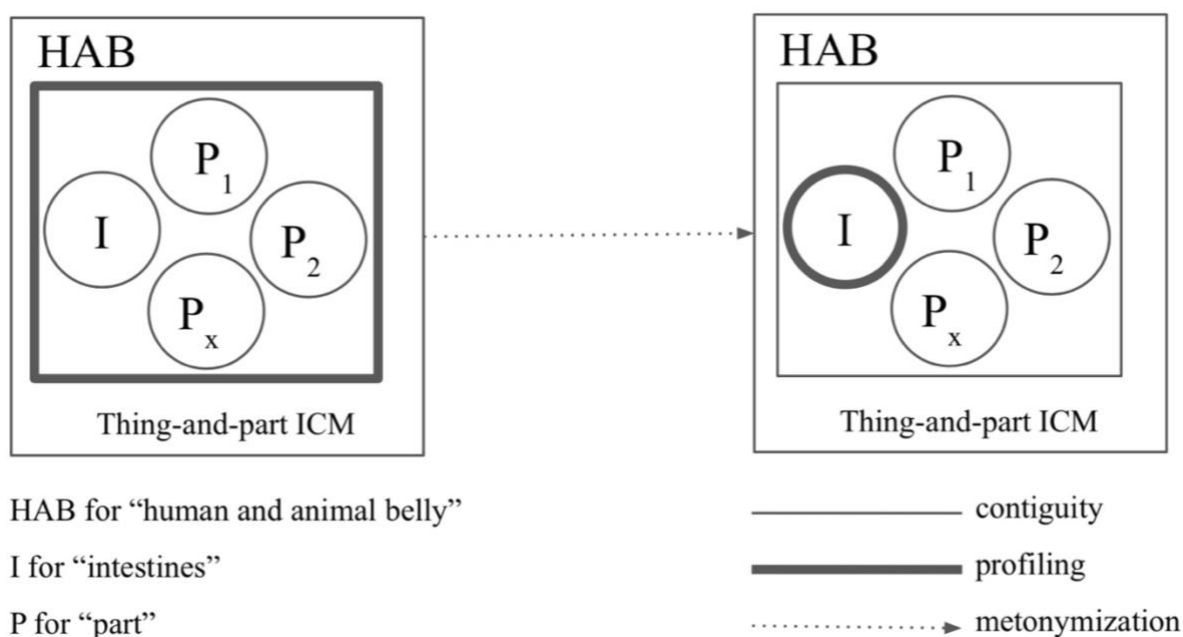


Figure 4.10 Metonymization for the INTESTINES sense

4.4.2 RUỘT_{N3}: The INTERIOR sense

In Vietnamese, *ruột* denotes the INTERIOR sense as a distinct meaning. It was described in DALL as “interior pars cuiuscumque rei,” translating from Latin to “the inner part of any thing.” This entry still exists in VVD as “*bộ phận bên trong của một số vật*,” meaning “the inner part of some things.” In example (48), *ruột* captures the inner part of a bamboo tree, which is a hollow space. Similarly, in example (49), this space corresponds to the interior of bread, taking on the corporeal form of a crust, yet still encompassing the entire interior of the

object. The crust of the bread is illustrated in **Figure 4.12**. Example (50) illustrates *ruột* describing the interior of a tire, referring to the soft part where air is pumped in. These examples demonstrate that *ruột* conveys the concept of a space within an object, sometimes corresponding to a tangible form. However, even in cases where it does not, *ruột* still represents a mental space that correlates with spatial relations in the physical world. This space is fundamental, abstract, and serves as the root from which other distinct senses derive.

- (48) *ruột* *tre*
 RUỘT_{N3} bamboo
 ‘The inner part of bamboo.’ (DICT 14)

- (49) *Nàng* *ném* *tới* *một* *mẫu* *ruột* *bánh-mì*.
 she.3SG throw to.PREP one piece.CLF RUỘT_{N3} bread
 ‘She threw a piece of bread crumb towards (me).’ (NOVEL 23)

- (50) *ruột* *bánh* *xe*
 RUỘT_{N3} tire vehicle
 ‘The inner part of a tire.’ (DICT 14)

Image schemas describe the semantic relationship between RUỘT_{N1}: The BELLY sense and RUỘT_{N3}: The INTERIOR sense. The INTERIOR sense derives from the BELLY sense through profiling the interior aspect of a container. This conceptualization, originating from the human body, extends to a conceptual space mapping different parts of the belly. Within this conceptual base, various anatomical parts are simplified into substructures. *Ruột* represents the interior in this vertical structure among body parts like *bụng* (profiled differently in Section 4.2.1) and *lòng* (Section 4.3.3). RUỘT_{N3}: The INTERIOR sense emerges when focus is directed to the inner substructure in the belly’s image schema, depicted with heavy lines. *Ruột* maps to this structure due to its association with the interior, as described in its BELLY sense in Section 4.1.4. This inner focus has led to its evolution along a distinct semantic

pathway, developing connections to RUỘT_{A1}: The KINSHIP sense and RUỘT_{A2}: The CLOSENESS sense.

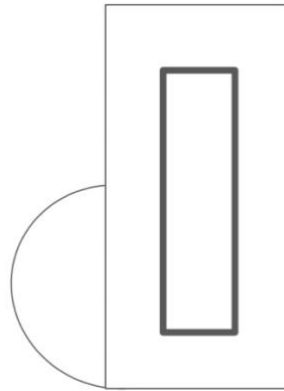


Figure 4.11 Image Schema of RUỘT_{N3}: The INTERIOR sense

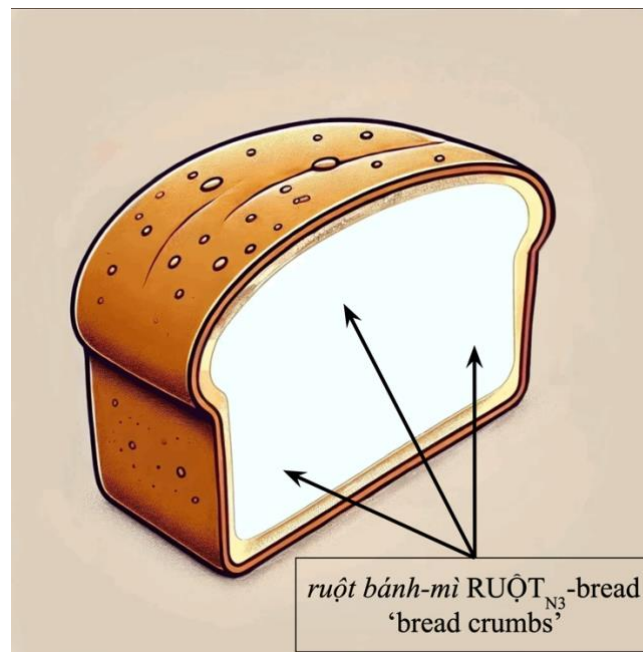
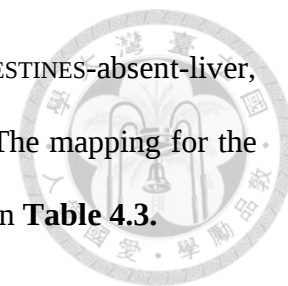


Figure 4.12 Illustration of the perception of bread crumbs derived from RUỘT_{N3}: The INTERIOR sense

4.4.3 RUỘT_{N4}: The COGNITION sense

In Vietnamese, *ruột* is understood as a carrier of cognitive abilities, coded in RUỘT_{N4}: The COGNITION sense. Examples (51-53) show that *ruột* is where confidential, unspoken thoughts and intentions are stored. Therefore, if we “leave our intestines outside of the skin” (51), it means we are exposing our innermost thoughts. Similarly, if someone “walks in our intestines on high heels” (52) or “sees through one’s intestines and liver” (53), they can discern our inner thoughts. The COGNITION sense is metaphorical, as nobody can literally see through another’s intestines. In the context of examples (55-66), *ruột* serves as a container that carries emotions; it has space (54), a bottom (55), and can expand (56), be filled with emotions (57), and reach a limit when emotional fluid overflows (58). As it expands in (56), a person is overwhelmed with pleasure. Furthermore, our data indicates that *ruột* hosts various emotions, such as anger (62), happiness, joy, and nervousness, depending on the context. Expressions denoting anger are closely related to the universal metaphor ANGER IS HEAT: *sốt ruột* feverish-INTESTINES, ‘anxious’ (59-60), *nóng ruột* hot-INTESTINES, ‘anxious’ (61), *mát ruột* cool-INTESTINES ‘pleased/satisfied’; and ANGER IS INSANITY: *điên ruột* crazy-INTESTINES ‘furious’ (62), as seen in Lakoff’s (1987) extended case study of anger. Examples (63-66) show that lexical items describing harmful actions to *ruột* result in corresponding emotional distress for a person. Furthermore, the intestines can be cut *cắt ruột* ‘heart-broken’ (60), broken *đứt ruột* ‘heart-broken’, stung *rất ruột* ‘taxing’ (64), torn *xé ruột* ‘heart-broken’ (65-66), or twisted *quấn ruột* ‘anxious’. They can also be left rotten *thúi ruột* ‘extremely sad’ or stale *héo cả ruột gan* ‘extremely sad’. The intestines also serve as a repository for various personal traits, morals, and spirits. Consequently, their collocation can symbolize an individual’s personality: *xấu ruột* evil-INTESTINES ‘evil’), *thẳng như ruột ngựa* straight-

like.ADV-INTESTINES-horse ‘straightforward’, *vô ruột vô gan* absent-INTESTINES-absent-liver, ‘heartless’, *chặt dạ chặt ruột* tight-stomach-tight- INTESTINES ‘stingy’. The mapping for the conceptual metaphor RUỘT_{N2} (INTESTINES) ARE COGNITION is illustrated in **Table 4.3**.



- (51) *Ruột để ngoài da*
 RUỘT_{N4} leave out.PREP skin
 ‘To leave intestines outside of the skin (proverb meaning to be transparent).’ (DICT 20)

- (52) *Anh đi guốc trong ruột chúng nó*
 he.2SG.M 1SG high-heel in.PREP RUỘT_{N4} 3PL DET
 ‘He walks inside their intestines in high heels (He can read their mind).’ (NOVEL 39)

- (53) *người nói nhìn thấu ruột gan mình*
 person speak see through.ADV RUỘT_{N4} liver my.POSS
 ‘The speaker sees through my thoughts.’ (NOVEL 49)

- (54) *Tội-gì mình để-cho người-ta nhòm vào ruột?*
 why 1SG IMP~RDP INDF look in.PREP RUỘT_{N4}
 ‘Why let someone else look into your guts.’ (NOVEL 20)

- (55) *Tôi không trả-lời, không thể trả-lời, chỉ rùng mình*
 job NEG return NEG MDL return ADV tremble 1SG
cho vị mặn từ câu-hỏi im-lìm đó chảy từ-từ
 ADV flavor salty PREP question silent~RDP DEM flow slow~RDP

xuống đáy ruột.
 PREP bottom RUỘT_{N4}

‘I didn’t answer, couldn’t answer, just shivered slightly to let the salty taste from that silent question flow slowly to the bottom of my heart.’ (NOVEL 45)

- (56) *Ông-cụ phó-cạo già được họ khen nở-nang cả khúc*
 grandpa barber old PASS they.3PL praise expand~RDP whole.DET section.CLF

ruột, gật-gù: - Đấy các ngài xem, các quan-án bây-giờ

RUỘT_{N4} nod~RDP there.INTJ all.PL gentleman look all.PL judge nowadays.ADV

thuần công-minh như thế đấy!
pure fair like.ADV that.DEM there.INTJ

‘The old barber, who was ecstatic to be praised by them, nodded: There! Gentlemen, please look, judges nowadays are just purely fair!’ (NOVEL 8)

- (57) *Chị tức đầy ruột, nhưng phải nén không dám*
she.3SG angry full RUỘT_{N4} but.CONJ must.MDL press not.NEG dare

giở chua-ngoa.
show sour

‘She was filled with anger, but she had to suppress it and did not dare to show any bitterness.’ (NOVEL 12)

- (58) - *Mít-tinh mà-sao không thấy hô khẩu-hiệu? –Ông Xung hỏi.*
rally but.CONJ not.NEG see yell slogan Mr.3SG Xung.PN ask

Tụi trẻ được dịp cười nổ ruột.
person.PL kid have chance laugh explode RUỘT_{N4}

‘What kind of rally has no one yelling slogans? - Mr. Xung asked. The children had the chance to laugh loudly. (It was a wedding, not a rally.)’ (NOVEL 40)

- (59) *Bao-nhiều người đang sốt hết cả ruột lên.*
PL person PROG feverish ADV DET RUỘT_{N4} up.PREP
‘A lot of people are getting anxious.’ (NOVEL 47)

- (60) *Thấy nét mặt Mẫn Nghi buồn rười-rượi, Kiều Lan sốt ruột*
see line face Man Nghi sad ADV~RDP Kieu Lan feverish RUỘT_{N4}

hỏi tiếp: - Là chuyện gì vậy chị?
ask continue COP matter ADV ADV 2SG.F

‘Seeing the sad look on Man Nghi’s face, Kieu Lan asks anxiously: What is the matter, sister?’ (NOVEL 59)

- (61) *Mọi người đang nóng ruột không biết anh sống*

all.PL person PROG hot RUỘT_{N4} not.NEG know he.3SG live

chết thế-nào.

Die how.ADV

‘Everyone is anxious not knowing whether he is dead or alive.’ (NOVEL 39)

- (62) *Mới làm dâu được nửa tháng, đã nghe được câu*
just.ADV be bride already.ADV haft month did.PST hear reach.PFV sentence

ấy, hỏi có điên ruột lên không?

that.DEM how.Q whether.CONJ crazy RUỘT_{N4} up.PREP not.NEG

‘Having only been a bride for half a month, how could I not get mad upon hearing that sentence?’ (NOVEL 33)

- (63) *Trăm lạy cô, ngàn lạy cô, đừng dằn-vò ruột*
hundred bow 2SG.F thousand bow 2SG.F NEG torture RUỘT_{N4}

tôi nữa. Chồng tôi đi đâu?
1SG ADV husband my.POSS go ADV

‘I beg you a thousand times. Please do not torture me anymore. Where is my husband?’ (NOVEL 36)



(64) *Công-việc tuy-có rất ruột một-lúc, nhưng-mà cũng*
 job although.CONJ sting RUỘT_{N4} a-while.ADV but.CONJ also.ADV

được nhàn thân, không lúc nào phải dẫu-dãi
 able-to.AUX relax body NEG moment any.DET must.MDL endure~RDP

dưới bóng nắng.
 under.PREP shadow sunlight

‘Although the work can be quite taxing for a while, it eventually allows for some comfort, never requiring us to expose ourselves to the sunlight’ (NOVEL 9)

(65) *Chiều hôm nay em tiếp được thư anh, thật-là*
 afternoon day this.DEM I.1SG receive already.ADV letter your.POSS truly.ADV

bức thư xé ruột, em đọc đi đọc lại
 enveloped-object.CLF letter tear RUỘT_{N4} I.1SG read forth.ADV read back.ADV

nát cả thư.
 tear whole.DET letter

‘This afternoon, I received your letter. It was truly a heart-wrenching letter. I read it back and forth until the letter was also torn up.’ (NOVEL 1)

(66) *Bạn ơi! Sao-mà đau như xé ruột... Nhưng... chẳng*
 friend hey.INTJ why.Q hurt like.ADV tear RUỘT_{N4} however.ADV not.NEG

lo. Hãy chịu-đựng...
 worry IMP bear

‘My friend! Why does it hurt so much... But... don’t worry. Just bear with it...’ (NOVEL 29)



Table 4.3 The conceptual metaphor framework denoting the metaphor RUÔT_{N1}(INTESTINES)
ARE COGNITION (Examples 51-66)

Source domain: INTESTINES		Target domain: COGNITION
Storing digested food	⇒	Storing thoughts (51-53)
Storing digested food	⇒	Storing anger (57)
Changes in the shape of the intestines due to the content	⇒	Different levels of emotions (56, 58)
Temperature changes in intestines	⇒	Different emotions (59-61)
Physical pain in the intestines	⇒	Emotional pain (63-66)

4.4.4 The Descendant cluster

The two distinct senses in the Descendant cluster all derive from the reanalysis of the complex conceptualization depicted in **Figure 4.13** RUÔT_{A1}: The KINSHIP sense and RUÔT_{A2}: The CLOSENESS sense arises from construing a TR that is located metaphorically or physically inside LM. Being inside entails a particular construal of the scene in which inward orientation is assigned to the TR, as illustrated by the dashed line. In this cluster of senses, internal concentration of the of LM (dashed lines) relative to the TR (shaded sphere) is privileged. This complex conceptualization, while profiling a sequentially evolving process, is subject conceptualization in summary format during reanalysis. In the case of RUÔT_{A1}: The KINSHIP sense, it extends from RUÔT_{N1}: The BELLY sense. Although the events connected by dashed lines implying support do not occur simultaneously in reality (e.g., a baby as a TR receiving blood, from parents), summarizing this action conceptually links a child's blood to the

parents' belly. Thus, the lexical form prompting “belly” can become entrenched and employed to reference kinship-related senses.

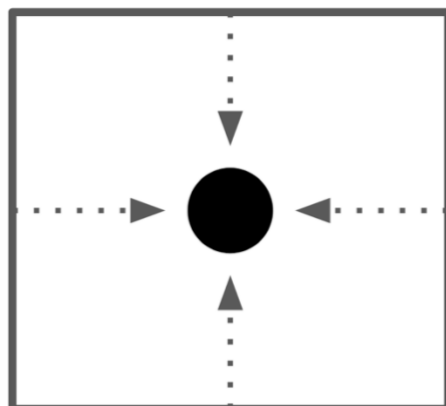


Figure 4.13 The internal concentration or Descendant cluster

Figure 4.14 describes the profiling that gives rise to RUÔTA₁: The KINSHIP sense and RUÔTA₂: The CLOSENESS sense. These two senses share a similar configuration to the Descendant sense cluster, differing only in the choice of LM and TR. RUÔTA₁: The KINSHIP sense belongs to a metonymic relationship where the fetus (TR) is physically located inside the mother's belly (LM), leading to new distinct senses arising from contiguity. RUÔTA₂: The CLOSENESS sense stems from a metaphorical relationship a giver (LM) and a receiver (TR) of attention or care. This relationship highlights care and attention in a manner similar to inward concentration in the Descendant sense cluster, leading to new distinct senses arising from similarity.

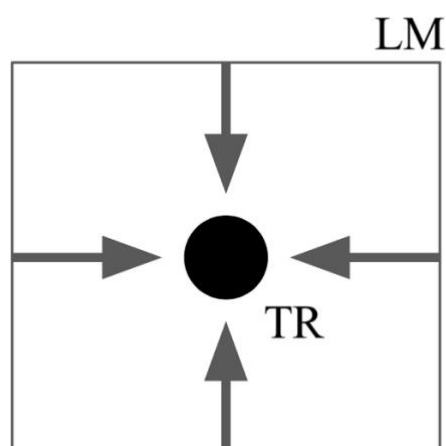


Figure 4.14 Profiling of RUỘT_{A1}: The KINSHIP sense and RUỘT_{A2}: The CLOSENESS sense

4.4.4.1 RUỘT_{A1}: The KINSHIP sense

Examples (67-70) illustrate RUỘT_{A1}: The KINSHIP sense, from which we can see that it is followed by a noun denoting a family member to describe a biological relationship. This sense has appeared in the first Vietnamese dictionary (DeRhodes, 1651), and still remains popular as recorded in the latest Vietnamese dictionary (Phe, 2021).

- (67) *anh em ruột*
 older-brother younger-brother RUỘT_{A1}
 ‘Biological brothers.’ (DICT 20)
- (68) *cha ruột*
 father RUỘT_{A1}
 ‘Biological father.’ (DICT 13)
- (69) *mẹ ruột*
 mother RUỘT_{A1}
 ‘Biological mother.’ (DICT 13)
- (70) *bà con ruột-rà*
 3SG.F 3SG.N RUỘT_{A1}~RDP
 ‘Relatives.’ (DICT 20)

The derivation of the KINSHIP sense from the semantic network associated with *ruột* can be attributed to the inherent link between a descendant and the belly. This correlation involves the nourishment transferred from the mother's belly (LM) to the fetus (TR), aligning with the inward concentration in the Descendant sense cluster. The profiling of this inward connection, as depicted in **Figure 4.14**, where the TR (the fetus) is positioned inside the LM (the mother's belly), leads to RUỘT_{A1}: The KINSHIP sense.

4.4.4.1 RUỘT_{A2}: The CLOSENESS sense

In addition to the above findings, we have identified a novel use of *ruột* as RUỘT_{A2}: The CLOSENESS sense. This usage, as exemplified in examples (71-73), refers to a deep and close relationship, but not one that stems from familial or blood ties. Example (71) uses *ruột* to depict a profound bond between friends, while in (72), it characterizes the strong relationship between an apprentice and their master. These examples highlight relationships that, despite lacking blood connection, share a level of closeness and favoritism typically found in family dynamics. It's noteworthy that this CLOSENESS sense is frequently found in two compound forms: *ruột thịt* (*ruột*-meat) and *ruột-rà* (*ruột* with its phonetic duplicate). Both of these are adjectival forms and can be translated as "intimate." Further details on these compounds are provided in Chapter 5. Example (73) places *ruột* in a scenario involving Tran Thu Huong, who is both a composer and a teacher. She has achieved success with children's songs and also with compositions that delve into a topic she is intimately familiar with: her teaching profession. Additionally, this sense is relatively novel, underscored by its intentional inclusion in brackets, indicating its infrequent usage.

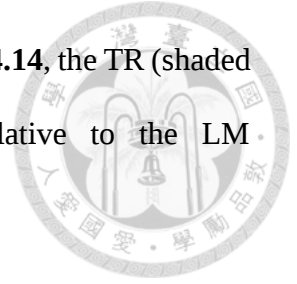
- (71) *Khi trở-về thành, thỉnh-thoảng kể lại cho mấy*
 when.CONJ return city ADV~RDP tell again.ADV for.PREP PL
đưa bạn ruột nghe, họ nói: “Việt Cộng cỡ vậy, làm
 person.CLF friend RUỘT_{A2} listen 3PL say Viet Cong ADV DEM do
sao ta thắng?”
 ADV 1PL win
 ‘When I go back to the city and sometimes share my experiences with close friends,
 they often respond: ‘The Viet Cong are so formidable, how do we win?.’ (N45)

- (72) *Minh khôn hơn Ba Ty, không đứng ra nhận*
 Minh smart than.CONJ Ba Ty NEG stand out.PREP receive
tiền của các hộ mà giao cho một
 money of.PREP each.DET household but.CONJ give to.PREP one
học-trò– Gã đệ-tử ruột của mình làm.
 student the.DET apprentice RUỘT_{A2} of.PREP his.POSS do
 ‘Minh is smarter than Ba Ty, he does not accept money from households but entrusts
 it to a student– his right-handed apprentice.’ (NOVEL 46)

- (73) *Đặc-biệt, Trần Thu Hương dành nhiều tâm huyết*
 especially.ADV Tran-Thu-Huong.PN spend much.ADV heart blood
với những sáng-tác dành cho thiếu-nhi và
 with.PREP PL composition give to.PREP kid and.CONJ
thành-công 60 với hơn 60 ca-khúc: [children’s song names]
 succeed sixty with.PREP more sixty song
cùng mảng đề-tài “ruột” về nghề của mình
 with.PREP theme topic RUỘT_{A2} about.PREP job of.PREP her.POSS
 ‘In particular, Tran Thu Huong, with her characteristic enthusiasm, has contributed
 extensively to children’s music, achieving success with more than 60 songs:
 [children’s song names], and those revolving around her familiar theme: [teaching-
 related song names].’ (NEWSPAPER)

Similarly, the correlation between the inward flow of attention and inward concentration in the Descendant sense cluster gives rise to RUỘT_{A2}: The CLOSENESS sense. This sense belongs to a metaphorical relationship where the TR is placed inside the LM, with profiled inward concentration. This configuration stems from the experiential and logical analogy between an attention giver and receiver, with the caregiver (LM) metaphorically larger than

the care receiver (TR), positioned protectively inside the LM. In **Figure 4.14**, the TR (shaded sphere) represents the object receiving attention (bold lines) relative to the LM (unhighlighted square).



Chapter 5 Discussion



5.1 Semantic networks of *bụng*, *lòng*, and *ruột*

Figure 5.1 below illustrates the semantic networks of *bụng*, *lòng*, and *ruột* according to the guidelines in Principled Polysemy. All three lexemes use the BELLY sense as their primary sense. From there, *bụng* shows the fewest semantic associations, with only two new senses in noun form: The PROTRUDING PART and COGNITION. *Ruột* exhibits five distinct senses, with the nominal pathway giving rise to the INTESTINES sense, the INTERIOR sense, the COGNITION sense, and the Descendant cluster, which gives rise to two adjectival associations: The KINSHIP sense and the CLOSENESS sense. *Lòng* has four distinct senses, including four nouns: The OFFAL sense, the CENTRAL BOTTOM sense, the CENTER sense, and the COGNITION sense.

In the figure, the empty white circle represents a sense cluster, while the small shaded black circle represents a distinct sense. The arrows indicate the direction from conceptually general to conceptually specific. The shape of the arrow indicates the cognitive mechanism involved in the sense generation process. The large shaded black circle at the top represents the primary sense of BELLY, and the similar circle at the bottom represents the metaphorical meaning of COGNITION. Although the three words share these two senses, it does not mean they are synonymous. A discussion of their differences follows in the next section.

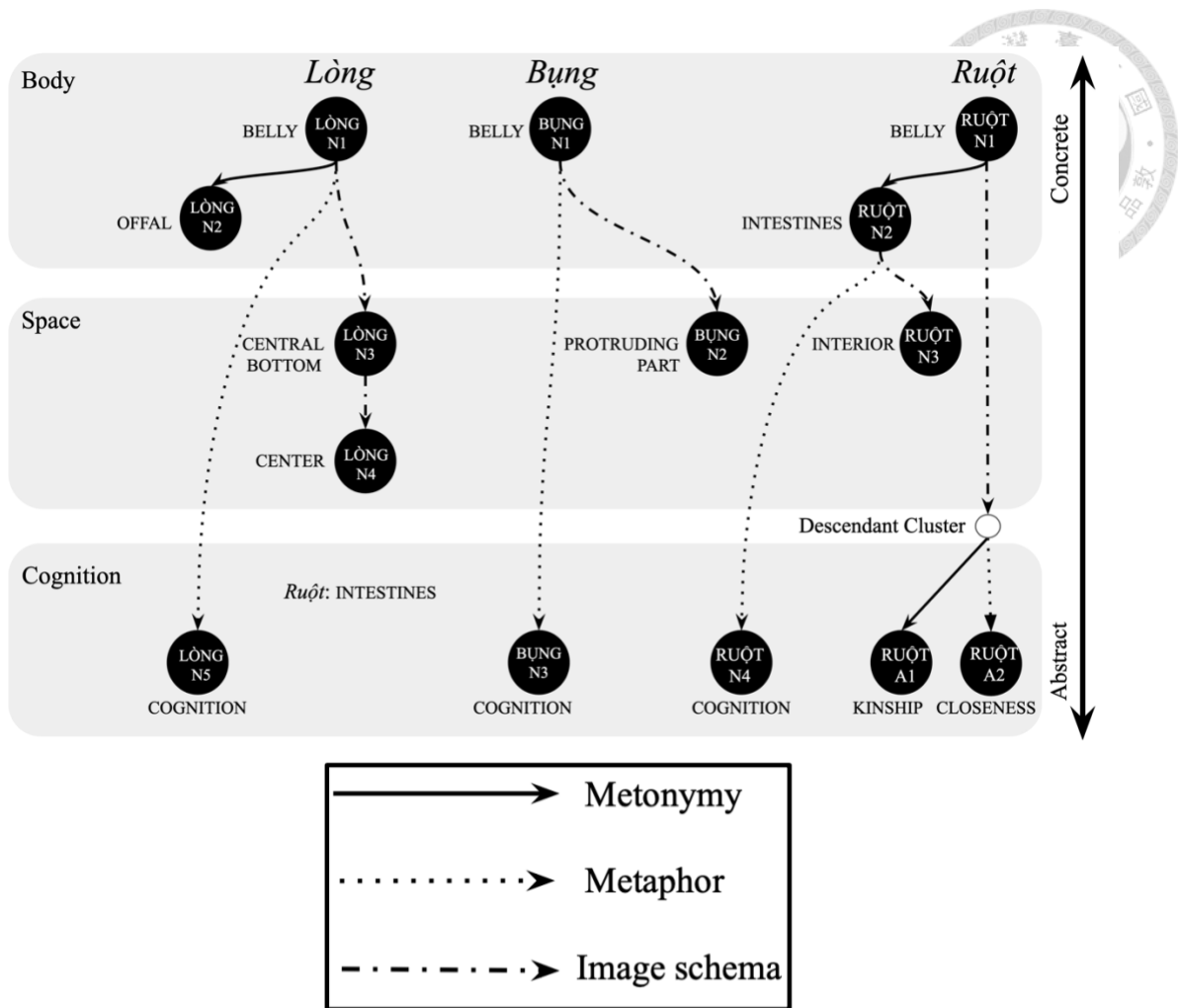


Figure 5.1 The semantic networks of *bưng*, *lòng*, and *ruột*

5.1.1 The problems of synonyms: The body, space, and cognition level.

All the senses of *bưng*, *lòng*, and *ruột* are arranged into three levels: body, space, and cognition. The body level refers to the physical realm, where all meanings map to body parts. The space level encompasses distinct figurative conceptualizations derived from these body parts, which are partly physical and partly metaphorical, forming unique shapes. The cognition level is entirely metaphorical, as any sense within this dimension no longer refers to the physical body part or space, but to a highly conceptualized form of it.

5.1.1.1 The body level: Similarity and distinction of the BELLY sense

According to **Figure 5.1**, *bụng*, *lòng*, and *ruột* all share the sanctioning sense of the BELLY. However, each sense denotes a different profile of the same conceptual base of the animal and human body, as described by the image schemas in **Figure 5.2** below. *Bụng* denotes the body part that includes the stomach, which contains and digests food, and the protruding body part corresponding to it. *Lòng* includes all digestive properties of *bụng* but also extends to the chest area, equivalent to “bosom” in English. The belly sense of *ruột* does not differ from *bụng*; the diagonal lines only represent the “inner” notion distinct to *ruột*, which gives rise to its associations with kinship and closeness in the metaphorical space, signifying an “inner” connection. There are also two unique pathways belonging to this dimension: LÒNG_{N2}: The OFFAL sense and RUỘT_{N2}: The INTESTINES sense. The former specifies animal internal organs, and the latter specifically refers to the intestines of both humans and animals.

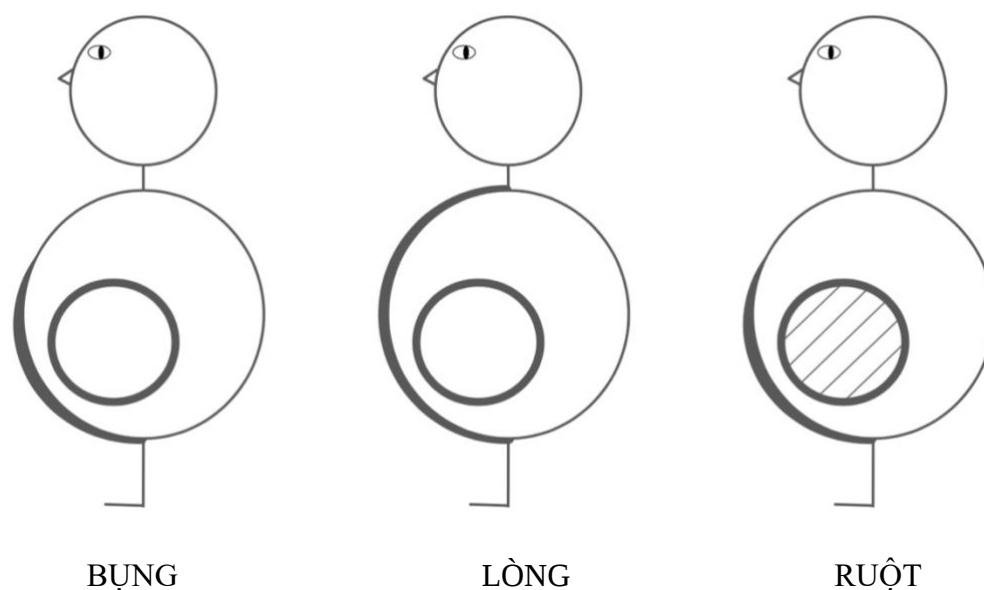


Figure 5.2 The profiles of *bụng*, *lòng*, and *ruột* in the BELLY sense

5.1.1.2 The space level: Distinguishing shapes and roles.

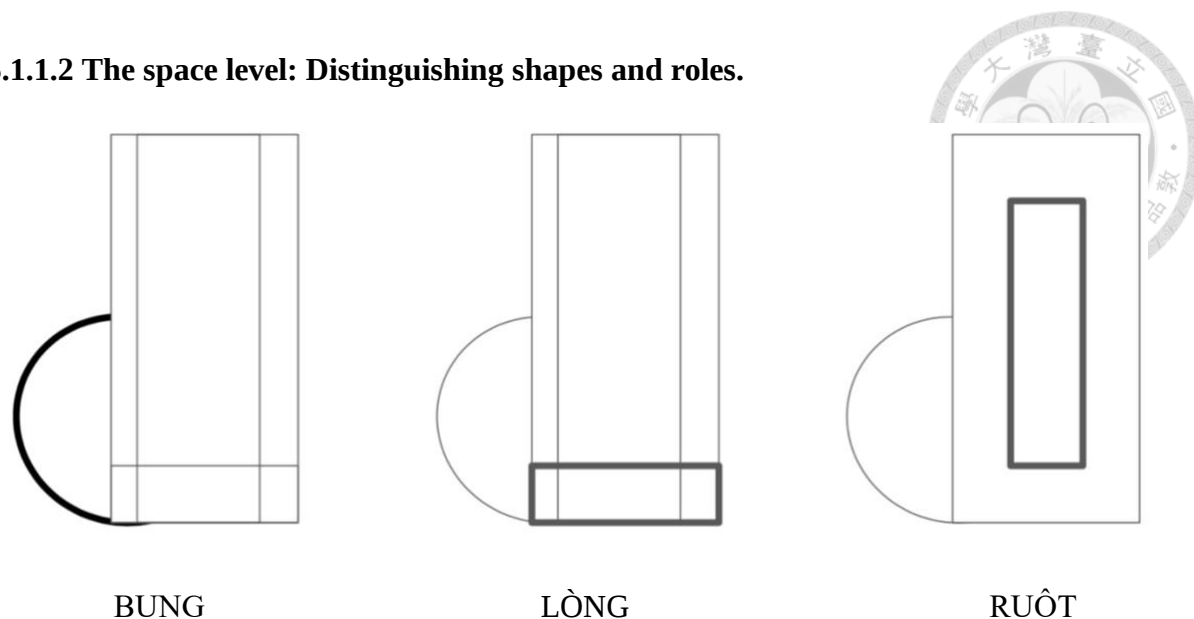


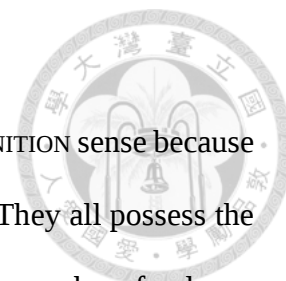
Figure 5.3 The profiles of *bụng*, *lòng*, and *ruột* in the body conceptual space

Figure 5.3 illustrates the concept of the body as a CONTAINER for *bụng*, *lòng*, and *ruột*. This conceptualization originates from the human body and extends to a conceptual space that maps different parts of the human form. *Lòng* represents the central bottom in this vertical structure, *bụng* represents the protruding part, and *ruột* represents the interior. *Lòng* maps to this structure because it occupies the largest area in human anatomy compared to *bụng* and *ruột*, as depicted in **Figure 5.1**. This extensive area of the abdominal and bosom regions, including the intestines, is the source of the “central” notion. This notion gives rise to meanings such as LÒNG_{N4}: The CENTER sense and the conceptualization of *lòng* as the seat of cognition in the Vietnamese language. *Ruột* maps to this structure due to its association with the interior, and this inner focus has led to its evolution along a distinct semantic pathway, developing connections to RUỘT_{A1}: The KINSHIP sense and RUỘT_{A2}: The CLOSENESS sense.

5.1.1.3 The cognition level: Distinction of the COGNITION sense

Bụng, *lòng*, and *ruột* can often be used interchangeably in their COGNITION sense because of their overlapping areas at the body level, as observed in **Figure 5.2**. They all possess the interior part capable of storing, keeping, and protecting important matter, such as food or a fetus. This is why expressions related to the container metaphor, such as “bottom of the container” and “inside the container,” can apply to all three words, as shown in the metaphorical mappings in **Tables 4.1, 4.2, and 4.3**. In the conceptualization process at the space level, even though they are highlighted differently as shown in **Figure 5.3**, they are not entirely distinct. The body is a whole, and one cannot separate the flesh with extreme clarity. However, each word has unique properties due to its roots at the body level. For example, BỤNG_{N1} (BELLY) is protruding, RUỘT_{N2} (INTESTINES) are long, and LÒNG_{N1} (BELLY) is vast. That’s why metaphors like *bấm bụng* (pin-BỤNG_{N3}, meaning ‘to force oneself’) (74) and *thắt-lưng buộc bụng* (belt-tie-BỤNG_{N3}, meaning ‘to save money’) (75) are unique to *bụng*. These metaphors use the physical belly (BỤNG_{N1}) as the source domain, interpreting it as capable of protruding, which entails pressing it or tying it to signify controlling oneself.

Similarly, metaphors like *tấm lòng* flat-objects.CLF-LÒNG_{N5}, transliting to ‘gratitude’ in (76), and *cõi lòng* area.CLF-LÒNG_{N5}, transliting to ‘heart’ in (77) are unique to *lòng*. Dinh and Le (2016) mentioned that these compounds of *lòng* stem from the conceptualization of the ABDOMEN as “a piece of cloth” or “a field/land.” However, understanding the single metaphor LÒNG_{N1} (BELLY) IS COGNITION simplifies the explanation of these multiple cases. These metaphors use the physical abdomen and bosom area (LÒNG_{N1}) as the source domain, interpreting it as large, which translates to vastness in one’s heart. The process of superimposition in image schema transformation shows *lòng* evolving from a central bottom



position to being the center, from concrete to abstract. This process results in the belly being conceptualized as flat, making expressions like *tấm lòng* possible.

In the case of *ruột*, its properties as physical intestines serve as the source domain. Consequently, metaphors like *tiếc đứt ruột* regret-break-RUỘT_{N4} ‘to regret deeply’ in (78) and *nở-nang cả khúc ruột* expand~RD-DET-section.CLF-RUỘT_{N4}, ‘to be ecstatic’ in (56) are unique to *ruột*. In (73), the characteristic of the intestines being long in the source domain allows them to be metaphorically cut like a string, translating to emotional pain in the target domain. Due to its elongated shape, a suitable classifier for the intestines is khúc ‘section,’ as seen in (56). As a result, the expansion of a section of intestines in the source domain serves to describe an emotion so intense that it overwhelms the heart in the target domain. These properties rooted in the physical shapes of each lexical item result in expressions unique to these words. Therefore, expressions like *bấm lòng** press-abdomen, *côi ruột** area.CLF-intestines, or *đứt bụng** break-belly seem odd to native Vietnamese speakers.

- (74) *tụi bạn phải bấm bụng hùn tiền mua quà*
group.CLF friend must.MDL press BỤNG_{N1} pool money buy gift

cống- nạp

offer

cho

for.PREP

Phúc.

Phuc.PN

‘The guys must force themselves to pool money to buy a gift to offer as a tribute to Phuc.’ (NOVEL 57)

- (75) *người tiêu -dùng càng thắt-lưng buộc bụng và tăng-cường ăn*
person consume more belt tie BỤNG_{N1} and increase eat

cơm

meal

nhà

home

nhiều-hơn.

more

‘Consumers are trying to save money and increasingly eating more home-cooked meals.’ (NEWSPAPER)

(76) *Báo* *Thanh-Niên* *chân- thành* *cảm-on*
 newspaper Thanh-Nien.PN sincere thank
tấm *lòng* *của* *quý* *bạn-đọc*
 flat-objects.CLF LÒNG_{N5} of.PREP esteemed reader
 ‘Thanh Nien Newspaper sincerely thanks the gratitude of our esteemed readers.’
 (NEWSPAPER)

(77) *cô* *tan-nát* *cõi* *lòng* *khi*
 she.1SG.F shatter area.CLF LÒNG_{N5} when.CONJ
đọc *những* *lời* *tố-cáo* *vô lý*
 read PL word accusations baseless
 ‘Her heart was shattered when she read those baseless accusations.’
 (NEWSPAPER)

(78) *lấy* *một* *người như* *cậu* *mình* *tiếc* *đứt* *ruột*
 marry one person like.PREP you.2SG I.1SG regret break RUỘT_{N4}
 ‘Marrying someone like you, I regret it deeply.’ (NOVEL 26)

5.1.2 *Lòng*: The seat of cognition in the Vietnamese language.

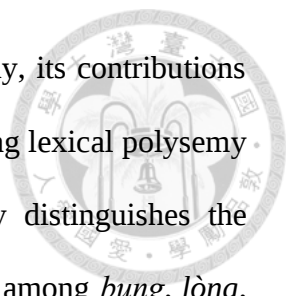
Lòng is considered the seat of cognition in Vietnamese, as evidenced by a significant number of COGNITION senses identified in the sense identification process. This aligns with previous studies (Tran, 2012; Dinh & Le, 2016). According to **Figure 5.1**, *bụng*, *lòng*, and *ruột* all share a semantic association within the cognition space to signify the COGNITION sense. However, *lòng* demonstrates the most diverse and nuanced conceptualization within this sense. It has a highly-conceptualized function compared to other abdominal terms, as the specific emotion contained within the abdomen often becomes a fixed noun representing that emotion. The container of the emotion becomes the conceptualization of that emotion. For instance: *lòng tin* LÒNG_{N5}-trust means ‘trust’, *lòng nhân-ái*: LÒNG_{N5}-compassion means ‘compassion’, *lòng tự-trọng*: LÒNG_{N5}-self-respect means ‘self-respect’, *lòng tự-ái*:

LÒNG_{N5}-self-shame means ‘sense of inferiority’, *lòng tự-hào*: LÒNG_{N5}-pride means ‘pride’, *lòng tự-tôn*: LÒNG_{N5}-self-respect means ‘self-esteem’, *lòng yêu* LÒNG_{N5}-love means ‘(romantic) love’, *lòng thương*: LÒNG_{N5}-love means ‘love (for family or humanity)’, *lòng đố-kị*: LÒNG_{N5}-jealous means ‘jealousy’.

Lòng’s strong semantic association highlights the intricate aspects of Vietnamese abminocentrism, positioning it as the organ that represents the seat of cognition in the Vietnamese language. *Ruột* exhibits the most connections, with two adjectival forms specifying the KINSHIP sense and the CLOSENESS sense derived from the Descendant cluster. This specificity likely stems from *ruột*’s connection with the “inner” notion. While *bụng* can also be used metaphorically to denote human cognition, its level of conceptualization is not as advanced as *lòng*. We propose that *lòng*’s overarching influence in the cognition space results from its occupying the largest area in both human and animal anatomy, encompassing both *bụng* and *ruột* at the body level, as shown in Section 5.1.1.1. *Lòng* is also unique among the three in having a specific sense denoting animal internal organs, the OFFAL sense. This likely explains its generality in the semantic network, as humans would logically have examined animal bodies for food before developing sufficient medical knowledge to examine human bodies. This insight is novel in the study of abminocentrism, suggesting that the selection of the “mind” in a language (Sharifian et al., 2008a) is related to the killing of animals for food and the spatial relationships among body parts.

5.2 Theoretical and practical contributions of the study

In this study, we have undertaken a detailed analysis of the semantic evolution of the Vietnamese terms *bụng*, *lòng*, and *ruột*, drawing on a corpus from various resources. This



thesis has significant theoretical and practical implications. Theoretically, its contributions are threefold: First, it introduces a theory-based methodology for studying lexical polysemy in Vietnamese, marking a pioneering approach. Second, it not only distinguishes the polysemous senses within each word but also delineates the differences among *bụng*, *lòng*, and *ruột* across three levels: body, space, and cognition. Third, it proposes that the semantic pathway of the seat of cognition in Vietnamese strongly correlates with the use of animal intestines as food and their spatial relationship with other abdominal body parts, offering a novel contribution to the study of Vietnamese abminocentrism.

Practically, the thesis makes two key contributions. First, our research introduces 14 senses for the three words, exceeding the number of entries found in Vietnamese dictionaries. Second, it enhances pedagogical approaches by aiding learners of Vietnamese in differentiating these seemingly synonymous terms across three different dimensions, organized from concrete to abstract. Understanding the semantic pathway will help explain the seemingly counterintuitive association between certain senses and their modern uses. For example, since the prominent sense of *ruột* is RUỘT_{N2}: The INTESTINES sense, people may find it difficult to connect intestines with kinship relationships. However, our network helps to show that RUỘT_{A1}: The KINSHIP sense is actually derived from the more logical association with RUỘT_{N1}: The BELLY sense, clearing up the confusion. Overall, this study offers both theoretical insights and practical applications in understanding and teaching the nuances of Vietnamese lexical semantics.

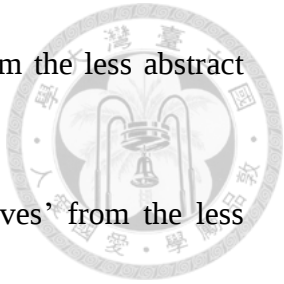


5.3 Limitations and future directions

The primary limitation of this study is that it offers a hypothetical proposal of the semantic connections of *bụng*, *lòng*, and *ruột* without providing empirical data to demonstrate actual semantic changes. Accurately pinpointing the initial emergence of each sense is challenging due to corpus constraints. Historical documentation mainly exists in Sino-Chinese and *Chữ Nôm* scripts. Sino-Chinese predominantly consists of Chinese terms articulated in Vietnamese, which do not adequately reflect the usage of authentic Vietnamese terms. Conversely, *Nôm* literature, often poetic, may not fully capture the breadth of Vietnamese language application across various contexts. Additionally, our analysis encounters limitations in covering examples found in dictionaries. Often, we could not find corresponding usages in our corpus, suggesting a possible disconnect in currency. This gap might be attributed to biases in older dictionary entries, leading to the omission of certain meanings from contemporary usage.

5.3.1 Reinforcing compounds in the corpora

During the sense tagging process, we encountered several composite forms of *bụng*, *lòng*, and *ruột* that fall under Thompson's classification criteria (2009, p. 130) for reinforcing compounds. Common compounds include *ruột gan*, *ruột thịt*, *bụng dạ*, and *lòng dạ*. These resulting forms often have a more figurative or abstract reference than their individual bases. When combined with *dạ*, *bụng* and *lòng* acquire a metaphorical sense. Similarly, when *ruột* is combined with *gan*, it expresses a metaphorical sense as well. However, *ruột thịt* (intestines-meat) denotes 'relative' as a noun and 'blood-related/intimate' as an adjective. Illustrations of the lexical components of these forms are as follows:

- 
- *Ruột gan*: ‘emotional endurance or concealed human affection’ from the less abstract terms *ruột* ‘intestine’ and *gan* ‘liver’
 - *Ruột thịt*: ‘to be biologically related or close like biological relatives’ from the less abstract terms *ruột* ‘intestine’ and *thịt* ‘meat’
 - *Bụng dạ*: ‘deep, unexpressed thoughts towards people and things’ from the less abstract terms *bụng* ‘belly’ and *dạ* ‘stomach’
 - *Lòng dạ*: ‘deep, unexpressed thoughts and feelings towards people and things’ from the less abstract terms *lòng* ‘abdomen’ and *dạ* ‘stomach’

These reinforcing compound forms are a great way to decide which terms to add next into the study. Research should consider encompassing more body terms, whether purely Vietnamese lexemes like *dạ* ‘stomach’ or those with Sinitic roots like *gan* ‘liver,’ originating from the Chinese 肝 *gān* ‘liver.’ Earlier recordings of such Chinese writings in Vietnamese history allow the study to go beyond the 1651 threshold of the earliest dictionary, enabling a diachronic study that could address the mentioned limitations. Future study on these linguistic compounds might shed light on a deeper understanding of the parallelism between human anatomy and cognition. The body is interconnected rather than having clear separations between organs, much like how meanings are similarly fluid in lexical semantics.

5.3.2 Reduplication compounds in the corpora

Another frequently encountered compound in this study is reduplication. These compounds fall under Thompson’s (2009) partial rhyming reduplications categorization. Several compounds are evident in the dictionaries corpus; common reduplications of *lòng* include *lòng dòng*, *lòng thông*, and *lòng vòng*. Common reduplications of *bụng* include *bụng*

thụng, bụng xụng, and bụng nhụng. Ruột only has one reduplicative compound, *ruột rà*. The examples in the following section illustrate the most common tokens. For the full list of reduplicative compounds, please consult the footnote section in the sense tagging process. The reduplication compounds of *lòng* have 148 tokens, the reduplication compounds of *bụng* have 35 tokens, and the reduplication compound of *ruột* has 21 tokens. The following section discusses these compound forms in length.

5.3.2.1 LÒNG_{A1}: The TANGLED sense

We observe that there are two types of lexemes *lòng* is combined with in reduplicative form. The first type of lexeme has a meaning, while the second type does not. In both cases, *lòng* conveys the sense of being tangled in an adjectival form. The collocate lexemes from the first type include *dòng* ('line'), *thòng* ('fall/dangle'), and *vòng* ('circle'). When combined with these lexemes, *lòng* denotes a distinct sense of being twisted together and entangled, as illustrated in examples (79) to (25). This sense can describe entangled matters with a corporeal form, such as ropes in example (80), or shapes of routes, like purposeless driving in (79) and (81). It can also be purely metaphorical, describing a manner of speech that beats around the bush, as in (82) and (83). The collocate lexemes from the second type include *khòng*, *xòng*, and *nhòng*. These are morphemes that are purely phonetic, but when combined with *lòng*, the compound form has a meaning: *lòng khòng* (LÒNG_{A1}~RDP 'skinny'), *lòng xòng* (LÒNG_{A1}~RDP 'entangled'), and *lòng nhòng* (LÒNG_{A1}~RDP 'unsolved problem').

According to Tran et al. (2015), a reduplicative word is composed of two parts: a root and a reduplicative part, which repeats the root. In many cases, the root syllable has a clear meaning, while the reduplicative syllables have vague or even oblique meanings.

In the first case, since the collocate lexemes have a clear complementary meaning to entanglement, determining the root is challenging. In the second case, since the reduplicative form is purely phonetic, it is safe to say that *lòng* is the root, expressing a sense of entanglement. There is a possibility that we are encountering the problem of homonymy in the first case, and *lòng* does not possess the sense of entanglement. The question then is, what sense does *lòng* possess here? Is it merely a phonetic morpheme with vague or no meaning? This is a quest that future study can take on.

- (79) *Đi lòng vòng một hồi lại trở về chỗ cũ.*
 go LÒNG_{A1} winding one while again.ADV return to.PREP place old
 ‘Returning to the original place after wandering around for a while.’ (DICT 20)

- (80) *Đầu dây buông xuống lòng thòng.*
 head rope fall down.PREP LÒNG_{A1} fall
 ‘The end of the rope dangles down.’ (DICT 16)

- (81) *Hậu chạy xe-máy chở Duy lòng vòng qua*
 Hau.PN ride motorbike carry Duy.PN LÒNG_{A1} round across.PREP
nhiều tuyến đường
 many.PL line.CLF street
 ‘Hau rode a motorbike, circling Duy around many street.’ (NEWSPAPER)

- (82) *Thằng Sơn úp mở, cố-tình nói lòng vòng*
 3SG Son fold open intentional.ADV speak LÒNG_{A1} round
 ‘Son was being evasive, intentionally speaking in circles.’ (NOVEL 53)

- (83) *Nói lòng dòng mắt thì-giờ*
 speak LÒNG_{A1} line waste time
 ‘Talking in circles wastes time.’ (DICT 19)

5.3.2.2 BỤNG_{A1}: The SAGGY sense

Similar to *lòng*, there are two types of lexemes *bụng* is combined with in reduplicative form. The first type of lexeme has a meaning, while the second type does not. In both cases, *bụng* conveys the sense of being saggy in an adjectival form. The lexeme *thụng* belongs to the first case, denoting the meaning of “baggy.” The collocate lexemes from the second type include *xụng* and *nhụng*. Regardless of whether the complementary lexeme has a clear meaning or not, when combined with these lexemes, *bụng* denotes a distinct sense of tending to sink or bulge downwards under weight or pressure. This sense is usually used to describe meat or clothes, as illustrated in (84)-(87). In (85) and (87), *bụng* in combination with the phonetic duplication *nhụng* describes the soft, mushy, and chewy characteristics of meat. In (84) and (86), *bụng* in combination with the phonetic duplication *xụng* and *thụng* describes the untidy appearance of clothing that is oversized or not neatly tucked up inside the pants.

Similar to *lòng*, it is challenging to decide which one is the semantic root of *bụng* in the first case. In the second case, since the reduplicative form is purely phonetic, it is safe to say that *bụng* is the root, expressing a sense of being saggy. However, this sense only appears in the dictionaries corpus with a limited number of tokens as follows: *bụng thụng*: 10 tokens, *bụng xụng*: 8 tokens, *bụng nhụng*: 12 tokens, and *bụng bịu*: 2 tokens. The rarity of the composite form of *bụng* may also be due to the absence of a corpus of spoken language, where phonetic duplication is used more frequently.

- (84) *Ăn-mặc* *bụng-xụng*
dress BỤNG_{A1}~RDP
‘To dress messily and untidily.’ (DICT 13)
- (85) *Đám* *thịt* *mỡ* *bụng-nhụng*
chunk.CLF meat fat BỤNG_{A1}~RDP
‘A soft and mushy chunk of fatty meat.’ (DICT 16)



- (86) *Quần áo bụng-xụng*
 pant shirt BỤNG_{A1}~RDP
 ‘Messy and untidy clothes.’ (DICT 17)
- (87) *Miếng thịt bụng-nhung*
 slice.CLF BỤNG_{A1}~RDP BỤNG_{A1}~RDP
 ‘A soft, mushy, and chewy slice of meat.’ (DICT 18)

5.3.3.3 The composite form *ruột rà*

Unlike the reduplications of *bụng* and *lòng*, there is no debate on the KINSHIP sense of *ruột* in the *ruột rà* compound. An illustration of this usage is found in (88), where *ruột rà* denotes a kinship-like relationship. Despite its limited token numbers, *ruột rà* offers insights into the reduplication in this thesis.

- (88) *gia-đình chàng-traí đã hiến tạng con mình, để*
 family boy PST donate organ child their.POSS to.PREP
- tái-sinh 4 con người không ruột-rà, thân-thích*
 give-new-life four human.CLF person NEG RUỘT_{A1}~RDP close~RDP
 ‘The boy’s family donated their child’s organs to give new life (save) to four unrelated, unacquainted individuals.’ (NEWSPAPER)

There is a chance that *bụng* and *lòng* do not have an extended sense of being saggy and tangled in adjectival forms. The examples we see could merely be phonetic reduplications of the meaningful semantic root, which is not *bụng* and *lòng*. However, this possibility seems unlikely in cases where the accompanying morpheme of *bụng* and *lòng* does not have a clear meaning. It is likely that *bụng* and *lòng* do possess saggy and tangled senses, respectively. Based on our framework, if this is the case, then the sense association can be explained through profiling a property in metonymization. The BELLY sense of *bụng* includes the saggy property. The BELLY sense of *lòng* includes the tangled property. The BELLY sense of *ruột*

includes the ability to hold the fetus, where the kinship relationship derives from. All these senses derive from metonymization at the body level. This aligns with the semantic component of 月 “flesh” from the *Chữ Nôm* entry of *bụng* (脬) and *ruột* (脾), and 心 “heart,” which represents the highly conceptualized cognition sense derived from the belly sense of *lòng* (惹) in **Table 1.1**. However, these are just hypotheses. Further knowledge regarding the Vietnamese phonological aspects is required to further explore these possibilities. This is a quest to fulfill in the future.

Appendices



Appendix 1: Vietnamese dictionaries from 1651-2021 included in the dictionaries corpus

Number	Name	Year of publication	Author
1	Dictionarium Annamiticum Lusitanum et Latinum <i>Tự điển Việt–Bồ–La</i>	1651	Alexandre de Rhodes
2	Dictionarium Anamitico–Latinum ¹⁶ 南越洋合字彙 <i>Nam Việt–Đương Hiệp Tự vị</i>	1838	Jean-Louis Taberd
3	Dictionnaire élémentaire Annamite–Français ¹⁷	1874	Le Grand de La Liraye
4	Petit Dictionnaire pratique à l’usage des élèves du cours d’annamite	1877	Abel Des Michels
5	<i>Tự vị An Nam–Pha Lang Sa</i> Dictionnaire annamite – français	1877	J. M. J. (Louis Caspar, <i>Cố Lộc</i>)
6	Vocabulaire Annamite–Français	1894	la Mission de Saigon
7	Dictionnaire Annamite ¹⁸ 大南國音字彙 <i>Đại Nam Quốc âm tự vị</i> (<i>Đại Nam Quốc âm tự vị</i>): Tome 1 A-L	1895	Huỳnh-Tĩnh Paulus Của

¹⁶ This dictionary was edited by Bishop Jean-Louis Taberd (*Cố Từ*) based on the entire manuscript drafted in 1773 by Bishop Pierre Pigneau de Behaine (*Bá Đa Lộc*).

¹⁷ The dictionary was originally published in 1868; this is the second edition.

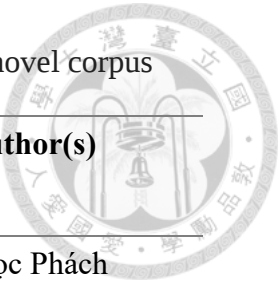
¹⁸ The dictionary was published in two volumes over consecutive years.



	Dictionnaire 大南國音字彙 <i>Đại Nam Quốc âm tự vị</i> (Đại Nam Quốc âm tự vị): Tome 2 M-X	Annamite	1896	
8	Dictionnaire Annamite–Français		1898	J.F.M Génibrel
9	大南國音字彙合解大法國音 Dictionnaire Annamite–Français (Langue officielle et langue vulgaire) Tome Premier A-M 大南國音字彙合解大法國音 Dictionnaire Annamite–Français (Langue officielle et langue vulgaire) Tome Second N-X		1899	Jean Bonet
10	Petit Dictionnaire Annamite–Français (Từ điển nhỏ tiếng An Nam-Pháp)		1901	P.-G. Vallot
11	Petit Dictionnaire Annamite–Français (Tiểu từ điển Việt-Pháp)		1904	P.-G. Vallot
12	Petit Lexique Annamite–Français		1908	Al. Pilon
13	<i>Việt Nam Tự Điển</i> 越南字典		1931	Hội Khai Trí Tiến Đức
14	Dictionnaire Annamite–Chinois–Français		1937	Gustave Hue
15	<i>Việt Nam tân từ điển</i>		1952	Thanh Nghị
16	<i>Từ điển tiếng Việt</i>		1988	Hoàng Phê
17	<i>Từ điển tiếng Việt</i>		1991	Văn Tân
18	<i>Đại từ điển tiếng Việt</i>		1999	Nguyễn Như Ý
19	<i>Từ điển tiếng Việt</i>		2004	Hoàng Phê



Appendix 2: Vietnamese novels from 1925-2020 included in the novel corpus



Number	Novel name	Year of publication	Author(s)
1	<i>Tổ Tâm</i>	1925	Hoàng Ngọc Phách
2	<i>Con nhà nghèo</i>	1930	Hồ Biểu Chánh
3	<i>Hồn bướm mơ tiên</i>	1933	Khái Hưng
4	<i>Gánh hàng hoa</i>	1934	Khái Hưng, Nhất Linh
5	<i>Tiêu Sơn tráng sĩ</i>	1935	Khái Hưng
6	<i>Số đỏ</i>	1936	Vũ Trọng Phụng
7	<i>Đoạn tuyệt</i>	1936	Nhất Linh
8	<i>Bỉ vỏ</i>	1937	Nguyễn Hồng
9	<i>Tắt đèn</i>	1937	Ngô Tất Tố
10	<i>Giông tố</i>	1937	Vũ Trọng Phụng
11	<i>Làm đĩ</i>	1937	Vũ Trọng Phụng
12	<i>Bước đường cùng</i>	1938	Nguyễn Công Hoan
13	<i>Những ngày thơ ấu</i>	1938	Nguyễn Hồng
14	<i>Bướm trắng</i>	1938	Nhất Linh
15	<i>Trúng số độc đắc</i>	1938	Vũ Trọng Phụng
16	<i>Lều chõng</i>	1939	Ngô Tất Tố
17	<i>Lan Hữu</i>	1940	Nhượng Tống
18	<i>Đế mèn phiêu lưu ký</i>	1941	Tô Hoài
19	<i>Chùa Đàn</i>	1946	Nguyễn Tuân
20	<i>Sống mòn</i>	1956	Nam Cao
21	<i>Đất rừng phương Nam</i>	1957	Đoàn Giỏi
22	<i>Gia tài người mẹ</i>	1963	Dương Nghiễm Mậu
23	<i>Vòng tay học trò</i>	1964	Nguyễn Thị Hoàng
24	<i>Hòn đất</i>	1966	Anh Đức



25	<i>Mù khơi</i>	1970	Thanh Tâm Tuyền
26	<i>Dấu chân người lính</i>	1972	Nguyễn Minh Châu
27	<i>Bếp lửa</i>	1973	Thanh Tâm Tuyền
28	<i>Gặp gỡ cuối năm</i>	1981	Nguyễn Khải
29	<i>Trư cuồng</i> ¹⁹	1982	Nguyễn Xuân Khánh
30	<i>Mùa biển động</i> ²⁰	1982	Nguyễn Mộng Giác
31	<i>Người không mang họ</i>	1983	Xuân Đức
32	<i>Thời xa vắng</i>	1984	Lê Lựu
33	<i>Mùa lá rụng trong vườn</i>	1985	Ma Văn Kháng
34	<i>Tuổi thơ dữ dội</i>	1988	Phùng Quán
35	<i>Thiên sứ</i>	1988	Phạm Thị Hoài
36	<i>Những thiên đường mù</i>	1988	Dương Thu Hương
37	<i>Miền thơ ấu</i>	1988	Vũ Thư Hiên
38	<i>Đi về nơi hoang dã</i>	1989	Nhật Tuấn
39	<i>Sông Côn mùa lũ</i>	1990	Nguyễn Mộng Giác
40	<i>Bến không chồng</i>	1990	Dương Hường
41	<i>Miền hoang tưởng</i>	1990	Nguyễn Xuân Khánh
42	<i>Mảnh đất lắm người nhiều ma</i>	1990	Nguyễn Khắc Trường
43	<i>Mắt biếc</i>	1990	Nguyễn Nhật Ánh
44	<i>Nỗi buồn chiến tranh</i>	1991	Bảo Ninh
45	<i>Ăn mày dĩ vãng</i>	1991	Chu Lai
46	<i>Chung cư</i>	1996	Trần Văn Tuấn
47	<i>Cơ hội của Chúa</i>	1999	Nguyễn Việt Hà

19 The novel was completed in 1982 but published in 2005.

20 This is a volume in a series of novels published from 1982-1989, including five volumes: *Những đợt sóng ngầm* (1984), *Bão nổi* (1985), *Mùa biển động* (1986), *Bèo giạt* (1988), and *Tha hương* (1989).



48	<i>Người đi vắng</i>	1999	Nguyễn Bình Phương
49	<i>Chuyện kể năm 2000</i>	2000	Bùi Ngọc Tấn
50	<i>Hồ Quý Ly</i>	2000	Nguyễn Xuân Khánh
51	<i>Cánh đồng bất tận</i>	2005	Nguyễn Ngọc Tư
52	<i>Cho tôi xin một vé đi tuổi thơ</i>	2008	Nguyễn Nhật Ánh
53	<i>Tôi thấy hoa vàng trên cỏ xanh</i>	2010	Nguyễn Nhật Ánh
54	<i>Đội gạo lên chùa</i>	2011	Nguyễn Xuân Khánh
55	<i>Nếu biết trăm năm là hữu hạn</i>	2012	Phạm Lữ Ân
56	<i>Ngồi khóc trên cây</i>	2013	Nguyễn Nhật Ánh
57	<i>Ngày xưa có một chuyện tình</i>	2016	Nguyễn Nhật Ánh
58	<i>Tám ván phóng dao</i>	2020	Mạc Can
59	<i>Người tình dĩ vãng</i>	2022 ²¹	Dạ Miên

²¹ Online novel, retrieved in 2022 from <https://isach.info/story.php?story=nguoi tinh di vang da mien>

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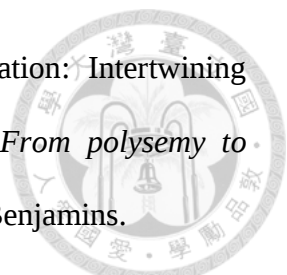
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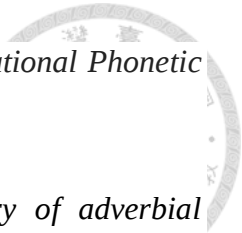
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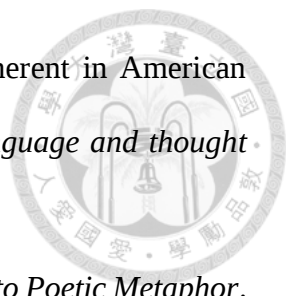
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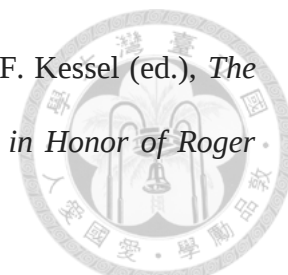
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